

THE SPECULATIVE CAMPUS PROJECT AND THE FORMFIELD SERIES

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ABSTRACT

The Speculative Campus Project is an emerging practice-based design research project which focusses on two interwoven investigations; experimenting with a 'process-based' architectural design approach and developing speculative design propositions for University learning environments.

The research was initiated through a series of design studios undertaken in the RMIT Master of Architecture program known as the FORMFIELD series. The studios demonstrate the possibility and necessity of undertaking multiple design research explorations – generative design processes in the first instance and speculative propositions for university environments in the second. The attitude is that the complexity of architectural design needs to be considered in educating architects. The model of design studio pedagogy which isolates one area for investigation (program, process, or site alone for example) is questioned suggesting that the design projects produced through such models hold a reductive and impoverished view of architecture is and can contain.

The aspect of the research in the FORMFIELD design studios which focusses on process-based design uses an understanding of the wider field which was facilitated in part by a reflection of previous series of design studios (white noise PANORAMA) and was captured in my PhD by project which provided an examination and critique of process-based architectural design. I have argued that contemporary process-based work is built on an inherited foundation of ideas that are often considered to be naturally linked to this way of working and that despite an evolving of these methods in contemporary practice, these fundamental assumptions continue to be maintained and constrain this practice. The reasons one might use these processes might be different away from these traditions and demonstrate an expanded series of concerns for process-based design work.

The speculations around future University Learning Environments spring from research that cites the importance and potential of social spaces as learning spaces on campus. Through the production of

architectural design propositions examples are provided through the design studio work that serve as prototypes of built and spatial possibilities.

This paper will speculate around the relationship of the overall research project and the design studios and reflect on the dissemination of the research propositions and speculations. It will provide a discussion of an integrated and speculative practice of ideas, propositions, researching, teaching, collaborating and designing.

The Speculative Campus Project and the FORMFIELD Series

How can design studios provide a productive nexus of teaching and research? A research project that I have been developing at RMIT University, Melbourne will be used as a case study and a means through which to speculate on wider questions around design studios and research. The Speculative Campus Project is an emerging practice-based design research project which focusses on two interwoven investigations; experimenting with a 'process-based' architectural design approach and developing speculative design propositions for University learning environments. The project was supported by the RMIT Design Research Institute¹ and the RMIT School of Architecture + Design. A series of design studios undertaken in the RMIT Master of Architecture program known as the FORMFIELD² series (2010 – 2012) were used to initiate and seed the research.

The model of research favoured here is research *through* design (contrasted with research *for* design and research *about* design)³. Design propositions were produced as research - as prototypes of particular propositions - which were subsequently disseminated (through exhibition and publication) with accompanying reflection and speculation. The studios themselves demonstrate the possibility and necessity of undertaking multiple design research explorations and the need to consider the complexity of architectural design in educating architects. The model of design studio pedagogy which isolates one area for investigation (program, process or site for example) is questioned suggesting that the design projects produced through such models hold a reductive and impoverished view of what architecture is and can contain.

The dilemma of being “academically correct”⁴ and the need for research “through” design.

It is possible that everything you say about what you have done in a design project is completely inaccurate and the building can still be interesting, still 'good'. Reading an architectural conference paper several years ago that discussed a design studio focussed on procedural design, which described the approach of the studio in a concise manner with appropriate references and clear description of the step-by-step procedural model used in the projects, there came a jarring moment at the end when the projects were revealed. An instant glance at the projects made the description that came before it somewhat irrelevant. The projects were poor, derivative and unchallenging.

As a designer and educator I have been interested in this dilemma of accuracy which is amplified in research focussed on designing. The generation of “good” design does not necessarily require accuracy or clarity in the process of its generation but the critique of design outcomes and its contextualisation probably does. Research “for” and “about” design does. Jeffrey Kipnis made a similar point when discussing the role of theory in the production of architectural projects in the 1990's (specifically external theories brought to the production of architecture).

Say, after reading Nietzsche's work on the revaluation of values, some architect designs an upside-down house to be constructed entirely in ice, contending that such constitutes a revaluation of architectural values. In terms of a theory of architectural design only three aspects of this situation are of interest: first, the fact that a particular choice, in this case a text by Nietzsche, motivated the design. Secondly, it is of interest how that motive was translated into a design process, which in this case was accomplished by illustrating the reversal of selected value pairs – up and down, permanent and impermanent – in an otherwise traditional design. Finally of interest are the terms by which the design is understood and evaluated. It is irrelevant whether or not it can be demonstrated that this design derives from a correct interpretation of Nietzsche's ideas. Such a demonstration can neither authorize nor indict the choice of motive, the process, nor the design⁵.

When it comes to architectural design the question of clarity is not as interesting as the question of judgement and what enables and assists rather than hinders

designing. In terms of process-based architectural design there are additional considerations such as the fact that choreographing a “good” process-based experiment does not guarantee a “good” building design, following a process-based experiment accurately does not guarantee a “good” building design and interesting propositions can be generated out of inadvertently misusing the process. Glossing over this with students and even alluding to the possibility of clarity and certainty (a pseudo rigour) ultimately doesn’t help.

So how do you structure a design studio to experiment with ideas and techniques and not ignore the complexity of architectural design? How do you facilitate a process-based design approach without making it seem linear, stripping away all the complexities or worse teaching one prescriptive “method”? How do you avoid the ‘it’s good in theory’ but produces banal work scenario? While research “through” design avoids some of the issues associated with design coming after “research”, how can design studios generate research; new knowledge through designing and what forms does this new knowledge come in?

Process-based Design Practice and the white noise PANORAMA studios.

The aspect of the research in the The Speculative Campus Project and the FORMFIELD design studios which focusses on process-based architectural design uses an understanding of the wider field which was facilitated in part by a reflection on an earlier series of design studios called white noise PANORAMA (RMIT 1998 – 2003) which was captured in my PhD by project (white noise PANORAMA: Process-based architectural design 2009 RMIT)⁶ which also provided an examination, critique of and repositioning of the potential and scope of process-based architectural design. In this instance reflection on the studios which specifically focussed on a process-based design approach became a chapter in the PhD. Reflecting on students working with this approach facilitated observations on the common considerations and problems of working in this way and (along with reflection on my own body of work) facilitated a particular understanding of the field which subsequently enabled the PhD content.

‘Process-based’ design refers to an approach whereby a process - consisting of a series of actions or operations - is choreographed in order to initiate and develop architectural designs (sometimes known as rule-based or generative design

processes). We can trace a lineage of this type of practice through the early projects of Peter Eisenman and Bernard Tschumi, then through Diagram Practice (as an attempt to break away from the restrictions of linear processes), Greg Lynn’s work through the 1990’s and various contemporary practices including – more recently - digital scripting processes. While there are broad variations in this practice that mean that it can’t be called one particular method, there are certain shared characteristics; involving designing the process as a starting point with a series of rules or actions being choreographed; there is often an adoption of techniques or systems from other disciplines and a translation of these to architectural technique.

I initially began working with process-based design methods because they offered the potential for the discovery of conditions, arrangements and effects that could not have been produced without them. As my practice developed I became increasingly critical of what I saw as the more problematic aspects of this type of design practice in the wider field, which I felt was becoming a confused terrain with questionable claims, sustained problems, and in some cases, had become what might be called a ‘process style’ or ‘process aesthetic’ and a discourse overwhelmed with the anxiety to claim that the processes were not “authored”. I ultimately argued that contemporary process-based practice is built on an inherited foundation of ideas that are often considered to be naturally linked to this way of working and that despite an evolving of these methods in contemporary practice, these fundamental assumptions continue to be maintained; are rarely specifically acknowledged and can be seen to constrain this type of practice⁷. There are other ways to use process-based design away from these traditions. The reflections on the field posited as new knowledge in the PhD were developed by reflecting on the differences in my own practice as well as reflection on the studios.

The Speculative Campus Project and the FORMFIELD studios.

The catalyst for the research on future University Learning Environments springs from research that cites the importance and potential of social spaces as learning spaces on campus. Starting from the premise that learning happens everywhere and anytime on Campus, we asked what might the possibilities be if we start to look at the social spaces on campus as active learning spaces and ways of facilitating people gathering. What are the different configurations through which this might occur – what do they look like, how are they organised and what might they lead to?

The aim was to consider the possibilities of design led by privileging the social spaces on campus through organisational strategies which facilitate interwoven formal systems. In my own work I have been interested in design potential of the formal condition I called FORMFIELD, a term coined to describe a condition (or organisational system) in which form and field gain variation, definition but also equivalence. The FORMFIELD idea aimed to capture these two conditions both as separate systems embedded within each other as well as forming a third polluted system. The hunch was that new types of architectural relationships would be developed for learning environments, planning, organisation, form, spatial qualities and so forth and these could be distributed on-mass (systematised as a flexible malleable system rather than designing one-off instances). The experiments with a process-based design approach were choreographed by each student (based on their own interests) towards facilitating these new relationships.

Importantly, in terms of research through the production of architectural design propositions, we sought to provide examples that might serve as prototypes of the built and spatial possibilities of these speculations. While it's one thing to have ambitions for social spaces being dispersed through more formal learning spaces - with the ambition to provide spill out spaces for students to continue working outside class time, to provide spaces for students to interact deliberately and by chance and so forth - what does this condition in fact look like, what are the specific arrangements and what possibilities do they lead to? In pursuing this research question, the aim was to do it in such a way as to still propose building designs that do not strip away the complex series of concerns and wide range of other performative criteria that buildings need to engage with.

Projects and Propositions.

The studios commenced with 5 weekly Experiments that focussed concurrently on future learning environments and choreographing process-based experiments in which techniques and systems external to architecture were appropriated and the behaviour of these systems co-opted to re-examine core architectural relationships. Experiment 01 focussed on choreographing process-based experiments, Experiment 02 focussed on choreographing process-based experiments in order to explore internal organisation, Experiment 03 focussed on choreographing process-based experiments in order to consider the building form and the organisation of the open

space component on the site. Experiment 04 focussed on how one might choreograph a process-based experiment to operate on existing building typologies in order to reappropriate and amplify their social qualities for learning environments and the final Experiment 05 considered choreographing a process-based experiment to consider the building's surface. Students were then asked to choose the direction for their final project after reflecting on the possibilities that had been developed through the experiments and the propositions that had been identified on a weekly basis. Students proceeded by selecting one or more of their process-based experiments/systems to work with. By this stage students have practiced choreographing a process-based experiment 5 times and have discussed over 50 examples with their peers. In the Experiments they have been working on the site with the correct proportion of program but did not receive the specific brief until the final ideas and vague propositions had been established.⁸

Speculations around learning environments included considering circulation spaces as active and part of learning; investigating the dispersal of social spaces (including food spaces, computer labs and study spaces) through dedicated learning spaces as well as looking at university spaces as flexible with multiple uses around a 24 hour cycle. In particular we considered using the strategic location of social spaces as integrated with other functions and akin to civic space on campus.

Georgina Karavasil's project for a Future University Building (FORMFIELD 4 2012) [FIGS 1-6] examined combination using a process-based experiment that was informed by the behaviour of the process of oil emulsification using a series of digital and material explorations. A variable field system was created comprised of 3 Dimensional solids and voids (internal and external) which provided variable densities across the length of the building, and produced a porous sponge like building. The system produced a series of spaces embedded within spaces internally and interspersed with embedded sectional voids as well as a series of external courtyards.

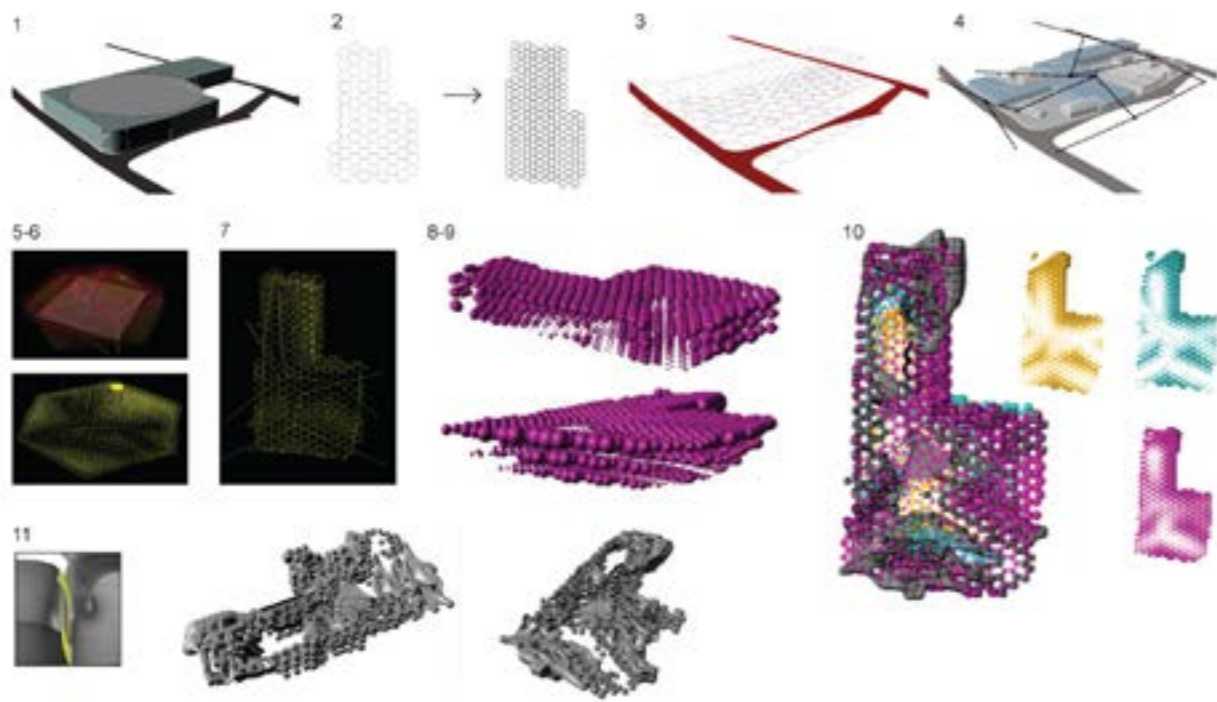


FIGURE 1: Process-based experiment by Georgina Karavasil (First Year RMIT Master of Architecture Student) 2012



FIGURE 2: Understanding oil behaviour by Georgina Karavasil (First Year RMIT Master of Architecture Student) 2012

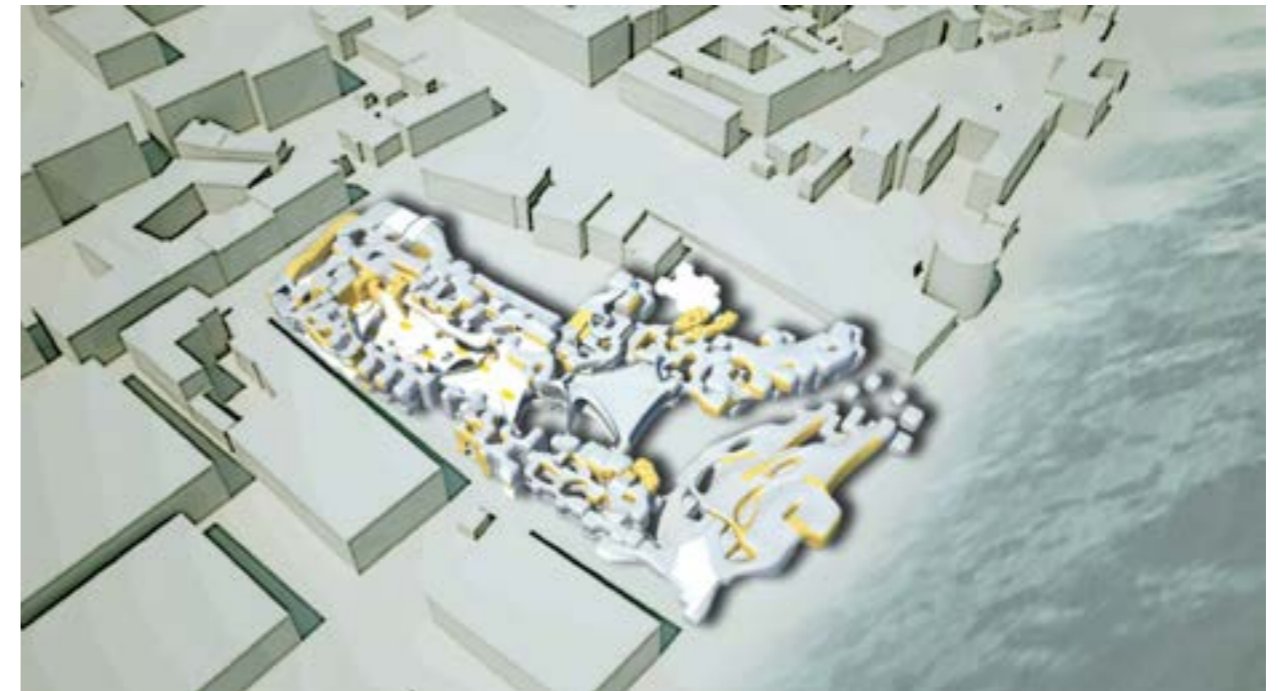


FIGURE 3: Aerial View for the developed design of the Future University Building by Georgina Karavasil (First Year RMIT Master of Architecture Student) 2012



FIGURE 4: External courtyard space, Future University Building by Georgina Karavasil (First Year RMIT Master of Architecture Student) 2012

The initial speculation in the project focussed on strategies for combining social space and learning space. How do we allow for a networked combination of these spaces and what are the combinations in which a student travelling across the building campus can be aware of the activities in the building? How do we create opportunities for social spaces, gathering and study outside the classroom and utilise external space as learning space?

The building proposal also tackles the problem of a large deep building and how to allow light through the building and visual connection across floors. It also provides a model where “classrooms” adjacent to the social voids can also double as be flexible social space as required and similarly the corridor can act as teaching space when required.



FIGURE 5: Interior view, Future University Building by Georgina Karavasil (First Year RMIT Master of Architecture Student) 2012



FIGURE 6: Aerial View showing courtyard spaces by Georgina Karavasil (First Year RMIT Master of Architecture Student) 2012

In the FORMFIELD studios the process-based experiments were reworked by students numerous times. The first time an experiment was choreographed, it was done so with the ambition of replicating the behaviour of the appropriated precedent based on a hunch about the reason for doing so in relation to ambitions for the qualities desired in the final outcome and in subsequent iterations the process was repeated with different parameters built in with more control desired over the system which is being developed.

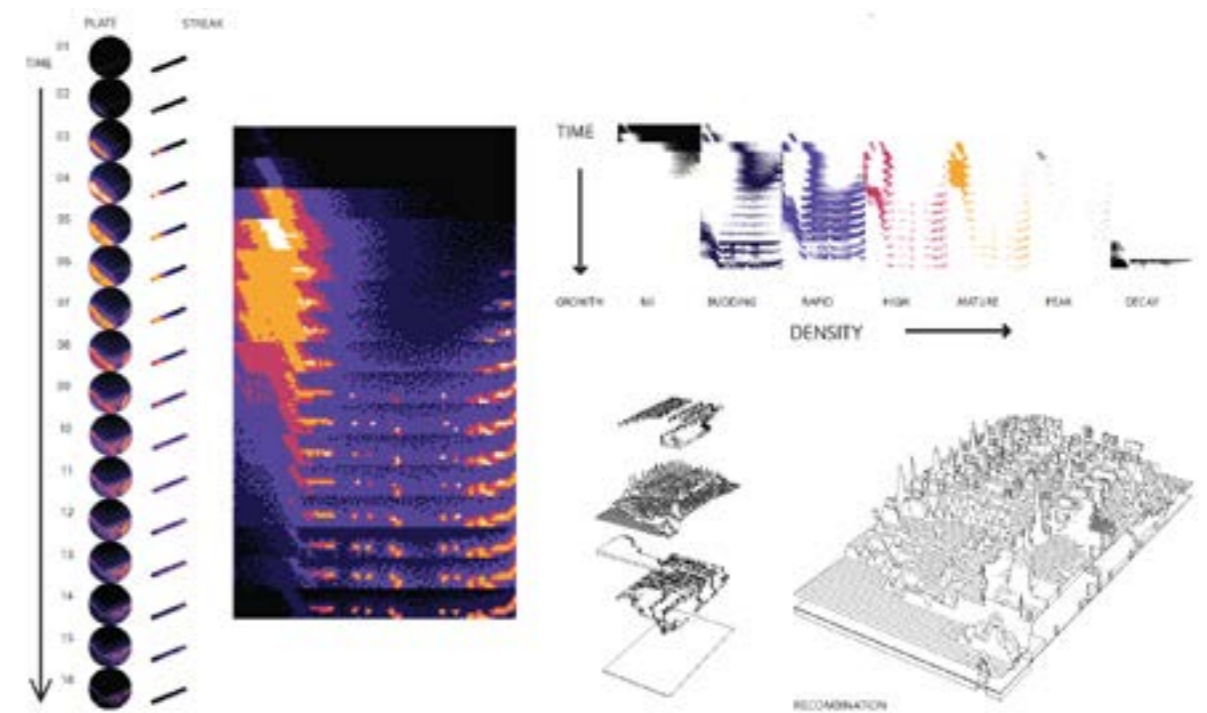


FIGURE 7: Final process-based experiments by David Wegman (First Year RMIT Master of Architecture Student) 2012

David Wegman's project (FORMFIELD 4 2012) [FIGS 7-11] investigated how to create a system for variable density across the building. The process was developed based on a hunch and desire to develop a system that would thread a variable density of social space – and possibly open space - through the building. The process-based experiment that was developed draws on the behaviour of bacterial growth systems over time. The project is developed to maximise a threading through of external open space through the building form which subsequently becomes porous at plaza level and is conceived of as a civic terrain accessible to the public. The process also assisted the development of an organisational system underneath the plaza which disperses and threads a series of learning and social functions in a terrain/mat allowing numerous opportunities for both discreet learning spaces and, immediately adjacent, spaces for social interaction.



FIGURE 8: External view of plaza level, Maribor Future University Building by David Wegman (First Year RMIT Master of Architecture Student) 2012

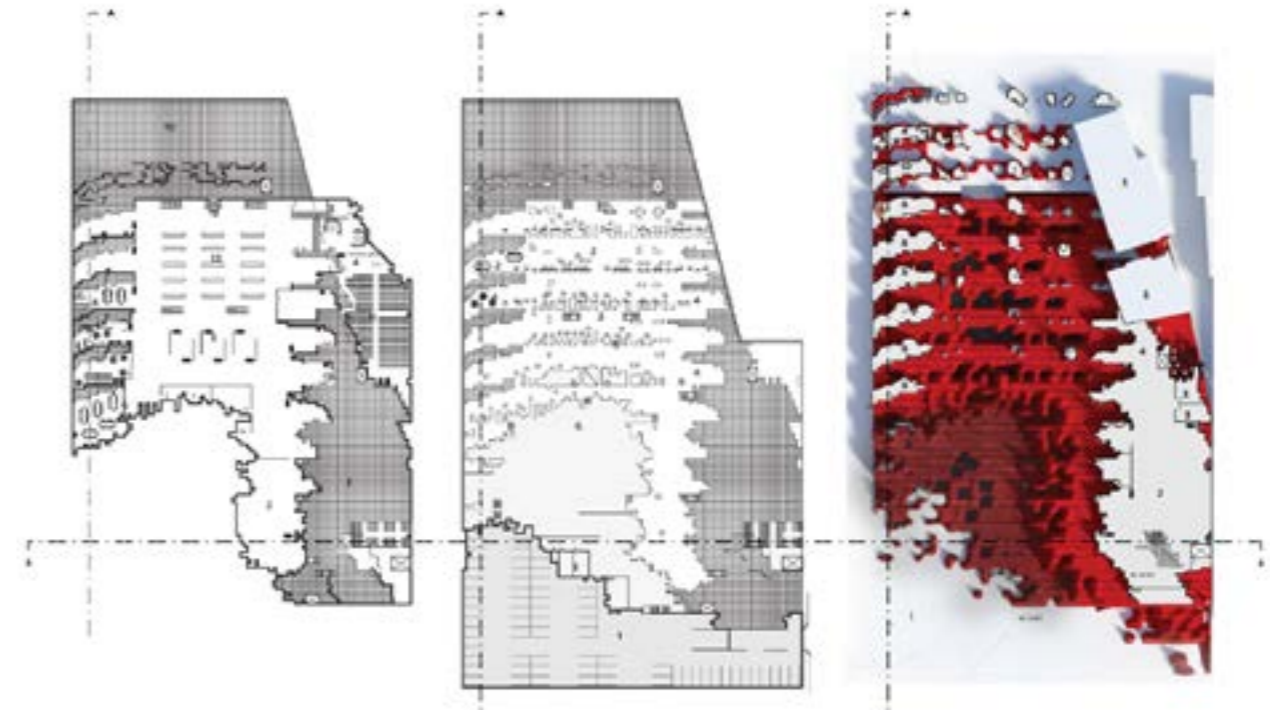


FIGURE 9: Floor Plans, Maribor Future University Building by David Wegman (First Year RMIT Master of Architecture Student) 2012

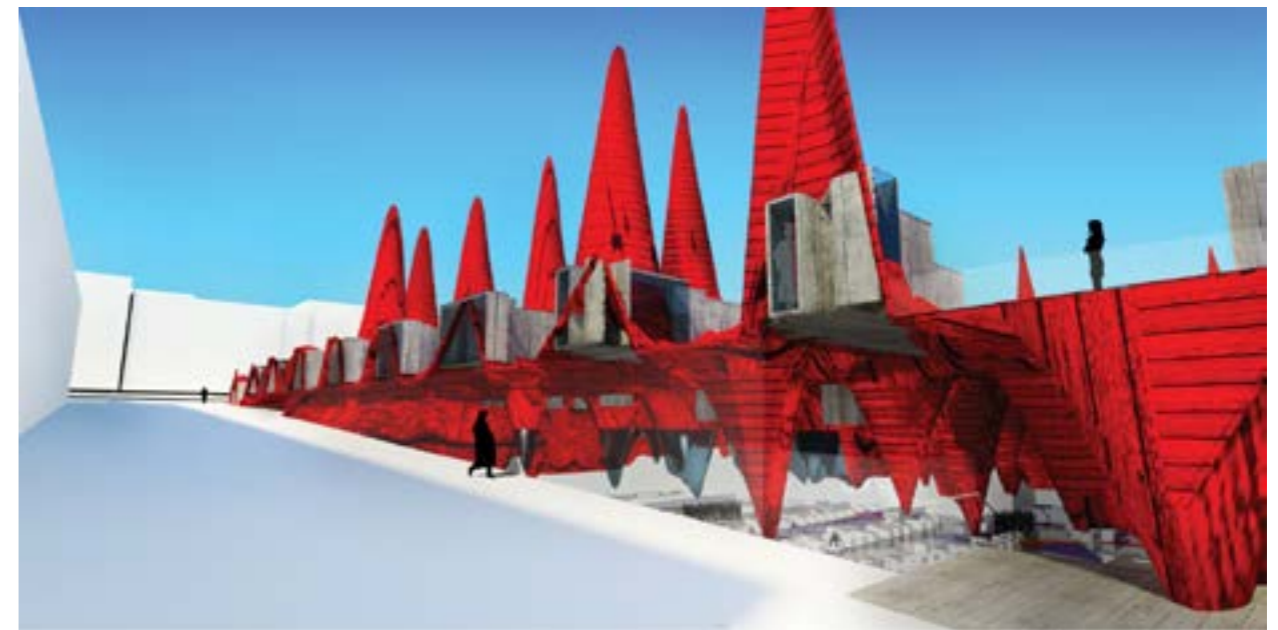


FIGURE 10: Maribor Future University Building by David Wegman (First Year RMIT Master of Architecture Student) 2012

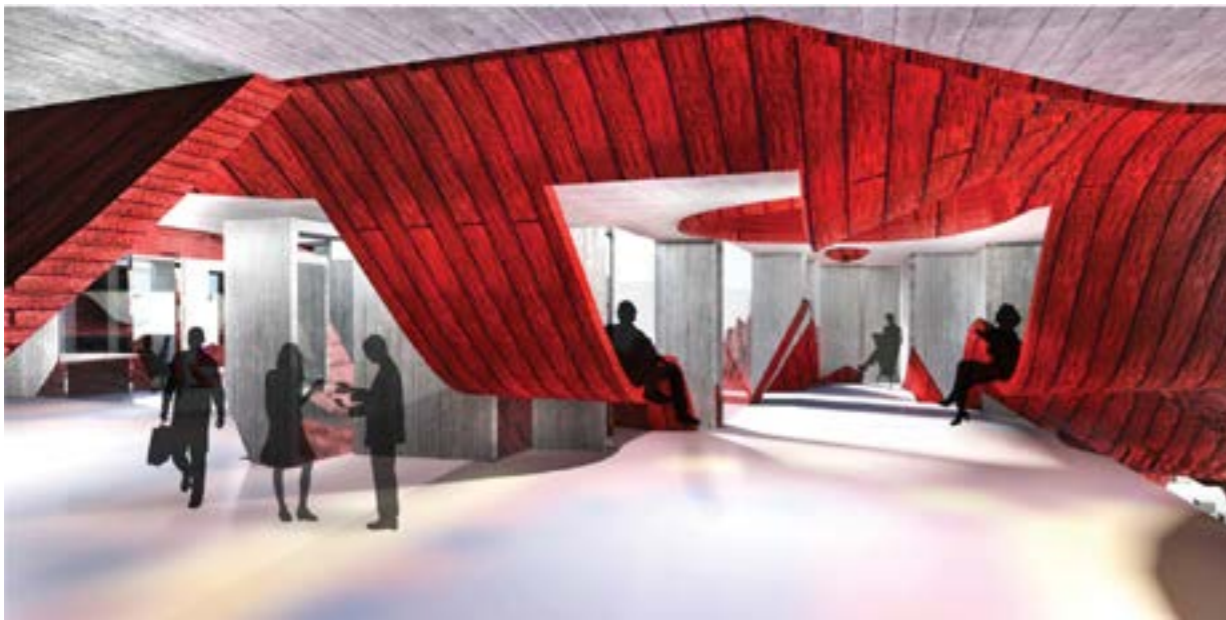


FIGURE 11: Internal Corridor Spaces, Maribor Future University Building by David Wegman (First Year RMIT Master of Architecture Student) 2012

A further investigation in the studios involved ‘misappropriating’ various building typologies not traditionally associated with learning environments (train stations, stadia, shopping malls for example) and exploring the possibilities that they might bring (as part of a process-based approach) to the design project. In particular considering the configurations which facilitate public gathering and their relationships to the programs that surround them as well as to facilitate a breaking down of the vertical slab configuration that is usually associated with multi-level learning environments.

A series of projects appropriated the Stadium as a social precedent in order to explore the possibilities for gathering and public open space offered by the bleacher seating arrangement for University and public use. In Lip Hyeon Cheong’s project (FORMFIELD 4 2012) [FIG 12] a splitting process facilitates a porosity to the campus comprised of a series of inter-connected courtyards. The project attempts to develop an interwoven arrangement of both formal, informal and public spaces. Nur Safura Abdl Razak’s project (FORMFIELD³ 2011) for a new building for the RMIT School of Aerospace Mechanical and Manufacturing Engineering on the Bundoora campus [FIG 13] operates on the Stadium as a type using a series of scaling processes. It proposes a “building as campus” joined through a series of interlinked courtyards and aspires to a high level of visual and physical porosity.



FIGURE 12: Section through, Maribor Future University Building by Lip Hyeon Cheong (First Year RMIT Master of Architecture Student) 2012

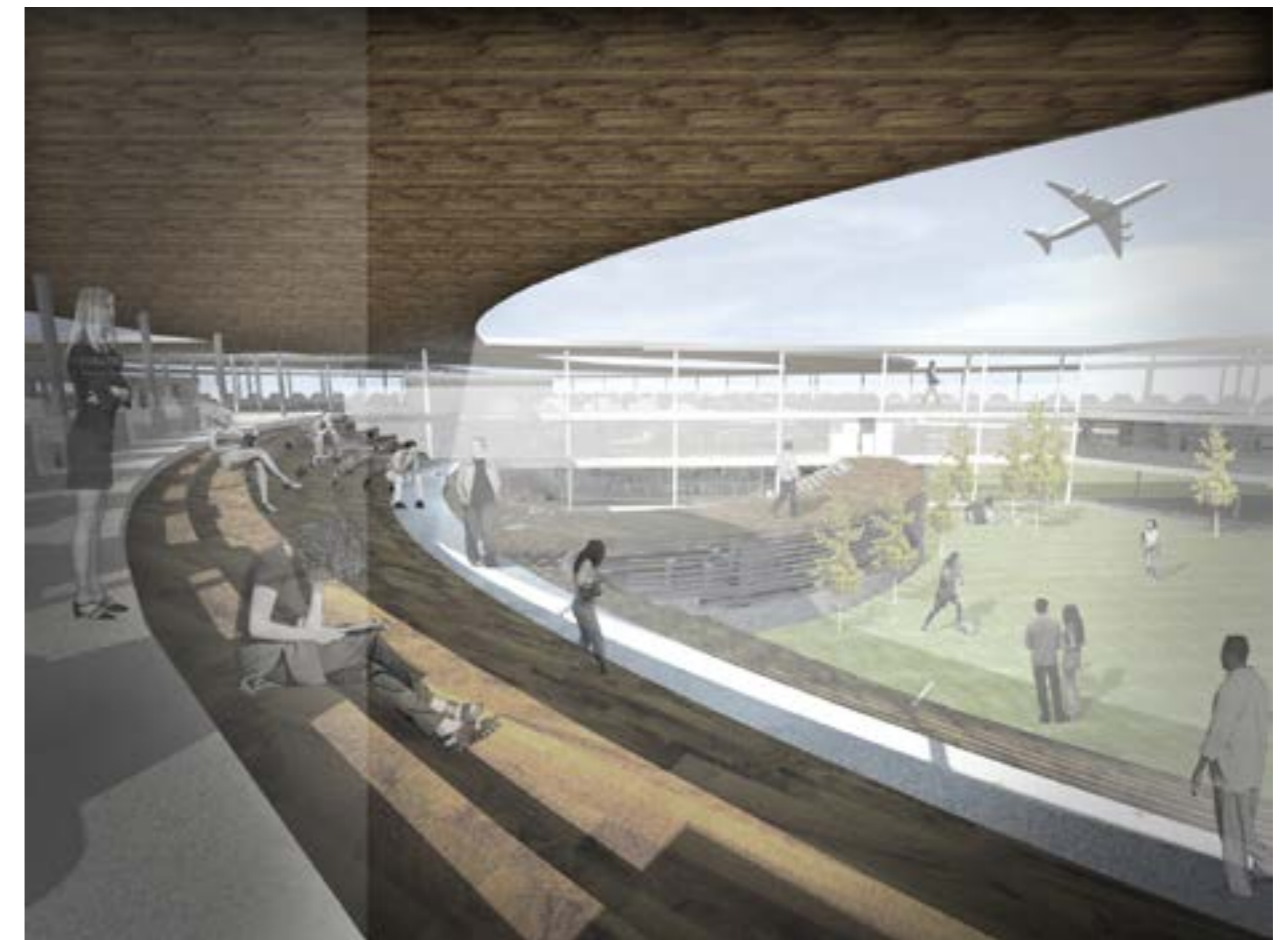


FIGURE 13: View from proposed building for RMIT Bundoora Campus by Nur Safura Abdl Razak (First Year RMIT Master of Architecture Student) 2011



FIGURE 14: Diagrammatic massing model by Gabor Olah (First Year RMIT Master of Architecture Student) 2010

Gabor Olah's project (FORMFIELD 2010) [FIG 14] operates on the base type of the shopping mall as an initial organisational system and explores the potential for appropriating the public areas in the mall. As well as the central circulation and organisation of the mall (which progressively becomes more eroded on the higher levels) a series of internal courtyards are developed as internal and external amphitheatre and gathering spaces. James Loder's project (FORMFIELD³ 2011) [FIGS 15-16] for a new building for the RMIT School of Aerospace Mechanical and Manufacturing Engineering on the Bundoora Campus incorporates condensed laneway spaces between a series of buildings. The laneways contain cafes and classrooms accessible from and spilling out to the external open spaces. A series of ramps were developed to link the different levels which contained desks, study spaces, gathering and spill out space. The project incorporates a series of lecture theatres clustered around a central courtyard.

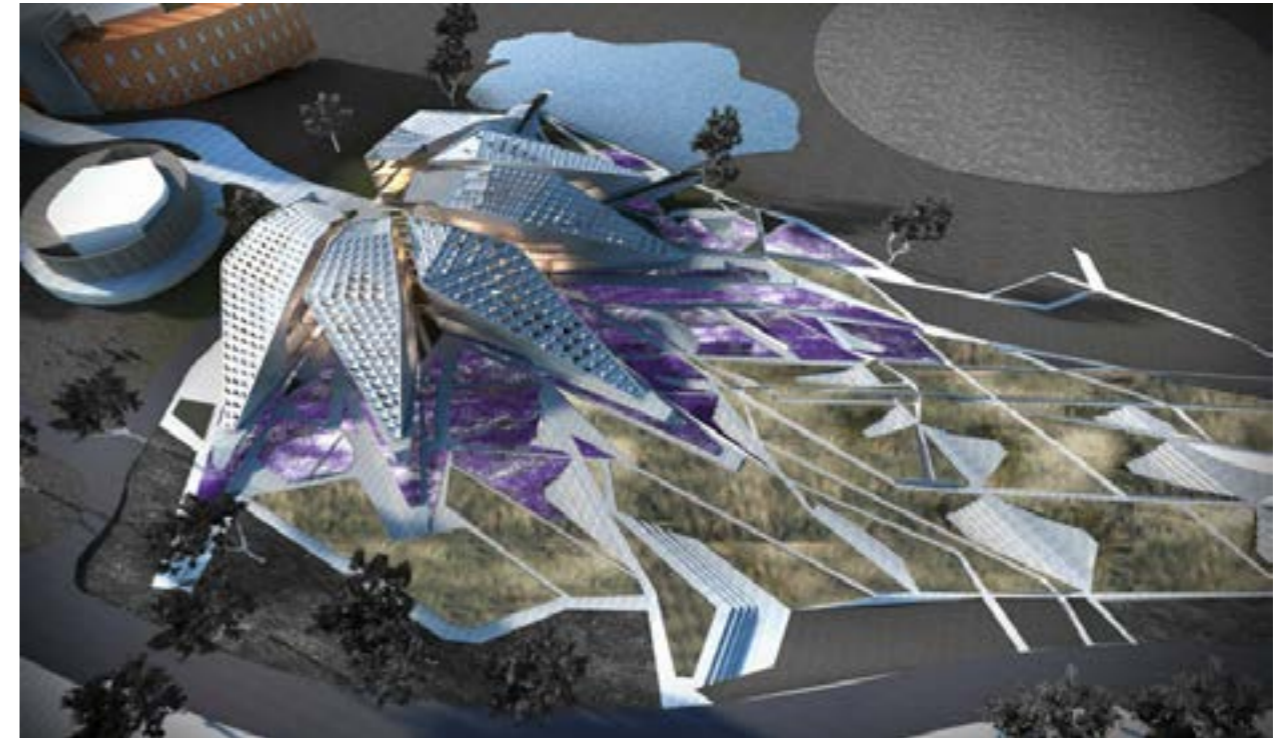


FIGURE 15: Aerial View of proposed building for RMIT Bundoora Campus by James Loder (First Year RMIT Master of Architecture Student) 2011

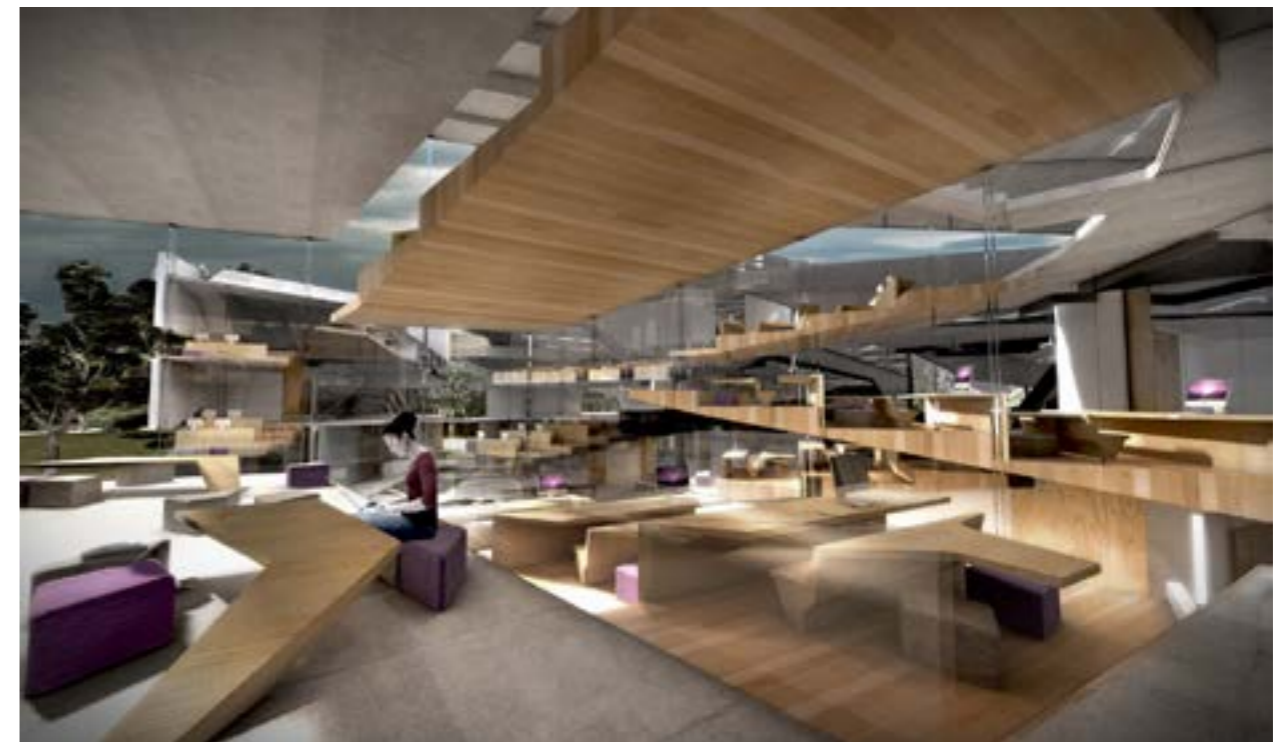


FIGURE 16: Internal View of proposed building for RMIT Bundoora Campus by James Loder (First Year RMIT Master of Architecture Student) 2011

Conclusion

The projects produced in the studio are not in their entirety perfect, there are flaws and that is of course to be expected where experimentation and venturous practice is required. The studios were peer reviewed through the invited juries of practitioners.⁹ The reflection on the wider questions associated with the studios using student work as an example prototype were presented in a number of public forums including the Work Where I Live Symposium¹⁰ (2011) and were exhibited in both the Architecture Pavilion and the Slovenian Pavilion of the Venice Architecture Biennale 2013 (where they were presented at the 100YC forum). The Speculative Campus Project and FORMFIELD studios were also exhibited as part of the RMIT Design Research Institute's Convergence Exhibition, RMIT Design Hub Melbourne, 2013¹¹.

My research interests include design process and this is a disciplinary concern. The means through which we uncover and explore design ideas are vital in any discipline. Research in the academy though, most often revolves around solving problems and this is how government funding models are structured. But there needs to be room for projective explorations that can be applied across a number of "problems"¹². The design explorations and approach in The Speculative Campus Project can be used across a range of building types. What the studios do not do is develop the "research project" in lieu of designing. They seek to juggle numerous questions and ambitions simultaneously, avoid being reductive and they have some faith that this approach is possible and productive for all parties involved.

Endnotes

- 1 Where I was the founding Research Leader of the Future Fabric of Cities Flagship Program (RMIT DRI 2009-2013) for more information refer to <http://www.designresearch.rmit.edu.au/programs/the-future-city/fabricated-city>
- 2 The FORMFIELD Design studios ran in the RMIT Master of Architecture program between 2010-2012 as follows: FORMFIELD and FORMFIELD² (2010) explored the design of a speculative university building and hybrid programs in Melbourne's Docklands Precinct. These were influenced by research on workplace models particularly questions around 'pay as you go' space. FORMFIELD³ was for the relocation of the RMIT School of Aerospace, Mechanical and Manufacturing Engineering from a series of dispersed

buildings on the Bundoora East campus to a single building on the Bundoora West Campus. FORMFIELD 4: 2112Ai Architectural Intelligence Edition (2012) was commissioned by the Maribor 100YC - 2112Ai [Architectural Intelligence] project which was a multidisciplinary project that invited visionary ideas for the city of Maribor in Slovenia and its 100 year future and focussed on experimental design techniques to consider a future Speculative University Campus precinct. The most recent studio WONDERSTUFF (prompted a change in name and direction) focussed more specifically on generative processes and the design of a new building for RMIT in Cardigan Street, Melbourne.

- 3 see Peter Downton, *Design Research* RMIT University Press, Melbourne, 2003
- 4 The term "academically correct" has been used a number of times and I attribute it to Neil Masterton (Design Director, Ashton Raggatt McDougall) who would sometimes start critique of student projects with "well that's very academically correct, but..." meaning that while the description sounded convincing in an academic sense the project was lacking when judged as an architectural proposition.
- 5 Kipnis, Jeffrey. "Forms of Irrationality" in *Strategies in Architectural Thinking*, Whiteman, John, Kipnis, Jeffrey, Burdett, Richard (Eds.)148-65. Cambridge: MIT Press, 1992.
- 6 see Vivian Mitsogianni, *white noise PANORAMA: Process-based architectural design* RMIT 2009 unpublished project-based PhD, supervised by Dr Shane Murray and Dr Sue-Anne Ware. For a discussion of the practice-based PhD model see Van Schaik, L. and Johnson, A. (ed): 2011, *By Practice, By Invitation: Design Practice Research in Architecture and Design at RMIT, 1986-02011*, onepointsixone, Melbourne Australia.
- 7 See Vivian Mitsogianni, *white noise PANORAMA: Process-based Architectural Design* RMIT 2009, unpublished project-based PhD.
- 8 This is a tactic to encourage the project being led through ideas and propositions as opposed to "resolving the building program".
- 9 The studios were assisted by a number of guest critics including: Neil Appleton (Lyons Architects), Dean Boothroyd (M@ STUDIO and NH Architects), Paul Morgan (Paul Morgan Architects), Donald Bates (LAB Architecture Studio and University of Melbourne), Mark Raggatt (Ashton Raggatt McDougall Architects), Gabor Olah (Ashton Raggatt McDougall Architects), Andrew Burrow (SIAL and RMIT Design Research Institute), Roland Snooks (Kokkugia and RMIT Architecture), Leanne Zilka (Zilka Architects and RMIT Architecture), John Doyle (Index Architects and RMIT Architecture) and

Professor Aleksandar Subic (Head of School, RMIT Aerospace, Mechanical and Manufacturing Engineering).

- 10 Work Where I Live Symposium: Collaborative Research on the Flexible and Dispersed Workplace, 5th September 2011, Chapter House Melbourne. Convened by Dr Graham Crist and Simon Whibley RMIT Design Research Institute.
- 11 Convergence: Transforming Our Future, May 2013, RMIT Design Hub Melbourne, curated by Fleur Watson and Ewan McEwan.
- 12 As research leader of the DRI Future Fabric of Cities Flagship I initiated the Speculative Architecture Laboratory research cluster in order to make room for the work of a number of colleagues who had strong research that did not specifically relate to one "problem".

Biography

Dr Vivian Mitsogianni is Deputy Dean and Head of the RMIT Architecture programs and a partner in M@ STUDIO Architects. Vivian was the founding research leader of the Future Fabric of Cities Flagship in the RMIT Design Research Institute (2009 – 2013) which undertakes transdisciplinary practice based design research; Masters of Architecture Design Studio coordinator (2001-2009) and the founding Architecture Community + Industry linkage projects coordinator (2001 – 2008). She undertakes practice-based design research and has extensive experience in the design of Architecture Design Studio curriculum to facilitate this mode of research.