Pattern, Contingency and Lifestyle
The Houses of Troppo Architects

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A thesis submitted in fulfilment of the degree of
Doctor of Philosophy
School of Architecture and Built Environment
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This work is dedicated to:

Those who are passionate about a simple way of life

It is hoped that this thesis will contribute to our appreciation of how architecturally designed spaces can bring delight into everyday experience.

And

Environmental concerns

In search of sustainability, it is also hoped that this study will heighten the concerns that we ought to have for the design of our fragile living and built environments.

And

My family

My father who sadly passed away before the submission of this thesis once taught me the perseverance and determination to achieve dreams in life, despite unexpected difficulties and challenges the life throws at me. My mother, who never doubts my ability, always displays her faith in the intention of my studies although she has no clue what they are for and how they can be useful for building a better world tomorrow. My two boys, who have spent most of their weekends in my office showed their support and belief in my hunch about the fruitful outcomes of this study and how they might influence the ways that people understand the use of everyday space and live life to its fullest!
# Contents

Dedication ................................................................................................................................. ii
Contents .................................................................................................................................... iii
List of figures .......................................................................................................................... vi
List of tables ........................................................................................................................... xii
Abstract .................................................................................................................................... xiii
Acknowledgements ................................................................................................................ xv
Statement of Originality and Agreement .................................................................................. xviii
Statement of authorship .......................................................................................................... xix

## PART 1 THE BEGINNING

### Chapter 1 Introduction ....................................................................................................... 1
1.1 Background .......................................................................................................................... 3
1.2 The Significance of Troppo Architects ............................................................................. 5
1.3 Research Questions .......................................................................................................... 25
1.4 Aims and Objectives ........................................................................................................ 27
1.5 Theoretical Framework ................................................................................................. 28
1.6 Research Methodology .................................................................................................... 30
1.7 Structure of the Thesis .................................................................................................... 32

### Chapter 2 Literature Review ............................................................................................... 33
2.1 Introduction ....................................................................................................................... 34
2.2 Patterns ............................................................................................................................. 36
2.2.1 Definition of pattern .................................................................................................. 38
2.2.2 Pattern and design process ....................................................................................... 38
2.2.3 Pattern and their sources ......................................................................................... 42
2.2.4 Pattern, shape grammars and styles ........................................................................ 44
2.3 Contingency ..................................................................................................................... 48
2.3.1 Definition of contingency ....................................................................................... 49
2.3.2 Contingency, institutional and social contexts ......................................................... 49
2.3.3 Contingency and Critical Regionalism .................................................................... 52
2.3.4 Contingency and sustainability ................................................................................. 55
2.4 Values ............................................................................................................................... 57
2.4.1 Definition of value ................................................................................................... 58
2.4.2 Anthropocentric approaches to ethical values ......................................................... 59
2.4.3 A general ethics of the built environment

Chapter 3 Research Design and Methodology

3.1 Introduction

3.2 Three Stage tactics

3.3 Scope and limitations

3.4 Research methods

3.4.1 Case study

3.4.2 Observation

3.4.3 Exploratory Interview

3.5 Summary

PART 2 THE JOURNEY 1980 ~ 2014

Chapter 4 Identifying Patterns

4.1 Introduction

4.2 The contexts of the Top End

4.2.1 Climatic conditions and the built environments in the Top End

4.2.2 Social structure and cultural references

4.3 Source of contemporary reference to Troppo's work

4.4 Aspirations for design principles, theory and methods

4.4.1 Backyard Architecture

4.4.2 Architectural hedonism

4.4.3 Greater-than-the-indoors-will-ever-be-outdoors

4.4.4 The tenth line for verandahs and inside-outside

4.4.5 The improvisation of forms

4.4.6 The instrumental ordering of spatial experience

4.5 A Pattern Language for a Gone Troppo lifestyle

4.5.1 Flirting with symmetry

4.5.2 Hard and soft space

4.6 Summary

Chapter 5 Five Case Studies

5.1 Introduction

5.2 The expansion of Troppo practice

5.3 Darwin: Mortlock Residence, Howard Springs, Northern Territory

5.3.1 Troppo language in the Mortlock Residence

5.3.2 Conclusion

5.4 Townsville: Connell Residence, Magnetic Island, Queensland

5.4.1 Troppo language in the Connell Residence

5.4.2 Conclusion

5.5 Adelaide: Russell Residence, Torrens Park, South Australia

5.5.1 Troppo language in the Russell Residence
### PART 3 INTERCONNECTIONS

#### Chapter 6 Troppo Language, Contingency and Responsive Cohesion

| 6.1 | Overview | 302 |
| 6.2 | Patterns of response to place | 303 |
| 6.2.1 | Place: the expansion of practice | 304 |
| 6.2.2 | People: partnerships, additions of in-house architects and wealthy clients | 317 |
| 6.2.3 | Construction technology and building regulations | 327 |
| 6.3 | Contingency in response to issues | 331 |
| 6.3.1 | Social organization | 333 |
| 6.3.2 | Cultural expression | 335 |
| 6.3.3 | Economic structure | 338 |
| 6.3.4 | Sustainable design | 339 |
| 6.4 | Like-minded values and attitudes | 342 |
| 6.4.1 | Mentoring versus survival | 343 |
| 6.4.2 | Interconnections and disconnection in design collaboration | 347 |
| 6.5 | Value and attitude by effect and experience | 348 |
| 6.6 | Summary | 350 |

#### Chapter 7 Conclusions

| 7.1 | Coherent form-patterns | 355 |
| 7.2 | Effect of the differences and similarities | 357 |
| 7.3 | Troppo values and attitudes | 360 |
| 7.4 | The journey from 1980 to 2014 | 362 |

### Appendix A

- Journal Article | 365

### Appendix B

- Interview Questions | 378

### Appendix C

- Interviews | 388

### References and Bibliography

|  | 391 |
List of figures

1. An invitation for a farewell party ................................................................. 1

1.1 An invitation for the relocation-opening of Troppo office in Darwin ......................... 4

1.2a The job record up to 1990 ...................................................................... 6

1.2b The Troppo poster ................................................................................. 8

1.2c The Tour Map of Darwin Troppo houses .................................................. 9

1.2d The articles about the housing development in Palmerston and Bowali Cultural Centre ... 11

1.2e The collective photographs of Troppo’s residential and commercial projects ........ 15

1.2f The images of Rozak House and Thiel House ............................................. 16

1.2g Welke’s sketches of houses ...................................................................... 17

1.2h Harris’s sketches of proposed house design and streetscape ......................... 17

1.2i The news article about Welke’s expedition to Antarctica ............................ 19

1.2j The map of Troppo’s journey around Australia in 1978 ............................... 20

1.2k The sketch of Tyto Wetlands Community .................................................. 24

1.3 The diagram for an overview of the research process ..................................... 26

1.4 The diagram for the procedure of the research ........................................... 27

1.6 The diagram for an overview of research methodology .................................. 31

1.7 Harris’s sketch of random streetscape ....................................................... 32

3.1 The diagram for an overview of theoretical framework, research methodology & methods .... 70

3.2 The diagram for 3 stages of the research ................................................... 71

3.4 The diagram for the process of conducting research methods ......................... 76

4.1a The sketch of The Shelter Numberline .................................................... 86

4.1b A collection of old photographs and sketches of indigenous huts, shelter and houses .......... 88

4.2.1a The Australia map and a climate diagram of Darwin ............................... 91

4.2.1b The diagrams of wind roses and sun paths of Darwin ............................. 92

4.2.2 Harris’s sketches of J.G. Knight’s bungalow ............................................ 95

4.3a The covers of ‘Influences in Regional Architecture’ & ‘Punkahs & Pith Helmets’ ........ 99
4.3b The images of Troppo's early news articles and a conference paper ...............................102
4.3c The collection of articles and a poster for a public talk .................................................. 104
4.4a The illustrations of Troppo's four design principles for tropical house designs ..............106
4.4.1a Welke's sketch of a shed as an inspiration for designs ................................................. 107
4.4.1b The images of newspaper articles about backyard architecture ................................. 108
4.4.2 The sketches of the 1980s Troppo houses ..................................................................110
4.4.3 The conceptual sketches for explaining the relationships between nature and houses ..........111
4.4.4a The sketches of the tenth line theory ......................................................................... 112
4.4.4b The sketches and photographs of local and the 1980s Darwin Troppo houses .............113
4.4.5 Harris's sketches and photographs of the Cape du Voltigeur House, South Australia ... ..115
4.4.6 Harris's conceptual sketches for section designs and floor plans ............................. 116
4.5a The sketches of Troppo's first commissioned unbuilt house ........................................ 119
4.5b Nineteen elevation drawings of the 1980s Darwin Troppo houses ................................ 120
4.5c Designing symmetry with a hint of asymmetry patterns on elevations ..........................121
4.5d The drawings for the analysis of communal and private spaces ................................. 123
4.5e Nineteen floor plans of the 1980s Darwin Troppo houses ........................................... 124
4.5f The sketches of the colonial farmhouse design of the early Darwin houses ..................125
4.5.1a The sketches for the transformations of forms of the Coleman House ..................... 126
4.5.1b The sketches for the transformations of forms of the Lawler House .......................... 126
4.5.1c The sketches for the transformations of forms of the Gettings House........................ 127
4.5.1d The sketches for the transformations of forms of the Green Can House .................... 127
4.5.1e The sketches for the transformations of forms of the Butcher House ......................... 127
4.5.1f The sketches for the transformations of forms of the Draper House .......................... 128
4.5.1g The sketches for the transformations of forms of the Pitt House ............................... 128
4.5.1h The sketches for the transformations of forms of the Gerovich House ....................... 128
4.5.1i The sketches of irregular forms of the floor plans ....................................................... 129
4.5.1j The sketches of the courtyard design concept of the Hazeldine House ..................... 129
4.5.2a A general connectivity graph of the 1980s Darwin Troppo houses ...........................131
4.5.2b Rectangular and non-rectilinear forms of the 1980s Darwin Troppo houses ...............132
4.5.2c Verandahs added to bedrooms in the design of the 1980s Darwin Troppo houses .........133
4.5.2d Three representations of symmetrical, asymmetrical and hybrid forms in geometry .... 133
4.5.2e Four types of the floor plan designs of the 1980s Darwin Troppo houses .......................... 134
4.5.2f 3-dimensional models of the 1980s Darwin Troppo houses ........................................... 135
4.5.2g A collection of on-site photographs of the 1980s Darwin Troppo houses ......................... 137
4.5.2h A flight of stairs as a feature of the design of the 1980s Darwin Troppo houses ............ 138
4.5.2i The photographs of the Jarvis Lawler House ................................................................. 141
4.5.2j The photographs of the Kaipinger House ................................................................. 142
4.5.2k The photographs of the Green Can House ................................................................. 142
4.5.2l The alternative use of verandahs ................................................................. 143
4.5.2m The alternative use of under house spaces ................................................................. 144
4.5.2n The distinctive architectural features of the 1980s Darwin Troppo houses ................ 145
5.3a The construction models and built work by McNamara ........................................... 166
5.3b The entrance and verandah at rear of the Mortlock Residence, Darwin .................... 167
5.3.1a The structure and form of the verandah of the Mortlock Residence, Darwin ............ 168
5.3.1b The structure and form of the roofs of the Mortlock Residence, Darwin ................. 170
5.3.1c The new water feature of the Mortlock Residence, Darwin ........................................ 171
5.3.1d The connectivity graph of the Mortlock Residence, Darwin ...................................... 172
5.3.1e The floor plan of the Mortlock Residence, Darwin .................................................. 173
5.3.1f The central axis of the Mortlock Residence, Darwin .................................................. 174
5.3.1g The hierarchy in spaces of the Mortlock Residence, Darwin ...................................... 176
5.3.1h The open indoor and outdoor spaces of the Mortlock Residence, Darwin ................ 176
5.3.1i The steel structure and building detailing for spatial experiences within spaces ........ 178
5.3.1j The double-height spaces and transparency of the external walls ....................... 180
5.3.1k The views from outside in and inside out ................................................................. 183
5.3.1l The surrounding landscape and observatory for wildlife .................................. 184
5.3.1m The semi-open bathroom ......................................................................................... 185
5.3.1n The leisure and lifestyle .......................................................................................... 188
5.3.1o The use of spaces and the content of the residents .............................................. 190
5.4a Clark's sketches for the design concept of cruciform ............................................. 194
5.4b Posters of Clark's design of contemporary Troppo houses in Townsville ................. 195
5.4c The diagram of Townsville annual temperatures and rainfall .................................. 196
5.4d  Onsite photographs of contemporary Troppo houses on the Magnetic Island, Townsville ......197
5.4e  Clark’s conceptual section and floor plan drawings ..................................................... 197
5.4f  O’Toole’s built work and a design proposal for a house .............................................. 200
5.4g  3D models of the preliminary design of the Connell Residence, Townsville ..............203
5.4.1a The entrance, balcony and verandah of the Connell Residence, Townsville ............. 206
5.4.1b The connectivity graph of the Connell Residence, Townsville ................................. 207
5.4.1c The floor plan of the Connell Residence, Townsville ............................................. 208
5.4.1d The relationships between interior spaces and verandah ...................................... 210
5.4.1e The locations and numbers of en-suite bathrooms .............................................. 211
5.4.1f The use of verandah space .......................................................... ................................. 212
5.4.1g The fixed and minimal openings ............................................................................... 213
5.4.1h The hidden trail for the exclusivity of the house .................................................... 214
5.4.1i The covered up structure and a mix-use of materials ............................................. 216
5.4.1j The framed view by a fixed size window ................................................................. 218
5.4.1k The absence of banks of windows ............................................................................ 219
5.5a  The diagram of Adelaide annual temperatures and rainfall ....................................... 225
5.5b  The existing structure defined the configuration of the Russell Residence, Adelaide .... 226
5.5c  The form, texture, design and settings of the Russell Residence, Adelaide ............... 227
5.5.1a The outside-in experience in the living room .......................................................... 229
5.5.1b The connectivity graph of the Russell Residence, Adelaide ................................. 231
5.5.1c The floor plan of the Russell Residence, Adelaide ................................................. 232
5.5.1d The symmetrical form with a hint of asymmetry in the design of floor plan ............ 233
5.5.1e Shared and alternative use of private space .............................................................. 234
5.5.1f Maximizing the use of circulation space ................................................................. 235
5.5.1g The clear views to the entrance and backyard ....................................................... 236
5.5.1h The surroundings and changing natural settings .................................................... 238
5.5.1i The beautiful warm feeling of the living space ........................................................ 241
5.5.1j The use of the advanced design technologies in place ............................................ 243
5.6a  The home office of the regional director in Byron Bay ............................................. 248
5.6b  The diagram of Byron Bay annual temperatures and rainfall .................................... 250
5.6c  The built work, and the collaborative and award-winning mixed-use building in Byron Bay ...251
5.6.1a The design of contemporary Troppo townhouses in Byron Bay ........................................252
5.6.1b The design form and natural settings of the Hutchinson Residence, Byron Bay ..............254
5.6.1c The slatted timber walls for the entrance and hallway ..........................................................255
5.6.1d The connectivity graph of the Hutchinson Residence, Byron Bay .....................................256
5.6.1e The floor plan of the Hutchinson Residence, Byron Bay ...................................................257
5.6.1f The transition space and semi-open hallway .........................................................................258
5.6.1g The symmetry and repetition in the design of floor plan .....................................................258
5.6.1h The hierarchy in spaces ........................................................................................................259
5.6.1i The transparency and open spaces within a monolithic box ..............................................261
5.6.1j The outside-in and inside-out experiences ..........................................................................263
5.6.1k The open access to nature and outdoor activities .................................................................265
5.6.1l The privacy offered by nature and its geographic settings ...................................................266
5.6.1m The style and context of the neighbouring houses ............................................................268
5.7a The new home office of Adrian Welke in Perth ....................................................................273
5.7b The initially suggested house for the case study ..................................................................275
5.7.1a The modern design of the Howell Residence for a wealthy lifestyle ..................................277
5.7.1b The modern design of the Howell Residence for a wealthy lifestyle ..................................277
5.7.1c The connectivity graph of the Howell Residence ...............................................................279
5.7.1d The neighbouring housing styles ......................................................................................280
5.7.1e The scale and construction methods of the housing projects in the area ............................281
5.7.1f The floor plans of the Howell Residence, Perth .................................................................283
5.7.1g The controlled circulation within enclosed spaces .............................................................285
5.7.1h The hierarchy in spaces shown in the design of split levels ..............................................286
5.7.1i The minimal architectural hedonism in the design of enclosed indoor spaces ..................288
5.7.1j The visual experience of an alternative hedonist lifestyle through transparency ..............288
5.7.1k The use of marble as an expression of a desirable lifestyle for the residents ..................290
5.7.1l The modern lifestyle with the order of hard surfaces and minimal landscape ..................292
5.7.1m The heavily use of air-conditioning for maximum indoor comfort ..................................293
6.2.1a The 16 design vocabulary elements of the Troppo language ............................................308
6.2.1b Skillion roofs as a distinctive expression of contemporary Troppo houses .....................314
6.2.1c The missing features in the design of Connell Residence ..................................................316
6.3.2 Construction techniques used in the design of the 1980s houses ................................336
6.4.1 The image of Troppo as drinking man’s architects ..................................................344
List of tables

5.3.2 Comparison made between the language and the Mortlock Residence design ............192
5.4 Design approaches between former and current directors in the Townsville office .........203
5.4.2 Comparison made between the language and the Connell Residence design ............221
5.5.2 Comparison made between the language and the Russell Residence design ..........246
5.6.2 Comparison made between the language and the Hutchinson Residence design ....271
5.7.2 Comparison made between the language and the Howell Residence design ..........298
6.2.1a Comparison made between the language and five contemporary houses ..................310
6.2.1b Comparison made for the contexts between 1980s Troppo and five contemporary houses ........................................................................................................................................................................312
6.2.2a The engagement and experiences of five regional directors with Troppo ............320
6.2.2b The engagement and experiences of the regional directors with clients ..........324
6.2.2c The dynamics between five regional directors and clients in the processes ....325
6.2.3a The design of contemporary Troppo houses in response to climate, technology & clients’ daily activities ........................................................................................................................................................................329
6.3.1a The relationships between local development, design responses and social interaction of the clients with neighbouring houses ..................................................................................................................334
6.3.2a Recap on the Troppo’s construction practice and methods for the design of the 1980s Troppo Darwin houses ........................................................................................................................................................................338
6.4.1 Connections between indoor comfort and the numbers of rooms .........................346
Troppo Architects, a multi-award-winning practice originally established in Darwin in the tropical Top End of Australia in 1980, has long been regarded as a leader among a small vanguard of Australian architects focused on climatically responsive design. Over a period of three decades, founding partners, Phil Harris and Adrian Welke, grew and incrementally expanded the practice to five regional offices – Darwin, Townsville, Adelaide, Byron Bay and Perth – across Australia. Whilst the practice has had to adapt in order to address and respond to a greatly expanded range of both climatic and socio-cultural variations in context, it has continued to attract outstanding critical acclaim including a Global Award for International Sustainable Architecture in 2010 and the Gold Medal of the Australian Institute of Architects (AIA) in 2014. How this design practice has succeeded in sustaining its own internal cohesion through such a process of major organisational growth and change while it has also sustained its capacity to respond effectively to context and clients’ needs in a distinctive and exemplary manner, is the multifaceted question explored in this thesis.

The study focuses exclusively on Troppo’s single family houses. It investigates how residential designs from the regional offices in the decade up to 2014 relate to the ideas and values that Harris and Welke espoused in their first decade of practice in Darwin. Through a theoretical framework that engages this work with concepts of pattern language, contingency, and responsive cohesion between designs and their physical and psychological contexts, the study offers insight into relationships between Troppo’s design ideas, their values, and their attitudes to space, place, culture, and the quality of delight in environments for everyday living. Fieldwork-based and centred on a cluster of comprehensive case studies, the methodology also includes extensive interviews with both the architects and the residents of the houses in question, formal analysis of original design documentation as well as the built and
occupied houses, observation of design processes within the different regional Troppo offices, and the most thorough examination yet undertaken of the archives of the Troppo practice.

PART 1 presents an initial historical overview of the Troppo practice, the aims and objectives of the research, and a review of the relevant literatures underpinning the theoretical framework and methodologies to be applied. PART 2 first discerns and describes a pattern language that is observed to have emerged from a corpus of Darwin houses designed and built in the first decade of the Troppo practice, through the 1980s. Identifying visually distinctive patterns in plan or form for particular spatial functions as well as psychological spaces associated with particular sensory experiences, the thesis reconstructs the original contexts and design reasoning in and through which these patterns were first explored. Representative houses designed and built by each of Troppo's regional offices in the past decade (up to 2014) are then examined in a series of five comprehensive case-studies. These map the relationships between these later houses and Troppo's early residential commissions in Darwin. PART 3 then discusses the similarities and differences between the respective formal languages of these regionally dispersed cases and the early houses with respect to the broader theoretical foci and the framework of the study (pattern, contingency, responsive cohesion). The thesis concludes with a brief overview of the key findings of the study and their implications for contemporary architectural practice and education, and for further research in those sub-fields.

The thesis shows how the design of Troppo's houses reflects a process of cohesion between architects and owners around shared values and aspirations for delight in the spaces within houses and for experiencing close links with nature. It also reveals the critical importance of mentoring in the relationships between Harris and Welke, the regional directors and their clients. It also shows how the practice has negotiated conflict between its values and the realities of commercial practice in diverse regional offices with changing client expectations, code requirements and building costs.
I have had a great passion for computational visualizations and generative design since I was an architecture student. The ‘unseen’ and ‘unheard’ creative design ideas formed in design processes had always been the most curious human activity in my academic training, teaching and working in the architectural field for almost two decades. Productivity, speed and visual representations of design were matters in the early years. The more time I spent working on quantity and visual aspects of architecture, the farther I found myself away from grasping the truth to my curiosity as to what was the ‘something’ that made architecture meaningful, aesthetically striking and functionally satisfactory for the user of spaces. Furthermore, what it is in the space of a building that influences the way the user lives and works with delight on a daily basis. This ‘something’ has been elevated to become the impetus of this study and set a course to seek, unravel and examine those ‘unknowns’ in the design process of architects.

With enormous gratitude, this study would never have been accomplished without the assistance and support of many people who participated, engaged and spent a substantial amount of time with me over the years. Their enthusiasm, encouragement, and anticipations for the completion of this study were the power sources for me to dive deep, travel far and arrive at the destination of this long voyage of what that ‘something’ is making us to live our lives to its fullest.

My supervisors, Emeritus Professor Antony Radford and Dr. Peter Scriver, have given me their faith in the depth and significance of this study right from the beginning. Their supervision, assistance, advice, and friendship have given me strength, different perspectives and approaches in search of ways to reach the aims and objectives of this study.

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Former Darwin director, Greg McNamara, who tragically passed away in a motor accident two weeks after my visit in 2011, stimulated me with most valuable thoughts about changing policy and environmental concerns in the climate of current practice. His passion for architecture and kind personality was appreciated deeply by driving me around to visit early Troppo projects and engaging with me in insightful discussions a month before the tragedy took place. My thanks are extended to Townsville director, Terry O'Toole, and former in-house architect Aftab Khamisa and Zammi Rohan, former Byron Bay manager Dan Connolly, former Townsville director Geoff Clark, and senior architect in Adelaide branch Damien Guerin for their generous time in discussions and providing materials for the major part of this thesis – five case studies.

Without the sincerity of the occupants of early and later Troppo houses, this thesis would not have gone deep into understanding the meaning of everyday life by living, experiencing and profoundly engaging with the work of Troppo Architects. Their verbal descriptions and body language demonstrate the 'feeling' they received from and grew with the house and its surrounding landscapes over time. Many thanks also go to the occupants of early Troppo houses and neighbours in Coconut Grove, Darwin for their enthusiasm in participating in interviews and allowing house visits.

I am particularly grateful to personal support from many individuals along this long journey. Without their encouragement, support and assistance in many different ways, this thesis would not have been accomplished. Foremost is Dr. Kate Cadman, who constantly showed me her faith in my research and generously offered me an enormous amount of time editing this thesis with advice and an eye for mistakes in my writings. Individuals are my dear colleagues and friends, Dr. Vanessa Menadue, Vivien Ho, Dr. Marwa El-Ashmouni, Martin and Ruth Nordstrom, Dr. Bill Mihalopoulos, Helen Low, Dr. Gerry
Groot, Mansoor Ma, Robert Caprile and many others. Special thanks are extended to them for their mental support, friendships, and inspirational conversations at the difficult times of this study.
Statement of Originality and Agreement

This thesis contains no material which has been accepted for an award or any other degree or diploma in any university. It is the best of the candidate’s knowledge and belief, the thesis contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

One journal article was completed and published during the candidature of the PhD with my supervisor Emeritus Professor Antony Radford as the second author in 2013. The quotations and illustrations by other authors and media have not been included in the body of this thesis unless stated in the text otherwise.

I consent to the thesis being made available for photocopying and loan if accepted for the award of the degree. The interviews with the associated stakeholders have been conducted with consent that recordings, transcripts and quotations would only be used in the thesis and academic publications in the future. Any quotations and/or use of graphic images, photographs, sketches and working drawings of selected case studies will need explicit permission from them.

Jessica Huang

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### Statement of Authorship

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<td>Contribution to the Paper</td>
<td></td>
</tr>
<tr>
<td>Signature</td>
<td>Date</td>
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