

**Saudi Culture and the Potential Introduction of Digital  
Design Techniques: Influences and Interactions**

By

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A thesis submitted in fulfilment of the requirements for  
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## **Certificate of Authorship and Originality**

I certify that the work in this thesis has not previously been submitted for a degree, nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

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Signature of Student

## **Dedication**

This thesis is dedicated to my mother, Fizah, and my father, Sadagh, who taught me that working hard is part of life and will achieve dreams. Thank you for believing in me. Their love and prayers are what brought me where I am today. I also dedicate this thesis to my wonderful and loving wife, Rash. I would not have been able to accomplish this research without her support, deep understanding and profound encouragement through the happy and hard times. I also thank my father-in-law Hussain and mother-in-law Azizah for their prayers, love and support. Finally, I dedicate this thesis to my beloved sons, Abdulrahman and Abdulaziz, whose unconditional love and sweet spirits lifted and sustained me during the darkest hours.

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## **Abstract**

This study investigates Saudi cultural constructs re the potential to use digital design techniques, and how these may relate to certain cultural and educational aspects, influence ways of thinking and processes of designing, and advance architecture in Saudi Arabia. The study analyses the characteristics of Saudi culture and architectural education as the direct source of contemporary Saudi architecture. It also questions the relationship between the cultural background and current Saudi architecture and architectural education, as well as cultural and educational aspects that could *prevent or challenge the use of digital design techniques*.

The main research question asks: What are the potential influences and interactions of introducing digital design techniques to Saudi culture, Saudi architecture and architectural education? What are the methods or tactics to make this introduction happen? Will digital design techniques be introduced to Saudi Arabia in the near future?

The research establishes Saudi culture, architecture, and architectural education; architectural digital design techniques and architecture as an outcome from other countries; and the limitations or challenges of using new digital design tools in *Saudi Arabia*. The study is guided by qualitative research techniques, using the following methods to collect and analysis data: interviews with academic staff and students in three Saudi universities, focus group interviews with Saudi architecture students completing their architecture degrees at Australian universities, interviews with Saudi computer science students also in Australian universities, and analysis of all the interviewees' views and expectations in relation to Saudi culture, architecture and architectural education, and the potential interaction with digital design techniques.

The study assumed there is a lack of knowledge – and application – of digital design techniques in Saudi architecture. There are some cultural aspects that could prevent the use of digital design techniques. Moreover, there is a challenge to change the usual way of architectural design. Finally, the use of digital design techniques is hard to understand and use compared to the current ways of architectural thinking and designing in Saudi Arabia.

The study finds that the perception of digital design techniques among Saudi architecture staff and students is a mix of positive and negative, and accepting and rejecting. Nevertheless, digital design techniques seem to be accepted. However, this is tied to gaining extra knowledge such as English, mathematics, programming languages and software, which are the main pillars of digital design techniques. Introducing these techniques to Saudi culture requires raising awareness of digital design techniques; an easy and smooth introductory period; and convincing Saudi culture of digital design techniques. Introducing these techniques will be achieved through architecture educators, architectural education, architecture students and computer science specialists.

The study is contributing to understand the new digital design techniques revolution at the three Saudi Arabia cultural levels (Saudi culture, architecture, and architectural education). More specifically, the role of these techniques in improving Saudi architecture, and in enhancing its architectural education.

# Table of Contents

|  |           |
|--|-----------|
| Certificate of Authorship and Originality.....   | i         |
| Dedication .....   | ii        |
| Acknowledgements.....  | iii       |
| Abstract.....  | iv        |
| List of Tables .....   | x         |
| List of Figures.....   | xi        |
| List of Publications.....  | xii       |
| <b>Chapter 1: Introduction.....</b>  | <b>1</b>  |
| 1.1    Introduction .....  | 1         |
| 1.2    Research background.....  | 1         |
| 1.2.1    Research context and development .....  | 1         |
| 1.2.2    Research conceptual diagram and research steps .....                                      | 5         |
| 1.2.3    Research problem.....   | 7         |
| 1.2.4    Research questions .....  | 7         |
| 1.2.5    Research objectives and scope .....   | 8         |
| 1.2.6    Limitations of the study.....   | 9         |
| 1.2.7    Research hypothesis .....   | 9         |
| 1.2.8    Contribution to knowledge.....  | 10        |
| 1.2.9    Ethical considerations .....  | 11        |
| 1.3    Thesis structure .....  | 11        |
| <b>Chapter 2: Kingdom of Saudi Arabia: Culture, architecture and architectural education .....</b> | <b>15</b> |
| 2.1    Introduction .....  | 15        |
| 2.2    Saudi culture .....   | 18        |
| 2.2.1    Saudi culture: past, present and future .....   | 19        |
| 2.2.2    Culture layers .....  | 22        |
| 2.2.3    Saudi culture and technology .....  | 22        |
| 2.3    Architecture in relation to culture .....   | 23        |
| 2.3.1    The role of cultural values in Saudi architecture .....                                   | 25        |
| 2.4    Saudi contemporary architecture .....   | 27        |
| 2.4.1    Saudi built environment and cultural changes.....   | 31        |
| 2.5    Saudi architectural education.....  | 32        |
| 2.5.1    Influences on architectural education .....   | 33        |
| 2.5.2    Architectural education in government universities .....                                  | 34        |
| 2.5.3    Architectural education in private universities and colleges .....                        | 37        |
| 2.5.4    Impact of Western curriculum in architecture schools .....                                | 42        |
| 2.5.5    Computers in Saudi architectural education .....  | 43        |
| 2.6    Conclusion .....  | 44        |
| <b>Chapter 3: Architectural digital design techniques.....</b>                                     | <b>47</b> |
| 3.1    Introduction .....  | 47        |
| 3.2    Evolution of technology theory .....  | 50        |
| 3.3    A new way of thinking and designing .....   | 53        |
| 3.4    Complexity and never before .....   | 58        |
| 3.5    Architecture and mathematics .....  | 61        |
| 3.6    Architecture and computation.....   | 65        |
| 3.7    Drawing tool or generative system .....   | 71        |
| 3.8    Conclusion .....  | 74        |
| <b>Chapter 4: Digital theories and approaches in architecture .....</b>                            | <b>76</b> |
| 4.1    Introduction .....  | 76        |

|   |  |     |
|---|--|-----|
| 4.2   | Folding in architecture and the blobs .....  | 79  |
| 4.3   | Performative architecture .....  | 81  |
| 4.4   | Parametric design and parametricism.....   | 83  |
| 4.5   | Morphogenesis, emergence and self-organisation.....  | 86  |
| 4.6   | Nonlinear organisation .....   | 92  |
| 4.7   | Digital tectonic .....   | 92  |
| 4.8   | Topology in architecture .....   | 97  |
| 4.9   | Digital poetics .....  | 98  |
| 4.10  | Conclusion.....  | 100 |
| <b>Chapter 5: Digital design techniques .....</b>   | <b>103</b>   |     |
| 5.1   | Introduction .....   | 103 |
| 5.2   | Architectural digital generative behaviours.....   | 104 |
|   | 5.2.1 Variety of possibilities .....   | 105 |
|   | 5.2.2 Evolutionary generative behaviours .....   | 105 |
|   | 5.2.3 Generative mathematical concepts .....   | 107 |
|   | 5.2.4 Self-organisation as a complex behaviour .....   | 109 |
| 5.3   | Shifting the architectural design process .....  | 110 |
|   | 5.3.1 Shifting design process and techniques: swarms, flocks, fractals and crowds.....       | 110 |
|   | 5.3.2 Integration of design, fabrication and construction.....                               | 112 |
|   | 5.3.3 From exploitation to exploration .....   | 113 |
| 5.4   | Architects and digital design techniques frontiers.....                                      | 114 |
|   | 5.4.1 Algorithms and geometric calculations .....  | 115 |
|   | 5.4.2 Fabrication, its machines and materials .....  | 117 |
| 5.5   | Coding and scripting .....   | 118 |
|   | 5.5.1 Understanding coding language.....   | 118 |
|   | 5.5.2 The benefit of coding.....   | 120 |
|   | 5.5.3 Access to coding .....   | 120 |
|   | 5.5.4 Techniques of coding.....  | 122 |
|   | 5.5.5 Algorithms in coding .....   | 123 |
|   | 5.5.6 Relationship between architects and scripting – computation .....                      | 124 |
|   | 5.5.7 Using scripting.....   | 125 |
| 5.6   | Contemporary advanced architecture: how architects conceive it and what it looks like .....  | 128 |
|   | 5.6.1 How architects conceive contemporary advanced architecture .....                       | 128 |
|   | 5.6.2 What does contemporary advanced architecture look like.....                            | 131 |
| 5.7   | Outcome of digital design techniques in Saudi Arabia .....                                   | 136 |
| 5.8   | Conclusion.....  | 143 |
| <b>Chapter 6: Perception of digital design techniques among Saudi architecture staff and students..</b> | <b>145</b>   |     |
| 6.1   | Introduction .....   | 145 |
| 6.2   | Research methodology .....   | 145 |
|   | 6.2.1 Research strategy .....  | 145 |
|   | 6.2.2 System of inquiry.....   | 146 |
|   | 6.2.3 Research strategy and method .....   | 147 |
|   | 6.2.4 Tactics and techniques .....   | 149 |
| 6.3   | Analysis.....  | 158 |
|   | 6.3.1 Coding .....   | 158 |
|   | 6.3.2 Data analysis .....  | 160 |
|   | 6.3.3 Validation and accuracy.....   | 160 |
|   | 6.3.4 Qualitative data presentation .....  | 161 |
| 6.4   | Interviews and the participants.....   | 162 |
| 6.5   | Perception of digital design techniques among Saudi architecture staff and students.....     | 165 |
| 6.6   | Digital design techniques from the interviewees' cultural and architectural perspective..... | 179 |
|   | 6.6.1 Saudi culture will accept digital design techniques .....                              | 179 |
|   | 6.6.2 Digital design techniques may conflict with Saudi culture .....                        | 180 |
|   | 6.6.3 Saudi architecture will accept using digital design techniques .....                   | 181 |
|   | 6.6.4 Saudi architectural environment is not ready to embrace digital design techniques now. | 182 |
| 6.7   | Digital design techniques technical knowledge and architecture .....                         | 187 |
|   | 6.7.1 Architects' views on technical knowledge.....  | 187 |

|   |            |
|---|------------|
| 6.7.2 Computer science specialists' views on technical knowledge .....                              | 190        |
| 6.8 Conclusion .....  | 193        |
| <b>Chapter 7: Saudi culture and architecture and relationship to digital design techniques.....</b> | <b>194</b> |
| 7.1 Introduction .....  | 194        |
| 7.2 Perception of current Saudi architecture.....   | 194        |
| 7.2.1 Changes in Saudi architecture .....   | 194        |
| 7.2.2 Global style .....  | 196        |
| 7.2.3 The expectation and reality of current Saudi architecture .....                               | 198        |
| 7.3 Saudi architecture and its relation to digital design techniques .....                          | 199        |
| 7.3.1 Outcomes of digital design techniques are in Saudi Arabia but not by Saudi architects..       | 199        |
| 7.3.2 Why Saudi architects cannot use digital design techniques .....                               | 201        |
| 7.3.3 Saudi architecture and current designing techniques .....                                     | 202        |
| 7.3.4 Call for conservatism and the clash with the future .....                                     | 203        |
| 7.4 Response of Saudi culture to digital design techniques .....                                    | 206        |
| 7.5 Aspects preventing introduction of digital design techniques in Saudi Arabia.....               | 210        |
| 7.6 Methods for introducing digital design techniques .....   | 216        |
| 7.6.1 Saudi cultural level.....   | 216        |
| 7.6.2 Saudi architectural level .....   | 221        |
| 7.7 Conclusion .....  | 224        |
| <b>Chapter 8: Saudi architectural education and relationship to digital design techniques .....</b> | <b>226</b> |
| 8.1 Introduction .....  | 226        |
| 8.2 Current Saudi architectural education.....  | 226        |
| 8.2.1 Current designing techniques .....  | 226        |
| 8.2.2 Current technology.....   | 228        |
| 8.2.3 Infrastructure and software.....  | 230        |
| 8.2.4 Saudi architectural education plans .....   | 232        |
| 8.3 Saudi architectural education and relationship to digital design techniques .....               | 233        |
| 8.3.1 Current staff knowledge of digital design techniques .....                                    | 233        |
| 8.3.2 Gap between Saudi architectural education and digital design techniques .....                 | 235        |
| 8.3.3 Perception of digital design techniques among Saudi architectural education .....             | 237        |
| 8.4 Saudi architectural education response to digital design techniques .....                       | 240        |
| 8.4.1 Acceptance .....  | 240        |
| 8.4.2 Easy or difficult.....  | 241        |
| 8.4.3 Necessity .....   | 242        |
| 8.4.4 Proponent or opponent .....   | 244        |
| 8.5 Aspects preventing digital design techniques in Saudi architectural education .....             | 245        |
| 8.6 Methods for introducing digital design techniques to Saudi architectural education.....         | 249        |
| 8.6.1 Saudi architectural educators.....  | 250        |
| 8.6.2 Saudi architectural education .....   | 250        |
| 8.6.3 Saudi architecture students .....   | 251        |
| 8.6.4 Computer science specialists.....   | 251        |
| 8.7 Conclusion .....  | 252        |
| <b>Chapter 9: Conclusion .....</b>  | <b>254</b> |
| 9.1 Introduction .....  | 254        |
| 9.2 Expected future of digital design techniques in Saudi Arabia .....                              | 254        |
| 9.2.1 Saudi digital style.....  | 254        |
| 9.2.2 Saudi architects as users or developers .....   | 256        |
| 9.3 Digital design techniques influence at all levels .....   | 257        |
| 9.4 Opportunities to introduce digital design techniques .....                                      | 260        |
| 9.5 Overview and summary of findings.....   | 261        |
| 9.6 Current implementation actions.....   | 273        |
| 9.7 Future research directions .....  | 274        |
| <b>Appendices .....</b>   | <b>275</b> |
| Appendix 1: Human Research Ethics Committee approval .....  | 275        |
| Appendix 2: Interview transcript (example – transcribed from Arabic to English).....                | 276        |

|  |            |
|--|------------|
| Appendix 3: Interview with computer science students (example).....                    | 281        |
| Appendix 4: Permission to conduct interviews at Saudi university (email example) ..... | 283        |
| Appendix 5: Information sheet for interviewees.....                                    | 285        |
| Appendix 6: Consent form.....  | 286        |
| Appendix 7: Seminar and workshop outline .....   | 287        |
| Appendix 8: Seminar and workshop transcript .....                                      | 288        |
| Appendix 9: Interview transcript validation email (example).....                       | 294        |
| <b>Bibliography.....</b>   | <b>295</b> |

## List of Tables

|   |     |
|---|-----|
| Table 1: Summary of government universities and schools of architecture in Saudi Arabia .....   | 40  |
| Table 2: Summary of private universities and schools of architecture in Saudi Arabia .....  | 41  |
| Table 3: Coding exercise 1: A good first program, from Shaw (2011, p. 13) .....   | 127 |
| Table 4: Coding exercise 32: Loops and lists, from Shaw (2011, pp. 95-96) .....   | 127 |
| Table 5: Examples of contemporary building forms .....  | 133 |
| Table 6: King Fahad University of Petroleum and Minerals interviewees (academics and students), College of Environmental Design, Architecture Department.....   | 155 |
| Table 7: King Saud University interviewees (academics and students), Architecture and Planning College, Architecture and Building Science Department .....      | 155 |
| Table 8: Umm Al-Qura University interviewees (academics and students), Faculty of Engineering and Islamic Architecture, Department of Islamic Architecture..... | 156 |
| Table 9: Focus group interviewees: Saudi architecture students who are studying overseas in Australia   | 156 |
| Table 10: Interviewees: Saudi computer science students who are studying overseas in Australia.....   | 156 |
| Table 11: Measurement of participants' responses .....  | 178 |
| Table 12: Aspects preventing digital design techniques in Saudi architectural education .....   | 246 |

## List of Figures

|  |     |
|--|-----|
| Figure 1: A conceptual diagram of the research .....   | 5   |
| Figure 2: Research steps .....   | 6   |
| Figure 3: Relationships in digital tectonic .....  | 96  |
| Figure 4: Paradigmatic shift in physics and related mathematical concepts in digital design, which architects need to understand (Kotnik 2010, p. 3) ..... | 129 |
| Figure 5: King Abdulaziz Centre for World Culture, Dhahran.....  | 137 |
| Figure 6: Qasr Al Hokm Downtown Metro Station, Riyadh .....  | 137 |
| Figure 7: The Museum of the Built Environment, Riyadh .....  | 138 |
| Figure 8: King Abdullah Financial District Men's and Women's Portal Spas, Riyadh.....  | 139 |
| Figure 9: King Abdullah Financial District Conference Centre, Riyadh .....   | 140 |
| Figure 10: King Abdullah Petroleum Studies and Research Centre Community Mosque, Riyadh.....   | 140 |
| Figure 11: King Abdullah Financial District Metro Station, Riyadh .....  | 141 |
| Figure 12: King Abdullah Petroleum Studies and Research Centre, Riyadh.....  | 142 |
| Figure 13: Research structure outline based on Groat and Wang (2002) .....   | 146 |
| Figure 14: Six categories of perceptions of interviewees (Saudi staff and students) on digital design techniques .....                                     | 166 |
| Figure 15: Typical Saudi house with (Roshan) traditional elements attached (Albarqawi 2013, p. 4.35)   | 197 |
| Figure 16: The current Saudi architecture and its relation to new technologies .....   | 204 |

## **List of Publications**

Austin, M. & Qattan, W. 2016, 'I'm a visual thinker' rethinking algorithmic education for architectural design', *Proceedings of the 21st International Conference of Computer-Aided Architectural Design Research in Asia*, Melbourne.

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