

# School of Architecture & Urban Design

## PhD Project Places 2020

**SCHOOL OF ARCHITECTURE & URBAN DESIGN**  
[PROJECTS Summary](#)

**SCHOOL OF ARCHITECTURE & URBAN DESIGN**  
[PLACES Summary](#)

### **Important information for Applicants**

**Prospective applicants for PhD PROJECTS / PLACES are required to submit an Expression of Interest (EOI) through the [RMIT University Application Service](#). Based on this EOI applicants will be invited to undertake a Pre-Application Interview prior to formally submitting an application.**

This EOI will consist of:

- Personal details
- Contact details
- Program details and proposed commencement date
- Research proposal
- Nominated 'Project' or 'Place'
- Qualifications including transcripts and dissertation/thesis

Further information about the application process and this online system can be found through [this link](#).

School of Architecture & Urban Design

HDR PROJECTS Summary

#	School Discipline(s)	PROJECT	Supervisors	Field of Research
PR1	Landscape Architecture	<a href="#">Design for Climate Resilience</a>	Prof Esther Charlesworth Prof John Fien A/Prof Mauro Baracco Dr Leila Irajifar (Associate Supervisor)	Design thinking / sustainable design 120199
PR2	Landscape Architecture	<a href="#">Design and Designers in Post-Disaster Planning and Recovery</a>	Prof Esther Charlesworth Prof John Fien Dr Leila Irajifar (Associate Supervisor)	Sustainable design 120199
PR3	Landscape Architecture	<a href="#">Design for Social Change</a>	Prof John Fien Prof Esther Charlesworth Dr Leila Irajifar (Associate Supervisor)	Sustainable design 120199
PR4	Landscape Architecture	<a href="#">Landscape Architecture Practice Research in Digital Techniques</a>	A/Prof Charles Anderson Dr Heike Rahmann A/Prof Katrina Simon	Landscape Architecture 120107
PR5	Landscape Architecture	<a href="#">Landscape Architecture Practice Research into Metropolitan Melbourne and Regional Victoria Cultures and Economies</a>	A/Prof Charles Anderson Dr Heike Rahmann A/Prof Katrina Simon A/Prof Mauro Baracco	Landscape Architecture 120107
PR6	Landscape Architecture  Architecture	<a href="#">The Design, Use and Perception of Urban Landscapes</a>	A/Prof Charles Anderson Dr Heike Rahmann A/Prof Katrina Simon Dr Judy Rogers A/Prof Quentin Stevens	Urban Design 120199  Landscape Architecture 120107  Architectural Design 120101
PR7	Architecture	<a href="#">European emigre architects in post-war Melbourne: narratives of place, exile and translation</a>	Prof Harriet Edquist Prof Phillip Goad Dr Christine Phillips	Architectural History and Theory 120103  Architecture not elsewhere classified 120199
PR8	Architecture  Structural Engineering	<a href="#">Design Robotics: Robotic Metal Fabrication in Architectural Design</a>	A/Prof Roland Snooks Prof Yi Min (Mike) Xie	Architectural Design 120101  Structural Engineering 090506
PR9	Architecture	<a href="#">Designing New Urban Models</a>	A/Prof Graham Crist Prof Martyn Hook A/Prof Paul Minifie A/Prof Katrina Simon A/Prof Mauro Baracco	Architectural Design 120101  Landscape Architecture 120107

PR10	<p>Architecture</p> <p>Landscape Architecture</p>	<p><a href="#">Indigenous Architecture and Placemaking</a></p>	<p>A/Prof Elizabeth Grant  Prof John Fien  Pros Esther Charlesworth  Prof Martyn Hook</p>	<p>Urban Design  120199</p> <p>Landscape Architecture  120107</p> <p>Architectural Design  120101</p> <p>Aboriginal and Torres Strait Islander  Policy  160501</p> <p>Community Planning  120501</p>
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School of Architecture & Urban Design

HDR PLACES Summary

	School Discipline(s)	PLACE	Supervisors	Field of Research
PL1	Architecture Interior Design Landscape Architecture	<a href="#">Reflective Industry Practice in Architecture, Interior Design and Landscape Architecture</a>	<p><u>Architecture Supervisors</u> A/Prof Mauro Baracco A/Prof Richard Black A/Prof Graham Crist Prof Sand Helsel Prof Martyn Hook Dr Anna Johnson A/Prof Paul Minifie Prof Vivian Mitsogianni Dr Jan van Schaik</p> <p><u>Interior Design Supervisors</u> A/Prof Suzie Attiwill Dr James Carey Dr Roger Kemp</p> <p><u>Landscape Supervisors</u> A/Prof Charles Anderson Dr Anton James A/Prof Katrina Simon</p>	Architecture 120101  Interior Design 120106  Landscape Architecture 120107  Urban Design 120199
PL2	Architecture Interior Design Landscape Architecture	<a href="#">Generative Practice Research in Architecture, Interior Design and Landscape Architecture</a>	<p><u>Architecture Supervisors</u> Prof Alisa Andrasek Prof Sand Helsel Dr Anna Johnson Dr Christine Phillips Dr Michael Spooner A/Prof Roland Snooks Dr Jan van Schaik Dr Leanne Zilka A/Prof Mauro Baracco</p> <p><u>Interior Design Supervisors</u> A/Prof Suzie Attiwill Dr James Carey Dr Roger Kemp Dr Olivia Hamilton</p> <p><u>Landscape Supervisors</u> A/Prof Charles Anderson Dr Kate Church Dr Bridget Keane Dr Heike Rahmann Dr Judy Rogers A/Prof Quentin Stevens A/Prof Katrina Simon</p>	Architecture 120101  Interior Design 120106  Landscape Architecture 120107  Urban Design 120199

## SCHOOL OF ARCHITECTURE & URBAN DESIGN

### PR1 HDR PROJECT:

#### Design for Climate Resilience

### PROJECT Description

Resilience is not just the ability to “bounce back” and withstand disruption; it is a characteristic of communities and settlements that have developed the social capital, adaptive capacity and hardened infrastructure that can minimise exposure and sensitivities to climate change induced disaster risks. Like all high-level concepts, however, translating resilience into practice requires frameworks and strategies that relate basic scientific understanding to local environmental, social, economic and political conditions.

Numerous such frameworks have been developed and applied, e.g. through the work of ISET, Asian Cities Climate Change Resilience Network, Arup, the 100 Resilient Cities movement and Care International’s community-based adaptation programme. Many of these are grounded in the systems thinking that underpin socio-ecological research. However, none has sought to apply design thinking to climate challenges.

Design thinking is a “buzzword” in the worlds of product and service design, where designers look carefully at the interface between user experience and product design. This is the design thinking tradition developed by IDEO and the Stanford D.School. However, the tradition is much older. For example, design thinking has been part of architecture and engineering for millennia.

This older approach builds upon systems analysis and community/user engagement to explore alternative conceptualizations and explanations of the problem and then uses foresight and design techniques to explore and evaluate alternative solutions, which when enacted, are always treated as “experiments” in the social-ecological tradition of adaptive management.

The research will build a conceptual model for applying design thinking in building climate resilience and apply it in case studies in settlements/cities relevant to the scholar’s areas of regional interest.

### Relevant literature

Clune, S. et al (2015) *Design-led Decision Support for Regional Climate Adaptation*.

VCCAR Report.<<http://www.vcccar.org.au/design-led-decision-support-for-regional-climate-change>>

Geiss, D. (2000) By design: The disaster resistant and quality-of-life community, *Natural Disaster Review*, August, 150-160.

Ling, T. & Chiang, Y. (2018) *Well-being, health and urban coherence-advancing vertical greening approach toward resilience: A design practice consideration. Journal of Cleaner Production*, 182, pages 187-197.

Tyler, S. & Moench, M. (2012) A framework for urban climate resilience. *Climate and Development*, 4(4),

Zambrano-Barragán, C. (2015) *Decision Making and Climate Change Uncertainty: Setting the Foundations for Informed and Consistent Strategic Decisions*. World Resources Institute. <<http://www.wri.org/our-work/project/world-resources-report/decision-making-and-climate-change-uncertainty-setting>>

Baracco, M. & Wright, L. (eds) (2018) *Repair: Architecture actively engaging with the repair of the places it is part of*, Actar Publishers, Barcelona and New York.

### Supervisors

Prof Esther Charlesworth

Prof John Fien

Dr Mauro Baracco

### Associate supervisors

Dr Leila Irajifar

## SCHOOL OF ARCHITECTURE & URBAN DESIGN

### PR2 HDR PROJECT:

#### Design and Designers in Post-Disaster Planning and Recovery

### PROJECT Description

Recovering from disasters is a challenging process. Disasters create greater pressures than are found in 'normal' settings: heightened urgency; the need for rapid reaction and speedy results; media scrutiny; a multiplicity of national, local and international actors; and resource scarcity and few dedicated funding sources to meet recovery needs. Responding to these demands requires a clear road map, an efficient, well-organised process, knowledge gained from past failures and successes, rapid decision-making and implementation capabilities, and skilled coordination.

This research project will assess the range of roles that architects, and other built environment professionals can play in managing this range of tasks and constraints. In research on post-conflict reconstruction, Charlesworth has described these roles as the "hero", "pathologist", "educator" and "social reformer". What roles have, can and ought architects play in post-disaster recovery, given the growing recognition that recovery is not just about physical outcomes but is a social process aimed at long-term sustainable development as well? Selected case studies of architects engaged in post-disaster recovery will be undertaken and the results of interviews and recovery plans and designs analysed through critical discourse analysis in order to answer questions such as these.

### Relevant literature

Awotona, A. (2017) *Planning for community-based disaster resilience worldwide*. Routledge, London.

Charlesworth, E. (2006) *Architects without frontiers: War, reconstruction and design responsibility*. Architectural Press, Oxford.

Charlesworth, E. (2014) *Humanitarian architecture: 15 Stories of architects working after disasters*. Routledge, London.

Charlesworth, E & Ahmed, A. (2015) *Sustainable housing reconstruction: Designing resilient housing after disaster*. Routledge, London.

Fan, L. (2013) *Disaster as opportunity? Building back better in Aceh, Myanmar and Haiti*, Overseas Development Institute, London.

Geiss, D. (2000) *By design: The disaster resistant and quality-of-life community*, *Natural Disaster Review*, August, 150-160.

### Supervisors

Prof Esther Charlesworth

Prof John Fien

### Associate supervisors

Dr Leila Irajifar

## SCHOOL OF ARCHITECTURE & URBAN DESIGN

### PR3 HDR PROJECT:

#### Design for Social Change

### PROJECT Description

Design for social change is a significant movement in the design professions at the present time. Major projects can be identified in the areas of design for democracy, design for diversity and inclusion, design for affordable housing, design for conservation (ecological design), and design for community development. Often seen, at least in the past, as non-profit work, design for social change now encompasses working with social enterprises, NGOs, foundations, corporations and governments and includes concepts and processes such as social innovation, collaborative systems, co-design, co-production, and systemic change.

A range of questions for research underpin the design for social change movement, however. In what ways and under what conditions can design and design thinking contribute to social change most effectively? How can collaboration across the spectrum of design methodologies and genres generate deeper and longer-lasting solutions? How could such collaborations be organized, funded, and implemented? How can the effectiveness of such collaborations be measured? What are the range of metrics and alternatives to numerical measures) for gauging sustained impact? How can programs and solutions be designed at a scale commensurate with the scale of the actual problems being confronted? What discourses within the design professions facilitate and/or constrain the practice of design for social change? In what ways can design education contribute to positive discourses and discursive practices in design for social change?

Research may be undertaken through both thesis and/or practice-based approaches, with lead supervision offered by staff from the Humanitarian Architecture Research Bureau with expertise in design for post-conflict and post-disaster settings, design with remote Indigenous communities, sustainability policy and practice, social change processes and public participation. Co-Supervisors from other Schools are available as appropriate.

### Relevant literature

Adendroth, M. and Bell, B. (eds) (2015) Public Interest Design Practice Guidebook: SEED Methodology, Case Studies, and Critical Issues. Routledge.

Bell, B. and Wakeford, K. (eds) (2008) Expanding Architecture: Design as Activism, Metropolis Books.

Berman, D. (2013) Do Good Design: How designers can change the world, 2nd edition, AIGA Press / New Riders.

Charlesworth, E. (2006) Architects without frontiers: War, reconstruction and design responsibility. Architectural Press.

Charlesworth, E. (2014) Humanitarian architecture: 15 Stories of architects working after disasters. Routledge.

Dentrell, W. (2012) Designing for Social Change, Design Observer. Online at <https://designobserver.com/feature/designing-for-social-change/33188>

Ellison, C., Smith, B., and Stowell, S. (eds) 2016) Design for People Stories About How (and Why) We All Can Work Together to Make Things Better, Metropolis Books.

Harvey, D. (2005) The New Urbanism and the Communitarian Trap: On Social Problems and the False Hope of Design, in Saunders, W. (ed.) Sprawl and Suburbia, University of Minnesota Press, 21-26.

Sinclair, C. and Stohr, K. (ed.s) (2006, 2012) Design Like You Give a Damn, Vols 1 and 2. Thames Hudson

### Supervisors

Prof Esther Charlesworth

Prof John Fien

### Associate supervisors

Dr Leila Irajifar

## **SCHOOL OF ARCHITECTURE & URBAN DESIGN**

### **PR4 HDR PROJECT:**

#### **Landscape Architecture Practice Research in Digital Techniques**

### **Project Description**

Landscape architectural practice has a long history of parallel adoption and adaptation of technologies of visualisation from related fields - for example landscape painting, cartography, architecture, and environmental science. With the integration into landscape architectural practice, these tools are modified and extended, and their limitations explored. Advancements in digital technology now provide new opportunities for the development of specific design techniques that can extend beyond visualisation and provide greater opportunities within the field of landscape architectural practice.

This project seeks engagement with a range of tools within the broader field of generative practice to explore new design techniques that operate between modes of observation and spatial formation. These may take the form of explorations around parametric modelling, simulated environments and material modelling, workflow, digital prototyping and fabrication.

Within this scope projects would be developed within the candidate's specific area of expertise and relevant sites and may be in partnership with appropriate stakeholders.

Applicants are sought to contribute to the Landscape Architecture discipline; to make links with RMIT's Enabling Capability Platforms priority areas; and build emerging communities of Landscape Architecture and creative practice.

### **Relevant literature**

Cantrell, B., & Yates, N. B. (2012). *Modeling the environment: Techniques and tools for the 3D illustration of dynamic landscapes*. Hoboken, NJ: John Wiley.

Walliss, J., & Rahmann, H. (2016). *Landscape architecture and digital technologies: Re-conceptualising design and making*. Abingdon, Oxon: Routledge.

<https://practice-research.com/>

### **Supervisors**

A/Prof Charles Anderson  
Dr Heike Rahmann  
A/Prof Simon

#### Associate supervisors

Dr Kate Church  
Dr Bridget Keane  
Dr Yazid bin Ninsalam  
Dr Ata Tara

## **SCHOOL OF ARCHITECTURE & URBAN DESIGN**

### **PR5 HDR PROJECT:**

**Landscape Architecture Practice Research into Metropolitan Melbourne and Regional Victoria cultures and economies**

### **PROJECT Description**

The transformation of landscapes related to processes of production and extraction, associated habitation patterns, logistics and infrastructures highlight the entangled conditions between culture, economy, environment and settlement. 'Landscape' is a primary ground where the implications of these processes are manifested. To respond to this complexity there is a need to expand on existing landscape architectural design strategies and approaches that can be fragmented, towards techniques that cut across these issues at multiple scales and work in collaboration with numerous stakeholders (local communities, government bodies and industries).

This project incorporates both generative and applied research to explore the intersection between the economic, environmental and cultural dynamics of spatial production. Situated in Metropolitan Melbourne and regional Victoria, the research engages with the politics of urban and rural transformation through landscape architectural practice and modes of advocacy. The research focus may include Transitional Economies - collaborations with community and stakeholders; Disrupted Landscapes - temporal / dynamic master planning; and Landscape driven development models, whilst incorporating reflection on influences, implications and applications within the wider global context.

Within this scope projects would be developed within the candidate's specific area of expertise and relevant sites and may be in partnership with appropriate stakeholders.

Applicants are sought to contribute to the Landscape Architecture discipline; to make links with RMIT's Enabling Capability Platforms priority areas; and build emerging communities of Landscape Architecture and creative practice.

### **Relevant literature**

Orff, K. (2016). *Toward an urban ecology*. NY, NY: The Monacelli Press.

Mauro Baracco (project CI), *Regenerated Towns in Regenerated Nature: Projects and Strategies for the Rehabilitation of Urban Environments, Landscapes and Economies in West Wimmera, Australia*. <http://www.townsandnature.com/>

### **Supervisors**

A/Prof Charles Anderson

A/Prof Mauro Baracco

Dr Heike Rahmann

A/Prof Katrina Simon

#### Associate Supervisors

Dr Kate Church

Dr Bridget Keane

Dr Ata Tara

## **SCHOOL OF ARCHITECTURE & URBAN DESIGN**

### **PR6 HDR PROJECT:**

#### **The Design, Use and Perception of Urban Landscapes**

### **PROJECT Description**

In alignment to current staff research projects funded by the Australian Research Council and international agencies, opportunities are available for PhD places for candidates to explore various aspects of the design, use and perception of urban landscapes, across a range of contexts and scales, through both thesis- and practice-based approaches. Proposed projects will align the applicant's interests and experience to a supervisory team and an existing cohort of HDR candidates who have particular expertise in research projects that explore the following:

Contexts: urban open spaces, including waterfronts, quasi-public settings, marginal spaces, creative industry clusters, and urbanism in East Asia

Critical themes: multi-sensory perception, social interaction and cohesion, behavioural controls, informal and temporary urbanism, landscape urbanism, managing urban space, memory and heritage, national identity methods: spatial analysis, site analysis, behavioural observation, typo-morphological analysis, interviews, Actor-Network Theory, Assemblage Thinking, research through design.

This research area sits at the intersection of the various practice disciplines that shape urban environments (landscape architecture, urban design, architecture, interior design, urban planning, public art), and analytical approaches drawn from the social sciences and cultural studies, including geography, sociology, psychology and history.

PhD candidates will be enrolled within RMIT's School of Architecture and Urban Design, with a supervisory team providing broad expertise across multiple disciplines. The School's twice-yearly Practice Research Symposium provides opportunities for regular, structured presentation, critique and advancement of the ongoing research, which will be informed by wider school research into cutting-edge design practice approaches.

Applicants' projects will also build wider links across RMIT, particularly through its Enabling Capability Platforms (ECPs): with the Urban Futures ECP, with its focus on how the design and management of cities and their public realm can be more liveable and sustainable, and with the Design and Creative Practice ECP, by informing and engaging with creative practice in playful experience of place, and innovative approaches to designing for urban living and social sustainability.

### **Relevant literature**

Stevens, Q., *The Ludic City: Exploring the potential of public spaces*, London, Routledge, 2007. Stevens, Q. and Franck, K., *Memorials as Spaces of Engagement: Design, Use and Meaning*, New York, Routledge, 2015.

Aelbrecht, P. and Stevens, Q. (eds) *Public Space Design and Social Cohesion: An International Comparison*, New York, Routledge, 2018.

Desfor, G., Laidley, J., Stevens, Q. and Schubert, D. (eds) *Transforming Urban Waterfronts: Fixity and Flow*, New York, Routledge, 2010.

### **Supervisors**

A/Prof Charles Anderson

Dr Heike Rahmann

A/Prof Katrina Simon

Dr Judy Rogers

A/Prof Quentin Stevens

#### Associate Supervisors

Dr Kate Church

Dr Bridget Keane

Dr Ata Tara

## SCHOOL OF ARCHITECTURE & URBAN DESIGN

### PR7 HDR PROJECT:

#### European Emigre Architects in Post-War Melbourne: Narratives of Place, Exile and Translation

### PROJECT Description

There has been increasing interest over the past two decades on the contribution and impact of European émigré architects in Australia. For the most part, historians have focused on architects trained in European modernism who were exiled or forced to emigrate with the rise of National Socialism in Germany and its occupied territories prior to World War II or, as a consequence of Communist invasion in the case of Eastern Europe after the war. By and large these people are viewed as 'European', regardless of their nationality, place of education or professional experience prior to emigration. Ronnen Goren's 1993 exhibition *45 Storeys. A Retrospective of work by Melbourne Jewish architects from 1945* at the National Gallery of Victoria was one of the first projects to bring the work of émigré architects to public attention. While Goren's group was identified as Jewish, Roger Butler's *The Europeans. Émigré artists in Australia 1930-1960* (1997) and Rebecca Hawcroft's *The Other Moderns. Sydney's forgotten European design legacy* (2017) grouped their subjects under the adjective 'European'.

The recovery of the legacy of émigré architects has enriched Australia's dominantly Anglophone architectural history, and several émigrés have been the subject of individual studies but there are problems inherent in the still-current use of the collective adjective 'European'. It encompasses and tends to homogenise people from different countries and experiences. A similar problem has been identified with the prevalent use of 'British' in architectural history, which is shorthand for, and usually conflates English, Scottish, Irish and Welsh. In an effort to unpick this category and examine the Scottish contribution to imperial architectural history, Alex Bremner recently noted that the use of the term 'British' has led over the years to such architecture being seen as representing an undifferentiated cultural and political homogenate (i.e. 'Britain', and more generally 'the West').

This project similarly seeks to unpack the identities that exist within the term 'European' and dismember the 'cultural and political homogenate' it implies. It is based in the RMIT Design Archives with its rich collections of material relating to émigré architects and designers. It seeks to uncover and use as the ground point of design exploration in either thesis or project format the work of Viennese (Ernest Fooks, Kurt Popper, Frederick Sterne), Czech (George Kral), German (Frederick Romberg, Gerhard Herbst, Wolfgang Sievers) or Russian (Anatol Kagan) émigrés and interrogate the ways in which personal histories, cultures, narratives and competencies were translated and modulated in and by their new environments.

### Relevant literature

G. A. Bremner, "The expansion of England? Rethinking Scotland's place in the architectural history of the wider British world",

<https://arthistoriography.files.wordpress.com/2018/05/bremner.pdf>

Roger Butler, ed., *The Europeans. Émigré artists in Australia 1930-1960* (Canberra: National Gallery of Australia, 1997)

Alison Clarke and Elana Shapira, eds., *Émigré Cultures in Design and Architecture* (London: Bloomsbury, 2017)

Harriet Edquist, Frederick Romberg. *The Architecture of Migration 1938-1975* (Melbourne: RMIT University Press, 2000)

Harriet Edquist, Ernest Fooks, *Architect* (Melbourne: School of Architecture & Design, RMIT, 2001)

Harriet Edquist, Kurt Popper: *From Vienna to Melbourne Architecture 1939-1975* (Melbourne: School of Architecture & Design RMIT, 2002)

*Vienna to Melbourne Architecture 1939-1975* (Melbourne: School of Architecture & Design RMIT, 2002)

Helen Ennis, Wolfgang Sievers (Canberra; National Library of Australia, 2011)

Philip Goad and Julie Willis, eds, *The Encyclopedia of Australian Architecture* (Cambridge, UK: Cambridge University Press, 2011) Ronnen Goren ed., *45 storeys. A retrospective of work by Melbourne Jewish Architects from 1945* (Melbourne: Access Gallery, National Gallery of Victoria 1993)

Rebecca Hawcroft, ed., *The Other Moderns. Sydney's forgotten European design legacy* (Sydney: New South Publishing, 2017).

Simon Reeves, *Gentle Modernist. The nine lives of Anatol Kagan* (Melbourne: Vivid Publishing, 2017)

RMIT Design Archives Journal, various issues, <https://www.rmit.edu.au/about/our-locations-and-facilities/facilities/research-facilities/rmit-design-archives/research/rmit-design-archives-journal>

### Supervisors

Prof Harriet Edquist  
Prof Phillip Goad  
Dr Christine Phillips

## **SCHOOL OF ARCHITECTURE & URBAN DESIGN**

### **PR8 HDR PROJECT:**

**Design Robotics: Robotic Metal Fabrication in Architectural Design**

#### **PROJECT Description**

This research will explore the relationship between robotic fabrication techniques and mass-customised or non-standard geometries for the development and fabrication of metal facades.

The volatile nature of metals within fabrication processes necessitates the use of vision systems and feedback in robotic fabrication techniques. Consequently, this research trajectory will integrate vision systems and real-time robotic control systems developed in collaboration with QUT with a number of metal fabrication processes. The research will explore the relationship between emerging metal fabrication techniques, and more traditional techniques which can be automated, such as welding.

The digital aspect of this research will focus on both the logic of real-time robotic feedback and algorithms used in the resolution and optimisation of geometry with respect to fabrication and structural constraints. These generative algorithmic approaches will include the use of multi-agent algorithms and machine learning. The complexity of material distribution of metal deposition processes enable the use of highly optimised geometry, which will be developed through structural optimisation.

This PhD research will be undertaken through the Applied Practice mode. The research will be collaborative in nature, working within a research group led by Roland Snooks that is exploring emerging algorithmic design and robotic fabrication paradigms. The generative design research will be developed through design projects where the architectural implications of this research will be tested and explored.

#### **Relevant literature**

Gramazio, Fabio, and Matthias Kohler. *The Robotic Touch*. Park Books.

Daas, M. and Wit, A. (n.d.). *Towards a robotic architecture*.

Willmann, J. (n.d.). *Robotic Fabrication in Architecture, Art and Design 2018*.

*Towards an automated robotic arc-welding-based additive manufacturing system from CAD to finished part - UoW (2016)*

*Study on Arc Welding processes for High Deposition Rate Additive Manufacturing - Conference on Electro Physical and Chemical Machining (2018)*

#### **Supervisors**

A/Prof. Roland Snooks

Prof. Yi Min (Mike) Xie

## **SCHOOL OF ARCHITECTURE & URBAN DESIGN**

### **PR9 HDR PROJECT:**

#### **Designing New Urban Models**

### **PROJECT Description**

This research aims to propose and produce designed propositions that can serve as new models for growing cities.

There is an enormous amount of research surrounding cities. Approaches deriving from the disciplines of sociology, politics, economics, planning, finance and engineering all offer important perspectives on cities and their problems all offering formulations as to how the operation and inhabitation of cities might be improved. Design, through its core of envisioning particular material proposals, offers a method of researching cities that synthesises a range of desiderata, and testing insights proffered by other disciplines. A designed proposal, in its particularity, must judiciously weigh competing interests, constraints and objectives. Design offers a uniquely powerful method of testing the consequences following from new proposals for city organisation and formation.

The history of cities shows us that cities progress through an enchaind series of model designs and accompanying theoretical proposals and narratives in response to changing technical, economic and social forces. Creative response to these drivers is able to offer new kinds of cities with qualities that exceed the imperatives of their formation. This research will proceed through a series of engaged projects, in conjunction with industry partners. It will assemble technical and conceptual tools, including data-driven urban simulations, appropriate to addressing those problems. It will produce a series of particular designed proposals and from these derive new applicable knowledge by analysing, reflecting on and disseminating those proposals

### **Supervisors**

A/Prof Mauro Baracco

A/Prof Graham Crist

Prof Martyn Hook

A/Prof Paul Minifie

A/Prof Katrina Simon

## SCHOOL OF ARCHITECTURE & URBAN DESIGN

### PR10 HDR PROJECT:

#### Indigenous Architecture and Placemaking

#### PROJECT Description

There is a global rise in scholarly work and architectural practice in a field that barely two decades ago was paid little attention. Architecture and placemaking plays an important role in Indigenous peoples' experiences of cultural tradition and modernity, and may be categorized into several streams related to Indigenous architecture and placemaking within both national and international settings.

**Vernacular architecture (ethnoarchitecture):** The legacy of colonisation and its ongoing structures has continuing effects across all aspects of Indigenous cultures, and architecture is no exception. Much of the architecture that existed at colonisation was destroyed, often without the colonising forces recording the types, materials, usage and importance of the buildings that had been constructed for millennia. Prior to the scholarship in architectural history, it was asserted, in effect, that Indigenous architectural cultural expression considered worthless as 'not architecture', or at least not 'real' architecture. Architecture is, of course, one of the key cultural activities that asserts a collective identity and is practised by all groups of people across the world. Like all cultures, Indigenous peoples have always been architectural—people design and build to accommodate, celebrate and sustain their cultures, economies and families—and given the opportunity, architectural cultures are retained. There is a strong interest in continuing the body of research into documenting and reviving Indigenous architectural knowledges.

**Contemporary Indigenous architecture and placemaking:** An important consequence of colonisation has been the imposition of culturally inappropriate architectures—based on dominant settler cultural values—on Indigenous communities across the world. The full impact of culturally inappropriate buildings and spaces on Indigenous cultures is still being developed as a field of scholarship, though the lack of 'fit' between Indigenous cultures and many of the buildings within which they live or work is clear. Indigenous communities experience ongoing problems with buildings they occupy including household crowding, building designs that are incompatible with Indigenous cultures and assumptions that Indigenous communities will assimilate into Western housing and other buildings such as educational and healthcare settings. In addition to poor cultural fit, many buildings for Indigenous peoples have had poor quality construction and environmental health standards, compared to general community standards in their country, and have other problems such as excessive operating costs or insecure tenure. Building designs that incorporate the socio-spatial and other cultural needs of Indigenous peoples should be readily available. Such issues are of major policy concern in Australia within the context of Closing the Gap.

There are a growing number of contemporary architectural projects across the world by, with and for Indigenous peoples, who wish to claim, reclaim and revitalise the built environment, and to create places and spaces that are congruent with and reflective of Indigenous lifestyles, histories, cultures and communities, and that celebrate Indigenous identity/s. Much work is needed on the extent to which such culturally responsive architectural projects contribute to the well-being (in its widest sense) of Indigenous peoples and the conditions under which success may be achieved.

There is also a growing discourse related to 'Indigenous architecture' is, or might be. There are of course many answers to this and discourse on this topic is welcomed. Many contemporary Indigenous architectural designs incorporate traditional Indigenous architectural knowledge, through the accommodation of important social constructs, the use and format of particular materials or artworks, symbols, colours or patterns, and the creation of particular landscapes, into which the architecture is incorporated. Though there are myriad ways in which these links with traditions are achieved, the philosophical and personal approach taken by the architect is individual and often highly dependent on the input of the Indigenous client/s. Indigenous architecture is, for some, architecture that is designed by Indigenous peoples and that incorporates a strong consideration of Indigenous culture. This recognises the importance of Indigenous peoples reclaiming and controlling architecture once more, and acknowledges the term 'Indigenous' as belonging to the author of the design, not to the function of the building or location within an Indigenous community. These approaches need to be documented.

**Indigenous Placemaking:** The inclusion of Indigenous peoples in civic landscapes contributes to their spiritual and cultural renewal and contemporary identity, and to the whole community's sense of self and to the process of reconciliation. This has the potential to provide a gateway to a different way of understanding place which includes Indigenous perspectives and could, symbolically, contribute to the decolonisation of Indigenous people. An inter-related issue for the colonising culture is reconciliation with the Indigenous concepts of Country, in the sense of an intimate sense of belonging and connectedness of spirit through an understanding of Indigenous cultural landscapes, an issue which this paper explores. Research on the facilitation of further Indigenous inclusion and of re-imagining ways of representation is encouraged.

#### Relevant literature

- Brown, D. (2009). *Maori Architecture: From fale to whareniui and beyond*. Auckland: Raupo Penguin.
- Grant, E., Greenop K., Refiti, A. L. & Glenn, D. (eds). (2018). *The International Handbook of Contemporary Indigenous Architecture*. Singapore: Springer.
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## SCHOOL OF ARCHITECTURE & URBAN DESIGN

### PL1 HDR PLACE:

Reflective Industry Practice in Architecture, Interior design and Landscape Architecture

### PLACE Description

A Reflective Industry Practice mode of research involves practitioners operating largely in a professional environment, generally with a peer-reviewed and award-winning body of work developed over 10 years or more. These practitioners have already developed recognised mastery in their field. They are invited to reflect upon the nature of that mastery within a critical framework, engaging them in reviewing the nature of their mastery, defining its enabling structures, its knowledge bases, and the implications of the nexus between these for emerging forms of research-led practice. They conclude by speculating through design on the nature of their future practice. They demonstrate their finding publicly, through an exhibit, a presentation to the examiners, and a written dissertation.

Two kinds of knowledge are created by the research. One concerns the ways in which designers marshal their intelligence, to construct the mental space within which they practice design. The other reveals how public behaviours are invented and used to support design practice. This mode of research extends and develops the knowledge base of their profession, and thus its ability to serve society.

### Relevant literature

<https://practice-research.com/>

[van Schaik, L](#) 2015, *Practical poetics in architecture*, John Wiley and Sons, United Kingdom.

[van Schaik, L](#) 2011, *Architecture and Design by Practice*, by Invitation Design Practice Research at RMIT, Six Point Six One

[van Schaik, L](#) 2008, *Spatial Intelligence*, John Wiley and Sons, Chichester, UK.

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## SCHOOL OF ARCHITECTURE & URBAN DESIGN

### PL2 HDR PLACE:

Generative Practice Research in Architecture, Interior Design and Landscape Architecture

### PLACE Description

A Generative Practice mode of creative research crosses boundaries between professional and academic/university-based research practices, and often between disciplines. This practice research approach enables practitioners to generate new kinds of practices - within a discipline, or through establishing new fields of practice - in response to challenges and concerns emerging in a changing world. Candidates might be early career, seeking to enter into a period of deep enquiry that transforms a set of practice-based interests into a more developed practice with a well-articulated emphasis, set of agendas and approaches. They might equally be mid- or later-career practitioners seeking to generate a new practice trajectory through a transformation of their established mastery. They demonstrate their findings publicly in ways most appropriate to the particularities of their practice research, usually through an exhibit, a written dissertation, and a presentation to examiners.

This mode offers new knowledge in the form of previously unarticulated approaches to practice, informed by specific issues and challenges that direct their generative action.

Applicants are invited to contribute to the disciplines of Architecture & Urban Design, Interior Design and Landscape Architecture; to the School's research clusters/laboratories; to make links with RMIT's Enabling Capability Platforms priority areas; and to build emerging communities of design and creative practice.

### Relevant literature

<https://practice-research.com/>

[van Schaik, L](#) 2015, *Practical poetics in architecture*, John Wiley and Sons, United Kingdom.

[van Schaik, L](#) 2011, *Architecture and Design by Practice*, by Invitation Design Practice Research at RMIT, Six Point Six One

[van Schaik, L](#) 2008, *Spatial Intelligence*, John Wiley and Sons, Chichester, UK.

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