



The 24th
Pacific Rim Real Estate Society Conference
“Property research for our changing world”

21-24 January 2018
Auckland, New Zealand



BUSINESS SCHOOL
DEPARTMENT OF PROPERTY

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Welcome and Kia ora

Dear friends and colleagues,

The Department of Property at the University of Auckland's Business School is delighted to be hosting the 24th Annual Pacific Rim Real Estate Society Conference.

The annual PRRES conference is the premier forum for regional and international property researchers. It is a time where we can all share our research, renew friendships and partake in rigorous debate. The PRRES conference has a reputation for being fun, supportive and friendly and we have no doubt that the 2018 conference will be no exception.

Participants will experience a genuine Māori welcome at the University's Waipapa Marae, followed by a fascinating and enlightening keynote panel discussion setting out the extensive Māori contribution to New Zealand's economy and the role of real estate.

We are encouraged to see younger scholars stepping into the PhD Colloquium this year being held at the magical Goldie Estate Winery on Waiheke Island. This is where our PRRES doctoral students will discuss their research and inspire. I am sure all participants will find the feedback they receive useful and stimulating.

Over 100 property papers will be presented from researchers representing 17 countries over the three days of the conference. The research topics are varied and include: housing markets, behavioural property research, property finance and investment, urban and regional policy, among many others. We are honoured to have keynote addresses from Professor Colin Lizieri (University of Cambridge) and Professor Norm Miller (University of San Diego) on the dynamic challenges afoot in the property profession and what to expect over the next decade.

One of the strengths of PRRES is the solid link that has been established over the years with the property industry. To enhance this relationship and the power of academic and industry professionals working together we have included this year, three industry panels sponsored and presented by CBRE, JLL and Colliers International on millennials, the future of work and market dynamics after natural disasters, all topics of great interest to the future of property practice.

The social events at the conference include welcome drinks at the Gus Fisher Gallery, a conference dinner at the university's Fale, a women's networking session and informal socialising in Auckland's vibrant Britomart area.

We would especially like to thank our local supporters – Colliers International, CBRE and JLL – as well as the sponsors of PRRES – Altus Group, the Australian Property Institute, the Royal Institute of Chartered Surveyors, the Real Estate Development Association of Kaohsiung, and the Real Estate Appraisers Association of Taiwan. Without your generous support we would not be able to put on such an important event.

We appreciate your participation in the program and hope that you find this conference enjoyable, informative, challenging and intellectually stimulating.

2018 PRRES Conference Team

Deborah Levy, Jeremy Gabe, Zhi Dong, William Cheung

Our Sponsors

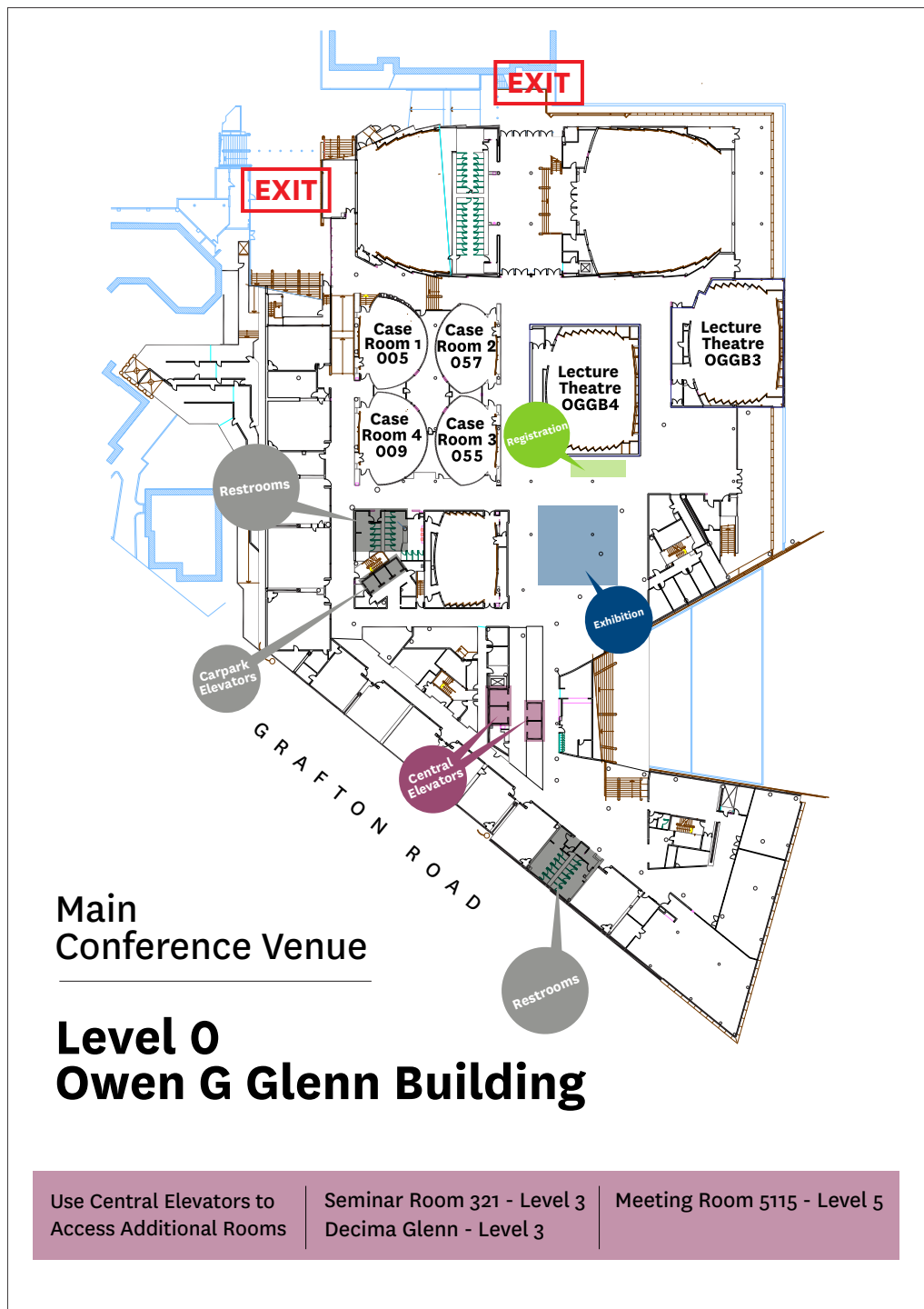
Local Sponsors



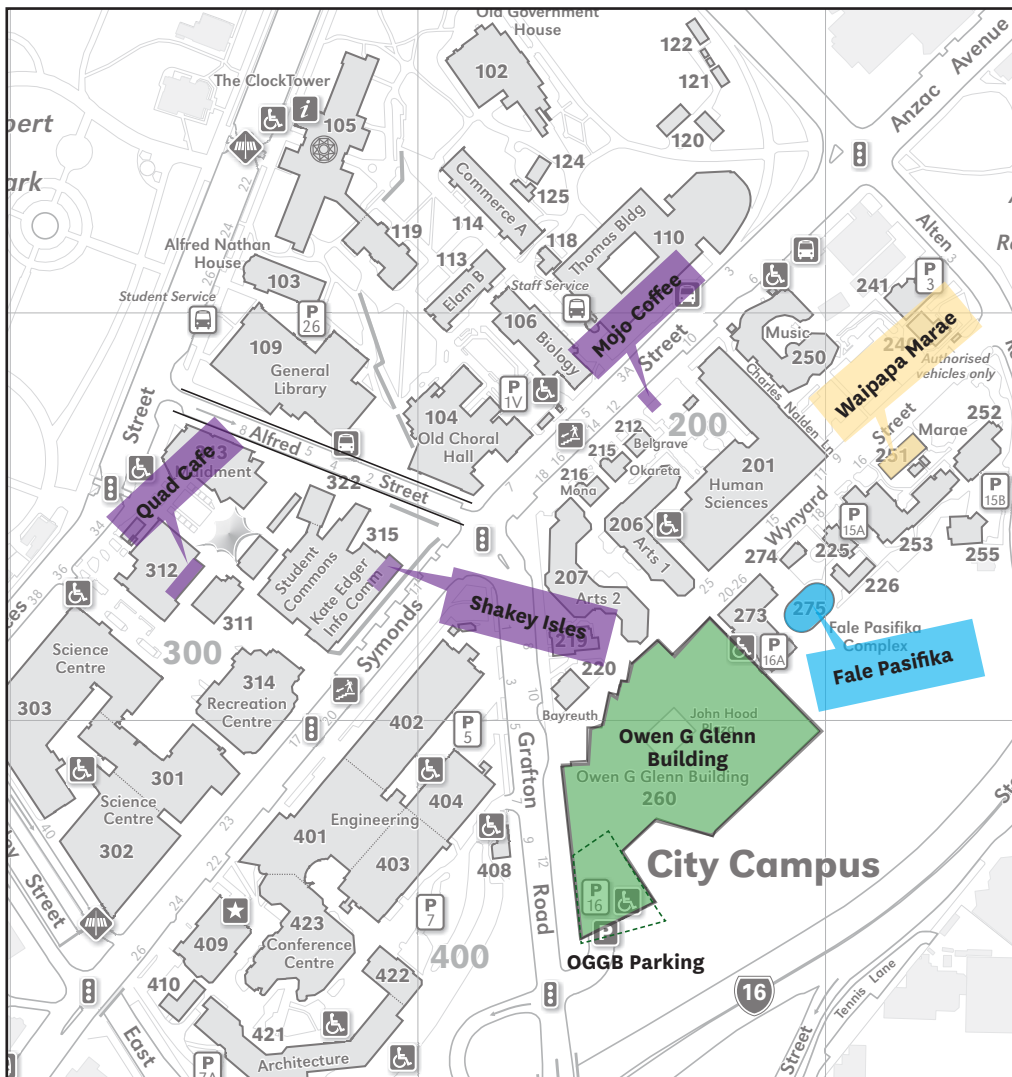
PRRES Sponsors



Main Venue Map



Campus Map



Main Conference

Owen G. Glenn Building, Level 0

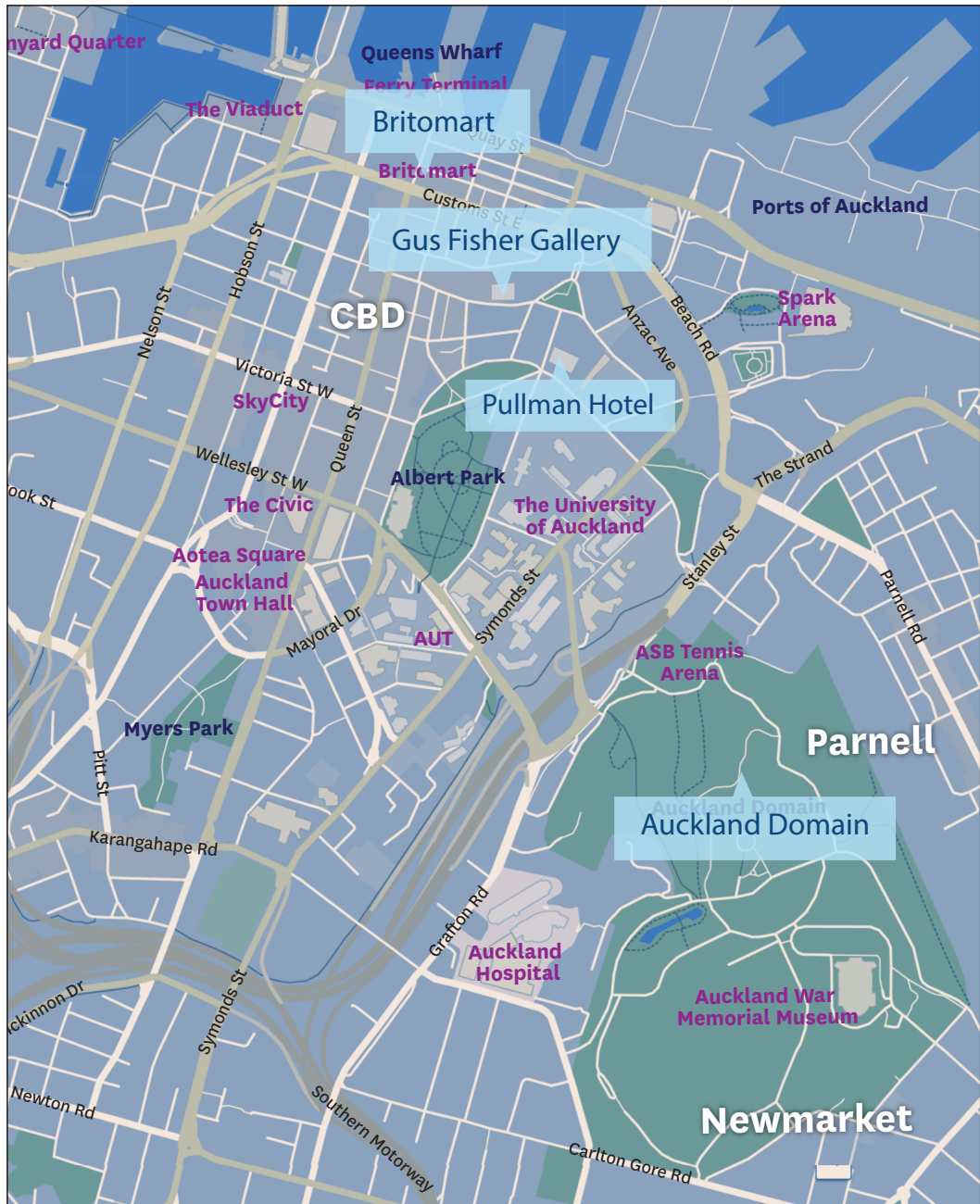
Opening of Conference

Waipapa Marae

Conference Dinner

Fale Pasifika

Local Map



Welcome Reception
Gus Fisher Gallery

Womens Function | Optional Networking
Britomart

Conference Info

Conference Venue - Owen G Glenn Building

12 Grafton Rd, Auckland Central (map on page 4)
Owen G. Glenn Building is open from 7.00am until 6.30pm

Parking

Public parking is available beneath the Owen G Glenn Building. Delegates may purchase reduced fee, single use, exit tickets from the registration desk for \$12 per day.

Cameras and Electronic Recording

No electronic recording of presentations is permitted without permission of conference organisers and speakers.

Twitter

The most up-to-date information will be available from our twitter feed available at www.prres2018.nz or @prres2018

Slido

During keynote sessions we will be utilising Slido to collect questions.

Ask your questions at **www.sli.do/prres2018**

Wifi

Wireless internet access is available for use during the conference.

NETWORK : UoA-Guest-WiFi

USERNAME: prres@Auckland2018.com

PASSWORD: DipNnZ6u

Nearby Services

ASB Bank

Level 1, Owen G Glenn Building (OGGB)
University of Auckland
Banking and foreign exchange services

Pharmacy & Post Shop

Level 1 Kate Edgar Information Commons
Corner Alfred St & Symonds Street

Food & Drink

Where to start?! Auckland has more great places to eat and drink than we could hope to recommend. A great place to start is the Britomart District, a hotspot of food and drink less than 1.5km from the conference venue. See flier in the conference bag for more details.

Getting Around

There are a many **taxi companies** to choose from in Auckland. We suggest:

Blue Bubble Taxis
09 300 3000
www.cooptaxi.co.nz

The conference venue is in a prime location for **public transportation**. Find details at:

Auckland Transport
www.at.govt.nz/bus-train-ferry

*download the AT mobile app on your smartphone for live updates

Medical and Illness

If you have an emergency you can contact the police, paramedics and fire department by calling 111 from any landline or mobile phone.

The Conference Venue is:
Owen G Glenn Building, 12 Grafton Road, Auckland Central.

If you require non-emergency medical attention during the conference, please inform the registration desk where a first aid kit will be available.

No Smoking

Smoking is not permitted anywhere within The University of Auckland campus.

Powhiri Protocol

A pōwhiri is a ritual of encounter and has been performed by Māori for many generations. Pōwhiri today are utilised to welcome all visitors and set the intention and purpose for their visit. There are many aspects of the pōwhiri process to observe.

The first voice heard by the guests as they approach will be that of a woman in the karanga (wailing call of welcome performed solely by women). The language of the karanga will be Maori. Women as hosts will start and conclude the karanga.

Your group will walk slowly on to the Marae and into the meeting house. The traditional welcome will take place in the meeting house, please be prepared to take your shoes off before entering the meeting house, and no food or drink can be taken into the venue.

At the end of this ceremony guests are invited to Harirū. This is where the guests cross the meeting house to greet the hosts with a handshake and hongi. The hongi recreates the creation story. We touch noses and foreheads and breath in with the recipient. We advise you to keep your eyes open during this moment so you do not hurt the recipient of your hongi.

After this we break the ritual with food and drink in the dining room (Wharekai) next to the meeting house. Traditionally this is an opportunity for the hosts to show off their wealth and their food specialties specific to the area. Generally, there will be a Karakia Whakapai Kai (Blessing) before partaking of food. Once this is completed, this Marae, Waiapapa is your Marae for the duration of your stay in Auckland.

We respectfully request those who do not attend the entire ritual reconnect with the conference at the Owen G. Glenn Building at 10.30am.

Social Information

If you have purchased a full registration, all social function are included. You will be advised at registration which socials you have confirmed your attendance for.

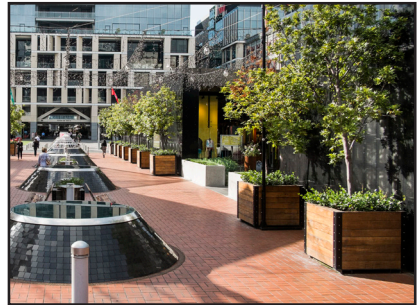
Welcome Reception

Sunday January 21,
Gus Fisher Gallery
74 Shortland St
6.30 - 8.00pm



Womens Function

Monday January 22,
Britomart
5.30 - 6:30pm
*Ladies to meet at reception at 5pm



Casual Networking

Monday January 22,
The Britomart Country Club
31 Galway St
6:30pm onward
*at own expense



Conference Dinner

Tuesday January 23
Fale Pasifika
Wynyard St
6.00 - 9:30pm

Where to go?

Quick local advice on exploring Auckland

Walk

Viaduct & Britomart Precincts – Auckland’s urban revival scene, featuring the hottest restaurants, bars and cafes.

Wynyard Quarter – Auckland’s expanding urban revival scene, awash in development and more restaurants. Access via footbridge from the Viaduct.

Auckland Museum – Top of the Auckland Domain, featuring cultural, natural and human history exhibits.

Auckland Art Gallery – A short walk from the venue at the south-western corner of Albert Park. Classic and modern art from local and international artists.

Markets – The French Market held at La Cigale (69 St Georges Bay Road, Parnell) takes place 8am to 1pm on Saturday & Sunday.

Bus (Journey Planner at <http://www.at.govt.nz>)

Mission Bay/Kohimarama/St. Heliers – Auckland’s “Eastern Bays” are popular summer hangouts, with cafes and beaches. Best at high tide with a southerly or SE wind direction.

Takapuna – Across the bridge on the “North Shore”, another popular summer hangout with a fantastic beach, waterfront town, and a freshwater lake. Best in a westerly or SW wind at any tide; lots of watersports gear for hire.

Ponsonby Road – Long strip of independent retailers and restaurants stretching between College Hill and Karangahape Road. Easy access using the Outer Link bus outside the conference venue (head uphill towards the city).

Dominion Road & Sandringham Road – Transport yourself to China, India, Korea, Thailand and everywhere in-between in the shops around Dominion & Valley Road, Dominion & Balmoral Road or Sandringham & Kitchener Road.

Mt. Eden – One of the best views of Auckland CBD can be found atop this volcanic cone, with a lovely village of restaurants, bars and cafes underneath.

Ferry (all boats leave from the Downtown Ferry Terminal)

Devenport/Stanley Bay/Cheltenham – Across the harbour from the CBD, these historic villages are well preserved. Nearby volcanic cones provide stunning views of the harbour and city. Reasonable \$40 tour takes you everywhere.

Rangitoto Island – The youngest volcano in Auckland is preserved in its natural state. Walk up to the top for fantastic views and lava caves (bring a torch).

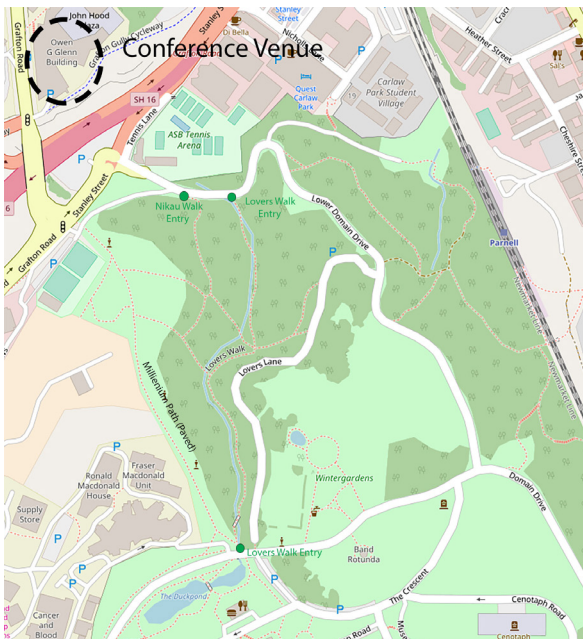
Tiritiri Matangi Island – A full-day trip, but a must-do if you want to meet NZ’s endemic birdlife. The island is a pest-free sanctuary and you’re guaranteed to meet many birds on many well-maintained bushwalking tracks.

Local Walks

Cabin fever on a warm summer day? Consider a walking meeting after an inspiring presentation at PRRES 2018! We're lucky to be located adjacent to the Auckland Domain and in the midst of Auckland's historic past. Here are some tips from the locals:

1. Auckland Domain bush walks. A little known secret, but in a five minute walk from the conference venue, you can be in an urban bush oasis! Walk out from Level 1 of the Owen G Glenn Building and turn left, down Grafton Road. Cross the motorway and the off-ramp to reach the Auckland Domain. A recommended route is then to turn left and walk up Domain Drive (next to the Tennis Arena) on the right hand side of the road. About 100 m past the Tennis Arena, you'll see signs for the Nikau Walk and then the Lovers Walk (see map). Disappear into the bush and walk uphill to exit the Lovers Walk at the Duck Pond, then retrace your steps downhill, taking an alternate exit. Allow 30-40 minutes for a circuit from the venue to the Duck Pond and back.

2. University of Auckland Heritage Trail. Explore the history of Auckland University and Albert Park, with many old buildings revealing the dynamic history of New Zealand's largest city. A detailed self-guided walk is available here: <https://www.aucklandcouncil.govt.nz/arts-culture-heritage/heritage-walks-places/Documents/university-heritage-trail.pdf> [Tip: Search Google for "University Heritage Trail Auckland"]. Start at Building #16 (the "Old Tuck Shop") which is directly opposite the Level 1 Entrance to the Owen G Glenn Building on Grafton Road. Depending on how deep you wish to engage with the stories in the e-guide, this walk can take between 30 minutes and 2 hours.



3. Auckland Domain Heritage Walk. Past the bush walks at the top of the Domain, starting at the War Memorial Museum (the prominent building at the top of the Domain), a self-guided walk with a 37 minute audio soundtrack covers the cultural and historical importance of the Auckland Domain. Find the route and audio download here: <http://www.parnell.org.nz/parnell-community-centre/heritage-walks/auckland-domain> [Search Google for "Parnell Heritage Walks Domain"]. Allow 2 hours for the full experience.

Keynote Speakers

Professor Colin Lizieri
University of Cambridge



Professor Colin Lizieri has over thirty years experience as a researcher, consultant and academic in property markets. Prior to joining Cambridge he taught at the University of Reading, at City University and the University of Toronto. Recognition of his work includes the award of the David Ricardo medal by the American Real Estate Society, "the highest recognition by ARES of scholarly work in the real estate discipline"; the International Real Estate Society Achievement Award for international real estate research "for outstanding achievement in real estate research, education and practice at the international level"; and election as an honorary fellow of the Society of Property

Researchers "in recognition of an outstanding contribution in the field of property research". Colin chaired the World Economic Forum's Global Agenda Council on The Future of Real Estate and Urbanization 2014-2016. He has acted as a consultant to national governments, central banks, sovereign wealth funds and other major real estate actors and has acted as an expert witness in the Upper Chamber (Lands Tribunal) and the Australian Federal Courts. He became head of the Department of Land Economy in January 2016.



Professor Norman Miller University of San Diego

Norm Miller is a Professor and the Ernest W. Hahn Chair of Real Estate Finance at the University of San Diego where he has been since the fall of 2007. He has several dozen highly cited papers on sustainability, workplace trends, housing, valuation and forecasting. For much of his academic career he was at the University of Cincinnati as Academic and Real Estate Center Director with one year visits at DePaul University and the University of Hawaii and three years at the University of Georgia where he started his career. He received his Ph.D. in Finance from the Ohio State University. He is active on the Editorial Board of several national/international journals and a past President of the American Real Estate Society. Known for his pioneering work on the economics of green and sustainable real estate, he was the founding Editor of the Journal of Sustainable Real Estate and is now Editor Emeritus. Dr. Miller worked as V.P. of Analytics at CoStar, and is a research principal with Collateral Analytics, see www.collateralanalytics.com. He is also on the advisory boards of Pathfinders, Measurabl, Surefield and Verdani. His book with David Geltner of MIT "Commercial Real Estate Analysis and Investment" is in its third edition and is the leading graduate real estate textbook in the world. He is currently a Homer Hoyt Land Use Institute Faculty and Board member, where he is involved with some premier thought leaders among academics and industry professionals in a think tank setting.

Keynote Panel

The Māori economy - a subset of the New Zealand economy, is impressively valued at NZD42.6 billion. Maori land and property development have played an integral role in the growth and valuation of this figure. This panel brings together a number of experts to discuss the nature of Maori land ownership and the unique challenges and opportunities of Maori property development.



Kiri Dell (Panel Chair) The University of Auckland

Kiri is a post-doctoral research fellow at Department of Property, University of Auckland Business school and Māori innovation lead at Tech Futures Lab. Kiri helped to develop 'Whiua ki te Ao', an initiative that encourages more Māori participation in the entrepreneur and innovation sector. She is director of The Nuka Institute, a company specialising in extracting innovative products from manuka and kanuka trees. Working in collaboration with R&D, universities and industry

she is helping to discover new products from native New Zealand bio resources for Māori land owners. She is also a Trustee for Te Ohu Whai Ao an organisation that connects Māori to a global community of Indigenous people in business and is currently the co-chair of the Indigenous Caucus of the Academy of Management.



David Kennedy Ngāi Tahu Property Limited

David is Chief Executive of Ngāi Tahu Property, the property company of South Island's Ngāi Tahu Group. He oversees the growth opportunities to build Ngāi Tahu Property's portfolio in Te Waipounamu while his expertise in the Auckland market helps the company meet its strategic objectives there.

Prior to this role, David was Chief Executive Officer for The Eden Park Trust and has held CEO/COO positions with Skycity Entertainment Group, Westfield New Zealand and St Lukes Group. He has had significant experience in property, government policy, strategy development and organisational development and has consulted to industry, particularly with regard to retail and property development.

David is a board member of Panuku Development Auckland.

David has had community involvement through his roles as Chair of Counties Manukau Sport and Sportnet, and as a Minister of Social Development-appointed Chair of the Auckland Central Community Response Forum. He is a past board member for Ngāi Tahu Property, the Force Corporation and the Property Council of New Zealand.



Te Kani Williams Tūhoe, Whakatōhea, Tainui, Ngāi Tai ki Tōrere and Te Aupōuri

Te Kani has advised many Māori entities and Statutory Boards, and has worked with claimant groups in direct negotiations in the settlement of their Treaty claims. He has been instrumental in the development of Māori corporate and trust structures and in developing new and innovative redress proposals.

Te Kani has acted extensively in the Waitangi Tribunal area since 1997 to the present day including the Muriwhenua, Urewera, Central North Island, National Park, Whanganui, King Country, Te Paparahi o te Raki Historical Inquiries. He has also appeared in the Ngāti Awa, Te Arawa, Ngāti Whātua, Ngāti Haka Patuheuheu, Ngāti Kahu and Ngāpuhi urgency inquiries. In addition Te Kani was lead counsel for the Ngāti Kahu Remedies Inquiry which is still ongoing.

Te Kani also has an extensive background dealing in Property Law matters (both commercial and residential) having acted for a number of Commercial and Residential property Developers, also in relation to the development of a Rest Home and Retirement Village as well as matters involving Joint Venture developments between Māori entities and third party investors.

Session Chair

The session chair's role

Thank you for agreeing to being a session chair, this role is vital to the smooth running of the conference.

The duties of the session chair include the following:

1. You are responsible for the session that you have been allocated in the programme, if you are unable or unwilling to take on the role of the chair then it is your responsibility to find someone else to take your place.
2. Show up to the session 5-10 minutes before the session begins. Identify the paper presenters in advance, and introduce yourself. Remind each presenter of the time limits that apply, and describe the method you will use to alert them of time limits during the actual presentation.
3. At the start of the session, introduce yourself to the audience and offer a brief overview and how the papers relate to each other.
4. Next, introduce the speakers with brief comments regarding their affiliation and/or background of each presenter.
5. Prior to each presentation, announce the paper's title, author/s' names and their affiliations. Identify the individual who will be speaking if it is someone other than the first author.
6. During the presentations enforce time limits strictly to ensure that no one author or member of the audience monopolises the session. Paper presentations have been allocated 20 minutes inclusive of question time.
7. Once presentations are complete, the remainder of the time can be used for informal discussion with the audience and session participants. It is your job to field questions from the audience.
8. Conduct the session as informally and supportively as possible and encourage as much audience participation as possible.

Presenter

The author's/presenter's role

Papers to be presented in the sessions have abstracts which are included in the Delegate Handbook. They have been arranged by general topic and cross-referenced with the session number. Full papers that have been blind-peer reviewed have been indicated after the paper heading in the abstract.

1. Prepare a presentation of your paper of no more than 15 minutes (you will be allocated 15 minutes including 5-10 minute of questions and answers with the audience). Given the time constraint, your task within the session is to provide highlights of your research. In fairness to other presenters and the audience, it is essential that you do not go over your allocated time
2. The presenter/s should show up to the session 5-10 minutes before the session begins. Introduce yourself to the Session Chair
3. Load your presentation on the computer in the designated room
4. You are recommended to prepare your presentation in both Powerpoint and PDF format so to avoid any issues regarding the software incompatibility
5. You are encouraged to consider including the following points in your presentation:
 - a. The source of your work and relationship to other areas
 - b. The basic structure of your research ideas or model
 - c. Methodology and methods, research question/s and/or hypotheses
 - d. Implications of your work for researchers, practitioners and instructors
 - e. Contribution of your work to the discipline
 - f. Indicate that you are willing to discuss ideas further with the audience
6. It is strongly recommended that you do not read straight from your paper. This approach does little to generate interest on the part of the audience and is an ineffective way to communicate ideas.

PhD Colloquium

Programme for Phd Student Colloquium

Sunday 21st January, 2018

Venue: Goldie Estate Winery, Waiheke Island

Presenters: 30 minutes including feedback

Time	Activity
7.30am	Attendees assemble at the Ferry Terminal, 99 Quay St, Pier 2 – for registration and tickets
8.00am	Ferry departs to Matiatia Wharf, Waiheke Island Please note gates close 2 minutes before departure
8.40am	Ferry arrives at Waiheke Island. Attendees catch shuttle bus to Goldie Estate (approx. 10 minute drive)
9.10am - 9.40am	Rochelle Ade
9.40am - 10.10am	Erika Bartak
10.10am - 11.10am	Morning Tea
11.10am - 11.40am	Chuyi Xiong
11.40am - 12.10pm	Mustapha Bangura
12.10pm - 1.00pm	Lunch
1.00pm - 1.30pm	Quan Truong
1.30pm - 2.00pm	Treshani Perera
2.00pm - 2.30pm	Tea Break
2.30pm - 3.00pm	Yang Yang
3.00pm - 3.30pm	Wasay Majid
3.30pm - 4.00pm	Feedback Session and Close
4.00pm - 4.45pm	Wine Tasting
5.10pm	Catch shuttle to Matiatia Wharf
5.30pm	Catch ferry to Auckland
6.10pm	Arrive Ferry Terminal, Quay St

(Please note the departure times are based on Fullers ferry timetable effective 1 May to 1 October 2017)

Rochelle Ade, University of Auckland (NZ)

"Actual performance of homestar rated houses"

Erika Bartak, University of Melbourne (Aus),

"Sustainability by stealth: closing the gap between discourse and practice in the Australian volume home building sector"

Chuyi Xiong, University of Auckland (NZ)

"The trend and cycle of residential property market in New Zealand"

Mustapha Bangura, Western Sydney University (Aus)

"Housing affordability and housing submarkets: the case of Greater Sydney"

Quan Truong, University of Auckland (NZ)

"Sale and leaseback structure for commercial properties in Southeast Asia emerging markets"

Treshani Perera, RMIT (Aus)

"Forecasting the commercial property market performance: beyond the primary reliance on econometric models"

Yang Yang, University of Auckland (NZ)

"Property investment, speculation, negative gearing and tax: a study of Auckland residential property market"

Wasay Majid, University of Auckland (NZ)

"The accommodation supplement and the private rental sector in New Zealand"

Programme Overview

Time		Sunday 21 January	Monday 22 January	Tuesday 23 January	Wednesday 24 January
Day	PhD Colloquium Day	DAY 1	DAY 2	DAY 3	
Start	End				
7:30	8:00	Transport to Waiheke Island	Registration & Gather at Waipapa Marae	API Breakfast (Decima Glenn)	Registration
8:00	8:30				
8:30	9:00				
9:00	9:30		Powhiri (Waipapa Marae)	Welcome & Keynote Prof. Norm Miller	Welcome & Keynote Prof. Colin Lizieri
9:30	10:00				
10:00	10:30				
10:30	11:00				
11:00	11:30	PhD Colloquium (Goldie Estate, Waiheke Island)	Welcome & Keynote Panel	Morning Tea	Morning Tea
11:30	12:00				
12:00	12:30				
12:30	13:00		Lunch & PRRES AGM (All invited)	Lunch	Lunch
13:00	13:30				
13:30	14:00				
14:00	14:30		Parallel Session 1	Parallel Session 4	Parallel Session 7
14:30	15:00				
15:00	15:30				
15:30	16:00		PRRES Board Meeting (OGGB 5115, by invitation only)	Afternoon Tea	Conference Closing (OGGB4)
16:00	16:30				
16:30	17:00				
17:00	17:30	Registration (Gus Fisher Gallery)	Women's Networking Event (Meet at Registration)	Break	Free time & Depart to the Airport
17:30	18:00				
18:00	18:30				
18:30	19:00	Welcome Reception (Gus Fisher Gallery)	Free Time	Conference Dinner (Fale Pasifika)	
19:00	19:30				
19:30	20:00				
20:00	20:30				
20:30	21:00				

Programme Monday 22nd January

8.00am	Registration Opens	Owen G Glenn Building, 12, Grafton Road			
8.30am	Gather at Marae	Waipapa Marae			
9.00am	Powhiri	Waipapa Marae			
9.50am	Morning Tea	Waipapa Marae			
10.30am	Welcome and Keynote Panel	Owen G Glenn Building, 12, Grafton Road	Room OGGB4 (260.073)		
12.00pm – 1:30pm	Lunch				
12.30pm – 1:30pm	PRRES AGM (All invited)	OGGB 4 (260.073)			
1.30pm – 3.00pm	Parallel Session 1				
	Session 1A Urban Planning and Design (UPD)	Session 1B Property Education (PE)	Session 1C Property Market Analysis (PMA)/ Property Investment (PI)	Session 1D Property Valuation (PV)	Session 1E Property Management (PM)/ Future direction in property (FDIP)/Property and environment (P&E)/Property and society
	Room: Case Room 2 (260.057) Chair: Shanaka Herath	Room: Case Room 4 (260.009) Chair: Michael Rehm	Room: OGGB 4 (260.073) Chair: Zhi Dong	Room: OGGB 3 (260.074) Chair: Abdul Rasheed-Amidu	Room: Case Room 3 (260.055) Chair: Georgia Warren-Myers
	UPD1 Transportation infrastructure development for regional areas: Implications for region (Refereed) Ian Clarkson and Koarosh Gharehbaghi	PE1 The quality of property education in Australia Connie Susilawati, SharonYam, and Graeme Newell	PMA2 Housing price dispersion in the presale market: a natural experiment Kelvin Siu Kei Wongand William Cheung	PV1 The balance sheet and valuation treatment of retirement living and aged care assets (Refereed) Lois C Towart	FDIP1 CoWorking culture – challenges and opportunities for office landlords (Refereed) Dulani Halvitigala, Hera Antoniadis and Chris Eves
	UPD2 Unforgiving foliage: the negative impact of gardens in the suburbs Lucy Craddock and Clive Warren	PE4 Exploring gaps between real estate curriculum and industry needs: a mapping exercise (Refereed) Abdul-Rasheed Amidu, Osahon Ogbesoyen, and Aliratz Olayinka Agboola	PMA4 The long-run volatility of Australian housing prices and market fundamentals Chyi Lin Lee	PV4 Towards equitable compensation: Inclusion of cultural values in valuation of customary land takings compensation UE4 (Refereed) Andrew Pai and Andrea Blake	PM2 Leveraging workspace for collaboration: a case study of corporate office relocation Raewyn Hills
	UPD3 Ground lessee insights on ground leasehold issues Alan Pope, Graham Squires, and Martin Young	PE3 Motivating students to be more engaged in their studies by providing authentic learning experiences and industry linkages Philip Beaton	PMA1 Catch animal spirits in auction: evidence from New Zealand property market Song Shi and M. Humayun Kabir	PV5 Valuation accuracy in South Africa and Sweden – a comparative study Samuel Azasu, Björn Berggren and Lars Silver	P&E5 Sustainable property management through building adaptation Hilde Remøy
	UPD4 Capturing the value of an electric linear ferry service (Refereed) Steven Boyd	PE2 A comparison of entry level property subjects in Australia Connie Susilawati, Sharon Yam and Peter Rossini	P17 The over sixties townhouse market in Christchurch, New Zealand: investment performance and market acceptance John McDonagh, Andrew Carswell, David Dean, and Brent Nahkies	PV3 Issues facing standardisation of property valuation practices: A case study of Suva, Fiji (Refereed) Sandeep Narayan	P&S3 Wellbeing of knowledge workers – assessment tools and user preferences Petrulatiene Vitalija, Christersson Matti, Zhang Eva, Nenonen Suvi, and Heywood Christopher
00pm-3:30pm	Afternoon Tea				

Parallel Session 2

Session 2A	Session 2B	Session 2C	Session 2D	Panel Session I
Urban Economics (UE)	Housing Markets (HM)	Property Finance (PF)	Property Management (PM)	The Secrets of Successful Publishing
Room: Case Room 2 (260.057) Chair: Olga Philippova	Room: OGGB3 (260.092) Chair: William Cheung	Room: Case Room 3 (260.055) Chair: Janet Ge	Room: Case Room 4 (260.009) Chair: Clive Warren	Chair: Graeme Newell
UE1 A comparison of the positive external effects of public and private sector led urban redevelopment <i>K W Chou, Jiancong Liang</i>	HM2 A Decade on from the GFC – financial resilience and unaffordable housing markets <i>Graham Squires, David White, and Erwin Heurken and Iain White</i>	PF1 Switching beta analysis of Malaysian listed property companies within Asian public real estate markets <i>Muhammad Yusaimi Hamid, Muhammad Najib Razali, and Yasmin Mohd Adnan</i>	PM4 Commercial tenants’ buildings choice – green office buildings in Kuala Lumpur, Malaysia <i>Yasmin Mohd Adnan, and Adibah Ariff</i>	Room: OGGB4 (260.073)
UE4 City proximity, travel modes and house prices: The tale of three cities in Sydney (Refereed) <i>Shanaka Herath and Ajith Jayasekare</i>	HM3 Government led innovations in affordable housing delivery: the case of Australia <i>Steven Rowley</i>	PF2 Independent valuation, mortgage collateral and negative equity: a counter-factual analysis <i>Amanda Lim, Ong Seow Eng and Davin Wang</i>	PM3 Sustainability and wellness in the built environment: A case study in Singapore <i>Michael Mak</i>	
UE8 Modelling urban growth in the Colombo urban fringe, Sri Lanka <i>KGPK Weerakoon</i>	HM6 An exploratory examination of housing the aged in South Australia <i>Peter Rossini, Christa Viljoen and Braam Lowies</i>	PF3 The performance of residential property and debt financing <i>Chyi Lin Lee¹, Justin Wang</i>	PM6 Underlying determinants of energy use and energy savings <i>Berndt Lundgren, Agnieszka Zalejska Jonsson</i>	
UE7 Auctions, tender and negotiated sales in the recent residential property market in Wellington <i>Jyh-Bang Jau, Yibin Pan, Shi Song and James Young</i>	HM10 The impact of labour market and tenure choices on housing need and affordability in Australia <i>Chris Leishman</i>	PF5 Measuring the costs and benefits of favourable tax treatments for owner-occupied housing (Refereed) <i>Chien-Wen Peng and I-Chun Tsai</i>	PM7 End of trip facilities best practice: how strategic investment in active lifestyles can improve tenant satisfaction <i>Pernille H. Christensen</i>	
5:00pm	Women’s Networking Event – Meet at Registration			
5:30pm	Optional Informal Meetup			

Programme Tuesday 23rd January

7.15am – 8.45am		API Breakfast (By invitation only)		Decima Glenn Room, Level 3	
8.30am		Registration Opens		Owen G Glenn Building, 12, Grafton Road	
8.50am		Welcome and Keynote presentation: Professor Norm Miller OGGB 4 (260.073)			
10.00am		Morning Tea			
10.30am – 12noon		Parallel Session 3			
Session 3A Behavioural Research (BR)		Session 3B Property Investment (PI)		Session 3C Housing Markets (HM)	
Room: Case Room 2 (260.057) Chair: Dulani Halvitigala		Room: Case Room 3 (260.055) Chair: Graeme Newell		Room: Case Room 4 (260.009) Chair: Graeme Squires	
BR5 The role of online ratings in the agent selection process Chua Boon Ping, Ong Seow Eng and Wang Hung Yip Davin		PI6 Tracking investment value changes of commercial real estate: an empirical framework Iqbal Syed		HM1 A supply side study on the sub-divided units in Hong Kong Ka Man Leung	
BR4 Do good-looking realtors earn more commission? Seow Eng Ong, Sumit Agarwal, Yi Fan and Calvin Chua		PI10 How do tenant characteristics shape the risk-return performance of property investment portfolios? (Refereed) Ningkun Li and Zhi Dong		HM8 Homebuyer incentives: A review of the literature Joseph A Barrins, Hao Wu, Georgia Warren-Myers, and Kimberly Winson-Geideman	
BR6 Media sentiment and housing market projections in the digital era: increased noise or enhanced predictive capacity? Martin Haran and Sacha Reid		PI8 Information asymmetry, lemons and ostensible underpricing in housing market KW Chau, Lennon HT Choy and Winky Ko Ho		HM4 A review of better construction supply chain practices to improve housing affordability in NZ Nishadi Anuruddika Sooriyamudalige, Niluka Domingo, Paul Childerhouse and Kenneth Park	
BR3 Selling too soon or not? The certainty and disposition effects in real estate transactions Björn Berggren, Rickard Engström and Andreas Fili		PI9 The Impact of unexpected changes of consumer confidence index on the performance of investment property markets Shuzhen Chen, and Zhi Dong		HM7 The dynamics of housing affordability for young households in Melbourne Australia, 2006-2016 (Refereed) Kimberly Winson-Geideman, Joseph A Barrins, Georgia Warren-Myers and Hao Wu	
Panel Session II Colliers International Market dynamics in the wake of earthquakes Chair: Chris Farhi, Director, Strategic Consulting, Colliers International, New Zealand Room: OGGB4 (260.073) This panel session will focus on the recent New Zealand earthquakes: Christchurch (2011), Wellington (2013) and Kaikoura (2016).		Session 3D Property and Society (P&S)/Property and the Environment (P&E)/Behavioural Research (BR) Room: Seminar Room (260.321) Chair: Pernille Christensen P&S4 Diversity and inclusion in the Australian property industry Judith Callanan, and Dulani Halvitigala		BR9 Home in the era of rampant financialisation of housing: the ‘paradox’ of house as home and investment Deborah Levy, Jane Horan, and Harvey Perkins P&E2 Exploring property valuer’s knowledge, behaviour and attitude regarding climate change by means of a mixed methods research approach André Kruger P&S5 The perceptions on sustainable real estate: a case study of Sri Lanka Janakie Edirisinghe,	
12noon – 1.00pm		Lunch			

1.00pm – 2.30pm		Parallel Session 4			
Session 4A Property Development (PD)/Behavioural Research (BR)		Session 4B Property Market Analysis (PMA)/ Future Directions in Property (FDIP)	Session 4C Urban and Regional Policy (U&RP)	Session 4D Property Investment (PI)	Panel Session III JLL The Future of Work Chair: Tom Barclay, Associate Director, JLL Research and Consulting Room: OGG84 (260.073) The future of work is JLL's outlook on the changing world of work and its impact on the next generation of corporate real estate
Room: Seminar Room (260.321) Chair: John McDonagh PD1 Examining developers' lifestyle housing ideas through web advertisements <i>Hasniyati Hamzah, and Yasmin Mohd Adnan</i>		Room: Case Room 2 (260.057) Chair: Chyi Lin Lee PMA3 Ten best practices for improving Australian commercial property market forecasting (Refereed) <i>Treshani Perera and Wejendra Reddy</i>	Room: Case Room 3 (260.055) Chair: Stephen Rowley U&RP1 The differential impact of the fiscal and exchange rate reform on regional property prices in China <i>K W Chau</i>	Room: Case Room 4 (260.009) Chair: Ong Seow Eng PI2 The role of sub-sector REITs in mixed asset portfolios in Australia <i>Hyunbum Cho</i>	
PD5 Residual value, development feasibility and the residential development process <i>Laurence Murphy</i>		PMA6 Characterising the commercial property investment market cycle using state-space analysis: A case-study for Australia <i>Anthony De Francesco</i>	U&RP5 An analysis of immigration policy on housing submarkets in Auckland, New Zealand <i>Di Wu and James Young</i>	PI3 The changing dynamic of international property investors <i>Graeme Newell, Jufri Marzuki and Stanley McGreal</i>	
PD2 Impediments to the strengthening of earthquake-prone buildings <i>Brent Nakhies</i>		PMA5 Pricing risk in yields and its impact on real estate market volatility (Refereed) <i>Jim Berry and Tony McGough</i>	U&RP4 Does economic freedom affect the returns of international real estate securities? (Refereed) <i>Mei-Se, Chien, Yir-Jung Emily, Syu and Hui-Chen, Hsu</i>	PI4 The significance and performance of Australian healthcare property <i>Jufri Marzuki, and Graeme Newell</i>	
BR7 The decision-making behaviour of property owners in post-disaster rebuild: a case study of Christchurch, New Zealand <i>Ikenna Chukwudumagu, Deborah Levy, Harvey C Perkins</i>		FDIP2 From cost benefit analysis to integrated value: how can enhanced valuation frameworks move us beyond sustainability toward regenerative built environments? (Refereed) <i>Jason Twill and Pernille H. Christensen</i>	U&RP2 The public good in compulsory acquisition and expropriation comparing Australia and Taiwan <i>Ken Rayner and Peddy, PiYing, Lai</i>	PI5 Estimating the impact of debt and management structure on A-REITs performance (Refereed) <i>Wejendra Reddy, Woon-Weng Wong</i>	
2.30pm – 3.00pm		Afternoon Tea			

3.00pm – 4.30pm Parallel Session 5

Session 5A Property and the Environment (P&E) /Future Direction in Property (FDIP)		Session 5B Property Valuation (PV) and Property Research Methods (PRM)		Session 5C Behavioural Research (BR)/Urban and Regional Policy (U&RP)/Property Education (PE)		Panel Session IV CBRE Millennials and real estate Chair: Zoltan Moricz, Senior Director, Head of Research, CBRE New Zealand Room: OGGB4 (260.073) This panel session will present and discuss CBRE in- depth global research on millennials, how they live, work and play and the implications for residential, office and retail sectors
Room: Case Room 2 (260.057) Chair: Hilde Remoy P&E1 Quantifying policy spillover effect in green buildings <i>Alastair Grimson, Arnaud Ciller, Jeremy Gabe and Sam Trowsdale</i> P&E3 Real estate market stability in a biosphere reserve <i>Steven Boyd</i>		Room: Case Room 3 (260.055) Chair: Lois Towart PV6 Property value and proximity to job centres - a geospatial approach <i>Jeremy W. Aber, and Philip A. Seagraves</i> PRM1 Accounting for, temporal, and physical similarity of residential sales in mass appraisal modelling: the development and application of geographically, temporally, and characteristically weighted regression (GTCWR) <i>Bidanset, P., McCord, M. and McGreal, S.</i> PRM3 Developing metrics for mass valuation quality assurance <i>John MacFarlane</i>		Room: Case Room 4 (260.009) Chair: Brent Nankies BR1 Engaging the property professional in market analysis <i>Steven Boyd</i> PE5 The challenge of developing business and professional values in the real estate graduate: a business school perspective <i>Eamonn D'Arcy</i> BR8 Whenua BEINGS: A framework for realising Maori land aspirations <i>Kiri Dell</i>		
P&E4 Is there a green premium for property companies? <i>Hanlu Fan, Chyi Lin Lee, QingLiang Tang and Paddy, Pi-Ying Lai</i>		PV2 A cognitive-behavioural model of valuation problem solving <i>Abdul-Rasheed Amidu</i>		U&RP6 How can local property entrepreneurs be enabled to contribute to the regeneration of regional settlements <i>Deborah Levy, Raewyn Hills, Harvey Perkins, Mike Mackay and Malcolm Campbell</i>		

4:30pm – 6:00pm Break

6.00pm Conference Dinner

Programme Wednesday 24th January

Owen G Glenn Building, 12, Grafton Road				
8.30am	Registration Opens			
8.50am	Welcome and Keynote presentation: Professor Colin Lizieri			
10.00am	Morning Tea			
10.30am – 12noon	Parallel Session 6			
Session 6A Urban Economics (UE)		Session 6B Urban and Regional Policy (URP)/ Property Development (PD)/ Property Research Methods (PRM)	Session 6C Property and Society (P&S)/ Property and the Environment (P&E)/ Property Management (PM)	Panel Session V IRES: Infrastructure Chair: Martin Haran Room: OGGB4 (260.073)
Room: Case Room 2 (260.057) Chair: James Young		Room: Case Room 3 (260.055) Chair: Laurence Murphy	Room: Case Room 1 (260.005) Chair: Harvey Perkins	
UE2 Heterogeneous traders and housing price dispersion – empirical evidence from Hong Kong <i>Wai Hong Chan and K W Chau</i>		U&RP3 Strategic responses in an ambiguous context: a meso-level analysis in the primary housing market (Refereed) <i>Chee Wei Cheah, Christina K.C. Lee and Brian K.H. Low</i>	P&S1 NHS snack and drink vending point of sale intervention <i>Lucy Campbell, Michael Pitt and Peter McLennan</i>	
UE3 A Convergence in utility functions: developer list prices and Time-on-Market <i>Shereen Ng Si Qi, Ong Seow Eng and Davin Wang</i>		PD4 A transition of the brownfield holding firm in China (Refereed) <i>Hao Wu and Bo Qin</i>	P&E6 Value of guarantee inspections in residential buildings <i>Agnieszka Zalejska Jonssona and Henry Muyingob</i>	
UE5 Effects of land incremental value allocation on rural operational construction land (ROCL) under market mechanism: case study in China (Refereed) <i>Liu Xiaoxia and Xin Janet Ge</i>		PRM2 Property development feasibility study – a self-fulfilling prophecy? <i>Steven Yu, Janet Ge and Song Shi</i>	P&E7 Clean heating and renewables in housing – is there a return on the energy shift? <i>Jonas Hahn, Jens Hirsch, Marcelo Cajias and Sven Blenert</i>	
UE6 The determinants of housing affordability in the regions of Greater Sydney <i>Mustapha Bangura and Chyi Lin LEE</i>		PD3 What drives hotel conversion in Hong Kong? <i>Cynthia Huiying Hou</i>	PM5 An investigation into the effects of gender, age, experience and local business market on the issuance of different disciplinary sanctions on real estate brokers - a Swedish case <i>Rickard Engstrom, and Inga-Lill Söderberg</i>	
12noon – 1.00pm		Lunch		

1.00pm – 2.30pmParallel Session 7					
Session 7A Housing Markets (HM)/Property Finance (PF)		Session 7B Urban Economics (UE)/ Property Management (PM)		Session 7C Future Directions and Property and Society (FDIP)/ Property and Society (P&S)/ Behavioural Research (BR)	
Room: Case Room 2 (260.057) Chair: Braam Lowies	Room: Case Room 3 (260.055) Chair: Song Shi	Room: Case Room 1 (260.005) Chair: Jeremy Gabe			
HM5 Are older homeowners staying or leaving? The South Australian family house debate <i>Braam Lowies, Rob Whait, Christa Viljoen, Vikash Ramiah, and Kurt Lushington</i>	UE9 Modelling of the investment impact of the properties renewal on GDP of the Slovak Republic <i>Julius Golej, Daniela Spirkova and Miroslav Panik</i>	FDIP3 Marketing sustainable lifestyles in the housing industry <i>Georgia Warren-Myers, Maddie Judge and Erika Bartak</i>			
HM11 Purchasing power and US house prices <i>Michael Rehm and Jeremy Gabe</i>	UE10 The determinants of optimal statute of limitations for landowners (Refereed) <i>Jyh-Bang Jou and Tan (Charlene) Lee</i>	FDIP4 Are we underestimating the sea level rise risk for property? <i>Georgia Warren-Myers; Gideon Ashwandeni; Franz Fuerst and Andy Krause</i>			
HM9 Housing divide, market intervention and growth model changes towards sustainable urbanisation in Suzhou, China <i>Yunqing Xu</i>	PM1 Strata living issues: Lessons from recent Queensland case law <i>Lucy M. Craddock and Clive M.J. Warren</i>	P&S2 A Climate Change Risk Premium for Residential Coastal Real Estate (Refereed) <i>André Kruger</i>			
PF4 Influence of lending on house prices in Australia <i>X J Ge</i>	PI1 The significance and performance of student accommodation as an alternate property sector <i>Graeme Newell and Jufri Marzuki</i>	BR2 Have real estate agents' perceptions on the importance of sustainability in housing changed? (Refereed) <i>Neville Hurst and Dulani Halvitigala</i>			
2.30pm – 3.00pmConference Closing	OGGB 4 (260.073)				

Abstracts

Behavioural research in property

1. Engaging the property professional in market analysis (Session 5C)

Steven Boyd
University of the Sunshine Coast, Australia

Property market analysis may be enhanced through a better understanding of behavioural economics. To progress and retain professional currency property professionals undertake a number of activities including self-directed market analysis, continuing professional development courses and less structured discussions with industry peers. Using structured audience response intervention, professional development courses may become more engaging and encourage interactivity between presenters and the audience. This interaction encourages the audience to promote positions and test the relatively of their positions anonymously and in real time. This paper describes market analysis techniques and their performance and discusses the linkage between property market analysis and behavioural economics. Thereafter it presents the findings from interactive professional development courses in Australia. The trends in audience response surveys from six successive annual Australian Property Institute's State of the Market seminars on the Sunshine Coast are considered. This research presents an opportunity to identify the input of the property professional in the market analysis process and the importance of audience participation as a component of continuing professional development in a challenging new environment.

Keywords: Audience response, behavioural economics, engagement, market analysis, continuing professional development

2. Have real estate agents' perceptions on the importance of sustainability in housing changed? (Session 7C) (Refereed)

Neville Hurst, Dulani Halvitigala
RMIT University, Australia

Energy used in housing is a major contributor to Australia's energy consumption and associated environmental impacts. As market facilitators and influencers, real estate agents are expected to play an active role in motivating home buyers in purchasing energy efficient housing through advertising. This research aims to examine whether real estate agents effectively incorporate sustainability features in their advertisements and if their perceptions of the importance of advertising sustainability features have changed over the last five years. Longitudinal, qualitative research was employed to determine whether environmental issues were considered to be a major factor by real estate agents when advertising detached dwellings. The first set of in-depth interviews was conducted with 10 real estate agents in 2013, followed by the second set of interviews with another 10 real estate agents in 2017. It was found that the attitudes of real estate agents on the importance of advertising sustainability in residential properties have not changed significantly even though they have become more aware of the climate change debate over the years. They would only emphasise sustainability characteristics in their marketing campaigns if those features would have noticeable financial implications. The findings suggest the free market strategy is likely to imbue sustainability into housing markets, but market facilitators, buyers and sellers have not yet reached a critical mass in terms of them being considered a norm. The necessity of reviewing the current legislative mechanisms in order to align the intent of the legislation with the actual outcomes is highlighted.

Keywords: sustainability; advertising; real estate agents; housing; marketing

3. Selling too soon or not? The certainty and disposition effects in real estate transactions (Session 3A)

Björn Berggren, Rickard Engström, Andreas Fili
KTH - The Royal Institute of Technology, Sweden

The role played by the real estate broker in the transaction of properties differs between countries. In Sweden, the broker represents both buyer and seller, as an "independent intermediary", and the traditional transaction process consists of media advertising, showing the house or apartment to potential buyers, and a Dutch auction open to all prospective buyers. Through this auction, the final selling price is set. However, during the last few years, it has become increasingly common that brokers keep databases of prospective buyers, and offers sellers the possibility to sell to such buyers, without any public showing. During the last 20 years, housing prices have increased rapidly in the major Swedish urban areas, and behavioural research on the disposition effect and the certainty effect has shown that sellers will sell too soon in a rising/booming market. In addition to this, the incentives of the broker, in general, are such that a higher selling price only increases the broker commission with a small fraction, and even though the seller formally makes the final decision to sell or not sell, the broker will often play a decisive advisory role. In this paper we take a closer look on the relationship between heuristics, incentives and the difference in selling price between housing sold with or without an auction. The data in this study comes from the transactions made in the Swedish capital, Stockholm. We have used two different sets of data – in the first data set we have compared transactions made without any public showing of the property with those properties that have been showed. The second data source consists of a large number of interviews made with sellers of houses and apartments in order to analyze their decision-making process and the influence of the real estate broker. We find that a relatively large proportion of sellers follow what could be called a satisficing strategy (cf. Simon, 1956), especially those who have owned their property for a long time. Furthermore, we find that the real estate broker plays a vital role in giving advice to the seller on whether to accept the offer or not. The changing role of auctions within Swedish real estate transactions could be a convergence trend towards the situation on other international markets. The analysis in this paper is based on Swedish conditions and Swedish data. Therefore a certain degree of caution is necessary before any generalizations can be made to property markets in other countries. We conclude the paper with a number of implications for buyers and sellers of properties, real estate brokers and policy-makers. The findings presented in this paper are in line with the previous studies and the theoretical assumptions made, that the real estate broker has a significant impact on the seller's decision to sell. We have also analyzed the potential conflicts of interest that may arise between the real estate broker and the seller owing to different incentives.

Keywords: Real estate brokerage, intermediary, housing, behavioural finance, listing service

4. Do good looking realtors earn more commission? (Session 3A)

Seow Eng Ong, Sumit Agarwal, Yi Fan, Calvin Chua
National University of Singapore, Singapore

Discrimination is very prevalent in the world. There are many researches undertaken that studied the various forms of discrimination in the labor market. Discrimination can happen because of nationalities, skin colors, genders, performances, being physically handicapped and looks. We used a unique dataset of over 1600 realtors working in two of the largest real estate agencies in Singapore to study whether beauty premium exist in this labour market. Our study used commission data, from 2013 to 2016, of agents, the demographics and their photographs. We estimated the real estate agents' look using golden ratio theory and a series of surveys done by the reviewer via the Likert scale to rate the looks of the agents. The study found that there is a strong and negative correlation between beauty and commission. We went further by expounding why beauty premium does not apply for this industry, we selected a smaller sample size, 93, and conducted personality profiling tests, using 16 PFs, to this group to determine the traits that allowed them to perform well in this industry. Our results showed that realtors who top agents tend to be dominance, a little shy, higher educated, self-disciple and are more experience.

Keywords: labour discrimination, 16 PFs, real estate agency, real estate agents, realtors, individual performance, commission and beauty

5. The role of online ratings in the agent selection process (Session 3A) (Refereed)

Chua Boon Ping, Ong Seow Eng, Wang Hung Yip Davin
National University of Singapore, Singapore

Property agents are an important part of the purchase, sale or rental process for any real estate transaction. With their understanding and exposure to current market issues and trends, property agents are able to provide useful advice to help their clients make an informed decision. However, most agents do not have a prior performance record of past engagements for client review. Without a reference point for the ability of a property agent, the agent selection process for the client becomes a subjective matter of personal referrals or chance. This market inefficiency is further compounded by market practice where commission structures do not distinguish between agents with good or bad performance, thus allowing poorly performing agents to benefit from free rents. This study examines the implementation of an "agent review and scoring system" for property agents that provides feedback on agent performance to potential clients. The study also discusses the relative importance of peer reviews in decision making in contrast to traditional mechanisms such as the use of an incentive or penalty that are ineffective due to conflicting stakeholder interests.

Keywords: Property agents; online ratings; agent selection process; performance

6. Media sentiment and housing market projections in the digital era: increased noise or enhanced predictive capacity? (Session 3A)

Martin Haran¹ and Sacha Reid²

¹ Ulster University, United Kingdom

² Griffith Business School, Australia

The digital evolution has transformed how 'news' is consumed around the world. Within the confines of housing markets - the more expansive range of transmission channels has had a profound impact on how market sentiment and commentaries are relayed and distributed to prospective purchasers/investors. Further to the new media channels, increased availability and sophistication of data available to both prospect buyers and investors has improved market transparency immeasurably over the course of the last decade. The increased data availability has in turn fuelled a new generation of property 'experts' and 'commentators' - with varying degrees of competence and credibility. What is clear is that prospective buyers in the current market are inundated with market reports, blogs, twitter feeds and other communication mediums detailing future housing market trends. The extent to which this increased 'noise' and 'sentiment' pertaining to house prices actually impacts the market is the nexus of the paper. The paper uses house price data from a housing sub-markets in Australia and the UK to examine the phenomena as a means of determining the extent, nature as well as the accuracy of media sentiment on house prices. Contrasts in mainstream and social media coverage pertaining to house prices in Australia and the UK markets will be explored. Textual analysis techniques will be employed to quantify the qualitative tone of both national and local housing news across a number of housing sub-markets. The paper will assess the accuracy of media sentiment in predicting future houses prices. To facilitate this, a house price sentiment index will be constructed to determine the lead-lag relationship between media sentiment and house prices and to evaluate the power of different media outlets in influencing both positively or negatively future house prices. The analysis will include a series of controls including wider macro-economic conditions, respective government policies pertaining the housing ownership, housing demand-supply indicators as well as access to and cost of finance at different points in the respective housing market cycles.

Keywords: Housing market sentiment, house price trends, digital communication, housing bubbles, irrational exuberance, international housing markets

7. The decision-making behaviour of property owners in post-disaster rebuild: a case study of Christchurch, New Zealand (Session 4A)

Ikenna Chukwudumogu, Deborah Levy, Harvey C Perkins
The University of Auckland, New Zealand

A series of catastrophic earthquakes in 2010 and 2011 in Christchurch, New Zealand, destroyed or damaged most of the buildings and much of the above and underground infrastructure in the central business district (CBD). Some six years later the CBD is being rebuilt after a period of building demolition and the clearing of debris. This paper reports a study of the role of private property owners in the post-disaster rebuild by examining the factors driving their decision-making behaviour. The research began by observing the very significant physical changes that had occurred in the Christchurch CBD as a result of the earthquakes. Face-to-face semi-structured interviews were then conducted with ten purposively identified commercial property owners. The interview data were subjected to interpretative thematic analysis. This analysis was used to interrogate and respond to arguments in the property literature about the most veracious way of characterizing processes of investment decision-making in post-disaster environments. Overall, the findings showed that the decision-making behaviour of property owners in Christchurch's post-disaster commercial rebuild have been driven significantly by their deep sentimental attachments to people and place. These findings challenge the underlying premises of much of the mainstream literature on property investment behaviour.

Keywords: Post-disaster; rebuild; earthquakes; Christchurch; Central Business District; place attachment; decision-making behavior; property owners; sentiment; emotion

8. Whenua BEINGS: A framework for realising Māori land aspirations (Session 5C)

Kiri Dell
The University of Auckland, New Zealand

Māori are the indigenous people of New Zealand, who experienced displacement and land loss through the mid-1800's colonisation by the British settler government. Over a period of significant struggle Māori only managed to retain 5% of land within New Zealand as result of the colonial land taking process, most of which is now held collectively by kin-groups. This is commonly referred to as Māori land. However whanau (kin-groups) who are in possession of land resources have struggled to realise their Māori land aspirations. Oppressive systemic processes, colonisation and displacement, land trauma and anxiety have been identified in this research as mechanisms that impede the effective management of Māori lands. Whenua BEINGS is the name given to a relational engagement strategy for realising Māori land aspirations. Whenua BEINGS is based on a typology of six relationships identified through this research: Belonging, Emotions, Influence, Nourishment, Genealogy, and Spirituality. This paper introduces the framework Whenua BEINGS and how it might be implemented into practice.

Keywords: Māori land, land resources, relational engagement strategy

9. Home in the era of rampant financialisation of housing: the 'paradox' of house as home and investment (Session 3D)

Jane Horan, Deborah Levy, Harvey Perkins
The University of Auckland, New Zealand

The rise and rise of 'residential capitalism' as illustrated in the financialisation of housing markets across the western world in particular, is a pervasive, sometimes insidious, other times overt transformation of the structure and institutions of contemporary capitalism. This is creating new subjects, new versions of selfhood, and new subjectivities as the ontological security of the home is commandeered, usurped even, as the value, values, and valuables of finance turn house into investment in the midst of the normalising of increasing levels of debt. In the context of the Auckland housing market in New Zealand, the nuances of the neoliberal environment are being drawn out and amplified as Aucklanders who own, want to own, or are just never going to own a house because they can't afford it, are more and more enmesh in the discursive affective space of the purportedly neutral space of the 'market'. What financialisation looks like in this context is difficult to discern analytically. To that end, our research is focused on holiday homes, known as 'baches' on the island of Waiheke, which is now an island suburb on the edge of the metropolitan area of Auckland. We argue that it is in the 'construction' of these, rather than in the context of the primary home, that housing financialisation might be seen most clearly. The participants in our study are bach-buyers, owners, and sellers on Waiheke, and we are interpreting the ways they construct ideas of house as home and capital investment in the holiday home market which is revealing what financialisation actually looks like on the ground. Our methodology and analysis work with the fine-grained studies of local neoliberalisations, as well as the broader hegemonic forces at play (Peck 2013) to illuminate what "financialisation of the everyday" (van der Zwan 2014) looks like.

Keywords: Financialisation; housing; home

Future directions in property

1. Coworking culture – Challenges and opportunities for office landlords (Session 1E) (Refereed)

Dulani Halvitigalaa¹, Hera Antoniadou², Chris Eves¹

¹ RMIT University, Australia

² University of Technology Sydney, Australia

Coworking relates to the use of space, which can be in the form of very short office leases ranging anywhere from between a day to a month and longer. Workers have the option to occupy and work in the space independently, collaboratively or in nominated teams. As of January 2017, there are 239 coworking spaces throughout Melbourne, Sydney and Brisbane; with a very rapid current growth rate, industry predicts approximately 1.2 million members globally would be using coworking space by the end of 2017 (Knight Frank, 2017). Many investors are being challenged by this growing demand for flexible, scalable, collaborative spaces with short term leases. This research paper explores the relationship between coworking and the space provided as opposed to the traditional office space environment from investors' point of view. A desktop comparative analysis of the top 12 coworking providers in Melbourne and Sydney is undertaken. The implications for property investors are analysed in the context of transforming the traditional office space environment into a coworking hub.

Keywords: Office property, coworking spaces, new ways of working, collaborative spaces, innovation

2. From cost benefit analysis to integrated value: how can enhanced valuation frameworks move us beyond sustainability toward regenerative built environments? (Session 4B) (Refereed)

Jason Twill, Pernille H. Christensen

University of Technology Sydney, Australia

The sustainability movement has increased the capabilities of built environment practitioners to design and deliver "living" buildings and infrastructure projects that mimic an ecosystem. These projects have demonstrated the ability to produce clean water and air, improve mental health and wellbeing, eliminate greenhouse gases and restore native habitat. Harnessing these capabilities and design knowledge to make "living" buildings mainstream, however, has been constrained by valuation protocols for the built environment that do not currently account for environmental and social value creation. This constraint in turn may limit or bias decision-making, distort the market and slow innovation within the property industry. This paper explores how we can expand upon existing cost-benefit and life-cycle cost analysis models toward "Integrated Value", a new concept of property valuation that integrates natural, human and social capital values alongside traditional built and financial capital.

Keywords: Property valuation; integrated value; natural capital, social capital, human capital

3. Marketing sustainable lifestyles in the housing industry (Session 7C)

Georgia Warren-Myers, Maddie Judge, Erika Bartak

University of Melbourne, Australia

This paper investigates the type of language that appeals to housing consumers that can be utilised to market sustainability in housing. The housing consumer is often the scapegoat for the poor adoption of sustainability, as from a consumers perspective there is often a lack of awareness (often taken as a lack of interest) and fear of green wash and being taken advantage of. Sustainability considerations have been poorly presented to housing consumers, if at all. For example in the Top 100 HIA builders only 30% mention sustainability on their websites and 68% of the Top 100 home builders do not mention sustainability or energy efficiency in the standard inclusions (Warren-Myers and McCrae, 2017). Consequently, there has been limited uptake and engagement by consumers in sustainability considerations. Part of this problem is how builders, developers and agents are marketing the sustainability features to home buyers and the need to identify how to appeal to consumers' interests, when competing with lifestyle options like media rooms, stone benchtops and alfresco dining and the like. This research used a three-phase experiment using online panels with

visual stimuli and language to investigate participant reception and engagement in sustainability. The experiments comprised three short online surveys, using repetition of the experiments to provide validation of the findings. The research found Australian preferences for language, ratings and graphics that appeal which may be used to market sustainability in housing. This could assist builders, developers and agents in communicating sustainability opportunities to new homebuyers and existing homeowners and perhaps creating better engagement opportunities that may result in more sustainable housing.

Keywords: Housing consumers; behaviour; communication; sustainability

4. Are we underestimating the sea level rise risk for property? (Session 7C)

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Sea level rise forecasts, old and new, identify a potential risk and uncertainty for property owners, occupiers and stakeholders; one which is likely still being underestimated, with little action being taken. Recent data has suggested that previous estimates by Intergovernmental Panel on Climate Change (IPCC, 2013) of a 1 metre rise by 2100 sea level rise are severely underestimated and could reach 2.7 metres (NOAA, 2017). The uncertainty of modelling, forecasting and data availability and constant change makes this a challenging concept for property stakeholders to consider how to tackle these challenges. However, as this study demonstrates using a case study of the bayside municipality of the City of Port Phillip, even conservative measures of sea level rise and the ancillary implications of storm surge, wave heights and flooding exponentially increase the risk to property and property values. Consequently, there is increasing need for the property industry, sector, stakeholders and academics to open the discussion as to strategies for adaption and mitigation.

Keywords: Sea level rise; risk; property stakeholders; climate change

5. Identifying sustainability challenges and opportunities for change in the Australian volume home building sector: a discussion (Session 5A)

Erika Bartak, Georgia Warren-Myers, Christopher Heywood
University of Melbourne, Australia

As one of the single largest investments an Australian household is likely to make, and with an expected long-term lifecycle, housing stands to make a significant contribution to environmental, social and financial (un) sustainability. Initiatives such as low carbon housing offer positive contributions towards global environmental challenges such as climate change, while issues of affordability and operational efficiency offer meaningful drivers for improved financial sustainability. But instead of seizing these opportunities for sustainability and implementing them widely in new homes, the Australian residential construction sector has been hindered by an on-going 'blame game' between consumer, government and industry stakeholders (Pitt & Sherry, 2014). Lessons can be drawn from international housing markets such as the UK and Europe, where increasing sustainability regulations have highlighted both drivers and barriers for change, including consumer demand, economic influences, and house builder skills and competency. While recent Australian studies investigate strategies to increase consumer demand through greater homebuyer awareness, education and empowerment, there is still limited engagement and implementation due to barriers presented by the volume home building model. This discussion paper examines the Australian volume home building industry and reviews its progress towards more sustainable housing, providing an overview of the current 'state of play' in the sector, while identifying gaps in existing research and potential avenues for change and improvement.

Keywords: Housing; sustainability; energy efficiency; homebuyers; volume house builders; residential construction

Housing markets

1. A supply side study on the sub-divided units in Hong Kong (Session 3C)

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This study analyses the supply of the sub-divided units (SDUs) in Hong Kong. SDUs provide low-cost housing at the expense of tenure security and housing quality. Albeit being substandard, the SDU market has been growing rapidly. It indicates that the demand for affordable housing could not be adequately met by the formal housing sector. The SDU supply is expected to be influenced by the size of the quasi-rent, which is a function of not only the rent gap, but also the enforcement of property rights and law, self-enforcing mechanism and the capital depreciation involved. To examine the effects of the above factors on the growth of the market, this study collects the SDU market data and constructs price indices by deploying both hedonic pricing and repeat sales models. The results give a fuller account of the market landscape by revealing the relative importance of the supply determinants. Strength of law enforcement ought to be raised so as to increase the cost of law infringement. It in turn refrains the landlords from supplying housing regardless of the socially acceptable minimum living standards and upholds the basic living rights of the occupants.

Keywords: sub-divided units, informal housing, quasi-rent, rent gap, price index

2. A Decade on from the GFC – Financial Resilience and Unaffordable Housing Markets (Session 2B)

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The central theme to this paper is to challenge the idea that financial resilience has been built up in cities with unaffordable housing markets. In doing so, the research engages with resilience theory, arguing that the 21st century society is one riven by turbulence, shocks and stress (Amin, 2013; Klein, 2007). Resilience theory engagement is also with an argument that society is now one where we live in a permanent state of economic, environmental and social emergency (Wilson and Swyngedouw, 2014). The research method involves secondary analysis of quantitative data on financial resilience and unaffordable housing market trends. Further, primary analysis involves key multi-stakeholder interviews (2017), with senior professionals dealing with the affordable housing problems from an economic and financial capacity. An in-depth case study of Auckland, New Zealand, is used to demonstrate critique of financial resilience in a city with unaffordable housing markets. Findings include an interesting mis-match of cities being deemed 'unaffordable' for statistical reasons, whilst not being 'resilient' for institutional network reasons (Rockefeller, 2017). Furthermore, findings concur that Auckland's housing market unaffordability may invoke a less financially resilient city. The study also indicates that a case study approach such as this does not necessarily provide a grounding for criticising existing resilience concepts. However, conclusions point towards resilience through unaffordable housing markets to be from: (1) more persistence rather than transformation; (2) limited room for stakeholder contestation; and (3) outcome driven approaches that simply purchase resilience. Risks of financial shock and emergency are seen to be permanently present as a feature of cities that have developed hyper-unaffordable housing markets.

Keywords: Property finance; property resilience; housing markets; affordable housing; Auckland, New Zealand

3. Government led innovations in affordable housing delivery: The case of Australia (Session 2B)

Steven Rowley

Curtin University, Australia

The lack of housing affordable to households on low to moderate incomes is a topic of continuous debate. Federal and State Governments can no longer afford the direct provision of public housing so States have had to find other ways of delivering supply for a range of different households that cannot afford traditional market housing. Aside from the use of the planning system which has delivered small quantities of housing through inclusionary zoning type policies in some States, in-

novations include financial tools delivering low deposit home loans to eligible households (Keystart in Western Australia and Homestart in South Australia for example); land cost reductions (ACT land rent scheme); partnerships with the community housing sector through asset transfer and management agreements (most states) and partnerships with the private sector delivering either lots within subdivisions or mixed tenure developments which include an element of affordable housing (primarily Western Australia). Some States have been far more effective in delivering innovations than others and this is often due to the presence of overarching affordable housing strategies but also due to the organisational structure and leadership of those agencies responsible for housing delivery. The research presented here first outlines the various initiatives adopted by the eight Australian State and Territory Governments to deliver affordable housing supply before focusing on four case study strategies/programs. Employing a Context-Mechanism-Outcome evaluation methodology covering two state level affordable housing strategies and two state level programs, the research defines the key factors determining a successful strategy/program and highlights the lessons that can be learnt from State governments that have successfully delivered affordable housing. These lessons include the importance of leadership, private and public sector consultation, organisational flexibility and policy resilience. The findings are applicable to any level of government seeking to develop and implement an affordable housing strategy or program.

Keywords: affordable housing, housing supply, innovations

4. A review of better construction supply chain practices to improve housing affordability in New Zealand (Session 3C)

Nishadi Anuruddika Sooriyamudalige, Niluka Domingo, Paul Childerhouse and Kenneth Park
Massey University, New Zealand

Demand for dwellings in New Zealand metamorphoses into an upstream level of condition due to the repercussions from the selling prices which tie up with social, cultural and policy changes. Despite the high demand for dwellings, non-governmental housing providers have been disinclined to focus on innovations in dwelling construction, due to less profitability and high volatility of the dwelling sector. Therefore, industry level approach is significant towards this national problem. Configuration of construction supply chain is an industry initiative which directly supplements positive consequences to the crisis of affordable housing. However, supply chain management practices are at a tactical level in New Zealand construction industry. Therefore, the aim of the research is to review the literature on the strategies which can improve integration of supply chains and collaboration among the participants. The findings reveal that, integrated procurement approaches, goal sharing, contractual trust, and good communication are significant to improve the performance of supply chain. Further, functional and multi-firm integration were identified as the ways to achieve efficiency and effectiveness of the supply chain process.

Keywords: Housing affordability; supply chain management; integration and collaboration; strategies

5. Are older homeowners staying or leaving? The South Australian family house debate (Session 7A)

Braam Lowies, Rob Whait, Christa Viljoen, Vikash Ramiah, Kurt Lushington
University of South Australia, Australia

Ageing is one of the most significant social transformations of this century and will impact nearly all economic sectors. Life expectancy and quality of life in later years is increasing, particularly in first world countries such as Australia. Based on the 2016 census data, South Australian individuals aged 65 and over comprise 18.3% of the population. This is considerably higher than the national average of 15.7% and is the highest percentage on the mainland. The intention of older South Australians to remain in the family home or relocate to other facilities has significant economic and social implications since many older South Australians provide economic benefits to the state through the care, accommodation or volunteering services. Intentions to relocate also are an important input for health service planning and infrastructure. While older people may desire to relocate, impediments may prevent them from doing so. Before embarking on research that attempts to understand the specific factors for relocating or not, it is necessary to determine whether an intention to relocate or not is prevalent within this South Australian demographic group. Consequently, the aim of this study is to determine the relocation intentions of older South Australians. To further support this objective an exploratory analysis of older South Australian homeowners' intention to move in relation to their gender, age, health, immigration status and financial behaviour will be conducted.

Keywords: Property and society, housing markets, ageing and relocating, ageing and housing

6. An exploratory examination of housing the aged in South Australia (Session 2B)

Peter Rossini, Christa Viljoen and Braam Lowies
University of South Australia, Australia

The Australian population is ageing with South Australia representing the highest proportion of older people over the age of 65 years on the mainland. The 2016 census shows that the median age in South Australia is 40 years, compared to 38 years for all Australians with 18.3% of the South Australian population aged 65 years or older. This figure is much higher than the national average of 15.7%. It is furthermore estimated that by 2061, more than 25% of the South Australian population will be above the age of 65 years with more than 36% of this same population above the age of 55 years. The vast majority of people above the age of 55 years (considered older) live as single or couples in owner occupied separate houses with 3 or more bedrooms. Many would consider this to be underutilising this housing. Although Governments at various levels are encouraging older Australians to age in place, more recently the debate to downsize has gained some traction. Downsizing to smaller housing options, such as Independent Living Units (ILU's) may free-up existing (often-larger) homes for new homebuyers and will assist with the housing affordability problem, especially concerning for younger Australians. However, this presupposes that there is suitable accommodation and an adequate volume of housing for this older demographic group. This paper uses 2016 Census data to examine the demographic and spatial distribution of older South Australians and considers this in relation to house prices and the numbers of retirement living opportunities, particularly ILU's. This is an exploratory paper that aims to support other qualitative and qualitative research to aid in policy making.

Keywords: Housing markets, property and society, housing the aged

7. The dynamics of housing affordability for young households in Melbourne Australia, 2006-2016 (Session 3C) (Refereed)

Kimberly Winson-Geideman, Joseph A Barrins, Georgia Warren-Myers & Hao Wu
University of Melbourne, Australia

The paper investigates the changes that are taking place with the first-time homebuyer incentives in Victoria and New South Wales, Australia. A great deal of attention has been paid to increasing home prices in Australia, primarily in the capital cities of Melbourne and Sydney where median prices increased 15% and 12%, respectively during the last financial year (July 2016-June 2017). First-time homebuyers are particularly affected by these increases, making affordability a primary concern among the local populations and a politically volatile issue with ramifications extending to immigration, employment and the greater economy. In an effort to alleviate some of the financial burden, the Victorian government announced a series of incentives, most notably that stamp duty would be abolished for first-time homebuyers of properties under \$600,000 and reduced for properties between \$600,000 and \$750,000. This is the first major adjustment to stamp duty in Victoria since 1999, with changes taking place at the beginning of July 2017. Within a few weeks of the Victorian announcement, a similar round of incentives was announced for New South Wales. While politically expedient, demand-side incentives such as these have the potential to intensify house price increases, particularly in the short-term, without corresponding increases in supply. This paper examines these incentives and comments on the potential impact by linking them to conventional economic theory. Alternative policy measures linked to economic theory and designed to achieve the goal of increased affordability are also presented.

Keywords: First-time homebuyers, housing affordability, house prices

8. Homebuyer incentives: A review of the literature (Session 3C)

Joseph A Barrins, Hao Wu, Georgia Warren-Myers, Kimberly Winson-Geideman
University of Melbourne, Australia

Since the Global Financial Crisis, many of the Pacific Rim economies (Australia and New Zealand most notably), have seen property values increase so rapidly that many first-time buyers have been priced out of those markets. The benefits of homeownership to communities and families are widely recognised in both countries, with the underlying assumption that the first property purchase will eventuate long-term financial benefits for the buyer (in most cases) and contribute to a stable society. Burgeoning property values have undermined this, with ownership rates falling as values increase. A number of government incentives have been implemented with the intent of alleviating at least some of the financial burden of buying, though the positive effects of these programs are questionable. This paper examines the literature on first-time homebuyers, particularly related to government programs designed to incentivise homeownership. A relatively large body of research exists that assesses a variety of incentives, but this paper is specifically focused on policies related to financial incentives such as tax/stamp-duty abatements, loan forgiveness, down payment assistance, and grants for first-time buyers.

Keywords: first-time homebuyers, housing affordability, house prices, homeownership incentives, stamp duty

9. Housing divide, market intervention and growth model changes towards sustainable urbanisation in Suzhou, China (Session 7A)

Yunqing Xu
Xi'an Jiaotong Liverpool University, China

The unsustainable impacts of the widespread property-led urban development (PLUD) in Chinese cities have been increasingly recognised, although PLUD has become even more predominant to cope with economic slowdown in recent years. Suzhou has more than doubled its urban population since 2000, one of the quickest among Chinese cities. Meanwhile, house prices surged by 44% in 2016 alone, deteriorating housing affordability and housing divide. This paper investigates the efficacy of housing policies since the 2010s in Suzhou with a main focus on the purchase restriction and affordable housing expansion. It employs an analytical framework of imposed and induced institutional changes to examine the interplays and compromises between central and local governments and discuss the underlying barriers for affordable housing provision and housing equity. It argues that there requires a combination of long-term mechanism of central housing policies and localised governance. This however remains contradictory to the key fundamentals of PLUD, including the land and resource intensive mode of growth and bias on quantity over quality development. It concludes that a more sustainable urbanisation of Chinese cities relies on a deeper understanding of the institutional factors in the housing sector and a paralleled reform in the property-led growth.

Keywords: Housing policies; affordability; growth model; governance; imposed and induced institutions; China

10. The impact of labour market and tenure choices on housing need and affordability in Australia (Session 2B)

Chris Leishman
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Housing affordability continues to be a major issue in Australia. Young Australians are struggling to enter the housing market, while more and more older Australians are paying mortgages or rents into retirement. Houses prices and rents continue to rise in some areas, with patterns of unemployment and wage growth varying significantly across the country. While 'housing need' is a complex term open to many different interpretations, it is often used to reflect the housing requirements of individuals that cannot be met through market housing owing to high costs or inadequate income. In this article, I extend recent housing system modelling advances from the United Kingdom to the Australian context. I present econometric results that demonstrate the endogeneities between housing costs and: household formation, tenure choice and labour market participation decisions. I conclude by setting out an agenda for continuing to develop this area of research in the Australian context, and by considering the implications of the findings for Australian housing policy.

Keywords: Labour market, tenure choices, affordability, household formation

11. Purchasing power and US house prices (Session 7A)

Michael Rehm and Jeremy Gabe
The University of Auckland, New Zealand

Value theory postulates that economic goods such as housing command value if they offer utility, are desired and are somewhat scarce. Value theory also prescribes a fourth factor of value, purchasing power, which represents market participants' financial capacity to compete for goods and services. Since a house is the single largest investment that most households ever make, the vast majority of homebuyers must obtain mortgage credit, essentially leveraging against their future income, in order to participate in their local housing market. This study conducts a time series analysis of Home Mortgage Disclosure Act (HMDA) data from 1990 through 2016 across 23 housing markets in the United States and finds that house prices, mortgage interest rates and loan-to-income ratios (LTI), which reflect credit-induced purchasing power, are cointegrated in nearly every market studied. Importantly purchasing power (LTI) is found to Granger cause house prices in markets that experienced comparatively high house price growth during the boom years leading up to the global financial crisis. Furthermore partial correlations performed on these three data series indicate that although interest rates, independent of purchasing power, explain house prices in several U.S. housing markets, the interest rate to house price relationship is weak and inconsistent. In contrast, purchasing power maintains a strong, statistically significant positive correlation with house prices after controlling for interest rates in every market analysed. As U.S. mortgage providers and their regulators focus their attention on serviceability of mortgage payments (payment-to-income ratios) rather than purchasing power (loan-to-income ratios), U.S. policymakers should consider debt-to-income limits policies enacted in markets such as Ireland and the United Kingdom to foster financial stability and dampen housing boom-bust cycles made worse by unbri-dled credit expansion and contraction.

Keywords: Housing markets, house prices, credit expansion, HMDA, time series

Property and the environment

1. Quantifying policy spillover effect in green buildings (Session 5A)

Alastair Grimson, Arnaud Ciller, Jeremy Gabe and Sam Trowsdale
The University of Auckland, New Zealand

This paper describes the change in water consumption of commercial office buildings over time drawing on a database of over 4,500 water disclosures representing over 1,000 unique office buildings in Australia. Results resemble similar patterns described in energy consumption, showing water consumption declined during the first 5 annual re-certifications and suggests reaching an equilibrium within 6 years. Water consumption is strongly correlated to energy consumption at the same stage of certification and such results would suggest improvements in water star rating that mirrored those of energy. However, findings indicate property managers are not being rewarded for improvements in water efficiency as they are in energy suggesting it might be high time for an examination of water rating thresholds.

Keywords: Water consumption; commercial office buildings; water efficiency

2. Exploring property valuer's knowledge, behaviour and attitude regarding climate change by means of a mixed methods research approach (Session 3D)

André Krugera
University of Johannesburg, South Africa

The emerging nature of climate change and the promulgation of the National Environmental Management: Integrated Coastal Management Act to adapt to and mitigate for the rising sea level by the South African government poses the following question to property valuers. How will property valuers take the risk created by the changing climate and rising sea levels into account when they develop an opinion of value? Since no previous studies exploring property valuer's experience concerning climate change risk was found in the literature, a phenomenological study exploring property valuer's lived experience of the rising sea level was undertaken in order to develop a model to assist property valuers when they value residential coastal real estate. Property valuer's lived experience regarding the rising sea level was investigated by way of a mixed methods approach employing a two stage sequential exploratory design. The research provides an insight into the behaviour of property valuers along the Southern Cape Coast and confirmed their dependence on historic data and their anchoring behaviour when they develop an opinion of value. Property valuers disregard of future risk, inherent in the changing climate and the rising sea level, due to an absence of evidence thereof in sales data is a concern. The research is restricted to residential coastal real estate on the Southern Cape Coast of South Africa. The interpretation of the qualitative findings and the quantitative results are that of the researcher and could be subject to a different interpretation by another researcher. As the first study of its nature on the risk posed by rising sea levels and the lived experience of property valuers, the research lacks external validity. Further research may be required to validate the findings. Property valuers and all stakeholders in residential coastal real estate should acquaint themselves with the inherent risk in the changing climate. This was the first study to explore the lived experience of property valuers regarding the rising sea level. The use of the mixed methods design allowed the researcher to corroborate property valuers stated behaviour within a specific real estate market with sales data.

Keywords: Mixed methods research, climate change, sea level rise, risk, property valuation

3. Real estate market stability in a biosphere reserve (Session 5A)

Steven Boyd
University of the Sunshine Coast, Australia

The Great Sandy Biosphere and Noosa Biosphere reserves share a vision to build thriving societies in harmony with the environment. At the core of the world network of Biosphere reserves is a mission shaped around the concept of sustainable development. There may be no single agreed definition of sustainable development however, in Australia Biosphere reserves are managed to combine both conservation and sustainable use of natural resources. As part of a community living sustainably, in harmony with nature, real estate owners may be less inclined to move home

leading to a more stable residential market. This paper presents a comparative analysis of sales records from four tourism orientated coastal communities within commuting distance of Brisbane, Queensland. Two of the communities are positioned within UNESCO designated Man and the Biosphere reserves. The comparative analysis primarily focuses on transaction volumes during a study period of eleven years. Emerging findings present a reliable difference between the distributions of sales per period for the four communities. More detailed analysis presents additional attributes and events that influence the volume of real estate transactions and decision making of local residents.

Keywords: Biosphere reserves, sustainable development, real estate market stability, real estate market analysis

4. Is there a green premium for property companies? (Session 5A)

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Buildings account for 40% of energy consumption in Europe, the United States and Asia, suggesting that the real estate and construction sector is a sector that offers substantial opportunities for the reduction of carbon emissions (Mills, 2011). To encourage the development of green buildings with low carbon emissions, greater energy-efficiency mandates and standards have been implemented globally. To meet the expectation of stakeholders, property companies have been actively reducing their carbon emissions and energy consumptions, as well as enhancing the carbon information disclosure of their companies. However, no empirical study has been devoted to the impact of carbon disclosure on the performance of a property company. This study aims to fill this gap by examining whether there is a green premium for property companies. Specifically, the links between the level of carbon emission performance and carbon disclosure quality and financial return of international property companies are scrutinized. The dataset of Carbon Disclosure Project (CDP) over 2010-2015 was utilised. The preliminary results assert that an enhanced financial return is associated with a lower level of carbon emissions and higher carbon disclosure quality, reflecting that there is a green premium. The practical implications of the findings are also discussed.

Keywords: Green premium, property companies, international, carbon performance, carbon disclosure project

5. Sustainable property management through building adaptation (Session 1E)

Hilde Remøy

Delft University of Technology, Netherlands

National governments and local authorities worldwide aim at reducing building related energy consumption and greenhouse gas emissions. Aiming to achieve the goals for sustainable development set in the Paris agreement, the Dutch government has installed new legislation requiring a Dutch Energy Performance Certificate (EPC) with the value C or better for office properties before 2023. From then on, letting properties with a lower energy label will be prohibited. Although the intentions are good, a certain rebound effect is occurring: property investors and developers focus on developing sustainable new-build office properties, hence existing buildings become vacant and obsolete. However, 80% of the properties needed for the next 50 years already exist, and the real sustainability challenge could better be met by improving the energy efficiency of existing properties. Part of these properties are not fit for use in their current state. Moreover, the ageing workforce and the new way of working lead to a decline in the demand of office space, and so adaptive reuse (across use adaptation) becomes a possibility for dealing with obsolete offices. Owners of existing property are facing complex decision-making issues: to which extent is it feasible to adapt or adaptively reuse existing buildings? Are the buildings and their properties fit for new use? This paper addresses the above questions, and aims at developing a framework for decision making on the topics of building adaptation and adaptive reuse to achieve sustainability goals. This research aims at revealing which location and building characteristics should be included when assessing the within use building adaptation and adaptive reuse potential of existing office property, looking at economic, social and environmental aspects of sustainability. In this study, the life span perspective is central to the re-use and new development strategies that are considered.

Keywords: Adaptive reuse; retrofit; property management; sustainable building; urban regeneration

6. Value of guarantee inspections in residential buildings (Session 6C)

Agnieszka Zalejska Jonssona and Henry Muyingob
KTH Royal Institute of Technology, Sweden

Quality is a notion that can be defined in many ways for example as satisfaction with product's performance; client perception of the quality which can be influenced by degree of innovation and companies' reputation and even client values. Moreover, the quality can be determined depending on the goals agreed between the client and the contractor and the achievement of these goals. In the case of residential construction, a product that is to be quality-assessed can be a building, a dwelling, or an environment delivered within and even surrounding a building. In line with quality as a notion of satisfaction, the quality is expressed by the users' relativistic evaluation. The users' judgement may depend on involvement in the process, the value of service received, perceived and acceptable quality, tolerance level, problems experienced, reported and corrected defects. In this paper, we apply a joint perspective on a notion of quality, examining perceived building quality defined as the occurrence of defects reported by a housing building owner. We are studying the relationship between perceived defects in the building and engagement of the board of governors in a housing co-operative in the guarantee inspections. The focus of the paper is on value of the guarantee inspections, performed two years after building occupancy, and on the role of the actors involved in this process, particularly the house owners and the inspector. The paper presents results from a study conducted in Sweden in which close to 40% of the multi-family housing in the country is under co-operative ownership. The analysis and results are based on the responses from a survey distributed among the governing boards of 1562 housing co-operatives. The board of governors of a housing co-operative board represents all the owners of the building (and the apartments). The analysis provided in the paper shows that there is significant relationship between reported defects and owners' education, comprehension of and engagement in the inspection process. The results are discussed in the context of building energy performance, size of the housing co-operative and co-operative strategies for building maintenance and management.

Keywords: Building quality-assessment, building energy performance, building maintenance, cooperative governance, property and the environment, property management

7. Clean heating and renewables in housing – Is there a return on the energy shift? (Session 6C)

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Previous research has confirmed 'green premiums' for improved energy efficiency in terms of residential rents and sales prices. We introduce an extension to existing models by incorporating property heating characteristics. In our first model, we follow a technology-centred approach by investigating the impact of the progressiveness of heating systems installed. We perform large-sample geo-additive regression analyses based on more than 400,000 observations covering German residential properties in 2015. Controlling for several price drivers, we find evidence for significant explanatory importance and that properties with 'green' or progressive heating technology c.p. come with the suggestion of higher prices. In two additional models, we replace heating technology by the underlying fuel type, i.e. renewable vs. non-renewable energy sources, and follow a rather resource-based approach. These results reflect that, while the well-known low energy consumption indeed comes with a price premium, this should to be interpreted together with the property's heating system or fuel type, as housing markets seem to compensate the 'green premium' by 'brown discounts' if low energy consumption figures are powered by obsolescent technology or fossil energy. The results suggest that retrofitting activity should be conceived from a holistic perspective in terms of optimizing the return on green investment.

Keywords: Housing market; energy efficiency; heating technology; fuel types

Property and society

1. NHS snack and drink vending point of sale intervention (Session 6C)

Lucy Campbell, Michael Pitt, Peter McLennan
University College London, United Kingdom

This research presented ways to positively influence snack and drink vending product choice in healthcare settings. The research used an across the board nutritional profile to split the least (red), mid (amber) and most (green) healthy products into groups. These groupings were used to design three interventions at the point of sale. The experiment was 54 weeks long, across 30 locations in a large hospital in London UK. The outcomes measure was red product stock levels. Results show a limited but positive relation between the interventions and service user behaviours, however revenue was significantly impacted in product replacement trials. A limited number of three intervention designs were trialled in one hospital, limiting generalisability. This research interpreted UK policy guidance, translated into operational changes in a healthcare environment. The research offers practitioners guidance on how they too might interpret policy guidance into practical service changes and if this was effective or not in this case. There has been specific call for tests on environmental design and vending service user behaviours, especially in healthcare, and so this research fills a gap in knowledge. Also, the nutritional profile that was used was untested in snack and drink vending, and therefore this research also makes a novel contribution to the development and use of nutritional profiles that suit vending specifically, given that one is not able to look at the back of packet labelling.

Keywords: Snack and drink vending, NHS, choice architecture, nutritional profiling

2. A climate change risk premium for residential coastal real estate (Session 7C) (Refereed)

André Kruger
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The changing climate and specifically the rising sea level presents a risk to the future benefits of residential coastal real estate. The purpose of this paper is to present a model property valuers can employ to derive a risk premium for properties at-risk of being permanently inundated due to the rising sea level. A mixed methods approach employing a two stage sequential exploratory design was applied to investigate property valuer's lived experience regarding the changing climate and the rising sea level. The findings indicate that property valuers pay no attention to the risk posed by the rising sea level and this can have far-reaching consequences for the coastal real estate market and the economies of coastal towns in South Africa. The research is restricted to residential coastal real estate on the Southern Cape Coast of South Africa. The proposed model reflects the researchers attempt to determine a risk premium and could be subject to a different interpretation by another researcher. As the first study of its nature on the risk posed by rising sea levels on property market values, the research lacks external validity. Further research may be required to validate the findings. The model provides property valuers with an uncomplicated approach to identify at-risk residential coastal real estate and an objective methodology to derive a premium based on the risk of rising sea levels. This research was the first to explore the effect of the rising sea level on the market value of residential coastal real estate in South Africa. It is also the first to provide property valuers with a model they can apply to quantify the rising sea level risk for a specific at-risk property.

Keywords: Model, climate change, sea level rise, risk, risk premium, property valuation

3. Wellbeing of knowledge workers – assessment tools and user preferences (Session 1E)

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The biggest asset and the cost for any organisation is its employees - personnel accounts for almost 90% of organisation's costs. According to Global Corporate Challenge (GCC) report, on average employees cost 3 months of lost productivity a year. Increasing number of research has shown that built environment has a strong impact on employee productivity due to the fact that knowledge workers spend around 90% of their time inside buildings. Wellbeing is the new green for buildings and providing healthy and balanced environment can reward not only companies and their employees but also landlords, developers and other concerned actors. Increasing attention to health and wellbeing in buildings led to the development of new wellbeing indicators and assessment tools and methods. The Living Building Challenge, Deloitte's Wellbeing@Work Index or WELL Building Standard™ are just a few examples to be mentioned. Although these assessment tools and methods are not yet widely spread, the discussion about wellbeing is thriving. In this study, we aim at developing a deeper understanding about wellbeing practices and preferences in knowledge work organisations from a user's perspective. We intend to distinguish the differences in preferences of users and organisations as well as the use of wellbeing practices across countries and industries. The research consists of three steps. First, the wellbeing rating tools and certifications are analysed and compared. Then, the empirical data is collected through questionnaire for the users of office buildings implicating identified wellbeing agenda. Additionally the semi-structured interviews are conducted with industry specialists in the increasing wellbeing and built environment field (e.g. WELL-accredited professionals (WELL AP)). The data of surveys are analysed by statistical methods and qualitative interview data is analysed by content analysis. The results are reflected towards literature and the conclusions are drawn. The results of this study will benefit scientific community by providing a better understanding of wellbeing practices and indicators of built environment in various organisations as there is a clear lack of academic research on this topic. It will also benefit practitioners by providing a better understanding on knowledge workers' needs and preferences regarding wellbeing at workplace. Identifying wellbeing indicators suitable for Finnish market can reduce the heavy workload of international certifications.

Keywords: Wellbeing; knowledge workers

4. Diversity and inclusion in the Australian property industry (Session 3D)

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Lack of gender equality and diversity among the built environment sector professionals has been a persistent problem globally which exacerbates skills shortages, reduces economic productivity and constrains innovative capacity (Olofsdotter and Randevåg, 2016; French and Strachan, 2015). This paper firstly examines the challenges that female students face entering the market, along with advancement through management roles within the property industry. Secondly, the inclusion of international students (male and female) within the industry, is examined to determine barriers that are faced on gaining employment for non-permanent residents and students whose first language is not English. A survey of international and female students, along with industry participants has been conducted. The survey results highlight the challenges faced, in both diversity and inclusion within the property industry. The results also provide the basis for discussions within industry bodies to better facilitate the employment of international students.

Keywords: Diversity; equality; woman; inclusion; employment

5. The perceptions on sustainable real estate: a case study of Sri Lanka (Session 3D)

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The real estate investment in industry finds the centre of economic and social changes in any country. Similarly it plays a key role in the economy of Sri Lanka. Virtually every aspect of real estate development and operation has significant environmental consequences: from the location of the site on which structures are built, to the materials required to construct buildings and other structures (imbedded energy), and then the energy required to operate them. However its impacts vary significantly by region, depending on local climate and building technologies, among other factors. As per (Hostetler and Knowles, 2010) environmental attributes in relation to real estate development are; Open space, Trees and conserved natural areas, Road network, Wetland conservation, Lighting, Landscaping, Storm water, treatment and Resident engaging. Sri Lanka being a small island country land resources are of vital importance. Along with the other issues like limited environmental resources (timber, sand, cement), pollution the country has to search options to promote sustainable real estate. It is observed that due consideration is not given for environmental aspects in real estate development especially in urban areas of Sri Lanka. Therefore the objective of this study is to measure the environmental concern of professionals, practitioners and academics who are engaged in the activities related to real estate sector in the country. Revised New Ecological Paradigm (NEP) Scale designed by Dunlap et al. (2000) to identify the views of environmental aspects of the people was used to measure the perceptions on fifteen environmental attributes. The survey instrument was adopted and randomly selected 50 groups of respondents covering the above categories were interviewed.

Keywords: Sustainable real estate, environmental attributes, new ecological paradigm

Property development

1. Examining developers' lifestyle housing ideas through web advertisements (Session 4A)

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Lifestyle housing entails linking lifestyle variables such as age, family type, family size, education, etc. with housing preferences of house buyers. Lifestyle housing typologies followed Maslow's Hierarchy of Needs (1943), whereby households will be motivated to satiate a higher need after fulfilling the lower or more basic housing needs. Accordingly, Malaysian developers have to constantly respond to changing housing preferences alongside shifts in socio-economic factors such as education and income levels, especially in the urban areas. As a result, in the last two decades developers have ventured into lifestyle housing to cater for the more sophisticated house buyers, compared to the more basic residences from independence up until the 2000's. However, the expected and the actual lifestyle housing product may not correspond with each other. Hitherto, developers' lifestyle ideas that were interpreted into the end product remained unexplored. To address the lack of study on how the local developers framed and interpreted purchasers' lifestyles, this paper draws on a content analysis of marketing webpages of 50 lifestyle housing schemes of top five developers in Malaysia to determine the lifestyle housing ideas of developers for each typology. Four main typologies of lifestyle housing were analysed in this research namely Gated and Guarded Communities (GACOs), Clubhouse Living, Green and Landscaped Residence and Lifestyles of Health and Sustainability (LOHAS). Results showed that the housing products mainly matched the expected lifestyles. The unpacking of developers' ideas of lifestyle housing leads to a better insight into the current lifestyle housing being offered to house buyers in Malaysia.

Keywords: Lifestyle housing, typologies, marketing, Malaysia

2. Impediments to the strengthening of earthquake-prone buildings (Session 4A)

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The passing of the Building Act (Earthquake-prone Buildings) Amendment 2016 has now made it mandatory for all territorial local authorities in New Zealand to identify the earthquake-prone buildings located within their areas. Earthquake-prone buildings are defined in the Regulations to the Act and are expected to number between 15,000 to 25,000 buildings. Once identified, earthquake-prone buildings will be identified in a publicly available data base and the owners of the buildings will be given from 7.5 years to 30 years to either strengthen or demolish their buildings. Which of these options is chosen by the owner will have significant implications for the urban fabric of many New Zealand towns and cities. In order to identify likely impediments to strengthening their earthquake-prone buildings the submissions made by owners to the government led review of the legislation was obtained under the Official Information Act and analysed. The results of this analysis and conclusions regarding impediments to strengthening are presented in this paper.

Keywords: Earthquake-prone, seismic mitigation, impediments

3. What drives hotel conversion in Hong Kong? (Session 6B)

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In order to achieve urban sustainability, the Hong Kong government has launched a policy to encourage adaptive reuse of under-utilized high-rise industrial buildings. Many buildings in Hong Kong have been converted into hotels over the past decade. This paper investigates the causes and consequences of hotel conversion, and aims to understand whether hotel conversion benefits hotel firms in the long run and whether hotel conversion can facilitate urban sustainability. Data is collected through a desktop study of government documents and in-depth interviews with hotel executives and industry professionals. Two case studies will be conducted to examine the conversion projects and the consequences of hotel conversion. The findings indicate that from the hotel owners' perspective, hotel conversion was initiated with the intention to capture real estate value and are affected by the corporate' real estate strategies. Also, hotel owners adopt a considerable amount of green design and practice in the conversion process. Green features have become one of the brand strategies of the hotels.

Keywords: Hotel Conversion; corporate strategies; adaptive reuse; sustainability

4. A transition of the brownfield holding firm in China (Session 6B) (Refereed)

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China's industrial structural change has led to the emergence of large scale industrial land turning into other uses. This paper looks into one of the major brownfield sites in Beijing and its holding state-owned-enterprise to consider a social cost minimising mechanism in brownfield development. A detailed investigation of historic and current organisational and spatial patterns reveals not only reuse of the brownfield site as redevelopment, but also significant transformation of its asset holding SOE. This paper explores and analyses forces and mechanisms behind the transformation of the brownfield asset and its asset holding organisation. Given the high cost for institution innovation, new firm structure, and socio-political interplay, SOE may behave like or be considered as an effective carrier of social warranty to balance substantial development risk. Findings have policy implication potential.

Keywords: Brownfield development; transaction cost; liability; firm structure

5. Residual value, development feasibility and the residential development process (Session 4A)

Laurence Murphy

The University of Auckland, New Zealand

Residual valuation and development feasibility calculations lie at the heart of the residential development process. These calculative practices have assumed a textbook orthodoxy that is usually only challenged on technical grounds. However, increasingly the behavioural and political implications of everyday calculative practices are being challenged. Drawing on theoretical discussions around assemblage theory and agencement, as well as ideas around the 'making of markets' and the 'performativity' of calculations, this paper examines the manner in which taken-for-granted practices shape market outcomes.

Keywords: Residual valuation; assemblage theory

Property education

1. The Quality of property education in Australia (Session 1B)

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This paper updates the authors' previous paper on "Student perceptions of the quality of property education in Australia 1994-2009". The analyses in this paper cover the Graduate Careers Australia's Course Experience Questionnaire (CEQ) of major property universities in Australia from 1994 to 2015 on student perceptions of good teaching and overall satisfaction. The results will also be compared against other property-related disciplines such as accounting, economics, building and planning. Changes in student perceptions over the last two decades will be critically evaluated and recommendations will be presented.

Keywords: Property education, teaching quality, student perception survey, student satisfaction, teaching quality, CEQ

2. A comparison of entry level property subjects in Australia (Session 1B)

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This paper compares and contrasts entry levels courses in three property degree courses in Australia. The courses are compared in terms of ;the relationship of each subject to the degree and the University; the purpose and nature of the subjects and the broader aims and objectives in terms of student outcomes; delivery; assessment; retention and student satisfaction. The success on these introductory courses may influence the students' performance in the intermediate and advanced property courses.

Keywords: Property education, blended learning, assessment, student retention

3. Motivating students to be more engaged in their studies by providing authentic learning experiences and industry linkages (Session 1B)

Philip Beaton

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Authentic learning experiences are well recognised as being a means by which students can more readily contextualise theoretical issues and discussions. This paper discusses the attributes of a property mentor scheme introduced and run for many years at UNISA within the Property discipline. Follow up surveys and feedback indicate that students believe the mentor scheme provides assistance with their career planning, valuable insights into the property profession, a greater understanding of the skill required to succeed in the property profession and has overwhelmingly helped them focus on their studies.

Keywords: Property education

4. Exploring gaps between real estate curriculum and industry needs: A mapping exercise (Session 1B) (Refereed)

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The objective of this paper is to explore the extent to which current real estate academic curriculum

align with industry needs in order to identify key areas for reform. A case study of four Universities was undertaken in the study. These cases were randomly selected from the Midlands, Northern and Southern parts of the UK. Data for the study was collected through a desk-top review of real estate curriculum from the four selected Universities and analysed using mind mapping approach. The study revealed that though knowledge from real estate academic curriculum aligns with the industry in six out of nine knowledge base areas, there were gaps in knowledge in the three areas considered most significant to the needs of industry. The study, therefore argues that universities may have dedicated enormous resources to educating real estate graduates in modules that are not necessarily essential to their daily job roles thereby leaving graduates in a position to rely on industry during their early employment. This study presents the findings of a mind mapping exercise which identifies the key areas of actual curriculum that show gaps in real estate education offered by selected universities in the UK. The findings are significant and could inform future curriculum reform.

Keywords: Academic curriculum, industry needs, mind mapping, real estate, UK

5. The challenge of developing business and professional values in the real estate graduate: a business school perspective (Session 5C)

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Real Estate and Planning, Henley Business School, University of Reading, Reading, RG6 6UD, United Kingdom Over the past twenty years the market for real estate graduates has undergone a significant shift in core skill requirements reflecting the changes which have taken place in the real estate sector itself. In particular the real estate services sector - which globally is the most significant employer of real estate graduates - has repositioned itself as a mainstream professional business service sector with a greater emphasis on business skills. As part of this process of change more emphasis has been placed on the need to develop business and professional values in the contemporary real estate graduate. While national professional bodies in the real estate sector have stressed the importance of developing professional ethics in the real estate curriculum for some time the changes in the sector especially the evolution of global delivery platforms in real estate services has necessitated the development of wider graduate value sets which transcend national boundaries and country specific cultural norms. In particular these include business ethics and integrity, corporate social responsibility, sustainability, values intrinsic to developing leadership skills and values relevant to understanding issues related to diversity and inclusion. This paper examines how such value sets can be developed in the classroom by embedding them both explicitly and implicitly in both the real estate curriculum and in extra-curricular activities. A case study of the new 'Business and Professional Values Module' on the MSc programme in Real Estate at the Henley Business School, University of Reading is presented. The paper concludes with a critical assessment of the key findings of the case study as a means of developing a template for embedding business and professional values which can be applied in a wide variety of real estate programmes.

Keywords: Real estate education; business values, professional values

Property finance

1. Switching beta analysis of Malaysian listed property companies within Asian public real estate markets (Session 2C)

Muhammad Yusaimi Hamida, Muhammad Najib Razalia, Yasmin Mohd Adnanb
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Malaysian listed property companies have experienced volatilities condition over last decades due to the several financial crises such as Global Financial Crisis (GFC), Euro debt crisis and oil price instability. Consequently, it gives Malaysian public real estate market expose to the global risk changes in regards to the financial crises. In addition, as Malaysian public real estate market also needs to gain global real estate exposure to attract more institutional investors investment. Therefore, it is vital for policy makers as well as investors to know whether Malaysian listed property companies impacted from the financial crisis from the volatility spillovers for Asian public real estate markets over the period of January 2000 to December 2016. By using Markov-switching (MS) approach which able to analyse discrete shifts in the stochastic volatility process. The focus of this research is impact from these three major recent crises. Furthermore, this research will also construct spillovers index for Malaysian listed property companies' vs Asian public real estate markets. This study will give importance highlight to Malaysian public real estate market condition on modelling time-varying by using Markov regime switching approach which in return provide useful information on different view rather than normal traditional method on performance analysis. This is especially important for Malaysian property portfolio sector as this kind method is very less discover.

Keywords: Beta analysis, Malaysia, listed property companies, Markov-switching, Asia

2. Independent valuation, mortgage collateral and negative equity: a counter-factual analysis (Session 2C)

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The issue of negative equity during periods of sharp declines in real estate values poses a systematic risk for mortgagee banks as well as of concern for policy makers. Concerns are aggravated when banks adopt valuations based on transaction prices, in which case, the buffer against negative equity depends substantially on the mortgage origination loan-to-value ratios. This study examines how a policy change requiring an independent valuation/appraisal to be obtained before transactions take place affects the collateral risk for mortgagee banks. A counter-factual approach will be adopted covering private residential real estate transactions in Singapore from 1995, tracing the change in values over several property market cycles, spanning the Asian financial crisis and the global financial crisis. The benchmark for independent automated valuation model (AVM) will be the X-listing price by SRX. This study also evaluates how the value of mortgage portfolios held by banks would change over periods of price declines to better understand mortgage delinquency and default. Mortgage portfolio value would be marked-to-market using various approaches, such as broad market price indexes and AVMs.

Keywords: Property valuation; negative equity; mortgage portfolios

3. The performance of residential property and debt financing (Session 2C)

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Housing investors have played an increasingly important role in the Australian housing market in recent years. However, the reported capital gains might not have fully reflected investors' actual returns as the impact of debt financing in property investment has been neglected. This study aims to fill this gap and assess the performance of residential property in a mixed-asset portfolio by considering the impact of gearing. A hypothetical housing portfolio was formulated. It consists of 3,400 properties across Sydney. Our preliminary results suggest that the use of debt financing does have an acute impact on the actual return and risk of a housing portfolio. Specifically, an enhanced return has been identified via the use of debt financing, although higher returns come with greater risk. The implications of the findings have also been highlighted.

Keywords: Housing, gearing, risk and return

4. Influence of lending on house prices in Australia (Session 7A)

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University of Technology Sydney, Australia

The Australian cash rate came down to the lowest level ever of 1.5 per cent on 03 August 2016. By the end of 30 December 2016, bank lending for residential properties had increased to \$983.7 billion for owner occupiers and \$539.4 billion for investors. The median house prices reached to over \$1.124 million in Sydney and \$795,000 thousand in Melbourne. Some commentators suggest there is a bubble in the Australian housing markets. Accordingly, banks have tightened their lending by reducing the loan to value ratio. The questions are: a) how are financial institutions making lending decisions for property purchases? b) do the lending decisions have an impact on house prices? It is assumed that the easier the access to lending, the easier it is to get into property markets for purchasers; meaning higher demand for properties and higher pressure on house prices. This research studies the influences of lending facilities on house prices in Australia. The objectives include investigating the types of lending facilities available for purchasers to access property ownership and analysing the relationships between demand for residential property, prices and the level of bank lending. The analysis will use Australian census and time series data from ABS and RBA for the period Decembers 2002 to December 2016 for the analysis. Statistical models will be developed. This research contributes to the body of knowledge in the field of study on several dimensions. First, the analysis demonstrates any causal effects of bank lending on house price appreciation. Second, the analysis provides further evidence on Australian States and Territories to differentiate impact levels. In addition, the utilized microeconomic estimates can be used to examine the macroeconomic effects.

Keywords: Lending; house prices; Australia

5. Measuring the costs and benefits of favorable tax treatments for owner-occupied housing (Session 2C) (Refereed)

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² National University of Kaohsiung, Taiwan

This study examines the favorable tax treatment for owner-occupied housing from an efficiency and equity aspect, highlighting the fiscal, macroeconomic and housing market consequences of the mix of these tax rules. From the fiscal perspective, the favorable tax treatment for owner-occupied housing reduces the tax revenue of both local and central government through exemption and relief measures and also government's ability to provide better public services. These arrangements also provide substantial incentives to encourage households to buy rather to rent a house by reducing the relative cost of owning versus renting. It distorts households' tenure choice, allocation of capital, and causing high housing price which may against the intended goal of promoting home ownership. According to our analysis, we would suggest that the governments to reconsider the current favorable tax treatments for owner-occupied housing, especially the mortgage interest deduction.

Keywords: Owner-occupied housing, favorable tax treatment, efficiency, equity

Property investment

1. The significance and performance of student accommodation as an alternate property sector (Session 7B)

Graeme Newell, Jufri Marzuki
Western Sydney University, Australia

Recent years have seen increased interest in investing in student accommodation as an alternate property sector. Major property investors such as GIC, CPPIB and PGGM have been active in the student accommodation property sector recently. This paper reviews the student accommodation property sector, surveys Australian investor attitudes to student accommodation as an alternate property sector, as well as assessing the risk-adjusted performance and diversification benefits of student accommodation against the other main property sectors over 2011-2016. The strategic property investment implications are also highlighted.

Keywords: Student accommodation; alternate property sector; investor attitudes; performance analysis

2. The role of sub-sector REITs in mixed asset portfolios in Australia (Session 4D)

Hyunbum Cho
University of South Australia, Australia

This paper investigates the significance, risk-adjusted performance and portfolio diversification benefits of sub-sector REITs in Australia and the strategic role of sub-sector REITs in a mixed-asset portfolio in Australia over 2010-2015. It tracks the performance of six sub-sector REITs, including diversified, office, retail, industrial, specialty and a benchmark REITs, and compares them with shares, bonds, unlisted property funds and direct property in Australia. The results show that office REITs provide the best risk-adjusted returns among the sub-sector REITs over 2010-2015 but specialty REITs have relatively low correlations with other major assets, including shares, bonds, unlisted property funds and direct property, providing significant diversification benefits to investment portfolios. The findings of this study facilitate additional property investment strategies for many fund managers, institutional investors, and pension funds that have invested or plan to invest in REITs market in Australia. This study is the first empirical analysis of the role of sub-sector REITs in mixed-asset portfolios in Australia and has validated the important strategic role of sub-sector REITs in a mixed asset portfolio. This is a part of Asia-Pacific property asset analysis and will contribute to future research on similar topics.

Keywords: Sub-sector, REITs, Australia, mixed asset portfolio, real estate, Asia Pacific

3. The changing dynamic of international property investors (Session 4D)

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Recent years have seen increased international property investment activity from both traditional property investors and new property investors (e.g.: Asian players). This paper uses the Real Capital Analytics database of over \$7 trillion in global property transactions over 2007-2017 to assess the changing dynamic of international property investors in recent years; particularly highlighting the increasing role of new international property investors (e.g.: Asian pension funds, sovereign wealth funds and property funds) as they seek to grow and diversify their property portfolios both locally and internationally. The strategic property investment implications are also highlighted.

Keywords: Property investors; international; RCA; pension funds; sovereign wealth funds

4. The significance and performance of Australian healthcare property (Session 4D)

Jufri Marzuki, Graeme Newell
Western Sydney University, Australia

Recent years have seen increased attention given to the alternate property sectors; this includes self-storage and healthcare property. This paper assesses the significance and performance of Australian healthcare property over 2006-2017. The risk-adjusted performance and portfolio diversification benefits of Australian healthcare property (and healthcare property sub-sectors) is assessed against the other main Australian property sectors. A comparison of the Australian healthcare property sector with the healthcare property sector in other countries (UK, France) is also provided. The strategic property investment implications are also highlighted.

Keywords: Healthcare property; Australia; alternate property sector; investors; performance analysis

5. Estimating the impact of debt and management structure on A-REITs performance (Session 4D) (Refereed)

Wejendra Reddy, Woon-Weng Wong
RMIT University, Australia

A-REITs first emerged on the Australian share market in the early 1970s, having grown in size to A\$148bn in 2007 before plummeting to a low of A\$38 billion in February 2009 (74% reduction). These devaluations have been attributed in part to high levels of debt financing over the A-REITs high growth phase (2001 to 2007), at times done using complex ownership structures. Since the GFC, A-REITs have once again thrived under a low interest environment outperforming broader stock and bond markets. Much of the recovery in the A-REIT sector was the result of debt restructuring and changes to management structure with several funds reverting to external management and separating their investment trust units from their stapled company shares. This study explores the sensitivity of A-REITs performance to changes in short and long term interest rates. To do this, the A-REITs funds are separated into four portfolios: 'low debt' and 'high debt' based on their relative debt to capital ratios, and 'stapled' and 'unit' based on their management structure as reported on the ASX website. Note that stapled funds are internally managed and unit funds are externally managed. The dataset covers a 21 year period (1995-2016) spanning multiple cycles in Australian capital markets using an asset pricing model. The results show that A-REIT returns were found to have a statistically significant relationship to market returns, inflation, short and long term changes in interest rates and in some cases inversion of the yield curve. All portfolios exhibited a positive relationship to changes in short term interest rates suggesting that REITs may benefit from higher rental yields in periods of economic growth associated with rising short term interest rates. All portfolios exhibited a negative relationship to changes in long term interest rates suggesting that REITs suffer from higher costs of debt associated with rising long term interest rates. This effect is greater for high debt compared to low debt funds. Furthermore, stapled funds appear to exhibit greater sensitivity to changes in long term interest rates than unit funds.

Keywords: REITs, management structures, interest rates, debt, Capital Asset Pricing, bonds

6. Tracking investment value changes of commercial real estate: an empirical framework (Session 3B)

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The transactions of commercial properties are irregular and lumpy; the properties themselves are heterogeneous and their qualities are ever changing. This creates a dearth in transaction price data required for constructing price indexes measuring inflation and depreciation. We have devised a method that constructs six quality-adjusted indexes for commercial properties. These indexes measure: (1) NOI inflation, (2) NOI depreciation, (3) price changes attributed to cash flow changes, (4) economic depreciation, (5) property price inflation, and (6) changes in capitalization rate. The method uses the information typically available in many commercial property data in an integrated way and meshes the asset price model, hedonic regression model, multiple imputation technique and superlative index number formulae to construct the indexes. The method is suitable for routine high frequency calculation of price indexes, and would be useful, among other things, for frequent marking of the value of the derivative contracts related to commercial real estate.

Keywords: Asset pricing model; CPPI; depreciation; hedonic methods; inflation; NOI; quality-adjustment; superlative indexes

7. The over sixties townhouse market in Christchurch, New Zealand: investment performance and market acceptance (Session 1C)

John McDonagh, Andrew Carswell, David Dean, Brent Nahkies
Lincoln University, New Zealand

Housing for the elderly is a world-wide challenge made more explicit in countries like New Zealand with an ageing population profile combined with increasingly unaffordable housing. A response to these challenges was a change made to the 1995 Christchurch City Plan designed to encourage the construction of higher density, independent elderly housing units that became known in the market as Over Sixties Townhouses. The research reported on in this paper examines both the investment performance of these housing units relative to the wider housing market in Christchurch as well as the market acceptance of this style of housing by those currently in occupation.

Keywords: Housing for the elderly; investment performance; market acceptance

8. Information asymmetry, lemons and ostensible underpricing in housing market (Session 3B)

KW Chau, Lennon HT Choy, Winky Ko Ho
The University of Hong Kong, Hong Kong

While adverse selection problem has originated from Akerlof (1981) seminal paper concerning automobile market, a list of papers has analyzed other types of product markets, such as housing market. In this paper we consider how developers choose their pricing arrangement when selling presale properties from the Hong Kong perspective. Utilizing 302,857 housing transaction data, this paper reveals that when floor area shrinks, developers will ostensibly underprice a flat by a discount while homeowners also follow suit in the secondhand market. The rationale behind is that under the doctrine of caveat venditor, developers are liable for concealing the adverse information about lemons in the presale market so that they ostensibly underprice the durable lemons to induce firsthand buyers to shortly resell the presale properties in the secondhand market where developers have no liabilities.

Keywords: Information asymmetry; pricing; housing markets

9. The impact of unexpected changes of consumer confidence index on the performance of investment property markets (Session 3B)

Shuzhen Chen, Zhi Dong
The University of Auckland

The purpose of this paper is to explore whether the unexpected changes of consumer confidence index (UCCI) affect the performance of investment property markets. This empirical study is the first to differentiate market shocks for UCCI, under different phases of market cycles for New Zealand, a small economy. This paper proposes a framework to analyse UCCI in line with different market cycles. Empirical tests are conducted to investigate the impact of UCCI on investment property markets, under different market phases and shocks. This paper finds that the impact of UCCI for investment property income return increases significantly during the phases with severe market shocks; however, UCCI does not have increasing impact on investment property income return during market recession periods. On the other hand, one-year lagged UCCI becomes statistically significant for investment property capital growth and investment property total return during recession periods, but not for these two types of return during periods with severe market shocks. The findings can help improve practitioners' understanding of potential indicators for property market cycles. The study provides additional insight into the signals and information for property markets. Property owners and managers are advised to take into account UCCI when make investment and divestment decisions. This study identifies the importance of tracking UCCI to predict potential shocks in investment property markets. The research provides new evidence on the relationship between market shocks and UCCI.

Keywords: Unexpected change of consumer confidence index, market cycles, investment property

10. How do tenant characteristics shape the risk-return performance of property investment portfolios? (Session 3B) (Refereed)

Ningkun Li and Zhi Dong
The University of Auckland, New Zealand

This paper investigates how managers can promote the risk-return performance of property investment portfolios by discretionarily selecting tenants under specific business sectors or operational regions. We build a unique database by manually collecting the appreciation value and rental value of direct property investment held by publicly traded property companies or trusts in New Zealand. We compare Sharpe ratio for hypothetical portfolios. We find that property portfolios under specific tenant business sectors or business operational regions can outperform or underperform the other property portfolios. Tenant characteristics are no less important than geography or property sectors when managers manage direct property investment portfolios. The literature has not yet addressed this new dimension for property portfolio construction. The findings of this study may help improve the efficiency of property investment markets.

Keywords: property portfolio management, investment properties, risk-return performance, Sharpe ratio, tenants characteristics

Property management

1. Strata living issues: lessons from recent Queensland case law (Session 7B)

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As populations grow, and as more people move to urban areas, housing density correspondingly increases. Since 2015 the number of residential strata complexes being built in Brisbane has grown exponentially. Separate from issues that arise for investors from a potential glut in the market, behaviour within a strata complex can influence a unit's value. The authors examine recent case law to identify trends that may adversely impact upon that value.

Keywords: Strata schemes, community title schemes, resident committees, owners' corporations, disputes, master planned communities

2. Leveraging workspace for collaboration: a case study of corporate office relocation (Session 1E)

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Organisations deliver added value to clients and optimise their own financial performance through their two key assets, their employees and their workspace. Benefits of open-plan offices and shared space include enhanced opportunities to work interdependently with other team members. Collaboration distributes the workload and provides the collective intelligence to come up with solutions to problems beyond what could be achieved individually. Working collaboratively is a social experience that requires certain behaviours by individuals to be effective. The purpose of the research is to find out how workspace design and fit-out can support (or constrain) employees in collaborative work. The research strategy is a qualitative case study of an organisation that elected to relocate their premises. Data was collected from team members of two business units pre-move and at two stages post-move over a period of one year. Key primary data collection methods include pre-arranged, face-to-face, semi-structured interviews and participant observation, where the researcher takes a membership role within the organisation. Improving collaboration is a key objective for the organisation. The findings from the pre-move study indicate that the design of the lobby and atrium, the position of the lift shaft, the non-contiguous floor-plates and compartmentalisation of teams by portfolio into self-contained pods stifled the further development of cross-disciplinary networks. The shortage of formal and informal meeting spaces interrupted the natural flow of activities, the alternative solutions selected by default being perceived as suboptimal to team member engagement in and resolution of issues. Preliminary findings from the post-move stages of data collection will be included. This research has presented an opportunity to gain insight into the perceptions and lived experiences of team members through interviews and through participant observation providing further understanding of collaboration and workplace dynamics not apparent from the interview process alone. This paper investigates how workspace and fit-out enables collaboration in a professional services company where collaboration for one team is more intense and for the other teams occurs on an as needed basis, necessitating a different balance of spatial solutions compared with project-focused industries.

Keywords: Collaboration; workspace; corporate real estate

3. Sustainability and wellness in the built environment: a case study in Singapore (Session 2D)

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To design and build a new high performance green building, sustainable features in many different aspects have to be incorporated in modern buildings, such as waste and recycling, energy efficiency, water consumption, building design, emission, indoor environmental quality, alternative transport, landscaping, and management, which are all commonly measured using sustainability rating systems. However, researchers discovered that building features alone are not enough to promote persistent performance of sustainable buildings. Studies have proven that occupants are still not satisfied with their wellness in green buildings. To realise the potential of sustainable building design, organisations need to shift towards the social and human elements of building occupants. New movements in sustainability have been developed gradually through the last decade that look beyond building performance efficiency towards social and human elements. The International WELL Building Institute (IWBI) has been established in 2013 and its mission is to improve human health and wellness in the built environment through seven categories: air, water, nourishment, light, fitness, comfort and mind. These concepts and practices all have a common vision is to emphasize the importance of human within the built environment. The WELL building standard version 1.0 launched in October 2014 focus on the human potential through the building. Until June 2017, there were 433 office buildings, mainly in USA (182) and Europe (101), registered with WELL standards. However, the take up from Asian countries are slow except China (54): Taiwan (4), Japan (3), Philippines (1). There are only two buildings (but actually within one single property development project) in Singapore registered with WELL. The aim of this paper is to explore these evolving wellness concepts and practices in the built environment and its experience in Singapore. Analysis of these human health and wellness elements using case study in Singapore provides insights for future developments in Asian countries.

Keywords: Property and the environment, sustainability, wellness, Singapore

4. Commercial Tenants' Buildings Choice – Green Office Buildings in Kuala Lumpur, Malaysia (Session 2D)

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As there are a growing number of green office buildings in the property market, many studies have focused on proving that these buildings have special characteristics. What is discussed less is the ultimate source of value from the customers who utilise the buildings through financial form i.e rent or capital investment. In an earlier study on office occupation by tenants of top grade office buildings in Kuala Lumpur, it was revealed that green office features were not the important factor in office space selection. This paper aims to provide overview of past studies on sustainable office occupation decision considerations. It also intends to reveal factors that are being considered in the green office occupation through an exploratory approach from tenants of green office buildings in Kuala Lumpur. Through a purposive sampling strategy, thirteen (13) participants had participated in interviews sessions. Eventually this paper intends to provide the insight of the green office buildings tenants of the business office location decision at two (2) distinct locations within Kuala Lumpur, Malaysia.

Keywords: Green office, tenants, office occupation decision

5. An investigation into the effects of gender, age, experience and local business market on the issuance of different disciplinary sanctions on real estate brokers - a Swedish case (Session 6C)

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The purpose of the paper is to investigate the effects of a number of broker characteristics – gender, age, previous experience as a real estate broker on the housing market as well as activity on a specific local business market – for different disciplinary sanctions issues by the The Swedish Estate Agents Inspectorate (FMI) between 2000 and 2016. FMI includes a Disciplinary Board, which consists of members appointed by the Government. The supervision entails ensuring that real estate brokers fulfil their obligations in accordance with the Swedish Estate Agents Act. The FMI's supervision can lead to a decision that the estate broker should be removed from the register or that the estate agent should be issued a disciplinary reminder or a warning. The reasons for the disciplinary sanctions differ and the study investigates factors possibly related to different types of complaints resulting in a disciplinary reminder or a warning. The study relies on data from FMI consisting of the collected decisions on sanctions issued 2000-2016. The number of registered brokers went from 4,574 to 6,910 during the period, and the complaints from 253 to 453. However, the number of disciplinary reminders, warnings or removal from the register stayed relative stable with an average of 65. Statistical methods are used to investigate the correlation between broker characteristics and the reasons for complaints leading to sanctions. The paper tries to enhance the understanding of the shortcomings of real estate brokerage on the private housing market. The perspective chosen here is from a consumer and regulator perspective. Some flaws of the market and possible systematical errors made by brokers with different characteristics are identified. The effect of gender and age as well as how different geographical market regions impact the type of complaints and sanctions are interesting findings. The practical and regulative implications of the results are easy to recognize, as consumer protection relating to activities of real estate brokers have been discussed especially since the financial crisis of 2007-2008. When consumers have little knowledge in the field of buying or selling a house, and when the decision to buy or sell often is one-of-a-kind for the individual household, there is a need for research investigating the mediators in the market – the brokers. They are the actors with education and experience as experts on regulations and of the local real estate market. The fact that a small number of brokers are disciplined with sanctions every year is alarming and well worth looking into. As markets for real estate brokerage function quite differently between countries around the world, we also give an overview of the specific attributes of the Swedish real estate broker market as compared to literature on the same markets in other countries.

Keywords: Real estate broker, disciplinary sanctions, Sweden, housing market

6. Underlying determinants of energy use and energy savings (Session 2D)

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Energy consumption in buildings accounts for 40% of the end-use of energy in the EU, and reductions in this consumption are a key to achieving the substantial reductions in CO2 emissions that are part of the EU-2020 target (Gram-Hanssen, 2014). Buildings are known to be a significant contributor to greenhouse gas emissions with space heating alone responsible for over half of all end use, emissions from UK dwellings (Kelly (2014). However, there is a need to know more about how to more strongly influence occupants to reduce household's energy consumption, thus more detailed knowledge is needed in this subject. Interventions to lower household's energy use have been employed with varying degrees of success. Information tends to result in higher knowledge levels, but not necessarily in behavioral changes or energy savings (Abrahamse, et. al, 2005). Most residential energy users, however, are not aware of their energy use pattern, and literature demonstrates that the level of energy-efficient behavior in household settings is underresearched (Stragier, et. al (2004). Our research findings stem from an ongoing research project in Stockholm, Sweden where an energy intervention's effectiveness is studied by examining underlying psychological determinants of energy use and energy savings. To identify those households that have an energy conscious behavior from those that do not strive to save energy the Energy-Efficient Behavior Scale is used (Abrahamse, et. al, 2005). To identify important psychological determinants of energy use and to create a mental profile of energy conscious and non-conscious energy users the means-end chain approach has been applied. The results may be used to improve energy intervention's effectiveness.

Keywords: Energy use, behavioural research in property

7. End of trip facilities best practice: how strategic investment in active lifestyles can improve tenant satisfaction (Session 2D)

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In Sustainable Sydney 2030, the City established ten strategic directions for the city. One of these is to create a "City for pedestrians and cyclists," with strategic target 7 stating that "at least 10 per cent of city trips will be made by bicycle and 50 percent by pedestrian movement." Building owners and managers of commercial office buildings in Sydney's CBD have also identified an increasing demand for end-of-trip facilities (include, among other things, bicycle storage, changing areas, shower facilities, and other amenities) by occupants of their buildings. Building owners and managers have indicated a need for standardisation and guidance to improve the design quality and functionality of EoTF noting that existing guidance provided in the Green Star rating tools hasn't always driven optimal outcomes. This research provides an evidence base to underpin guidance to building owners to improve decision making related to EoTF best practice design, investment and management. Analysis of EoTF facility swipe card access data, end-user e-survey responses, and visual preference interviews on-site with users is used understand the changing demand patterns and design requirements associated with the varied uses of EoT facilities. This will assist property owners in strategic asset investment in EoTF that can offer the most significant impact on end-user (tenant) satisfaction.

Keywords: Property management, property investment strategies, WELL, best practice

Property market analysis

1. Catch animal spirits in auction: evidence from New Zealand property market (Session 1C)

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Following the animal spirits theory proposed by Akerlof and Shiller, this article contributes to behavior economics by investigating the possibility of using auction sales data to capture evidence of irrational exuberance in the housing market. Using the monthly percentages of residential property auction sales for Auckland, Wellington and Christchurch regions in New Zealand from 2006 to 2015, and the exuberance testing method proposed by Phillips, Shi and Yu, we find that animal spirits have been developing in the Auckland housing market since 2013, but not in other regions. When compared to the results based on price-to-rent ratios, auction sales provide more meaningful results for identifying market-wide irrational exuberance at an early stage. The causality test on price-to-rent ratios and auction sales volume shows that asset prices and animal spirits influence each other in the short run. In the long run, prices have significant effect on animal spirits, but not vice versa.

Keywords: Property market analysis

2. Housing price dispersion in the presale market: a natural experiment (Session 1C)

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Sale before completion (i.e., presale) is a common practice for real estate developers to sell residential units. Since presale buyers are unable to inspect uncompleted units, developers could take advantage of asymmetric information and release quality information to the market selectively. Search theory also suggests that incomplete pricing information, especially for new products, will induce a less competitive market characterized by dispersed presale prices. Would price dispersion be reduced if developers are required to provide more quality and pricing information? In this study, we argue that this is not necessarily the case. A new information disclosure ordinance governing first-hand housing sales in Hong Kong is used as a natural experiment. We find that while the ordinance has reduced the price dispersion of presale units that are more asymmetric in quality information (e.g., from smaller developers), the reduction is small in neighborhoods with limited pricing information (e.g., thin trading volume). This suggests the ordinance has indeed made presale pricing more difficult because developers are no longer allowed to use different strategies to test market demand as before. As a critical test, we further show that the ordinance has no effect on price dispersion once developers' units are completed and available for inspection.

Keywords: Price dispersion, presale housing market, pricing information, quality information, natural experiment

3. Ten best practices for improving Australian commercial property market forecasting (Session 4B) (Refereed)

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Property forecasting is an integral component in the property investment decision-making process for property fund executives, supporting asset allocation, property fund strategy and stock selection in a mixed-asset portfolio. It is critical that property professionals employ a wide - range of quantitative and qualitative techniques for property forecasting. The overriding aim with property forecasting is to predict reasonable estimates of property market performance in terms of demand, supply, rent, yield and vacancy based on the independent variables of core economic drivers. However, with property forecasting generally social, economic, technical, political, structural and ecological evolutions also throw up a certain degree of uncertainties. Hence, this study explores the current status of the Australian commercial property market forecasting. In particular, it asks 22 property experts how they manage the structural changes and unexpected risk issues related to commercial property market forecasting. This study follows a qualitative research approach, conducting semi-structured interviews with open-ended questions. The analysis involved a reality check of the existing theoretical knowledge on commercial property market forecasting practice. The study identified new input determinants that are stressing on broader capital market components over property market fundamentals. Further, empirical improvements to the forecast methodology were identified by integrating different methodological orientations. Respondents stressed on an intensive validation process after adding a qualitative overlay on top of the econometric output. With emphasis on future uncertainty, the current property market condition is clinching the peak of the property cycle reflecting the pre-crisis situation except the fact of the current low gearing level. Referencing back to the pre-GFC situation will provide a warning flag in the econometric forecasts capturing the essence of a potential Black Swan exposure. Sensitivity analysis, stress testing and scenario analysis are commonly used to address these kind of high-impact, low-probability events in forecasting. Moving away from complex algorithms, spatial data analysis is also identified by following an atheoretical approach. The shared knowledge of the strategies for uncertainties enhances the credibility of forecasts. Therefore, the redesigning of the current property forecasting process is highly recommended with lower tail risk integration instead of marginalising them as statistical outliers in modelling.

Keywords: Property, forecasting, uncertainty, risks, market fundamentals, capital market

4. The long-run volatility of Australian housing prices and market fundamentals (Session 1C)

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Housing prices in Australia, particularly in Sydney and Melbourne have increased significantly in recent years. This raises a concern whether increases in housing prices have any relationship with economic fundamentals. Therefore, this paper examines the long-run determinants of Australian housing price volatility with using a high frequency dataset, namely the CoreLogic Home Value Indices. This analysis of study involves two stages. Firstly, a Spline-Generalized Autoregressive Conditional Heteroscedasticity (Spline-GARCH) model is used to extract the long run volatility of housing price. In the second stage, the long-run determinants of housing price volatility are identified under a panel analysis framework. The preliminary results suggest that fundamentals do explain the long-run determinants of Australian housing price volatility, whilst no similar evidence is available to explain the short-run volatility of Australian housing prices. The implications of the study are also highlighted.

Keywords: Spline-GARCH, long-run volatility, market fundamentals, and Australia

5. Pricing risk in yields and its impact on real estate market volatility (Session 4B)(Refereed)

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In the light of continued financial and economic turmoil, there has been a marked increase in the volatility in real estate markets. This has impacted the pricing of property assets, partly through market sentiment, particularly concerning risk. In a downturn, the perception of investment risk becomes increasingly important relative to overall total returns, and thus impacts on yields and performance of assets. In a recovery phase, and especially with low government bonds, risk and return compete for importance. This paper specifically considers the modelling of property pricing within this economic environment. The theoretical context begins by analysing the relationship between property yields and government bonds, incorporating expectations for property market performance. The analytical context then moves on to specifically include a measurement of risk which stresses its importance in investment markets since the Great Financial crisis. The model thus incorporates macroeconomic and real estate data, together with an international risk multiplier, which is calculated within the paper. The paper considers the driving forces which have led to the volatile movements of yields, flying out in the crisis and falling to record lows since. It also looks at the impact this has had on investment in real estate and the driving forces behind investor decision making.

Keywords Real estate pricing, risk analysis, yield modelling

6. Characterising the commercial property investment market cycle using state-space analysis: a case-study for Australia (Session 4B)

Anthony De Francesco

Real Investment Analytics

Many commercial property market cycles are characterised by long periods of adjustment over periods where underlying market conditions are also changing. This paper characterises the commercial property investment market cycle for Australia across these different market conditions. This is done by undertaking a state-space analysis with a time-series context. It also attempts to identify and gauge the influence of key market cycle drivers, such as space market and capital market influences, on the commercial property investment market. Finally, it will discuss how this information about property cycles can be used to better support investment management strategies.

Keywords: State-space analysis, mean reversion, market cycle

Property research methods

1. Accounting for locational, temporal, and physical similarity of residential sales in mass appraisal modelling: the development and application of geographically, temporally, and characteristically weighted regression (GTCWR) (Session 5B)

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Geographically weighted regression (GWR) has been recognized in the assessment community as a viable automated valuation model (AVM) to help overcome, at least in part, modeling hurdles associated with location such as spatial heterogeneity and spatial autocorrelation of error terms. Whilst previous research has applied the GWR approach, and indeed augmented the GWR weights matrix to also weight by time of sale, or also weight by structural similarity of properties in AVMs, there has been limited application to incorporate all three dimensions (location, structural similarity, and time of sale) simultaneously. Using data for two distinctive but separate cities (Fairfax, VA, USA and Belfast, UK) this research creates a novel locally weighted regression (LWR) AVM, called "Geographically, Temporally, and Characteristically Weighted Regression" or "GTCWR". The approach is compared with more well-known GWR-based models which incorporate fewer weighting dimensions. The results indicate that GTCWR was the only model to achieve IAAO-accepted levels of COD, PRD, PRB, and median ratio in both the training and testing samples with lower PRD and PRB levels. Moreover, the addition of temporal weighting applied to these datasets appeared to help reduce indicators of vertical inequity. Pertinently, the findings exhibit that in conjunction with an equitable, uniform, and defensible methodology that mirrors the comparable sales approach, GTCWR presents an innovative AVM that demonstrates an ability to value over twenty years of sales at IAAO-accepted levels without the creation and implementation of time-based variables.

Keywords: Geographically weighted regression; Geographically, Temporally, and Characteristically Weighted Regression" or "GTCWR".

2. Property development feasibility study – a self-fulfilling prophecy? (Session 6B)

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Feasibility study has been an essential exercise for almost every single property developer when it comes to assessing the probability and viability of a property development opportunity. There are a number of methods used by property developers, in particular, the application of discounted cash flow (DCF) technique to real estate appraisal, which was initially proposed by Richard and further developed by Graaskamp during the 1960s. The DCF model has been the fundamental theory underpinning the modern feasibility study method. This paper will assess the efficacy and reliability of the feasibility study methods developed to date and identify ways to address the most challenging part of a feasibility study, which is to quantify inputs subject to future uncertainty. It may not be possible to enhance the accuracy of these feasibility inputs, yet the feasibility study will be more meaningful and reliable if the level of assumptions on unknown factors is explicitly measured at the time of feasibility is undertaken and the decision-maker will assess the forecasted profitability in the context of the project risk level. This paper investigates the property development process and feasibility study method adopted in Australia. It will also conduct a survey among a number of Australian property developers to identify the reliability and accuracy of the feasibility study based on their previous development projects. The results from the study will be likely to reveal the inadequacies of established feasibility study. Further study will be conducted to explore the solution to the issues identified.

Keywords: Feasibility study – property development – risks – discounted cash flow

3. Developing metrics for mass valuation quality assurance (Session 5B)

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The requirements for statutory valuations are that they are fair and equitable so that these characteristics also pertain to the taxes based on the valuations. It is also preferable that statutory valuations are close to market values so that there is a reasonable level of transparency in the valuation process and the general public can have confidence in the statutory valuation outcomes. In New South Wales (Australia), annual Land Valuations are produced for approximately 2.5 million properties. The State and Local Government taxes based on these Land Valuations generate in excess of \$A7b annually so it is critical that all stakeholders are confident in the outcomes. In the mass valuation process, it is critical that Quality Assurance (QA) is a major focus and that this is built into the process as key element of quality improvement over time. This isn't easy to achieve against the backdrop of a quite fluid and segmented property market over recent years. Mass valuation requires the grouping of properties - in NSW called components and created on the basis of zoning and location. These properties should move together in value over time. This paper will consider the development and use of measures of uniformity and the implications for the subsequent selection of benchmark properties. Examples from the NSW land valuation process will be examined.

Keywords: Mass valuation, quality assurance; modelling; statistical measures

Property valuation

1. The balance sheet and valuation treatment of retirement living and aged care assets (Session 1D) (Refereed)

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The accounting standards, legislative framework and industry conventions govern how investment vehicles report their financial position. The aim is for transparent and timely reporting, enabling investors to make decisions. Australian real estate investment vehicles follow these standards, framework and conventions. Retirement Living and Aged Care (RLAC) investment vehicles are an emerging asset sector, particularly on the institutional investment market. While entities in the sector are required to follow accounting standards and legislative framework they are in a position to adopt conventions more in line with their asset sector. The RLAC sector comprises disparate property sectors, each with their own selection of asset classification and accounting treatment. Analysis of balance sheet treatment and valuations in the financial reports of Australian listed RLAC entities shows a greater reliance on directors' (non-independent) valuations compared to listed real estate investment vehicles in conventional (commercial, industrial and retail) sectors. This has implications for the level of transparency in the RLAC sector. The current industry trend of increasing the delivery of care services to residents in retirement living assets has the potential to further increase the reliance on directors' valuations.

Keywords: Directors' valuations, retirement villages, aged care

2. A Cognitive-behavioural model of valuation problem solving (Session 5B)

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This paper develops a cognitive-behavioural model of valuation problem solving. While previous studies on valuation decision making have described behavioural factors, such as heuristics, the present paper focuses on the cognitions associated with effective valuation problem solving. Drawing on Newell and Simon's work, the cognitive-behavioural model of valuation problem solving explores and integrates three semantic elements (knowledge states, problem-solving operators and strategies) derived from the verbal protocols obtained from valuers of varying levels of expertise (two experts, two intermediates and two novices) undertaking a valuation of a commercial property in a simulated context while thinking aloud. The model implies a more important role of analytical and intuitive reasoning and describes how an expert valuer cognitively solve practical valuation problems using these cognitive processes. It is argued that valuation professionals should be aware of the role of these cognitive processes and their linkages as requirements to perform valuation well under a wide variety of conditions.

Keywords: valuation analysis, valuer, cognition, problem solving, protocol analysis

3. Issues facing standardisation of property valuation practices: A case study of Suva, Fiji (Session 1D) (Refereed)

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Globalisation and increasing foreign property investments are compelling nations to adopt international practices for greater transparency and better governance. However, it is important to recognise that a number of smaller countries struggle to implement international frameworks and practices. In Fiji, lack of valuation standards and information databases, have led to variations in valuers' performances. This research is a pioneering study in the field of valuation in Fiji and highlights issues faced in implementation of the International Valuation Standards (IVS).

This research was undertaken in an attempt to identify fundamental practices within current market valuations of residential properties in Fiji and identify issues hindering the adoption of IVS. Using the pragmatic approach to research known as the mixed methods approach (Whittemore & Knafl, 2005), it uses quantitative data collection techniques and qualitative techniques to further understand valuer behaviour. A host of behavioural studies were utilised to understand valuers' behaviour and subjective practices starting from Diaz (1990). Quantitative studies were utilised to identify the key value parameters used for the sales comparison, income and replacement cost approaches. The research employed questionnaires collected from registered valuers, in-depth structured interviews and case studies through affiliations with valuation firms accepted into the valuation panels of the major banks in Fiji. These ensured comprehension of actual valuation practices, including difficulties faced from lack of available information databases in Fiji. Review of internationally recognised valuation standards and literature on valuation were used to identify gaps in local valuation practices where actual practices potentially deviated from any suggested normative standards in published practice guidelines. The objective was to identify gaps in valuation practices that could potentially hinder efforts towards standardisation i.e. the proposed adoption of IVS. This paper categorises and evaluates issues facing standardisation of valuation practices as institutional, informational and technical.

Keywords: Property valuation standards

4. Towards equitable compensation: inclusion of cultural values in valuation of customary land takings compensation (Session 1D) (Refereed)

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In plural land tenure societies that have identifiable and prevailing customary land tenure, the ostensible need for equitable compensation when customary land is expropriated by State for public purposes is becoming recognisably prevalent and portentous. Equity in process and outcomes of expropriation is central to the issue and the critical question is, 'how much compensation should State pay the expropriatee customary land owners?' Quantification of compensation requires valuation which is a necessary and inevitable function to the expropriation decision. However, unlike valuation of compensation for legal property takings that is predicated on established legal paradigms and statutory pronouncements and prescription, customary land poses critical challenges to valuation because of its incompatibility to legal property systems and regimes. The default position of valuation has been the adoption of legal property conceptions and application of conventional real property valuation methods. This paper posits that valuation for customary land takings compensation predicated on this basis is vulnerable to inequitable outcomes and not responsive to customary land tenure and the principle of equivalence that underpins compensation. Against this status quo, this paper proposes the inclusion of cultural value in valuation formulation of customary land takings compensation assessment.

Keywords: customary land; takings; equitable compensation; principle of equivalence; cultural value

5. Valuation accuracy in South Africa and Sweden – a comparative study (Session 1D)

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Valuation of residential properties is an important aspect of the real estate transaction process. The accuracy of valuations has therefore been an important research topic for the past 30 years. In a number of studies the precision of valuers in estimating the market price have been investigated using different methods and different types of properties. Property valuation within the residential sector fulfills an important role for institutions supplying loans to buyers, as well as providing potential buyers with a good estimate of the final market price. In both South Africa and Sweden, valuers have been criticized for lacking accuracy in their valuations, therefore we investigate and compare the valuation accuracy among valuers in South Africa and Sweden regarding residential properties in 2015 & 2016. The empirical data from this paper comes from three of the leading financial institutions in Johannesburg (South Africa), in all, close to 30 000 transactions. Furthermore, we have gathered a similar sized transaction-based dataset (proportional) from Stockholm (Sweden). In our analysis we have compared the pre-transaction valuation with the final (market) price in Johannesburg and Stockholm in order to compare the valuation accuracy in the two cities. We find that the valuation accuracy in Johannesburg is very high in our sample. The average margin of error among the valuation of the different residential properties is 1.5–2.6%. In Sweden the margin of error is far higher. Typically, the margin of error is often outside the 10% benchmark suggested by previous studies. Partially, this could be explained by the extreme upturn in prices for dwellings in the Swedish capital in the past ten years. The two contexts we have compared in this study are different in many respects. The process of securing a mortgage and the role of the valuations are rooted in the traditions in the two countries to mention two specific differences that we have observed. Therefore the institutional framework and the real estate transaction process must be considered when analysing the results. As for the professional body of valuers in South Africa the results from this study are good news. Regarding the valuers in Sweden, most often real estate agents, this study provides food for thought as they constantly undervalues residential properties, much to the dismay of prospective buyers and governmental institutions and regulatory bodies. This paper extends the literature on valuation accuracy by comparing the role and precision of valuers in two large cities, Johannesburg and Stockholm. Furthermore, it provides a number of insights into the changing role of valuers and their relation to financiers, as well as regulatory bodies.

Keywords: Valuation, real estate transactions, brokerage, financing, mortgage

6. Property value and proximity to job centres - a geospatial approach (Session 5B)

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Murfreesboro TN is the 13th fastest growing city in the US with a population over 50,000 as per the most recent US Census figures. In addition, the greater Nashville metro area is also a rapidly growing region of the US. The city of Murfreesboro is served by several major employers, including Middle Tennessee State University and Nissan's US headquarters and assembly plant just north of the city. In addition to the employment opportunities in the immediate Murfreesboro region, many residents commute via Interstate 24 into Nashville daily for work. During rush hour, traffic is a major concern going in and out of the city, regularly transforming 20 to 30-mile commutes into more than an hour drive. This article looks at a sample of residential home sale prices in Murfreesboro with these factors in mind. It is hypothesized that in addition to the typical factors that drive home prices, easy access to I-24 and the job markets to the north will make a home more valuable given the large number of Nashville commuters who call Murfreesboro home. The analysis involves a non-spatial regression model as well as a geographically weighted regression (GWR) carried out via ArcGIS. Various visualizations of patterns in home sales will be explored. At this time, preliminary analysis suggests that access to I-24 is not a major factor in home sales prices in Murfreesboro, and that the typical factors one might expect (square footage, lot size, age of house, etc.) are the primary drivers of sales prices in the city. The layout and planning of Murfreesboro presents some interesting patterns though, particularly the east/west divide of the city. I-24 splits the city with only a few points where traffic can cross the interstate, and the land between I-24 and US Highway 41 is largely zoned as commercial and industrial within this zone. Residential areas are most prominent outside this stripe of land. Further analysis will determine if this division has any effect on home prices.

Keywords: Real estate; geospatial; drive time; property valuation

Urban and regional policy

1. The differential impact of the fiscal and exchange rate reform on regional property prices in China (Session 4C)

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The 1994 fiscal reform has reduced the local government's share of tax revenue but retain all revenue from land sales (land use right fee). Land sales revenue is classified as extra-budgetary fund. Local government has more freedom to use such fund. There is a strong incentive for local governments to sustain the property prices so that they can maintain or increase their income from land sales. The 2005 exchange rate reform in China has widened the upper and lower limit of the RMB exchange rate. This policy has been seen by the global market as an initial step toward subsequent free trading of RMB in the international market. The exchange rate reform has increased the participation of foreign investors in China's real estate market. This means that the property markets in China is likely to be more affected by the global economy after 2005. This study examines the impact of the 2005 RMB exchange reform and the 1994 fiscal reform on property prices in China. Since China is a big country, the impacts of these two policies are unlikely to be uniform across the entire country. This study will investigate their differential impact on property markets in different regions of China.

Keywords: China, local government, property prices, fiscal reform, exchange rate reform, regional disparity

2. The public good in compulsory acquisition and expropriation comparing Australia and Taiwan (Session 4C)

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For a government to extinguish the property rights of private land holders in favour of the state for infrastructure and other community purposes, it must do so for the Public Purpose for which it is empowered. The role of the Public Purpose in the field of Compulsory Acquisition/Expropriation varies from jurisdiction to jurisdiction, with a varying breadth of interpretation. The declared Public Purpose definition provides limits which may be applied concerning the community-private property rights conflict for land required and how arbitrary the decision is to deprive an individual of their property. The declared Public Purpose can also promote acquisitions for infrastructure by engendering public confidence that expropriations will benefit the community as opposed to the individual. This paper examines and compares the Public Purpose of two countries, specifically focusing on the case studies of Australia (particularly New South Wales) and Taiwan, noting the relative advantages and disadvantages of each jurisdiction's declared definition of "Public Purpose". It does this at a qualitative level by examining and comparing the relevant legislation in each country and commenting upon relative perceived strengths and weaknesses of each.

Keywords: Expropriation, compulsory acquisition, public purpose

3. Strategic responses in an ambiguous context: a meso-level analysis in the primary housing market (Session 6B) (Referred)

Chee Wei Cheah, Christina K.C. Lee, Brian K.H. Low
Monash University, Malaysia

The subjective interpretation of an ambiguous housing policy by the different states in Malaysia has led to the imposition of new requirements on property developers in different states, from time to time. This has resulted in escalating compliance cost for property developers. The presence of ambiguity in the policy enables the actors in the housing market to interpret and reinterpret the housing environment in accordance with their own agendas and interests, leading to network renewal and regeneration. Thus, the housing industry is in a constant state of flux and evolution. Drawing on network and institutional theories, this study examines how property developers who operate across the States in Malaysia, strategically respond to the ambiguous state-specific housing policies. This research employed a retrospective case study research approach, using in-depth interviews of purposefully selected industry actors within the housing market. The findings suggest

that increments in compliance cost motivates property developers' innovative strategic actions such as ceremonial compliance and manipulation in response to the ever-changing mandatory requirements.

Keywords: Urban and regional policy, Malaysia housing market, strategic responses, institutional theory, network theory

4. Does economic freedom affect the returns of international real estate securities? (Session 4C) (Refereed)

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The aim of the paper is to investigate whether higher trade and financial freedom will affect the returns of international real estate security. We add four sub-indexes of economic freedom into the multifactor model of Bardhan et al. (2008) which covers the effects of global capital markets, domestic macroeconomic conditions and firm-specific variables, and dynamic generalized method of moment (GMM) is applied to estimate the annual data for 1,108 publicly traded real estate companies of 24 countries among 2006 to 2013. This paper also examines whether the effects of the different variables on real estate excess returns will be similar or different for two income-level groups, high-income and middle-income countries. The main findings are as follows: First, in light of the evidences of the whole sample, all four indexes of economic freedom significantly affect the real estate firm excess returns. Higher investment freedom can increase real estate excess returns, but there are converse impacts from other three sub-indexes of economic freedom, trade, monetary and financial freedom, on the returns. Second, three variables of firm-specific characteristics show different effects on real estate excess returns for two income-level groups. Real estate excess returns relate negatively to firm size and the market-to-book ratios but negatively to trading volume for the high-income countries. Except for firm size, other two variables cause opposite impacts on real estate excess returns for the middle-income countries. Third, higher monetary freedom and trade freedom will reduce real estate excess returns for both income-level groups, but the effect of trade freedom is insignificant for the high income-level countries. Finally, the effects of investment and financial freedom are different for two income-level groups. Higher investment freedom can significantly decrease real estate excess returns only for the middle-income counties, and financial freedom can significantly and negatively related to real estate excess returns for the middle-income countries.

Keywords: Real estate, trade freedom, financial freedom

5. An analysis of immigration policy on housing submarkets in Auckland, New Zealand (Session 4C)

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A key feature emerging from many global real estate markets has been relatively high levels of foreign investment. One of the areas likely to affect these markets is the ability of foreign buyers to immigrate to the country where the property has been purchased. Analysing residential real estate transaction records from 1996 to 2013 in New Zealand, a positive relationship between long-term arrivals and house price appreciation was found, consistent with the literature. Given this finding, it was thought that changes in immigration policy would influence house prices, particularly in submarkets that are likely to attract foreign buyers. A previously unannounced change in immigration policy relating to English language ability in 2002 provided the basis for this analysis. This paper focuses on disaggregated submarkets to examine how house prices in selected areas responded to changes in immigration regulation. Areas with a proportionally high ethnic Chinese populations were chosen because of the lack of English as an official language in the home country and the unique investment behaviour observed anecdotally in the local market. Using a difference-in-difference (DID) model drawing data from the Auckland region, a comparison of prices before and after the change in regulation was conducted. It was found that the changes in immigration policy had a significant negative impact on the neighborhoods most favored by Chinese immigrants, but only for a short period of time. However, the effect was not uniform with more persistent impacts occurring within higher priced market segments. The effects on house prices diminished greatly within 18 months of immigration changes for the selected submarkets and across all market segments. We found no similar effects when analysing other neighbourhoods with different ethnic profiles. These findings suggest that the use of immigration policy to constrain house prices are likely to produce limited specific results and only for a short period of time.

Keywords: House prices, housing submarkets, immigration, urban economics

6. How can local property entrepreneurs be enabled to contribute to the regeneration of regional settlements? (Session 5C)

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This paper reports the preliminary part of a study funded by New Zealand's National Science Challenge 11: Building Better Homes, Towns and Cities. Unlike the UK and other European settings, in New Zealand there has been very little policy emphasis placed on the development of peripheral regions. Uneven economic development has been a fact of life with very significant growth in Auckland, the country's largest city, and less growth in other localities. In the face of this, public, private and third-sector agencies in regional settlements have taken it upon themselves to initiate a range of activities aimed at urban regeneration. Our study, focusing on three South Island settlements, Oamaru – Timaru – Ashburton (with a population range of 14,000 to 29,000), has attempted to understand the situation they face and the nature of the initiatives they are pursuing. One set of these initiatives is very much property-related with local government and the private sector both engaging. These include retail facilities, business parks, heritage precincts and service facilities such as hospitality, recreation and accommodation for locals and tourists. At times local government and private sector developers work in harmony, but in others there are elements of antagonism and frustration getting in the way. We use our preliminary understanding gained from interviews with local government and the development sector to outline the working out of two cases studies including a new retail development (Ashburton) and a town centre revitalisation initiative (Timaru). Each emphasises the important roles played by developers in regional settlements and the need to find ways of harnessing their energy and commitment more effectively.

Keywords: Urban regeneration initiatives; local property entrepreneur

Urban economics

1. A comparison of the positive external effects of public and private sector led urban redevelopment (Session 2A)

K W Chau, Jiancong Liang
The University of Hong Kong, Hong Kong

Public sector led redevelopment is often implemented through government agencies that are empowered by law to acquire old properties for redevelopment. Such empowerment is especially important in areas dominated by multiple ownership buildings. These government agencies also have the mandate to improve the quality of the living environment of surrounding areas. In theory, public sector led redevelopment projects should be a net positive externality on the surrounding areas. However, such net positive externality might be compromised by how the agencies are funded. In addition, previous studies suggest that public sector led redevelopment projects can also destroy the real redevelopment option value of old properties in the vicinity. On the other hand, private sector initiated redevelopment projects have to rely on market forces. The scale of redevelopment is often hampered by the high transaction cost of land assembly. The redeveloped projects are often too small to exert any significant positive external effect on nearby properties. In addition, private developers are profit maximizers and will only concern about optimizing the value of the redevelopment projects. However, unlike public sector led redevelopment projects, the private sector ones do not exert negative impact on the real redevelopment option value of the old properties in the vicinity. Using empirical data in Hong Kong, this study evaluates whether private or public sector led redevelopment project has a stronger external impact on the living environment in the vicinity of the redevelopment project.

Keywords: Redevelopment, negative externality, high density, urban, unintended consequence

2. Heterogeneous traders and housing price dispersion – empirical evidence from Hong Kong (Session 6A)

Wai Hong Chan and K W Chau
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Price dispersion has been extensively studied in economic and finance literature, but woefully under-researched in housing market. This study aims to fill this research gap by examining the relationships between heterogeneous traders and housing price dispersion in the second-hand housing market. Traders in the housing market can be classified into informed, noise and liquidity traders according to their beliefs and amount of information possessed. This study develops hypotheses that explain the degrees of price dispersion by the composition of different types of traders. The unique features in the housing market including the availability to identify short term speculator (confirmor transactions), information asymmetry and the absence of short-selling market enable us to estimate changes in the composition of traders in the housing market. Empirical results from Hong Kong suggest that i) housing price dispersion increases with heterogeneous beliefs; ii) informed short-term speculators (informed traders) lowers housing price dispersion; iii) uninformed short-term speculators (noise traders) have no impact on housing price dispersion; iv) liquidity trading reduces housing price dispersion. These findings shed light on the causes of housing price dispersion in addition to the differences in the time on the market.

Keywords: Price dispersion, housing market, heterogeneous traders, Hong Kong

3. A convergence in utility functions: developer list prices and time-on-market (Session 6A)

Shereen Ng Si Qi, Ong Seow Eng, Davin Wang
National University of Singapore, Singapore

The pricing of units in new residential developments is more often an art rather than science. The price of a new unit that a willing-buyer is prepared to pay depends on the utility the buyer derives. If the list price for a new unit is higher than what a willing-buyer values it to be, the unit would remain unsold until such time another willing-buyer come along, or when the market conditions change. If the list price is too low, then the developer earns less than optimal profits. In an ideal first-best world, the developer would price all units close to the values conferred by willing-buyers. In the absence of explicit values / observed utility functions, we appeal to a hedonic price model approach where the values attached to property-specific attributes (location, amenities, size, etc) are inferred from past transactions. This baseline valuation will be used to estimate the over- or under-pricing of new units for selected condominium launches. The pricing deviation will then be mapped against the time new units take to sell (time-on-market).

Keywords: Pricing; residential developments; utility functions

4. City proximity, travel modes and house prices: The tale of three cities in Sydney (Session 2A) (Refereed)

Shanaka Heratha, Ajith Jayasekare
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House prices are partly explained by proximity to the urban centre. Generally, for simplicity, proximity to the urban centre is measured via straight-line distance (i.e. the distance 'as the crow flies'). However, distance between two points in space can be mainly conceptualised in three ways – straight-line distance, road-network distance and overland distance. Therefore, the particular distance measure that portrays 'reality' as closely as possible in a given study is context-specific. We examine implications of using different measures of distance on house price analyses using a dataset for Sydney. Spatial econometric techniques provide a mechanism to compare different distance measures in a robust manner. The disaggregated analysis of three regions in the city confirms distinct distance metrics exhibit different effects on house prices. Improving the modelling procedure taking into account the local context leads to the accurate measurement of 'city centre effects', informing policy makers on the actual extent of house price decline with an additional km of distance from the city centre. A separate section links these findings to prevalent travel modes in different parts of Sydney, and it suggests there seem to be three different cities in Sydney in terms of residents' preferred travel modes and their willingness to pay for 'proximity to the city centre'. Whilst revealing how residents' preferences for transport modes are reflected in house prices, these applications can guide in planning transport infrastructure projects (e.g. roads, highways and walking paths), establishing speed limits and improving public transport efficiency.

Keywords: Euclidean distance; road-network distance; overland distance; house price; travel mode; spatial econometrics

5. Effects of land incremental value allocation on rural operational construction land (ROCL) under market mechanism: case study in China (Session 6A) (Refereed)

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² University of Technology, Australia

The introduction of a market mechanism to convert rural collective land into urban construction land is being introduced in pilot studies in China, changing the single mode of governmental expropriation of the past. The new system allows rural collective economic organizations and members of the rural collective economy to participate in the allocation of land incremental value directly, replacing the former way of obtaining only the original use compensation from the government. This paper investigates the land incremental value allocation system of rural construction land under the market mechanism, for the purpose of understanding this new system, the model of land incremental value allocation, and the positive effects and shortcomings of this system. Three successful cases are applied for the analysis based on property right and land-rent theories. We have found that the new land incremental allocation system is beneficial to the collective economic organizations and members. Local government land adjustment charges to the transactions of rural construction land are appropriate for the transactions between local government and collective economic organizations. The level of charges on the transactions ranges from 16 to 20 percent. The share ownership quantification model (SOQM) of land incremental value allocation between the collective economic organizations and members is effective and beneficial to the development of rural collective economy and value-added of the long-term land appreciation share of their members.

Keywords: property right, land-rent theory, rural collective construction land; land increment value; share ownership quantification model, China

6. The determinants of housing affordability in the regions of Greater Sydney (Session 6A)

Mustapha Bangura, Chyi Lin Lee

Western Sydney University, Australia

In Australia, extensive studies on housing affordability and its determinants have been done at country, state and city levels. Few studies have investigated the determinants of housing affordability at a disaggregated level despite the existence of socio-economic and demographic disparities across cities such as Greater Sydney. This study departs from previous studies by examining the determinants of housing affordability in the different regions of Greater Sydney. Using data at Local Government Area (LGA) level obtained from ABS, Department of Infrastructure and Regional Development (DIRD), Housing NSW, and the Department of Employment (DoE) over 1991-2016, the study employed an Auto-Regressive Distributed Lag (ARDL) econometric model to examine the determinants of housing affordability for the different regions of Greater Sydney. The study finds that average personal income and house price are the key drivers of housing affordability across all regions. Housing supply is a significant determinant in low income regions such as western Sydney but insignificant in high income regions such as east and north regions. Low income regions are also more sensitive to income and price change than high income regions. The implications of the study have also been discussed.

Keywords: Greater Sydney; housing affordability; housing affordability determinants; regional, policy

7. Auctions, Tender and Negotiated Sales in the Recent Residential Property Market in Wellington (Session 2A)

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² University of Technology Sydney, Australia

³ University of Washington, United States

Using a Heckman two-step selection method, this paper compares three different sale methodologies used for residential properties in Wellington, New Zealand. The pairwise comparisons are: tender versus negotiation, auction versus negotiation, and auction versus tender, respectively. For each scenario, the choice of sale method, the determinants of selling prices, and sales method premiums were estimated. It was found that regardless of the sale method, a residential property will be sold for a higher price if it was newly built, had a larger floor area, had a water or broad view. A positive relationship between house prices and neighborhood factors was found in areas with fewer houses and older but wealthier residents. We also find that properties sold through auction yielded a price premium when compared to those sold through negotiation. Surprisingly, properties sold through tender yielded a premium when compared to either auction or negotiation sale methods with the highest premium found in the middle market price segments. This finding is in contrast with both revenue equivalence theorem which assumes that auctions and tender sales should show similar pricing outcomes and existing auction literature which has found sale discounts and premiums primarily on either end of the house price distribution. Additionally, an analysis of foreclosed house sales revealed a significant negative relationship between bank-owned houses and price, regardless of sale method.

Keywords: Auction; negotiation; premium; price determination; property prices; sales selection; tender

8. Modelling urban growth in the Colombo urban fringe, Sri Lanka (Session 2A)

KGPK Weerakoon

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The nature of urban growth is such that it moves to fringe areas changing non-urban uses to urban uses. It is a spatio-temporal process and a result of changes of different driving factors in the socio-economic, physical, and environmental sub systems that are directly linked with the main urban system. Deriving those driving factors is complex, but essential for urban planners and urban policy makers. Previously, urban scholars had considered those sub systems individually. However, these three sub systems directly influence the main urban system and consideration of all the driving factors in the three different sub systems together is necessary for modelling urban growth. There is a lack of studies, which have considered the effects of the urban sub systems on the fringe urban system, and this research aims to address this gap. Colombo urban fringe was chosen for the case study. In order to model the Colombo fringe growth and explore the relationship between urban growth and its driving factors, GIS based logistic regression modelling was used. The findings of the study highlighted the positive and negative influencing factors in terms of "where the growth should go?" and "how much of it should go?". Driving factors in the socio-economic, physical, and environmental sub-systems can exert their influence positively or negatively. Proximity to green areas, land value and population density were the most influential in stimulating urban growth in the Colombo urban fringe. The cumulative results of the various influences caused a unique pattern of growth in the Colombo urban fringe that is quite distinct from the pattern witnessed in other Asian countries.

Keywords: urban fringe, urban growth, urban sub system, main urban system, logistic regression modelling

9. Modelling of the investment impact of the properties renewal on GDP of the Slovak Republic (Session 7B)

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Slovak University of Technology in Bratislava, Slovakia

At present, Slovakia belongs to the fastest growing economies of the European Union, within which since the end of the global economic crisis the Slovak real estate market enjoys the sharpest growth. Despite the dynamic development in new housing construction, it needs to be said that the activity in the sector of the existing buildings still does not reach the necessary standard. The paper is focused on the properties renewal in the private and public sector. The authors see the biggest reserves just in the renewal of the existing buildings, while more than 600 thousand of residential properties need to be renewed and more than 15 thousand buildings - especially schools and hospitals, owned by the state or municipalities. The main aim is a quantitative analysis of the impact of modelled (simulated) investments into the properties renewal and its direct impact on the national economy of the SR. When modelling this impact of the investment on GDP, the authors proceed from two various economic methods. The first is the method of Keynes investment multiplier, which models what impact the investment has on the state economy. Just the flow of investments in the form of household savings, which will go to the properties renewal (especially residential) induces further positive effects on the state economy - on GDP, employment and increase in the production of companies. The second economic method is the production multiplier. Through it, the increased production in one sector of the national economy will influence the increase of the production in other sectors. Via two methods, the induced effects of this investment are investigated. The result is the quantification of financial sources put into the properties renewal on GDP of Slovakia. Outcomes gained from both above-used methods will be subsequently compared with selected foreign studies.

Keywords: Slovakia, real estate market, properties renewal, GDP, financial investments

10. The determinants of optimal statute of limitations for land-owners (Session 7B) (Refereed)

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In a recording title system a landowner faces two risks: the risk of a claim from a previously dispossessed owner and the risk of being dispossessed by adverse possession, squatting, or encroachment. In this study, we build a real options model to investigate the determinants of optimal statute of limitations, which balances the cost of receiving the claim from a past dispossessed owner more frequently against the benefit from less effort needed to expel squatters resulting from a longer statute of limitations. We find that a longer statute of limitations delays land development rather than speeds up (Miceli et al., 2003) or exhibits no effect (Baker et al., 2001). In addition, we find that a landowner will postpone development when the urban rents become more volatile. Consequently, the regulator should shorten the statute of limitations so as to reduce the likelihood for the landowner to be adversely possessed.

Keywords: Adverse possession, ownership risk, real options, squatting, uncertainty

Urban planning and design

1. Transportation infrastructure development for regional areas: implications for regions (Session 1A) (Refereed)

Ian Clarkson, Koorosh Gharehbaghi
RMIT University, Australia

Traditional urban development is perceived to be the most important expansion of the major economies. While the urban centres are the main source of economic activities, the regional areas also perform a significant role in aiding the nation's economy. Nonetheless, Transportation Infrastructure for regional areas is seemingly less important and thus is neglected. Globally, governments contend that their highest priorities are necessary for the ever expanding cities and their subsequent urban metropolis. However, more recently governments have announced the development or upgrade of significant Transportation Infrastructure for regional areas. Not only would such a decision enhance the nation holistically, but ultimately it may also further benefit the surrounding regions. It has generally been implied that the benefits of such infrastructure development outweigh the drawbacks; however such a proposition is usually developed on a case-by-case basis. A key strategy of Transportation Infrastructure Development in Regional areas is the concept of nation building schemes or the like. Furthermore, as the basis of the Australian Nation building program, approximately eight billion Australian dollars will be committed to building an inland Transportation Infrastructure freight rail line from Melbourne to Brisbane. This inland rail project will instigate a new benchmark for long haul freight competencies. Such high competence would increase the efficiency and reliability of inland rail systems. Moreover, the proposed Melbourne and Brisbane rail project services the export of agricultural and mineral resources from remote regions. As the basis of a case study, this paper will investigate the Inland Rail Transportation system linking the Melbourne and Brisbane ports. In doing so, implications to the surrounding properties in a region adjoining such a project will be carefully explored.

Keywords: transportation, infrastructure

2. Unforgiving foliage: the negative impact of gardens in the suburbs (Session 1A)

Lucy M. Craddock¹, Clive M.J. Warren²
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² University of Queensland, Australia

Chapter 3 of the Neighbourhood Disputes (Dividing Fences and Trees) Act 2011 (Qld) imposes rights and obligations on persons who are 'tree keepers'. Where the neighbours cannot resolve the matter themselves, the Tribunal can impose an order obligating the current owner (and affecting future owners) to a schedule of ongoing maintenance of remaining trees. What impact that has for land value generally has received little if any consideration. However, as urban density increases, there is a need to understand what impact these obligations will have for future developments and residents. The authors review decisions since the commencement of the Act and offer insight as to how future problems may be ameliorated.

Keywords: trees, valuation, disputes, master planned communities

3. Ground lessee insights on ground leasehold issues (Session 1A)

Alan Pope, Graham Squires, Martin Young
Massey University, New Zealand

Lived ownership experiences provide direct insight of property leaseholder concerns. Emerging of most prominence is an argument that due to heuristics, the propensity for ground rental review outcomes can be misestimated at the time of purchase. This exposes ground lessees to adverse wealth effects, and implies that ground leasehold values are prone to greater uncertainty. To explore this adverse wealth effect and value uncertainty, twenty-five semi structured interviews were conducted with residential ground lessees in New Zealand during 2016. In formulating decisions as to capital values, ground lessees do not behave in accord with 'normal' expectations, but succumb to the availability and affect heuristics. Beyond this, negative perceptions of rent reviews are exacerbated by arbitration processes that ground lessees perceive as being expensive and adversarial. The greater uncertainty of capital values is reflected in the opportunities for some speculators to exploit market mispricing. The findings from these interviews informs the design of further experimental investigation, implementation of which is ongoing.

Keywords: affect heuristic; availability heuristic; behavioural research in property; ground leasehold; rent review

4. Capturing the value of an electric linear ferry service (Session 1A) (Refereed)

Steven Boyd
University of the Sunshine Coast, Australia

The Noosa River Glider is a public transport solution to enable a modal shift from car based transport between Noosa riverside business centres. By making riverside business centres more accessible there will be a measurable increase in visitation, trade and economic worth. Through innovative taxation strategies these increases may support the ongoing operation of an electric linear ferry service. The problem relates to how the value of the proposed ferry service is captured and applied to offset capital and operating expenses. A new system of taxation, or levy, may be acceptable to riverside traders, in expectation of increased in trade. The same cannot be said for the broader community, many of who may not see increases in visitation, trade and economic worth as positive outcomes for their region. This research commences with a review of value capture approaches to fund infrastructure projects in Australia. The investigation extends to consider the Land Value Tax technique and its applicability to the current taxation and rating schemes in the Noosa shire. Subsequent modelling demonstrates how land value increases are passively recaptured through existing Land Tax and rates mechanisms. The impact and recovery of infrastructure expenditure related to the NRG service is then evaluated with the aid of discounted cash flow analysis. Emerging findings support the Henry Tax Review assertion that well-structured taxes on land and natural resources are a highly efficient means of raising revenue.

Keywords: Value capture, transport infrastructure, electric linear ferry, land tax

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Notes

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