Reconceptualizing Interventions of Built Heritage

A Comparison between Doctrines and Practices

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TOC

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TOC

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A Comparison between Doctrines and Practices

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chair of the Board for Doctorates
to be defended publicly on
Wednesday 29 January 2025 at 15:00 o'clock

by

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TOC

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TOC

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TOC

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TOC

Contents

List of Tables 16
List of Figures 17
List of Acronyms 21
Summary 23
Samenvatting 27
摘要 31

1 **Introduction** 35

1.1 **Research Background** 35
1.1.1 Built Heritage 37
1.1.2 Interventions of Built Heritage 38
1.1.3 Cultural Significance 40

1.2 **Problem Field** 42
1.2.1 Terminology, Definition, Categorization 42
1.2.1.1 Different Terminologies, definitions and categorizations in research 43
1.2.1.2 Terminology issues in the scope of international doctrines 49
1.2.2 Interventions and Cultural Significance in the Scope of Doctrines 51
1.2.2.1 Interventions and Cultural Values 52
1.2.2.2 Interventions and Cultural Attributes 53
1.2.3 State-of-the-Art in Bridging the Problem Fields 54

1.3 **Research Framework** 55
1.3.1 Research aim, objective and scope 55
1.3.2 Research Questions 55
1.3.3 Overall Methodology 56
1.3.3.1 Theoretical Frameworks 1 : Theoretical Framework on Cultural Values 56
1.3.3.2 Theoretical Frameworks 2 : Theoretical Framework on Cultural Attributes 58
1.3.3.3 Data Sources 1: international doctrinal documents. 60
1.3.3.4 Data Sources 2: Interviews of 20 stakeholders in NGS 65
1.3.3.5 Data Analysis 72

1.4 **Thesis Structure** 73

2 **Interventions in Doctrines** 81

2.1 **Mind the Diversity: Defining Intervention Concepts in International Doctrinal Documents** 81
2.1.1 Introduction 82
2.1.2 Research methodology 86
2.1.2.1 International Doctrinal Documents 86
2.1.2.2 Intervention Concepts 87
2.1.3 Findings 88
2.1.3.1 The trends of the intervention concepts evolving across documents 88
2.1.3.2 “Conservation (C1)” versus “preservation (C2)” 91
2.1.3.3 “Restoration (C3)”, “Reconstruction (C6)”, “Reassembly/Anastylosis (C7)”, “Maintenance (C12)”, “Removal (C14)” and “Repair (C20)” 95
2.1.3.4 “Change use (C10)”, “Adaptation (C11)”, “Rehabilitation (C15)”, “Retaining use (C23)”, “Reintroducing use (C24)”, “Adaptive Reuse (C28)” 100
2.1.3.5 Summary of the definitions 104
2.1.4 Discussion 106
2.1.5 Conclusion 109

2.2 **Values and Interventions: Dynamic Relationships in International Doctrines** 113
2.2.1 Introduction 114
2.2.2 Research methodology 117
2.2.2.1 International doctrinal documents 117
2.2.2.2 Intervention Concepts 118
2.2.2.3 Cultural values 119
2.2.3 Findings: The dynamic relationship between values and intervention concepts 121
2.2.3.1 Overall values across thirty-three intervention concepts 121
2.2.3.2 Intervention concepts and their leading values 122
2.2.4 Discussion 133
2.2.5 Conclusion 135

2.3 **The Role of Attributes Defining Interventions in International Doctrinal Documents on Built Heritage** 140
2.3.1 Introduction 141
2.3.2 Research methodology 142
2.3.2.1 International doctrinal documents 142
2.3.2.2 Intervention Concepts 145
2.3.2.3 Cultural attributes 146

2.3.3 Findings: The relationship between attributes and intervention concepts 148
2.3.3.1 Overall attributes across eight intervention concepts 148
2.3.3.2 RESTORATION (C1) 153
2.3.3.3 PRESERVATION (C2) 154
2.3.3.4 CONSERVATION (C3) 155
2.3.3.5 ADAPTATION (C4) 156
2.3.3.6 REHABILITATION (C5) 157
2.3.3.7 RELOCATION (C6) 158
2.3.3.8 RECONSTRUCTION (C7) 159
2.3.3.9 RENEW/RENEWAL (C8) 160
2.3.4 Discussion 161
2.3.5 Conclusion 163

3 **Interventions applied in NGS** 169

3.1 **Mind the Flexibility: Defining Intervention Concepts applied in National Gallery Singapore (NGS)** 169
3.1.1 Introduction 170
3.1.1.1 Problem field and research focus 170
3.1.1.2 A Brief on Conservation in Singapore 172
3.1.1.3 Concepts in Singapore context 174
3.1.1.4 Case Study 175
3.1.2 Research Methodology 176
3.1.2.1 Dataset: The interviewee selection process 176
3.1.2.2 Data collection: Semi-structured Interview 178
3.1.2.3 Data Analysis: Intervention Concepts 179
3.1.3 Findings 180
3.1.3.1 Conservation versus Preservation 184
3.1.3.2 Restoration and other related concepts (repair and reconstruction) 187
3.1.3.3 Adaptive Reuse 188
3.1.4 Discussion 189
3.1.5 Conclusion 194

3.2 **Values and Interventions: Dynamic Relationships in NGS** 197
3.2.1 Introduction 198
3.2.1.1 Problem field and research focus 198
3.2.1.2 Concepts in the Singapore context 199
3.2.1.3 The case study 200
3.2.2 Research Methodology 201

3.2.3 Findings 202
3.2.3.1 Social values as the leading values: Restoration(C3) and Revitalization(C26) 205
3.2.3.2 Economic values as the leading values: Conservation (C2) and Adaptive Reuse (C4) 209
3.2.3.3 Political values as the leading values: Preservation 216
3.2.3.4 Common leading values as the leading values: Reconstruction 219
3.2.4 Discussion 219
3.2.5 Conclusion 222

3.3 **The Role of Attributes Defining Interventions in NGS** 224
3.3.1 Introduction 225
3.3.1.1 Problem field and research focus 225
3.3.1.2 Concepts in the Singapore context 226
3.3.1.3 The case study 228
3.3.2 Research Methodology 228
3.3.3 Findings 229
3.3.3.1 Preservation 234
3.3.3.2 Conservation 237
3.3.3.3 Restoration 240
3.3.3.4 Adaptive Reuse 244
3.3.3.5 Revitalization 248
3.3.3.6 Reconstruction 248
3.3.4 Discussion 249
3.3.5 Conclusion 253

4 **Comparative Study** 257

4.1 **Introduction** 258

4.2 **Methodology** 260
4.2.1 Data Sources 1: International Doctrinal Documents 260
4.2.2 Data Sources 2: Interviews of International Architectural Competition of National Gallery Singapore (NGS) 260
4.2.3 Data Analysis 261

4.3 **Findings** 262
4.3.1 Comparison of Intervention Concepts 262
4.3.2 Comparison of Cultural Values 264
4.3.3 Comparison of Attributes 267

4.4 **Discussion** 271
4.5 **Conclusion** 272

5 Conclusions and Recommendations 275

5.1 Research Statement 275
5.2 Research Relevance 282
5.3 Research Limitations 283
5.4 Future Research Recommendations 285

Appendix 289
Publications 311
Curriculum Vitae 313

List of Tables

1.1 The theoretical frameworks on intervention concepts, between 1978-2007 43

1.2 The terminology of intervention concepts in publications (in chronological order). 47

1.3 The theoretical framework on cultural values (ICOMOS Australia, 1999; Mason, 2002; Pereira Roders, 2007; English Heritage, 2008;Tarrafa Silva & Pereira Roders, 2010) 57

1.4 Attributes theoretical framework – tangible attributes in built heritage. (Adapted from ICOMOS, 1994; Veldpaus and Pereira Roders, 2013; ICOMOS New Zealand, revised 2010; ICOMOS Australia, revised 2013; Veldpaus, 2015; UNESCO, revised 2021). 59

1.5 Attributes theoretical framework – intangible tangible attributes in built heritage. (Adapted from ICOMOS, 1994; UNESCO,2005; Veldpaus and Pereira Roders,2013; ICOMOS New Zealand, revised 2010; ICOMOS, Australia, revised 2013; Veldpaus,2015). 59

1.7 Interviewees' positions during and after the competition. 70

2.1 Definitions and categories of interventions are often non-aligned or omitted (question marks) between documents and organizations. 115

2.2 The theoretical framework on cultural values (ICOMOS Australia, 1999; Mason, 2002; Pereira Roders, 2007; English Heritage, 2008;Tarrafa Silva & Pereira Roders,2010) 120

2.3 Locating the eight values referenced in twenty-six intervention concepts from the 69 documents. 122

2.4 Forty-one international doctrinal documents. 143

2.5 Attributes theoretical framework – tangible attributes in built heritage. (Adapted from ICOMOS, 1994; Veldpaus and Pereira Roders, 2013; ICOMOS New Zealand, revised 2010; ICOMOS Australia, revised 2013; Veldpaus, 2015, UNESCO, revised 2021). 146

2.6 Attributes theoretical framework – intangible tangible attributes in built heritage. (Adapted from ICOMOS, 1994; UNESCO,2005; Veldpaus and Pereira Roders,2013; ICOMOS New Zealand, revised 2010; ICOMOS, Australia, revised 2013; Veldpaus,2015). 147

2.7 The overall attributes identified in eight intervention concepts within International doctrinal documents. 150

3.1 Interviewees' positions during and after the competition. 178

3.2 The overall distribution of the eight values referenced by the interviewees in defining six intervention concepts in NGS. Abbreviation of the concepts: C1= Preservation, C2= Conservation, C3= Restoration, C4= Adaptive reuse, C21= Reconstruction and C26. 203

3.3 The overall distribution of the tangible and intangible attributes referenced by the interviewees when defining each concept. The abbreviation of the concepts: C1= Preservation, C2= Conservation, C3= Restoration, C4= Adaptive reuse, C21= Reconstruction. 229

4.1 The comparison of intervention definitions between international and local project levels. 263

List of Figures

1.1 The selection process of the international doctrinal documents 60

1.2 The systematic reviewing process of the selection of the case study. 66

1.3 Preliminary comparison of the cases, such as the main concepts used, its building use, heritage type, authority/competition organizer, and final participants teams during the second screening stage. 67

1.4 The comparison of the geographical location and the composition of the participants in the cases. Although both the Tainan Art Museum and National Gallery Singapore qualified in the final screening process, the National Gallery Singapore was selected. 68

1.5 The geographical location of the case study of National Gallery Singapore. 68

1.6 The interviewees' roles were categorized by the competition stages (preparation/ conceptual/ construction), their relationship (direct/ indirect), and their participation time in the competition. 70

1.7 Thesis structure, including chapters and contents published or submitted as papers. 73

2.1 The intervention concepts that have been defined (CD), or identified but undefined (CU), and with no concepts (NC) found in the selected documents (upper part), and the trend of their defined/undefined situation (bottom part). 89

2.2 The development of the relationships between conservation and preservation. 92

2.3 The development of the relationships between repair, restoration, reconstruction, reassembly/anastylosis, removal and maintenance. 97

2.4 The development of the relationships between adaptive reuse, rehabilitation, adaptation, retaining use, change use, and reintroducing use. 101

2.5 The overall distribution of the eight values referenced by the twenty-six intervention concepts. 121

2.6 Twenty-six intervention concepts and their leading values. 126

2.7 The percentage of tangible and intangible attributes in each intervention. 148

2.8 The eight intervention concepts (restoration, preservation, conservation, adaptation, rehabilitation, relocation, reconstruction and renew/renewal) and their proportional references to the fourteen sub-categories (tangible and intangible attributes). 149

3.1 The interviewees' roles were categorized by the competition stages (vertical: preparation/ conceptual/ construction), their relationship (horizontal: direct/ indirect), and their participation time in the competition. 177

3.2 The Defined and undefined concepts (upper part) and their percentages (bottom part) were identified in each of the interviews. 182

3.3 The frequency of references to the intervention concepts during the interviews. 183

3.4 The overall frequency of referencing values in relating to the six concepts: "preservation (C1)", "conservation (C2)", "restoration (C3)", "adaptive reuse (C4)", "reconstruction (C21)", and "revitalization" (C26). 202

3.5 The six concepts and their leading values. 204

3.6 Values prioritized in restoration between governmental and non-governmental professionals 207

3.7 Values prioritized in restoration between professionals in practice, academia and both. 207

3.8 Values prioritized in restoration between those involved directly or indirectly in the competition. 208

3.9 Values prioritized in conservation between governmental and non-governmental professionals 211

3.10 Values prioritized in conservation between professionals in practice, academia and both. 211

3.11 Values prioritized in conservation between those involved directly or indirectly in the competition. 212

3.12 Values prioritized in adaptive reuse between governmental and non-governmental professionals 214

3.13 Values prioritized in adaptive reuse between professionals in practice, academia and both. 215

3.14 Values prioritized in adaptive reuse between those involved directly or indirectly in the competition. 215

3.15 Values prioritized in preservation between governmental and non-governmental professionals. 217

3.16 Values prioritized in preservation between professionals in practice, academia and both. 218

3.17 Values prioritized in preservation between those involved directly or indirectly in the competition. 218

3.18 The percentage of tangible and intangible attributes in each intervention. 231

3.19 The Six intervention concepts and their proportional references to the fourteen sub-categories(tangible and intangible). From the top left to right and to the bottom left to right: Preservation, Conservation, Restoration, Adaptive Reuse, Revitalization and Reconstruction. 233

3.20 The comparison of attributes referenced in relation to “preservation” between interviewees of governmental and non-governmental professionals. 235

3.21 The comparison of attributes referenced in relation to “preservation” between interviewees involved directly and indirectly in the competition. 236

3.22 The comparison of attributes referenced in relation to “preservation” between interviewees in academia, practice or both. 236

3.23 The comparison of attributes referenced in relation to “conservation” between interviewees of governmental and non-governmental professionals. 238

3.24 The comparison of attributes referenced in relation to “conservation” between interviewees involved directly and indirectly in the competition. 239

3.25 The comparison of attributes referenced in relation to “conservation” between interviewees in academia, practice or both. 240

3.26 The comparison of attributes referenced in relation to “restoration” between interviewees of governmental and non-governmental professionals. 242

3.27 The comparison of attributes referenced in relation to “restoration” between interviewees involved directly and indirectly in the competition. 243

3.28 The comparison of attributes referenced in relation to “restoration” between interviewees in academia, practice or both. 243

3.29 The comparison of attributes referenced in relation to “adaptive reuse” between interviewees of governmental and non-governmental professionals. 247

3.30 The comparison of attributes referenced in relation to “adaptive reuse” between interviewees involved directly and indirectly in the competition. 247

3.31 The comparison of attributes referenced in relation to “adaptive reuse” between interviewees in academia, practice or both. 248

4.1 The comparison of the overall frequency of values conveyed, and in each concept between international (doctrinal documents) and local project (NGS) level. 266

4.2 The comparison of the overall frequency of valued tangible and intangible attributes, and in each concept between international (doctrinal documents) and local project (NGS) level. 268

TOC

List of Acronyms

CIAM: Congress Internationaux d'Architecture moderne
CoE: Council of Europe
ICOMOS: International Council on Monuments and Structures
LTA: Land Transport Authority
NGS: National Gallery Singapore
NUS: National University of Sinagapore
PMB: Preservation of Monuments Board
PSM: Preservation of Sites and Monuments
SIA: Singapore Institute of Architects
SPAB: The Society for the Protection of Ancient Buildings
SUTD: Singapore University of Technology and Design
THU: Taiwan Tunghai University
UNESCO: The United Nations Educational, Scientific and Cultural Organization
URA: Urban Redevelopment Authority

TOC

Summary

Reconceptualizing Interventions of Built Heritage: A Comparison between Doctrines and Practices

Research Focus

This research aims to reveal and explore the commonalities and differences in the definition of interventions/ intervention concepts on built heritage between theory and practice, through cultural values and attributes of cultural significance. This research compares how interventions were defined in the international doctrinal documents and implemented in a local project, using a selected case study in the Asian context – National Gallery Singapore, along with the stakeholders' perspectives.

Interventions play a pivotal role in the decision-making process of heritage management to ensure that cultural significance can be continued and enjoyed by future generations. In order to achieve this goal, intergovernmental and non-governmental organizations have been working together for decades to provide documents, such as charters and guidelines, to promote "best practice" in conservation and guide professionals in academia and practice. However, although often referenced, these documents are different across places and times. In particular, definitions of interventions often use alternative terms in narratives or rely on linguistic - Latin word roots - explanations, making them difficult to compare and research scientifically. Two knowledge gaps were found related to the issue of definitions of interventions: First, the lack of alignment in definitions between different documents creates difficulties for professionals to follow and reference in scientific research. Second, cultural significance is decoded by cultural values and attributes and is expected to influence the choice of the level/degree of interventions. However, very few studies have systematically researched how the roles of values and attributes influence the definition of interventions.

In fulfilling the knowledge gaps, this thesis proposes a new approach and criteria to assist the definition approach. Therefore, the main research questions were established: What are the trends of interventions and their definitions, under the influence of cultural significance, scoping international doctrines between theory and practice? Followed by three sub-questions: (1) What are the concepts and their definitions in theory, scoping international doctrines, and with the local project-level practice? (2) What roles do values and attributes of cultural significance play in defining interventions and scoping international doctrines and practices at a local project level? (3) How are these interventions defined in comparison between a theoretical and a local project level, including stakeholders' perspectives?

Research Methodology

Two main frameworks have been chosen and applied in this research for analysis: theoretical frameworks on cultural values (Pereira Roders, 2007; Tarrafa et al., 2010) and cultural attributes (Veldpaus, 2015). Furthermore, two data sources were selected: 69 international doctrinal documents and 20 transcripts of interviews from a selected case study - the National Gallery Singapore. Since this research is funded by the Taiwanese government for the study of conservation in Southeast Asia, the case study has been chosen through a systematic reviewing process and is considered representative of regional contribution. During the analysis process, this research uses a qualitative method to extract the contents with concepts and their definitions, and to reveal the relationships between certain criteria based on the frequency of terms mentioned in the documents or transcripts. Since this research focuses on terminology and definitions, all the theoretical frameworks and data resources selected and analyzed are in English, to avoid issues caused by translation and interpretation.

Main Findings

Through systematically researching the role of values and attributes of cultural significance in influencing the intervention definition, the main findings are discussed at two levels:

At the theoretical level, in Chapter 2, diversity in defining intervention concepts has been identified in the scope of international doctrinal documents, including their trends of use, definitions, and relations in between. Due to the diversity in defining the interventions, the two criteria – values and attributes – were carried out to support the definition approach. On the one hand, through the analysis process, values has identified with a dynamic role in influencing the definition of intervention

concepts. Among all, historic, social and aesthetic values were prioritized in the international documents. Particularly, within a single concept, certain values have been identified to play contradictory roles in causing different definitions between documents. On the other hand, from the attributes aspect, although the attention to intangible attributes has increased in the last few decades, the relationship between interventions and tangible attributes remains stronger. To summarize, while values influence concepts in a more dynamic pattern and sometimes juxtapose with one another, attributes are often identified with one another in building layers, and therefore, they trigger the intervention concepts in hierarchical patterns.

Based on the knowledge obtained at the theoretical level, in Chapter 3, a case study in Asia – National Gallery Singapore – has been selected to validate how the interventions are defined at a local level from stakeholders' perspectives through interviews. Four intervention concepts, "conservation", "preservation", "restoration" and "adaptive reuse" – have been asked to the 20 interviewees. Main findings have shown that rather than being influenced by the language, the definitions of these concepts are heavily influenced by the local context, particularly the dual law systems governing the built environment. Also, certain values were being prioritized, such as social values; therefore, certain flexibility was given during the implementation. Chapter 4 used a comparative approach to reveal the commonalities and differences between the international and local levels. The result shows that Singapore, in general, follows international trends. Nevertheless, its definitions have been locally customized and evolved.

Conclusion and Recommendations

In conclusion, this research proposes a novel approach to defining interventions that bridge the gap in built heritage, between theory and practice. This approach not only avoids the traditional method of using one term to describe another or relying on linguistic origins but also allows for the exploration of diversity in decision-making for interventions. With greater consistency in defining the interventions in a redesign project, creativity is no longer a speculation but represents its particular moment in time. Further research is recommended to investigate international doctrinal documents in different language contexts, particularly those that have been translated into non-Latin languages. It is important to recognize that cultural values, attributes, and cultural significance may vary across time and place, even within a single context such as Singapore, which is a multi-ethnic society. Additionally, it is suggested that other aspects of criteria, such as actions and aims, be considered to support the definition process. The use of different methodologies, such as AI-supported methods for analyzing a larger pool of samples in text, images or other forms of representation of intervention concepts and (re)intervention projects, is also recommended.

TOC

Samenvatting

Het herconceptualiseren van ingrepen in gebouwd erfgoed: Een vergelijking tussen doctrines en praktijken

Focus van het onderzoek

Dit onderzoek wil de overeenkomsten en verschillen blootleggen en verkennen in de definitie van interventies/interventieconcepten voor gebouwd erfgoed tussen theorie en praktijk, door middel van culturele waarden en attributen van culturele betekenis. Dit onderzoek vergelijkt hoe interventies werden gedefinieerd in de internationale doctrinaire documenten en geïmplementeerd in een lokaal project aan de hand van een geselecteerde casestudy in de Aziatische context - National Gallery Singapore, samen met de perspectieven van de belanghebbenden.

Interventies spelen een cruciale rol in het beslissingsproces van erfgoedbeheer om te verzekeren dat culturele betekenis kan blijven bestaan en dat toekomstige generaties ervan kunnen genieten. Om dit doel te bereiken werken intergouvernementele en niet-gouvernementele organisaties al tientallen jaren samen om documenten te voorzien, zoals handvesten en richtlijnen, om de “beste praktijk” in conservatie te promoten en professionals in de academische wereld en de praktijk te begeleiden. Hoewel er vaak naar deze documenten wordt verwezen, verschillen ze van plaats tot plaats en van tijd tot tijd. Met name definities van interventies gebruiken vaak alternatieve termen in verhalen of vertrouwen op taalkundige verklaringen - Latijnse woordstammen - waardoor ze moeilijk te vergelijken en wetenschappelijk te onderzoeken zijn. Er werden twee hiaten in de kennis gevonden met betrekking tot de definities van interventies: Ten eerste zorgt het gebrek aan afstemming in definities tussen verschillende documenten voor problemen voor professionals om te volgen en te refereren in wetenschappelijk onderzoek. Ten tweede wordt culturele betekenis gedecodeerd aan de hand van culturele waarden en kenmerken en zal deze naar

TOC

verwachting van invloed zijn op de keuze van het niveau/de mate van interventies. Er zijn echter maar heel weinig studies die systematisch hebben onderzocht hoe de rol van waarden en kenmerken de definitie van interventies beïnvloedt.

Om de hiaten in de kennis op te vullen, stelt deze dissertatie nieuwe benaderingen en criteria voor om de definitiebenadering te ondersteunen. Daarom werden de belangrijkste onderzoeksvragen opgesteld: Wat zijn de trends van interventies en hun definities, onder invloed van culturele betekenis, scoping van internationale doctrines tussen theorie en praktijk? Gevolgd door drie subvragen: (1) Wat zijn de concepten en hun definities in de theorie, de scoping van internationale doctrines, en met de lokale praktijk op projectniveau? (2) Welke rol spelen waarden en attributen van culturele betekenis bij het definiëren van interventies en scoping van internationale doctrines en praktijken op lokaal projectniveau? (3) Hoe worden deze interventies gedefinieerd in vergelijking tussen een theoretisch en een lokaal projectniveau, inclusief de perspectieven van belanghebbenden?

Methodologie van het onderzoek

In dit onderzoek zijn twee belangrijke kaders gekozen en toegepast voor analyse: theoretische kaders over culturele waarden (Pereira Roders, 2007; Tarrafa et al., 2010) en culturele attributen (Veldpaus, 2015). Verder werden er twee gegevensbronnen geselecteerd: 69 internationale doctrinaire documenten en 20 transcripties van interviews van een geselecteerde casestudy - de National Gallery Singapore. Aangezien dit onderzoek wordt gefinancierd door de Taiwanese overheid voor de studie van conservering in Zuidoost-Azië, is de casestudy gekozen via een systematisch beoordelingsproces en wordt deze representatief geacht voor de regionale bijdrage. Tijdens het analyseproces gebruikt dit onderzoek een kwalitatieve methode om de inhoud met concepten en hun definities te extraheren en om de relaties tussen bepaalde criteria te onthullen op basis van de frequentie van de termen die in de documenten of transcripties worden genoemd. Aangezien dit onderzoek zich richt op terminologie en definities, zijn alle geselecteerde en geanalyseerde theoretische kaders en gegevensbronnen in het Engels, om problemen als gevolg van vertaling en interpretatie te voorkomen.

Belangrijkste bevindingen

Door systematisch onderzoek te doen naar de rol van waarden en attributen van culturele betekenis bij het beïnvloeden van de interventiedefinitie, worden de belangrijkste bevindingen op twee niveaus besproken:

Op theoretisch niveau, in hoofdstuk 2, is de diversiteit in het definiëren van interventieconcepten geïdentificeerd aan de hand van internationale doctrinaire documenten, inclusief hun gebruikstendensen, definities en onderlinge relaties. Vanwege de diversiteit in het definiëren van interventies werden de twee criteria – waarden en eigenschappen – gebruikt om de definitiebenadering te ondersteunen. Aan de ene kant werd tijdens het analyseproces vastgesteld dat waarden een dynamische rol spelen bij het beïnvloeden van de definitie van interventieconcepten. Van alle waarden kregen historische, sociale en esthetische waarden prioriteit in de internationale documenten. Met name binnen één concept bleken bepaalde waarden een tegenstrijdige rol te spelen, waardoor de definities in de verschillende documenten uiteenliepen. Aan de andere kant, vanuit het attributenaspect, hoewel de aandacht voor immateriële attributen de laatste decennia is toegenomen, blijft de relatie tussen interventies en tastbare attributen sterker. Samenvattend, terwijl waarden concepten in een dynamischer patroon beïnvloeden en soms naast elkaar bestaan, worden attributen vaak met elkaar geïdentificeerd in bouwlagen en triggeren ze daarom de interventieconcepten in hiërarchische patronen.

Op basis van de kennis die op theoretisch niveau is verkregen, is in hoofdstuk 3 een casestudy in Azië – National Gallery Singapore – geselecteerd om aan de hand van interviews te valideren hoe de interventies op lokaal niveau vanuit het perspectief van belanghebbenden worden gedefinieerd. Aan de 20 geïnterviewden werden vier interventieconcepten voorgelegd: “conservering”, “behoud”, “restauratie” en “adaptief hergebruik”. De belangrijkste bevindingen toonden aan dat de definities van deze concepten niet zozeer worden beïnvloed door de taal, maar veeleer door de lokale context, in het bijzonder de dubbele wetgeving voor de bebouwde omgeving. Ook kregen bepaalde waarden voorrang, zoals sociale waarden; daarom werd tijdens de implementatie een zekere flexibiliteit betracht. Hoofdstuk 4 gebruikte een vergelijkende aanpak om de overeenkomsten en verschillen tussen het internationale en lokale niveau bloot te leggen. Het resultaat laat zien dat Singapore over het algemeen internationale trends volgt. Toch zijn de definities lokaal aangepast en geëvolueerd.

Conclusie en aanbevelingen

Concluderend stelt dit onderzoek een nieuwe benadering voor om interventies te definiëren die de kloof tussen theorie en praktijk in het gebouwde erfgoed overbruggen. Deze benadering vermijdt niet alleen de traditionele methode om de ene term te gebruiken om de andere te beschrijven of om te vertrouwen op taalkundige oorsprong, maar maakt het ook mogelijk om de diversiteit in de besluitvorming over interventies te onderzoeken. Met een grotere consistentie in het

definiëren van de interventies in een herontwerpproject, is creativiteit niet langer een speculatie maar vertegenwoordigt het een specifiek moment in de tijd.

Verder onderzoek wordt aanbevolen om internationale doctrinaire documenten in verschillende taalcontexten te onderzoeken, met name die documenten die vertaald zijn in niet-Latijnse talen. Het is belangrijk om te erkennen dat culturele waarden, eigenschappen en culturele betekenis kunnen variëren in tijd en plaats, zelfs binnen één context zoals Singapore, dat een multi-etnische samenleving is. Bovendien wordt voorgesteld om andere aspecten van criteria, zoals acties en doelen, in overweging te nemen om het definitieproces te ondersteunen. Het gebruik van verschillende methodologieën, zoals AI-ondersteunde methoden voor het analyseren van een groter aantal voorbeelden in tekst, afbeeldingen of andere vormen van representatie van interventieconcepten en (re)interventieprojecten, wordt ook aanbevolen.

摘要

建築遺產干預概念的重塑：國際定義與實務比較

研究重點

本研究旨在創建新的定義模式框架: 透過文化意義 (cultural significance) 中文化價值 (values) 和屬性 (attributes) 的面向來剖析比較，干預/干預概念的共性和差異。本研究以亞洲背景下的新加坡國家美術館為案例，從利益相關者的角度，比較國際學術文獻對干預概念所下的定義，以及在本地專案中的執行方式。

干預措施在遺產管理的決策過程中扮演關鍵的角色，以確保文化意義能夠延續下去，並為後代所享用。為了達成這個目標，數十年來，政府間組織與非政府組織攜手合作，提供憲章與準則等文件，推廣保護的「最佳作法」，並指導學術界與實務界的專業人士。然而，儘管經常被引用，這些文件在不同的地方、不同的時代卻有不同的內容。尤其是，干預的定義經常在敘述中使用替代詞，或依賴語言學 - 拉丁語字根 - 的解釋，使得這些定義難以進行科學性的比較與研究。與介入定義問題相關的知識缺口有兩個： 首先，不同文件之間的定義缺乏一致性，造成專業人員在科學研究中難以遵循和參考。

在滿足知識缺口的過程中，本論文提出了新的方法和標準，以協助定義方法。因此，建立了主要的研究問題： 在文化意義的影響下，理論與實踐之間的國際理論範圍有哪些干預趨勢及其定義？接著是三個次問題：(1) 理論、國際學說與當地專案實踐的概念及其定義為何？(2) 在當地專案層級中，定義介入、規劃國際理論與實踐時，具有文化意義的價值與特質扮演什麼角色？(3) 在理論與當地專案層級的比較中，包括利害關係人的觀點，這些干預概念是如何定義的？

TOC

研究方法

本研究選擇並應用了兩個主要框架進行分析：文化價值理論框架 (Pereira Roders, 2007; Tarrafa et al., 2010) 和文化屬性理論框架 (Veldpaus, 2015)。此外，本研究選取了兩項資料來源：69份國際學理文件，以及20份來自所選案例研究-新加坡國家美術館的訪談記錄。本研究是由台灣政府資助的東南亞保存維護研究。經過系統性的審查，選出具有區域代表性以及貢獻的新加坡國家美術館作爲案例研究。在分析過程中，本研究採用定性的方法，以概念及其定義來擷取內容，並依據文件或筆錄中提及的詞彙頻率，揭示某些準則之間的關係。由於本研究著重於詞彙與定義，因此所有選取與分析的理論架構與資料資源均以英文為主，以避免翻譯與詮釋所造成的問題。

主要發現

透過有系統地研究影響干預/干預概念定義的價值觀與文化特質，我們將從兩個層面討論主要的研究結果：

在理論層面，在第 2 章中，我們從國際學說文件的範圍中發現了干預概念定義的多樣性，包括它們的使用趨勢、定義以及兩者之間的關係。由於干預定義的多樣性，因此進行了兩項標準 - 價值與屬性 - 以支援定義方法。一方面，透過分析過程，我們發現價值觀在影響干預概念定義的過程中扮演了動態角色。其中，歷史、社會和美學價值在國際文件中被放在優先地位。特別是，在單一概念中，某些價值被認定扮演著矛盾的角色，造成不同文件之間的定義不同。另一方面，從屬性方面來看，儘管過去幾十年來對無形屬性的重視程度有所提高，但干預概念與有形屬性之間的關係仍然較強。總括而言，價值以較為動態的模式影響概念，有時還會彼此並列，而屬性往往在建築層中彼此識別，因此，它們會以層級模式觸發干預概念。

基於在理論層面所獲得的知識，在第三章中，我們選擇了亞洲的一個案例研究--新加坡國家美術館--來驗證如何透過訪談，從利益相關者的角度來界定當地層面的干預概念。我們向 20 位受訪者提出了「維護」(conservation)、「保存」(preservation)、「修復」(restoration)和「適應性再利用」(adaptive reuse)這四個干預概念。主要調查結果顯示，這些概念的定義並非受到語言的影響，而是深受當地環境的影響，尤其是建築環境管理的雙重法律制度。此外，因某些價值觀被放在優先地位，在實施過程中也給予了一定的彈性，例如社會價值。第 4 章使用比較方法來揭示國際與本地層面的共通點與差異，結果顯示，新加坡整體上跟隨國際趨勢。儘管如此，其定義卻是因地制宜且不斷演變的。

結論與建議

總而言之，本研究提出了一種新的方法來定義干預/干預概念，以彌補建築遺產理論與實踐之間的差距。這種方法不僅避免了用一個術語描述另一個術語或依賴語言起源的傳統方法，而且還允許探索干預決策的多樣性。在再利用和再設計專案中，隨著干預定義的一致性提高，創意不再是一種推測，而是能代表其特定時刻的印證。

建議未來的研究，可以調查不同語言背景下的國際教義文件，特別是那些已被翻譯成非拉丁語言的文件。重要的是要認識到，文化價值、屬性和文化意義可能會因時因地而異，即使是在單一的情境中，如新加坡這個多民族的社會。此外，還建議考慮其他面向的標準，例如行動和目的，以支援定義過程。也建議使用不同的方法，例如人工智能支援的方法，來分析文字、圖像或其他形式表達干預概念和（再）干預專案的更多樣本。

TOC

TOC

1 Introduction

1.1 Research Background

We are living in an era where there is flooding in the desert, typhoons visiting in winter, and ice-/snowing- traditions have been cancelled for decades. Climate change has unavoidably impacted our daily lives and the built environment.

In the hope of slowing down climate change, intergovernmental and international organizations have addressed the key role the built environment plays. On the one hand, energy-related organizations' solutions include reducing CO_2 emissions through sustainable design and technology, improving comfort and services and saving the global economy (IEA, 2019). According to the Global Status Report 2017, buildings and construction activities account for 36% of global final energy use worldwide and produce nearly 40% of energy-related carbon dioxide (CO_2) emissions (UN Environment and IEA, 2017). Similarly, the European Union (hereinafter EU) also emphasizes that buildings are responsible for 40% of the total energy consumption and 36% of greenhouse gas emissions from energy (EU, 2023, p.5). In order to make sustainable buildings a reality, the EU pays attention to the building stock in the policy initiative known as the European Green Deal (EGD) (European Commission, 2019), which aims for a climate-neutral EU by 2050 (Pintossi, 2022). To fulfill the aim of the EGD, in 2020, the European Commission (EC) started a Renovation Wave for Europe with the slogan "greening our buildings, creating jobs, improving lives" (EC, 2020). This international policy has triggered scholars and practitioners to develop solutions for improving energy efficiency, pursuing social sustainability, and making housing bills more affordable through the substitution and reuse of materials, as well as applying new technologies and facilities.

TOC

On the other hand, heritage-related organizations, such as the United Nations Educational, Scientific and Cultural Organization (hereinafter UNESCO), developed the Sustainable Development Goals (SDGs), particularly focusing on the eleventh of the seventeen goals. This goal aims to enhance the construction of inclusive, safe, resilient, and sustainable cities and human settlements by strengthening the protection and safeguarding of heritage (United Nations General Assembly, 2015). Meanwhile, the EU Council also acknowledged that cultural heritage is a "strategic resource of a sustainable Europe" in supporting a sustainable environment (2014/C183/08). Despite the idea of adapting and conserving valuable resources for the future rather than demolishing them (Bullen & Love, 2010; Glumac & Islam, 2020; Pintossi, 2022), the new renovation requirements for achieving optimal energy efficiency have posed challenges for many buildings that were constructed decades or even centuries ago. These buildings were not originally designed to meet these updated requirements. Consequently, these "unqualified" buildings and building parts have become a management challenge for built heritage (Stanojević et al., 2021), ultimately risking demolition or becoming facades.

Ironically, regardless of whether these buildings meet any criteria or not, as we strive to find numerous solutions for creating a greener and better environment, we tend to forget that "the greenest building is the one that already exists" (Moe, 2008). Furthermore, built heritage is considered a non-renewable resource (Pereira Roders, 2019; Shipley et al., 2006; Pintossi, 2022). This dichotomy in classification has existed "between interventions on buildings classified by safeguard institutions, ranging from the global level with UNESCO to the local level with municipalities, and buildings considered nothing more than ordinary and culturally invaluable" (Pereira Roders, 2007). Over the years, many scholars have endeavoured to integrate heritage conservation and environmental sustainability (Pereira Roders, 2007; Gonçalves et al., 2019), working towards the shared goal of combating climate change. This means that, regardless of cultural or environmental perspectives, we are all working towards the same environment – one planet – but approaching it from different viewpoints and value systems. Therefore, as we collectively manage the built environment that we desire to conserve and enjoy, it is important to understand the WHY (values) and WHAT (attributes) that influence the definitions of intervention concepts.

While other scientific fields, such as medicine, have specific definitions for each disease, syndrome, and treatment, the field of the built environment should also adopt a more collaborative approach to defining concepts, terminology, and categories of requirements. By establishing a common ground with well-defined concepts and terminology, it is possible to bridge the gap within the architectural and built environmental discipline between heritage-related and energy-related

issues, as well as academia and practice. This can potentially contribute to raising awareness and further taking actions for the ultimate goal of slowing down climate change. As a starting point, this research takes the first step in discussing the interventions of the built heritage as classified by inter-governmental and international organizations.

To clarify the terminology used in the research context, the following paragraphs provide definitions and explanations of the related theories.

1.1.1 Built Heritage

Since the 19th century, the term "heritage" has been used in the cultural field, expanding its meaning from something inherited – transmitted and acquired from a predecessor or passed down from previous generations – as individual property to represent collective identity (Otero-Pailos, 2016; Gonçalves et al., 2019).

In order to safeguard heritage worldwide, cultural heritage has been defined differently from natural heritage within the scope of world heritage with outstanding universal value, according to the UNESCO Convention (1972). This definition includes man-made works such as monuments, groups of buildings, and sites. Over the years, the concept of cultural heritage has expanded to encompass a broader range, moving from a focus on monuments (which are object-based, top-down, static, and prescriptive) to cultural heritage (which is process-based, bottom-up, dynamic, and an expression of values and social choice) (Akagawa, 2018; Bandarin, 2019; Smith, 2012; Tweed & Sutherland, 2007; van Oers, 2015; Vecco, 2010; Pintossi, 2022). In line with this, scholars have also broadened the definition of heritage to include non-listed elements that are considered to have heritage significance, such as the ordinary urban landscape (Pendlebury, 2009; Mosler, 2019), residential buildings, and their neighborhoods (Spoormans, 2023). Furthermore, the role of cultural built heritage has been recognized not only in providing cultural identity and community continuity in the cultural perspectives (Feilden, 1982; Martins et al., 2017), but also in contributing to environmentally sustainable development (Pereira Roders, 2007; Gonçalves et al., 2019) and further recognized as a "strategic resource of a sustainable Europe" (2014/C183/08) by the EU Council.

Treated as part of the cultural heritage and with much overlap in its definition, "built heritage" was chosen for two reasons in the context of this research. Firstly, while targeting all aspects of the man-made environment, this research excluded movable objects which may fall under the scope of museology, such as artwork, paintings, and

sculptures, that exist independently and were not designed as parts of the building or place. Secondly, “built heritage” was treated as synonymous with “cultural built heritage”; however, during the literature review process, “cultural built heritage” was found to be less commonly used in existing scientific publications. To reach a larger audience for the discussion and considering the aforementioned reasons, “built heritage” was chosen to be used in this research.

Therefore, in the context of this research, “built heritage” means all aspects of the man-made environment, including building elements, single buildings, groups of buildings, and places, along with their tangible and intangible aspects. It encompasses various values that we have inherited from the past and aim to pass on to the future (Feilden, 1982; Martins et al., 2017).

1.1.2 Interventions of Built Heritage

The terminology “Intervention” has been used in many fields, such as “military intervention,” “social intervention,” and “medical intervention” in political science, economics, international law, sociology, and medicine. In economics, “intervention” means “purposeful action by a human agent to create change” (Midgley, 2000). In the scope of international affairs, as it is commonly used, the word ‘intervene’ suggests an event that occurs between two other events (Rosenau, 1968, p. 166). Notably, in describing military force, “intervention” can be designed and has a final goal to achieve, with a particular size, cost, and impact. Carrying out more than one kind of intervention in the same place and at the same time can invite trouble (Haass, 1999). These definitions somehow resonate with the intervention from the architectural perspectives of the built heritage field. Nevertheless, zooming into the field of built heritage, “intervention” is also sometimes used from the user perspectives (inhabitants, residents, visitors, tourists), such as displacement of the inhabitants, expropriation of private properties (Ozcakir, 2020), and participation (Rosetti et al., 2021), which are outside the scope of this research.

In the context of this research, the definitions defined by intergovernmental or nongovernmental organizations in international doctrinal documents initially referred to other events or actions in various fields. For example, in the 1945 UNESCO Constitution, “intervention” was used in the context of “intervening in…domestic jurisdiction.” Similarly, UNESCO in 1954 mentioned “intervening in the arm conflicts,” and the Council of Europe (CoE) in 1975 referred to “financial intervention.” However, these definitions did not align with the concept of “intervention” in the context of built heritage today. It was not until the 1980s that the definition of

"intervention" was officially introduced in the Appleton Charter for the Protection and Enhancement of the Built Environment (ICOMOS Canada, 1983). This charter stated that "intervention within the built environment may occur at many levels (from preservation to redevelopment), at many scales (from individual building elements to entire sites), and will be characterized by one or more activities, ranging from maintenance to addition." The New Zealand Charter also defined "intervention" as "any activity that causes disturbance or alteration to a place or its fabric. This includes archaeological excavation, invasive investigation of built structures, and any intervention for conservation purposes" (ICOMOS New Zealand, 2010).

However, terms were used as substitutions for "intervention" or used interchangeably, such as "transformation," "modification," "alternation," and particularly "change". "Change" was used throughout the entire document of the latest version of the Burra Charter (2013), as it advocates for a cautious approach to change: do as much as necessary to care for the place and make it usable, but otherwise change it as little as possible so that its cultural significance is retained. Additionally, the Valletta Principle (2011) prepared a section on the "aspect of change" targeting the historic town and urban area, mentioning the relationship between change and other perspectives, both in the natural and built environment. Specifically, aspects such as "change in use and social environment" and "change and intangible heritage" were addressed.

Similarly, in academia, when discussing this topic, scholars have used the term "intervention" in relation to built heritage (Feilden, 1982; Lowenthal, 1985; Choay, 1992/2001; Strike, 1994; Douglas, 2002; Pereira Roders, 2007; Jokilehto, 2018), as well as terms like "change" (Woodcock, 1988; Henket, 1992; Douglas, 2002), "adaptation" (Douglas, 2002), and others, to address issues related to interventions. Over the years, the concept of intervention in relation to built heritage has expanded. Initially, it focused only on historic monuments, but Choay (1992/2001) argued that intervention "by specialized professionals demands not only positive, historical, technical, and methodological knowledge. It implies a doctrine as well, which can articulate these skills and competencies in very different ways, by modifying the objectives and the nature of the architectural intervention" (Choay, 1992/2001 p. 101). With a broader scope, Douglas (2002) considered all changes to existing buildings, going beyond mere maintenance. As Jokilehto (2018) concluded, "interventions do not exclude modern design or reconstruction of lost features, but require taking into account the specificity and qualities of the context in each case" (p. 413). With a more comprehensive discussion aiming to bridge the gap between historic safeguarding organizations and energy-related agencies, as well as culture and nature, "intervention" also encompassed ecology, emphasizing the sustainable use of natural or manufactured resources and how it can contribute to energy efficiency (Pereira Roders, 2007).

Following the evolution of intervention concepts and definitions in academia and practice over the years, this research utilize the term “intervention” throughout the discussion.

1.1.3 Cultural Significance

“Cultural significance” is a very specific term used in the field of heritage, particularly in the context of international doctrines. In this thesis, the term “cultural significance” is briefly defined as the conveyed values (Pereira Roders, 2007) and attributes (Veldpaus, 2015). Values justify why heritage is listed, while attributes characterize the tangible and intangible resources that convey such values (Veldpaus & Roders, 2013). However, since this research focuses on the relationship between intervention and cultural significance, it is necessary to understand the historical development of its meaning over the years.

In the past, “cultural significance” was often referred to as cultural values (Worthing & Bond, 2008; Zancheti et al., 2009; Pereira Roders et al., 2011; Pereira Roders, 2013). “Cultural significance” was first identified in the Venice Charter (1964); however, it was a more vague term without a definition in the document (Zancheti et al., 2009) when explaining the idea of historic monuments as evidence of their civilization. This idea is not limited to a single architectural work but also includes their settings, related developments and events, and the “modest works of the past which have acquired cultural significance with the passing of the time” (ICOMOS, 1964).

With a more clearly articulated definition, “Cultural significance” came to prominence with the Burra Charter (Worthing & Bond, 2008; Pereira Roders, 2013). After dramatic evolution between different versions, a substantial revision was made in 1999 (ICOMOS Australia, 1999). This included the replacement of the phrase “synonymous with heritage significance and cultural values” (ICOMOS Australia, 1999) since the 1979 version, and the addition of more intangible aspects such as “use,” “associations,” and “meanings,” in addition to the physical “fabric.” Since then, “cultural significance” has been commonly understood as “the various values associated with a place that together identify why it is important” (Worthing & Bond, 2008: p. 47). In the latest version of the Burra Charter (2013), “cultural significance” is defined as “aesthetic, historic, scientific, social, or spiritual value for past, present, or future generations,” which are “embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places, and related objects.” More importantly, it points out that “the understanding of cultural significance may change” (ICOMOS Australia, 2013).

However, there are differing opinions among scholars regarding the definition of "cultural significance" in the Burra Charter. Zancheti (2009) categorized three different perspectives in defining "cultural significance": the epistemological, the socio-cultural, and the planning of conservation (p.50). He pointed out that, the Burra Charter was addressed from the epistemological point of view, in which "cultural significance" is inherent in the place itself, meaning that values are inherited within the sites. In opposition to this, from a socio-cultural perspective, Tainter and Lucas (1983) criticized the attribution of values and meanings to objects, claiming that these were tied to individuals and social groups, rather than being inherent. Building on this perspective, Green (1998) concluded that "cultural significance" should be determined by multiple social groups, rather than specialists. It arises from collective activity and develops through an ongoing interactive process over time. In terms of conservation planning, Mason (2002) pointed out that the declaration of "significance" is often a static statement that may perpetuate the same values. Subsequent restoration and preservation efforts, guided by the same statement of significance, tend to reinforce past values and create barriers that hinder the recognition of new values (Zancheti, p.50). Based on this analysis, Zancheti (2009) redefined "cultural significance" as "the set of all identifiable values resulting from continuous (past and present) judgment and the social validation of meanings of objects….it must be observed that significance includes present and past values, those that are in dispute between the stakeholders, and those with no more meaning in the present, but that are still in the collective memory or recorded in many instruments."

Together, conveying cultural significance, "attributes" was first used in the Operational Guideline (UNESCO, 2005) and then officially introduced in HUL (Historic Urban Landscape) as the global UNESCO policy (Veldpus, 2015). Before the term "attributes" was used, other terms were utilized in the documents, such as "sources of information" (ICOMOS, 1994), "aspect of integrity" (NRHP, 1953), "character-defining features" (ICOMOS, 2017), and "heritage-character-defining element" (ICOMOS, 2017). With a different categorization approach, although called "sources of information" originally in the Nara Document (1994), it presented seven categories: "(1) form and design, (2) materials and substance, (3) use and function, (4) traditions and techniques, (5) location and setting, and (6) spirit and feeling, and (7) other internal and external factors." These categories were then later utilized in the Operational Guidelines as "attributes" (UNESCO, 2005; UNESCO, 2011; Pereira Roders, 2013; Veldpus, 2015), referring to those "qualities and characteristics seen in things, in particular, the positive characteristics (actual and potential)" (Mason, 2002).

Over the years, the idea of “cultural significance” has evolved, and its categories have become more detailed. Scholars have developed theoretical frameworks of cultural values (Riegl, 1902; Feilden et al., 1993; English Heritage, 1997; Mason, 2002; Feilden, 2003; Throsby, 2006). Pereira Roders (2007) and Veldpaus (2015) have developed frameworks of values and attributes (Veldpaus, 2015) to support heritage management. Since these frameworks have been comprehensively developed and instrumentally applied in various research, they have been chosen and applied in this study. The details of the frameworks will be explained in section 1.3.3, the Overall Methodology.

1.2 Problem Field

1.2.1 Terminology, Definition, Categorization

Terminology and its definitions are among the most fundamental elements to understand when we learn knowledge from a field or even search for a book in the library. Over the years, as the heritage field has grown more interdisciplinary, ranging from sociology to natural science, it needs to constantly explain the issues of the built environment concerned between the popular and professional. This field tends to borrow terms from another field to “illustrate the analogy… as if medical experts used broken bones and aching muscles as their conceptual tools for understanding pathological phenomena” (Rosenau, 1968, p. 174). For the purpose of communication, in the short term, within a verbal conversation, this might be a solution. However, in the long term, especially in contributing to science, this way of borrowing terms and not defining them makes them difficult to discuss, compare and further research.

1.2.1.1 Different Terminologies, definitions and categorizations in research

Due to the fact that intervention concepts and definitions can vary over time, making it difficult to make comparisons, certain scholars have further researched and categorized to improve the understanding of intervention concepts and definitions (Dobby, 1978; Feilden, 1982; Woodcock, 1988; Henket, 1998; Douglas, 2006; Pereira Roders, 2007) (See TABLE 1.1).

TABLE 1.1 The theoretical frameworks on intervention concepts, between 1978-2007

No.	Scholars	year	Concepts	Aspects	Sources
1	**Dobby**	1978	(1) None: Conservation, Preservation, (2) Some: Repair, (3) Much: Enhancement, Restoration, Reconstruction, (4) Total: Demolition	physical changes	not specifically mentioned
2	**Feilden**	1982	(1) Prevention of deterioration (indirect conservation), (2) Preservation of the existing state Consolidation (direct conservation) (3) Restoration (4) Rehabilitation (5) Reproduction (6) Reconstruction	physical changes and values	not specifically mentioned
3	**Woodcock**	1988	(1) Keep: preserve, save, protect, record, conserve, rescue (2) Change: restore, rehab(ilitate), revive, transform, recycle, rebirth, revitalize, convert, reuse, adapt, repair, redevelop, stabilize, modify, consolidate, renew, renovate, move, remodel, refurbish (3) Destroy: dismantle, demolish, tear down, eliminate, remove, raze (4) Return: re-erect, reconstruct, copy	"words associated with preservation" with "actions" "actions" as in: positive(+) neutral(0) questionable(-)	Preservation News, National Trust, U.S.
4	**Henket**	1998	(1) Maintenance (2) Adaptation: (2.1) Change in functions: change to same/other use (2.2) Change in capacity: lateral/ vertical extensions (2.3) Change in performance: refurbishment and rehabilitation/ renovation and restoration	same/other use, capacity, performance	not specifically mentioned

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TABLE 1.1 The theoretical frameworks on intervention concepts, between 1978-2007

No.	Scholars	year	Concepts	Aspects	Sources
5	**Douglas**	2006	(1) Preservation (arrest decay), (2) Conservation (preserve purposely), (3) Refurbishment (facelift or makeover), (4) Rehabilitation (modernize), (5) Renovation (upgrade), (6) Remodelling (improve/extend), (7) Restoration (bring back), and (8) Demolition (remove). Other interventions: Maintenance, Stabilization, Consolidation, Reconstruction Scales of adaptation: small, medium and large Degrees of change: low key, substantial and drastic.	physical changes, scales	not specifically mentioned
6	**Pereira Roders**	2007	(1)Deprivation: abandon and vandalism (2)Preservation: inventory and prevention (3)Conservation: maintenance and safeguard (4)Restoration: restitution and reconstitution (5)Rehabilitation: reuse and conversion (6)Reconstruction: rebuilding and building new, to (7)Demolition: reduce and waste.	level of changes Other aspects: “reality”, “use”, “aim”, “built” and “impact”	international doctrines and research-related publications

One of the first scholars to theorize intervention concepts and their relation, although addressed more from the planning field, Dobby (1978) presented a table of terms used in conservation and implied their degree of change – none, some, much, and total. From Dobby’s perspective, “conservation” was presented as an intervention that makes no changes to total changes. Other interventions such as “repair” and “preservation” were considered to make no changes, while “enhancement,” “restoration,” “reconstruction,” and “demolition” make changes ranging from some to total changes.

With more detailed categorizations, Feilden (1982) presented seven ascending degrees of intervention, ranging from (1) the prevention of deterioration (indirect conservation); (2) preservation of the existing state; (3) consolidation (direct conservation); (4) restoration; (5) rehabilitation; (6) reproduction; to (7) reconstruction. In his work, Feilden defined that “interventions practically always involve some loss of value in cultural property but are justified in order to preserve the objects for the future” (Feilden, 1982; p.8). Also, Feilden’s categorization implies that interventions began not only with the action of “retaining” but also with the earlier “indirect” and “control” of the historic environment.

Henket (1992) made a distinction between “maintenance” and “adaptation” from the perspective of performance management. “Adaptation” can then be further divided into three categories, and within each of these categories, another hierarchy of categories was created. These categories include “change to same/other use” under “change in functions”, lateral/vertical extensions under “change in capacity”, and refurbishment and rehabilitation/renovation and restoration under “change in performance”.

Woodcock (1988) created a table outlining the terms from Preservation News in the American context. His table not only presented four main categories, “keep, change, destroy, and return”, which included thirty-five terms, but it also displayed the various actions that can be taken toward historic resources, along with his subjective evaluation of whether a particular action is positive (+), neutral (0), or questionable (-) (Woodcock, 1988, p.5). According to Woodcock’s perspective, “change” means something different from “keep”, “destroy”, as well as “return”, and it doesn’t necessarily have a negative connotation as it includes all three kinds of actions. Woodcock’s categorization implies connotations in each action.

Douglas (2006) presented profound research on “adaptation” based on Henket’s theory (1992). In the context of his book, Douglas mentioned that unlike the traditional way of using “adaptation” as a narrow term that only suggests some form of change, he used “adaptation” to describe the full range of works – any intervention to adjust, reuse or upgrade a building to suit new conditions or requirements – to property over and above maintenance. A figure of “the range of interventions” has been created, which shows the relationship between the level of intervention and the risk of obsolescence and deterioration. This included eight interventions, which are (1) preservation (arrest decay), (2) conservation (preserve purposely), (3) refurbishment (facelift or makeover), (4) rehabilitation (modernize), (5) renovation (upgrade), (6) remodelling (improve/extend), (7) restoration (bring back), and (8) demolition (remove). There were also another four interventions – maintenance, stabilization, consolidation, and reconstruction – presented according to the scale of adaptation – small, medium and large – as well as their degrees of change – low-key, substantial, and drastic – accordingly.

Pereira Roders (2007) took a step further, summarizing both international organizations and some scholars mentioned earlier. They created a scale of interventions that categorized seven main categories, each with two sub-categories: “passive” and “active.” The categories ranged from (1) deprivation: abandon and vandalism, (2) preservation: inventory and prevention, (3) conservation: maintenance and safeguard, (4) restoration: restitution and reconstitution, (5) rehabilitation: reuse and conversion, (6) reconstruction: rebuilding and building new, to (7) demolition: reduce and waste. Within this theoretical framework, other aspects such as “reality,” “use,” “aim,” “built,” and “impact” were also discussed.

Besides the diverse categorizations according to the aforementioned scholars, Ashworth (2011) addressed that the different definitions of “conservation”, “preservation”, and others were oriented towards the differences in heritage discourses. In the different discourses he identified, including the “preservation discourse” and the “conservation discourse”, the latter is dissimilar from the former mainly in two ways. First, the focus is widened from single monuments to ‘heritage ensembles’ (Ashworth, 2011). Second, the goal of heritage management is to ‘preserve purposefully’ rather than just preserve (Burke 1976; Larkham 1996/2005; Ashworth 2011; Ashworth 2013). One of the representatives mentioned in the “preservation discourse” was Petzet (2009). He once stated that ‘conservation does not mean “managing change,” but preserving’ (Petzet 2009, 101). On the contrary, scholars addressing the “conservation discourse” have noted that although the terms “preservation” and “conservation” are often used as synonyms, they are not the same (Ashworth 2013; Patiwael et al., 2019). Preserving purposefully is described as ‘not merely ensuring continued existence but ensuring continued useful existence, which often implies retaining or restoring the traditional appearance of buildings, but adapting the interior for modern uses’ (Burke 1976, 117). The inclusion of function in addition to form in heritage management through preserving purposefully has resulted in “adaptive reuse” becoming a popular slogan of heritage planners in Europe and North America in the 1970s (Tiesdell et al., 1996; Ashworth 2011)

Although not analyzed in this research, many professional publications were consulted and referenced in architectural and design education. These publications often categorized interventions and included examples of built projects combining narratives, graphics and images. With diverse terminology, interventions are referred to differently, such as “conversions” (Robert, 1989; Feireiss and Klanten, 2009; Plevoets and Cleempoel, 2019), “approaches” (Davies, 2003; Rogić, 2009; Hettema & Egberts, 2019), “principles” (Stone, 2005; Petzet,2010; Šijaković, 2015), “alternations” (Scott, 2007), redesign strategies (Cramer and Breitling, 2007; Petzet and Heilmeyer, 2012; Fu, 2016; Brooker,2017; Plevoets and Cleempoel, 2019; Masoud and Einifar, 2020), transformation (Feireiss and Klanten, 2009; Bollack, 2013), and “rewriting actions” (Alkemade and Etal., 2020). Also, when categorizing different intervention concepts, professionals borrowed terminology from other fields, such as writing metaphors (Machado, 1976), waste disposal (Petzet & Heilmeyer, 2012), biology (Šijaković, 2015), and Japanese repairing techniques – Kintsugi (Posthuma, 2016).

Recently, Plevoets and van Cleempoel (2019) conducted a more comprehensive review of publications on intervention concepts from the 1970s to 2019. They identified three different approaches: typological, technical, and architectural strategies.

They also developed two additional approaches: programmatic and interior. According to the authors, finding a single term to describe the complexity of a redesign project is challenging. This issue of language and terminology in architectural intervention creates difficulties in comparison and allows space for interpretation (Pezet, 2012). The main reason for this problem is that intervention terminologies simultaneously consider multiple aspects, such as aims, actions, values, attributes, waste and energy, and time (Turner, 1996; Pereira Roders, 2007; Veldpaus, 2015; Petzet & Heilmeyer, 2012). Although these publications were not analyzed in this research, they are listed as valuable references for future research (See TABLE 1.2).

TABLE 1.2 The terminology of intervention concepts in publications (in chronological order).

No.	Scholars	year	Concepts	Aspects	Sources
1	**Robert**	1989	Seven concepts of conversion: (1) Building Within (2) Building Over (3) Building Around (4) Building Alongside (5) Recycling Materials or Vestiges (6) Adapting to a New Function (7) Building In The Style of	Mixed aspects, Aims, Actions, Attributes	not specifically mentioned
2	**Davies**	2003	(1) Pastiche (2) Traditional (3) Subtle (4) Modern	Mixed aspects, Aims, Attributes	Research-related publications
3	**Brooker & Stone,**	2004	(1) Installation (2) Insertion (3) Intervention	Mixed aspects, Aims, Actions	not specifically mentioned
4	**Cramer & Breitling**	2007	Design Strategies: (1) Corrective Maintenance (2) Modernisation (3) Adaptation (4) Replacement Architectonic Expression: (1) Correspondence (2) Unification (3) Fragmentation (4) Junction & Delineation	Mixed aspects, Aims, Actions, values, attributes	Research-related publications
5	**Rogić**	2009	(1) Coexistence (2) Imposition (3) Fusion	Mixed aspects, Aims, Attributes	Research-related publications, exhibitions
6	**Semes**	2009	(1) Literal Replication (2) Intervention Within Style (3) Abstract Reference (4) International Opposition	Mixed aspects, Aims, Attributes	

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TABLE 1.2 The terminology of intervention concepts in publications (in chronological order).

No.	Scholars	year	Concepts	Aspects	Sources
7	**Feireiss & Klanten,**	2009	(1) Add-On (2) Inside Out (3) Change Clothes	Mixed aspects Aims, Actions, Attributes	
8	**Jäger**	2010	(1) Addition (2) Transformation (3) Conversion	mixed aspects Actions, Aims, Attributes	Research-related publications
9	**Bloszies**	2012	Degree of Contrast: (1) Extreme Contrast (2) Restrained Contrast (3) Referential Contrast	Mixed aspects, Time, Aims	not specifically mentioned
10	**Petzet & Heilmeyer**	2012	3R Hierarchy System: (1) Reduce: Perception, Behavior, Maintenance (2) Reuse: Renovation, Conversion, Infill, Redesign, Subtraction, Addition, (3) Recycle: Material Recycling, Gestalt Recycling	Mixed aspects, Waste hierarchy, physical energy, values	Research-related publications, exhibitions
11	**Bollack**	2013	(1) Insertion (2) Parasites (3) Wraps (4) Juxtapositions (5) Weavings	Mixed aspects, Aims	
12	**Šijaković & Perić**	2014	(1) Subjection (2) Symbiosis (3) Subversion	Mixed aspects Actions, Aims, Values Attributes	Research-related publications
13	**Fu**	2016	The level of change (1) Original Preserved (2) Portions Changed (3) Elements Decorated Design strategies in the Portions Changed (1) Within (2) Enclosed (3) Above (4) Below (5) Beside (6) Comprehensive New and Old Dialectic & Architectonic: (1) Duplication (2) Transitional (3) Contrast (4) Recall (5) Background	Mixed aspects Aims, Actions, Values, Attributes	International doctrines, English Heritage, Historic Scotland, Research-related publications

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TABLE 1.2 The terminology of intervention concepts in publications (in chronological order).

No.	Scholars	year	Concepts	Aspects	Sources
14	**Braae**	2018	(1) Differential (2) Continuity (3) Cultivation (4) Optimisation	Mixed aspects, Aims	not specifically mentioned
15	**Plevoets and van Cleempoel**	2019	(1) Typological (2) Architectural (3) Technical (4) Programmatic (5) Interior	Mixed aspects, Aims, Actions, Values, Attributes	Research-related publications
16	**Alkemade et al.**	2020	(1) Eliminate (2) Continue (3) Obscure (4) Reconfigure (5) Repurpose (6) Densify (7) Copy (8) Overlay (9) Reimagine (10) (Re)start (11) Abstain	Mixed aspects, Aims, Actions, Values, Attributes	not specifically mentioned

1.2.1.2 Terminology issues in the scope of international doctrines

In supporting the guidance of practice in the intervention of the built heritage field, intergovernmental organizations such as the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the Council of Europe (CoE), as well as non-governmental organizations like the International Council on Monuments and Structures (ICOMOS), have been developing international documents, such as charters, principles, guidelines, protocols, and recommendations, for over half a century. These documents not only provide positive historical, technical, and methodological knowledge from specialized professionals, but they also imply a doctrine (Mansfield, 2008). This means that they are seen to have “the fundamental role of offering statements or principles and guidelines for the conservation and management of places of cultural significance” (Taylor, 2004), and therefore are supposed to have a professional ethics role in guiding the conduct of heritage conservation practice (Taylor, 2004; Lin et al., 2023).

Many research studies focusing on international doctrinal documents have pointed out the lack of understanding of concepts and definitions, although intervention concepts and definitions are rarely discussed (Pereira Roders, 2007; Veldpaus et al., 2014; Castriota & Marcal, 2021; Vecco, 2010; Rosetti et al., 2021; Zerrudo, 2022; Albert et al., 2022). Some scholars have also stated that international doctrinal documents have evolved over time, and this evolution can be seen as a reflection of practice (Jokilehto, 2007). Through ratifications, these documents elaborate on definitions and broaden concepts (Jokilehto, 2007; LeBlanc, 2008), which benefits future identification (LeBlanc, 2008), provides important practical experiences (Silberman, 2008), and generates new knowledge and insights (Vecco, 2010; Rosetti et al., 2021).

However, since these documents were not created to be perfect and were made to be customized for their specific context, there are two main issues regarding the terminology of interventions within the scope of international doctrines.

Firstly, different definitions of the terminology between documents and organizations. Although international doctrinal documents have defined that interventions have different levels, scales, and activities (ICOMOS Canada,1983), the definition of the interventions often evolved between documents and/or was omitted. As these documents are meant to be applicable to different contexts, they tend to be universally applied (Vecco,2010; Al-Sakkaf et al.,2020b) in order to bridge all countries, cultures and priorities from the experts involved in their drafting as well as for future adoption at the national level (Francioni,2003; Al-Sakkaf et al.,2020a; Al-Sakkaf et al.,2020b). Such generalization might cause the intervention concepts and definitions to be considered overlapping and limited (Pereira Roders, 2007; Silberman,2008; Veldpaus et al, 2013; Khalaf, 2015; Castriota & Marcal, 2021). Moreover, nuances exist even within the same language-speaking context, such as a general understanding of the term “conservation” being more used in the British English-speaking context, while “preservation” is more used in North America. Taking examples from the doctrines, interventions like ‘conservation’ appeared only as the title of the Appleton Charter (ICOMOS Canada, 1983) but neither show up nor are defined in the document. ‘Conservation’ is also sometimes mentioned as an umbrella concept that includes other interventions (ICOMOS Australia, revised 2013; ICOMOS China, 2015), which is different from other documents. The Cultural Tourism Charter (ICOMOS,1999) mentions that “preservation” is an alternative term to “conservation” in some English-speaking countries. Besides “conservation” and “preservation”, certain concepts have been put in grey areas which cannot be aligned between documents, such as “rehabilitation” (ICOMOS Canada,1983), “adaptation’ (ICOMOS New Zealand, 2010; ICOMOS Australia, revised 2013), and adaptive re-use (ICOMOS Australia, revised 2013). These interventions, which are seldom related and/or further defined, often lead to misunderstandings or misinterpretations in research and practice.

Secondly, stemming from the terminology and definition issue, the lack of alignment among the different intervention levels/degrees/scales has become another concern, especially when bridging the gap between theoretical definitions and their implementation. The lack of alignment can result in miscommunication and even contradictions (Ashworth, 2011) among various stakeholders, thereby impacting the built environment (Patiwael et al., 2019) in various ways. Specifically, in the local context, this issue presents difficulties in applying appropriate local building and legislative codes, as they refer to different criteria, requirements, technologies, and heritage types (Ornela et al., 2016; Cazacova, 2016; Liudmila & Balkiz, 2019). For example, there may be discrepancies between policies that define maintenance as "repair" (Forster & Kayan, 2009; Eken et al., 2019) and inconsistencies between heritage and sustainable construction technology policies in the renovation/ restoration of vernacular heritage (Liudmila & Balkiz, 2019). Interventions require accurate guidance (Ornela et al., 2016), and without proper definitions to highlight the differences and diversity, tendentious interpretations often question the role of intervention concepts as best practices (Meskell, 2019). Furthermore, recent studies have emphasized that intervention definitions should go beyond mere linguistic considerations (Ganguly, 2023), redefining "repair" as a means to transcend barriers of social, racial, and cultural injustices and inequalities for sustainable futures (Berger et al., 2023). Therefore, considering the aforementioned issues, the existing approach of using traditional linguistic methods for definitions may no longer suffice.

1.2.2 Interventions and Cultural Significance in the Scope of Doctrines

In the context of international doctrinal documents, intervention is "formulated" (ICOMOS, 2017) and "guided" (ICOMOS New Zealand, 2010) by values and cultural significance. Intervention should be "chosen" (ICOMOS Canada, 1983), following the principle of "respecting" (ICOMOS, 2011), "best protecting" (ICOMOS, 2017) as well as "enhancing and sustaining" (ICOMOS New Zealand, 2010) values and cultural significance. New interventions, when added, should respect the cultural significance in a way that "does not distort or obscure" the cultural significance of the place or "detract" from its interpretation (ICOMOS Australia, 2013). In detail, "relative degrees of cultural significance" may lead to different levels of intervention at a place (ICOMOS Australia, 2013). In a sense, cultural significance is expected to influence the selected category/level of intervention on built heritage (ICOMOS Canada, 1983).

Based on the knowledge of the relationship between cultural significance, values, and attributes introduced in the previous chapter (1.1.3) – cultural significance is decoded by the conveyed values (Pereira Roders, 2007) and attributes (Veldpaus, 2015) – the following sections will present and discuss the current literature on researching the related topics about the relationships between interventions, values, and attributes individually.

1.2.2.1 Interventions and Cultural Values

Interventions may have good intentions, but they can disregard certain cultural values by favoring or neglecting the past, present, or future (Pereira Roders, 2007). Learning from the knowledge presented in the doctrinal documents, it is expected that values and cultural significance will influence the appropriate category/level of intervention (ICOMOS Canada, 1983). Although there is a wealth of research emphasizing the crucial role of values and cultural significance in decision-making processes in heritage planning and management (De La Torre, 2002; Mason, 2005; Pultar, 1997; Taher Tolou Del, 2020; Augustiniok, 2020), as well as in defining specific intervention concepts for built heritage, such as conservation, restoration, and reconstruction (Henket, 1998; Pereira Roders, 2007; Douglas, 2007), the relationship to their underlying values has rarely been studied, nor compared over time and place.

Many academics have pointed out the influence of values throughout the conservation process (Feilden, 1982), where values are expected to be prioritized, integrated, or ranked (Mason, 2005). Sometimes, values are seen as conflicting with each other (Rieigl, 1903/1996; ICOMOS, 1994; De La Torre, 2002), as they are influenced by diverging interests of stakeholders (Mason, 2005). Some researchers focus on specific values within one category of intervention, such as the social meaning of “maintenance” in modern heritage (Sample, 2016); using adaptive reuse to promote social values (Kenneth and Lucian, 2019); examining the balance between architectural and monument values in adaptive reuse (Augustiniok et al., 2020); and reflecting social, political, and economic values in “repair” for sustainable futures (Berger et al., 2023).

Understanding how values influence the definition is crucial. Without a proper definition, tendentious interpretations often cast doubt on the role of certain intervention concepts as best practices (Meskell, 2019). For example, the government has used “preservation” and “restoration” as strategies for gentrification under political and economic agendas (Meskell, 2019). “Conservation” and “adaptive reuse”

have sometimes been considered to compromise too much in terms of contemporary needs and have a negative impact on the place (UNESCO Bangkok, 2009). While some documents acknowledge that "conservation" is an integral part of good management of culturally significant places (ICOMOS Australia, revised 2013) and that "conservation" does not exclude certain intervention concepts, as Jokilehto once stated, "conservation does not rule out 'reconstruction' when it is well motivated and correctly executed" (Jokilehto, 2019: p.71). These are just a few examples that highlight the importance of a values-based definition of intervention.

1.2.2.2 Interventions and Cultural Attributes

Attributes are the tangible or intangible qualities that we inherit from the past. They are the resources that past generations deemed valuable enough to preserve for present ones, either through active protection or other means (Veldpaus, 2015). Unlike values, attributes follow a hierarchical pattern of inclusion and overlap, while values exist in parallel to each other. However, they are often ranked in terms of importance, especially when making decisions that involve multiple values (*Ibid*).

A growing body of research has highlighted the key role of attributes of cultural significance in the processes of decision-making in heritage planning and management (De la Torre, 2002; Junyong et al., 2008; Worthing & Bond, 2008; Throsby, 2002; Teutonico, 2019; Avrami et al., 2019; Havinga et al., 2020; Olimpio et al., 2021; **西和彦** et al.,2021), theorizing the relation between intervention concepts on built heritage, e.g., conservation, restoration, reconstruction, adaptation (Henket, 1998; Pereira Roders, 2007; Douglas, 2006; Shahi et al., 2020). However, the relation to their attributes was seldom researched, nor compared systematically.

Furthermore, as the range of attribute categories expanded (Sullivan, 2004; Jokilehto, 2006; Landorf, 2009; Vecco, 2010; Araoz, 2011; Labadi, 2013; Veldpaus, 2015), the heritage paradigm shifted from tangible to intangible aspects in recent decades (Ruggles & Silverman, 2009; Vecco, 2010; Silva, 2020). Scholars have highlighted that the object of preservation remains tangible and physical (Ruggles & Silverman, 2009). Ongoing debates also focus on whether certain intervention concepts favor tangible or intangible attributes, such as restoration, renewal, or reconstruction, especially in different cultural contexts (Matero, 2006; Mansfield, 2008; Kwanda, 2009; Park, 2014; Okahashi, 2018; Sharma, 2019). This underscores the idea that the meanings of significance and attributes change between cultures (ICOMOS, 1994) and over time (Worthing & Bond, 2008; ICOMOS Australia, revised 2013; De la Torre, 2002). Our intervention will impact how future

generations perceive conserved heritage and engage in new interventions, including the use of new digital technologies and artificial intelligence (Ceccarelli, 2017). In this dynamic context, the focus should not be on preventing change, but on finding alternative ways to enact change without compromising significance (Worthing & Bond, 2008: p.162). As the range of attribute categories expanded and their roles in influencing interventions became more dynamic, it is necessary to revisit and compare their relations over time and place more systematically.

1.2.3 State-of-the-Art in Bridging the Problem Fields

According to the two primary problems mentioned in sections 1.2.1 and 1.2.2, this research has identified primary research gaps. Even though levels, degrees, and scales have been mentioned in the definition and categorization process of intervention concepts, there has been little research that systematically analyzes intervention concepts by integrating the perspectives of values and attributes of cultural significance.

In order to address this knowledge gap, this research proposes a novel approach that uses new criteria to support the intervention definition process. By systematically researching the role of cultural significance in influencing the definition of interventions, this approach breaks down the definition into two aspects: values and attributes. This not only avoids the traditional approach of using one term to describe the other, but also enhances the understanding of intervention knowledge beyond its Latin origins, creating the possibility of revealing diversity and bridging academia and practice.

1.3 Research Framework

1.3.1 Research aim, objective and scope

The aim of this research is to explore and compare the definition of interventions in built heritage through the lens of cultural significance, values, and attributes within the scope of international doctrines. Additionally, the research aims to investigate how these interventions are implemented at the project level within a local context.

1.3.2 Research Questions

The main research question is:

— **What are the trends of intervention definitions, under the influence of values and attributes of cultural significance, between theory and practice?**

In order to tackle this question, three other sub-questions were developed:

Sub-question one:

— **What are the concepts and their definitions in international doctrines and at the local project level?**

Sub-question two:

— **What roles do values and attributes of cultural significance play in defining interventions scoping international doctrines and at a local project level?**

Sub-question three:

— **How are these interventions defined in comparison with international doctrines and at the local project level, including stakeholders' perspectives?**

1.3.3 Overall Methodology

As this research is about terminology and definitions, all the theoretical frameworks and data resources selected and analyzed are in English, including English-written texts such as documents or English-speaking contexts, such as interviews, to avoid the issues created by translation and interpretation. Two main frameworks are applied in this research for the purpose of analysis, which are the theoretical frameworks on cultural values in Chapter 1.3.3.1 and attributes in Chapter 1.3.3.2. In order to answer the research questions, two data sources were selected: the international doctrinal documents in Chapter 1.3.3.3 and the interviews of stakeholders in Chapter 1.3.3.4. The analysis process of these data sources is presented in Chapter 1.3.3.5.

1.3.3.1 Theoretical Frameworks 1 : Theoretical Framework on Cultural Values

Although several typologies of value systems for heritage conservation have been defined in various studies (e.g. Riegl, 1903; Mason, 2002; Riganti & Nijkamp, 2005), a comprehensive theoretical framework with more inclusive categories and their definitions (Pereira Roders, 2007; Tarrafa et al., 2010) has been developed and chosen for this research to support the decision-making process of heritage management.

This theoretical framework on cultural values has been globally applied to both urban and architectural scales since its development in 2010 for comparing perspectives from stakeholders (Silva & Roders, 2012), supporting policy evaluation (Veldpaus & Roders, 2014), analyzing literature in residential neighborhoods (Spoormans et al., 2020), analyzing social media (Bai et al., 2022; Foroughi et al., 2022), and serving as a baseline for fieldwork in cities such as Galle (Boxem et al., 2012) and Willemstad (Speckens et al., 2012). This theoretical framework consists of eight primary values and thirty secondary values (TABLE 1.3) to guide their identification: historic, aesthetic, scientific, ecological, social, economic, political, and age values. To further clarify, this theoretical framework only applies to urban and architectural scales. Certain important attributes, such as setting, landscape, and visibility issues, which are relevant to a broader range of natural and rural scales, were not considered in this framework.

TABLE 1.3 The theoretical framework on cultural values (ICOMOS Australia, 1999; Mason, 2002; Pereira Roders, 2007; English Heritage, 2008;Tarrafa Silva & Pereira Roders, 2010)

Primary Values	Secondary Values		References
	Social	**Spiritual**	beliefs, myths, religions (organized or not), legends, stories, and testimonial of past generations;
		Emotional, individual	memory and personal life experiences;
		Emotional, collective	notions related to cultural identity, motivation and pride, sense of "place attachment", and communal value.
		Allegorical	objects/places representative of some social hierarchy/status;
	Economic	**Use**	the function and utility of the asset, original or attributed;
		Non-use	the asset's expired function, which has its value in the past, and should be remained by its existence (of materials), option (to make some use of it or not) and bequest value (for future generations);
		Entertainment	the role that might have for the contemporaneous market, mainly for the tourism industry;
		Allegorical	oriented to publicizing financial property;
	Political	**Educational**	the education role that heritage assets may play, using it for political targets (e. g., birth-nations myths, glorification of political leaders, etc.);
		Management	made part of strategies and policies (past or present);
		Entertainment	it is part of strategies for the dissemination of cultural awareness, explored for political targets;
		Symbolic	emblematic, power, authority and prosperous perceptions stem from the heritage asset;
	Historic	**Educational**	heritage asset as a potential to gain knowledge about the past in the future through;
		Historic-artistic	quality of an object to be part of a few or unique testimonials of historic stylistic or artistic movements, which are now part of the history;
		Historic-conceptual	quality of an object to be part of a few or unique testimonial that retains conceptual signs (architectural, urban planning, etc.), which are now part of history;
		Symbolic	fact that the object has been part/related to an important event in the past;
		Archaeological	connected with Ancient civilizations;
	Aesthetical	**Artistic**	original product of creativity and imagination;
		Notable	product of a creator, holding his signature;
		Conceptual	integral materialization of conceptual intentions (imply a conceptual background);
		Evidential	authentic exemplar of a decade, part of the History of Art or Architecture;
	Scientific	**Workmanship**	original result of human labour, craftsmanship;
		Technological	skillfulness in techniques and materials, representing an outstanding quality of work;
		Conceptual	integral materialization of conceptual intentions (imply a conceptual background);
	Age	**Workmanship**	craftsmanship value oriented towards the production period;
		Maturity	piece of memory, reflecting the passage/lives of past generations;
		Existential	marks of the time passage (patina) present on the forms, components and materials;
	Ecological	**Spiritual**	harmony between the building and its environment (natural and artificial);
		Essential	identification of ecological ideologies on its design and construction;
		Existential	manufactured resources which can either be reused, reprocessed or recycled;

TOC

1.3.3.2 Theoretical Frameworks 2 : Theoretical Framework on Cultural Attributes

On the one hand, despite the earlier development of the Nara Grid by Van Balen (2008) for assessing the chosen case study, this research has revealed that the complexity of the attributes cannot be comprehensively assessed through these categorizations. This limitation stems from identifying some categories that exhibit overlapping or implicit characteristics. On the other hand, an attributes taxonomy theoretical framework was created by Veldpaus (2015) to enhance the understanding of the attributes and to facilitate the identification process. However, considering the specific focus of this research on built heritage, it became evident that Veldpaus (2015)'s framework which primarily targeted an urban scale, did not adequately address the attributes pertinent to built heritage. Among the five overarching categories of tangible attributes, only two main categories were found applicable to built heritage: "building elements", and "urban elements" under objects. Another category was the "group of buildings" and "building(s)+context" under "ensemble/complex".

Recognizing the inadequacy of suitable attribute categories of built heritage during the analysis, this chapter proposes an attributes theoretical framework with two categories: tangible and intangible attributes (TABLE 1.4 and TABLE 1.5). Each category comprises sub-categories, with eight sub-categories falling under tangible attributes and six under intangible attributes. These sub-categories were referenced from the prior framework by Veldpaus and Pereira Roders (2013), Veldpaus (2015), The Nara Document (ICOMOS,1994), The New Zealand Charter (ICOMOS New Zealand, revised 2010), The Burra Charter (ICOMOS Australia, revised 2013), and Operational Guidelines (UNESCO, revised 2021).

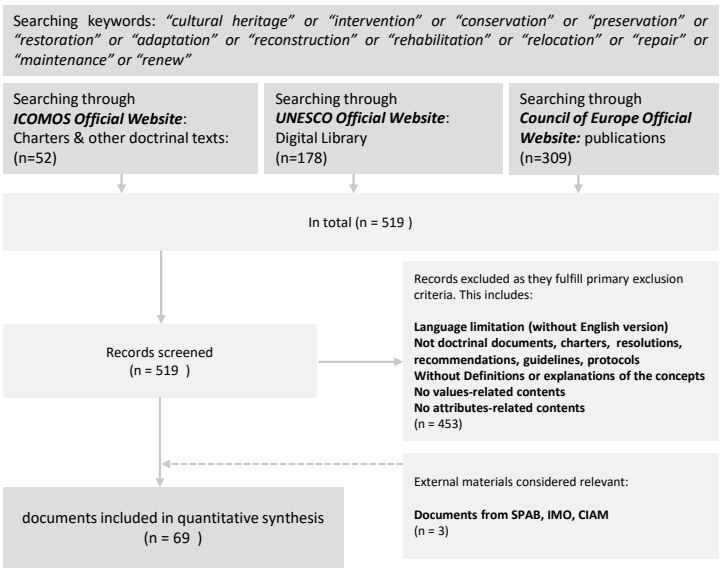
TABLE 1.4 Attributes theoretical framework – tangible attributes in built heritage. (Adapted from ICOMOS, 1994; Veldpaus and Pereira Roders, 2013; ICOMOS New Zealand, revised 2010; ICOMOS Australia, revised 2013; Veldpaus, 2015; UNESCO, revised 2021).

No.	Tangible Attributes	Contents
1	**Setting**	Including Visual Setting (Focal Point, View Cone, Distance Panorama), Spatial Setting (Spatial Volume and Void and Others, Configuration, Topography)
2	**Location**	Siting, Lot, Footing, Layout
3	**Form**	Scale, Size, Height, Mass, Dimension, Proportion, Density, Rhythm
4	**Style**	Including Decoration, Appearance, Character of The Period
5	**Surface (Specifically Building Elements)**	Patina, Colour, Signage, Hidden Marks; Natural Elements, Vertical Vegetation
6	**Structure**	Principle Structure
7	**Materials**	Colour, Texture, Material Pattern
8	**Fixtures And Fittings**	Furniture, Lighting, Facilities for Services, Non-Structural Elements

TABLE 1.5 Attributes theoretical framework – intangible tangible attributes in built heritage. (Adapted from ICOMOS, 1994; UNESCO,2005; Veldpaus and Pereira Roders,2013; ICOMOS New Zealand, revised 2010; ICOMOS, Australia, revised 2013; Veldpaus,2015).

No.	Intangible Attributes	Contents
1	**Use And Functions**	Services, Circulation, Practices, Activities, Ritual, or Other Representation of Living Tradition
2	**Design**	Design
3	**Craftmanship And Techniques**	Craftmanship, Technology, Workmanship, Manual Skills
4	**Manage System**	The Process of Managing, Type of Strategies, Approach.
5	**Process (Development And Evolution)**	The Process of Layering, Development or Evolution (Instead of The Result)
6	**Relation**	Other Senses or Associations (not physically and visually related to the user, such as sounds, smells, and feelings, may compose part of the Setting)

1.3.3.3 Data Sources 1: international doctrinal documents.



ICOMOS
international council on monuments and sites
ICOMOS

unesco UNESDOC Digital Library
UNESCO

COUNCIL OF EUROPE
CONSEIL DE L'EUROPE
Council of Europe

Three Sources of
The international doctrinal documents

FIG. 1.1 The selection process of the international doctrinal documents

The first data source is international doctrinal documents. This section of the data source is analyzed and presented in Chapter 2. International doctrinal documents play a crucial role in supporting the decision-making process of heritage management, particularly in terms of concepts and definitions explained in Chapter 1.2.1. A larger sample of 519 international doctrinal documents was selected (see FIG. 1.1). These documents were examined by searching for keywords such as "cultural heritage," "intervention," and "intervention concepts" - including terms like "conservation," "preservation," "restoration," "adaptation," "reconstruction," "rehabilitation," "relocation," "repair," "maintenance," and "renewal." Additionally, the glossary and terminology sections were reviewed for content related to values and attributes. If these sections were not available, the definitions of intervention concepts were deduced through content analysis of the complete documents. After examination, nearly seventy international doctrinal documents were selected and analyzed. These documents were mainly adopted by organizations such as the International Council On Monuments and Sites (ICOMOS), The United Nations Educational, Scientific and Cultural Organization (UNESCO), Council of Europe (CoE), and The International Committee for the Conservation of the Industrial Heritage (TICCHI). Four documents were adopted by other

TOC

organizations, including the Society for the Protection of Ancient Buildings (SPAB), ICOM Architecture, the International Museums Office (IMO), and The Congrès Internationaux d'Architecture Moderne (CIAM). These documents represent the earliest international doctrinal documents on cultural heritage, adopted before or at the inception of these international organizations. They span the years 1877-2021 and come from various geographical origins, including Europe, Asia, and the Pan-Pacific region (see TABLE 1.6).

TABLE 1.6 Sixty-nine international doctrinal documents (in chronological sequence) selected after the selection process. Abbreviations: Doc.= Documents, Org. = Organizations.

Doc.	Year	Short Reference	Full Reference	Org.
1	**1877**	**The Manifesto**	The SPAB Manifesto	SPAB
2	**1931**	**The Athens Charter**	The Athens Charter for the Restoration of Historic Monuments (Carta del Restauro)	IMO
3	**1933**	**Charter of Athens**	The Charter of Athens	CIAM
4	**1945**	**UNESCO Constitution**	Constitution of the United Nations Educational, Scientific and Cultural Organization	UNESCO
5	**1954**	**The Hague Convention**	The 1954 Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict and its two (1954 and 1999) Protocols	UNESCO
6	**1964**	**The Venice Charter**	International Charter for the Conservation and Restoration of Monuments and Sites	ICOMOS
7	**1966**	**Res (66) 19**	Resolution (66) 19: Criteria and Methods of Cataloguing Ancient Historical or Artistic Sites	CoE
8	**1966**	**Res (66) 20**	Resolution (66) 20: The Reviving of Monuments. Council of Europe	CoE
9	**1967**	**The Norms of Quito**	Final Report of the Meeting on the Preservation and Utilization of Monuments and Sites of Artistic and Historic Value	OAS
10	**1968**	**Res (68) 11**	Resolution (68) 11: On the Principles and Practice of the Active Preservation and Rehabilitation of Groups and Areas of Buildings of Historical or Artistic Interest	CoE
11	**1968**	**Res (68) 12**	Resolution (68) 12 On the Active Maintenance of Monuments, Groups and Areas of Buildings of Historical or Artistic Interest within the Context of Regional Planning	CoE
12	**1972**	**Resolution**	Resolutions of the Symposium on the Introduction of Contemporary Architecture into Ancient Groups of Buildings	ICOMOS
13	**1972**	**UNESCO Convention**	Convention concerning the Protection of the World Cultural and Natural Heritage	UNESCO
14	**1975**	**Res (75)**	The Resolutions of Bruges: Principles Governing the Rehabilitation of Historic Towns	CoE
15	**1975**	**The Declaration of Amsterdam**	The Declaration of Amsterdam	CoE
16	**1976**	**Charter of Cultural Tourism**	Charter of Cultural Tourism	ICOMOS

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TABLE 1.6 Sixty-nine international doctrinal documents (in chronological sequence) selected after the selection process. Abbreviations: Doc.= Documents, Org. = Organizations.

Doc.	Year	Short Reference	Full Reference	Org.
17	**1976**	**Nairobi Recommendation**	Recommendation concerning the Safeguarding and Contemporary Role of Historic Areas	UNESCO
18	**1976**	**Res (76) 28**	Resolution (76) 28: Concerning the Adaptation of Laws and Regulations to the Requirements of Integrated Conservation of the Architectural Heritage, Council of Europe (1976)	CoE
19	**1981**	**The Florence Charter**	The Florence Charter on the Protection of Historic Gardens	ICOMOS
20	**1982**	**The Declaration of Dresden**	Declaration of Dresden on the "Reconstruction of Monuments Destroyed by War"	ICOMOS
21	**1982**	**Tlaxcala Declaration**	Tlaxcala Declaration on the Revitalization of Small Settlements. Third Inter-American Symposium on the Conservation of the Building Heritage	ICOMOS
22	**1983**	**The Appleton Charter**	The Appleton Charter on the Protection and Enhancement of the Built Environment	ICOMOS
23	**1985**	**Convention**	Convention for the Protection of the Architectural Heritage of Europe	CoE
24	**1987**	**Washington Charter**	Charter for the Conservation of Historic Town and Urban Areas	ICOMOS
25	**1987**	**No. R (87) 24**	Recommendation No. R(87) 24 on European Industrial Town	CoE
26	**1989**	**No. R(89)6**	Recommendation No. R(89) 6 on the Protection and Enhancement of the Rural Architectural Heritage	CoE
27	**1990**	**Lausanne Charter**	Charter for The Protection and Management of The Archaeological Heritage	ICOMOS
28	**1990**	**No. R (90) 20**	Recommendation No. R(90) 20 on the Protection and Conservation of the Industrial, Technical and Civil Engineering Heritage in Europe	CoE
29	**1991**	**No. R (91) 6 (A**	Recommendation No. R(91) 6 on Measures Likely to Promote the Funding of The Conservation of the Architectural Heritage	CoE
30	**1991**	**Recommendation No. R (91) 13**	Recommendation No. R(91) 13 on the Protection of the Twentieth-century Architectural Heritage	CoE
31	**1992**	**Convention**	European Convention on the Protection of the Archaeological Heritage	CoE
32	**1993**	**Guideline**	Guidelines on Education and Training in the Conservation of Monuments, Ensembles and Sites	ICOMOS
33	**1994**	**The Nara Document**	The Nara Document on Authenticity	ICOMOS
34	**1995**	**No. R (95) 9**	Recommendation No. R (95) 9 of The Committee Of Ministers to Member States on The Integrated Conservation of Cultural Landscape Areas as Part of Landscape Policies	CoE
35	**1996**	**Principle**	Principles for the Recording of Monuments, Groups of Buildings and Sites	ICOMOS
36	**1996**	**Declaration**	Fourth European Conference of Ministers responsible for the Cultural Heritage	CoE

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TABLE 1.6 Sixty-nine international doctrinal documents (in chronological sequence) selected after the selection process. Abbreviations: Doc.= Documents, Org. = Organizations.

Doc.	Year	Short Reference	Full Reference	Org.
37	1996	**The Declaration of San Antonio**	The Declaration of San Antonio. InterAmerican Symposium on Authenticity in the Conservation and Management of the Cultural Heritage to discuss the meaning of authenticity in preservation in the Americas	ICOMOS
38	1996	**Charter**	Fourth European Conference of Ministers Responsible for the Cultural Heritage	ICOMOS
39	1998	**New Charter of Athen**	The New Charter of Athens 1998: International Agreement and Declaration by the national associations and institutes of Town Planners in the European Community. Amsterdam: European Council of Town Planners (ECTP)	CoE
40	1998	**Suzhou Declaration**	Suzhou Declaration on International Co-operation for Safeguarding and Development of Historic Cities	UNESCO
41	1999	**Charter**	Charter on the Built Vernacular Heritage	ICOMOS
42	1999	**Cultural tourism charter**	International Cultural Tourism Charter Managing Tourism at Places of Heritage Significance	ICOMOS
43	1999	**Principle**	Principle for the Preservation of Historic Timber Structures	ICOMOS
44	1999	**The Hague Convention**	The 1954 Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict and its two (1954 and 1999) Protocols	UNESCO
45	2001	**Resolution**	Fifth European Conference of Ministers responsible for the Cultural Heritage	CoE
46	2003	**Principle of Wall Painting**	Principles for the Preservation and Conservation/Restoration of Wall Painting	ICOMOS
47	2003	**The New Charter of Athens**	The New Charter of Athens 2003: The European Council of Town Planners' Vision for Cities in the 21st century. Lisbon: European Council of Town Planners (ECTP)	CoE
48	2003	**Zimbabwe Charter**	Principles for the Analysis, Conservation and Structural Restoration of Architectural Heritage	ICOMOS
49	2003	**Indonesia Charter**	Indonesia Charter for Heritage Conservation	
50	2003	**Nizhny Tagil Charter**	The Nizhny Tagil Charter for the Safeguard of Industrial Heritage	ICOMOS
51	2005	**Xian Declaration**	Xi'an Declaration on the Conservation of the Setting of Heritage Structures	ICOMOS
52	2005	**Faro Convention**	Council of Europe Framework Convention on the Value of Cultural Heritage for Society	CoE
53	2005	**Vienna Memorandum**	Vienna Memorandum on "World Heritage and Contemporary Architecture – Managing the Historic Urban Landscape"	UNESCO
54	2008	**Québec Declaration**	Québec Declaration on the Preservation on the Spirit of Place	ICOMOS
55	2008	**Québec Charter**	The ICOMOS Charter for The Interpretation and Presentation of Cultural Heritage Sites	ICOMOS
56	2008	**Cultural Route**	The ICOMOS Charter on Cultural Routes	ICOMOS

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TABLE 1.6 Sixty-nine international doctrinal documents (in chronological sequence) selected after the selection process. Abbreviations: Doc.= Documents, Org. = Organizations.

Doc.	Year	Short Reference	Full Reference	Org.
57	**2009**	**Hoi An Protocols**	Hoi An Protocols for Best Conservation Practice in Asia: Professional Guidelines for Assuring and Preserving the Authenticity of Heritage Sites in the Context of the Cultures of Asia	UNESCO
58	**2010**	**New Zealand Charter (revised 2010)**	New Zealand Charter for the Conservation of Places of Cultural Heritage Values	ICOMOS
59	**2011**	**Madrid Document**	Approaches for the Conservation of Twentieth-century Architectural Heritage	ICOMOS
60	**2011**	**HUL**	Recommendation on the Historic Urban Landscape	UNESCO
61	**2011**	**The Dublin Principles**	Principles for the Conservation of Historic Industrial Sites, Structures, Areas and Landscapes	ICOMOS
62	**2011**	**The Valletta Principles**	The Valletta Principles for the Safeguarding and Management of Historic Cities, Towns and Urban Areas	ICOMOS
63	**2011**	**The Paris Declaration**	The Paris Declaration on Heritage as a Driver of Development	ICOMOS
64	**2013**	**The Burra Charter (revised 2013)**	The Burra Charter: the Australia ICOMOS Charter for Places of Significance	ICOMOS
65	**2015**	**China Principle**	Principles for the Conservation of Heritage Sites in China	ICOMOS
66	**2017**	**Document**	Document on Historic Urban Public Parks	ICOMOS
67	**2017**	**Principle**	Principles for the Conservation of Wooden Built Heritage	ICOMOS
68	**2017**	**Salalah Guidelines**	Salalah Guidelines for the Management of Public Archeological Sites	ICOMOS
69	**2021**	**Guidelines**	Guidelines on Fortifications and Military Heritage	ICOMOS

However, the scope of the documents also changed due to the different focus of each part of Chapter 2 and the development of the research.

In Chapter 2.1, nine documents have been chosen to support the understanding of the relationships between concepts. These documents are presented with more comprehensive lists of intervention concepts in the sections titled “definitions,” “levels of intervention,” or “degrees of intervention” to better explain their relationships and hierarchies. Different versions of the same documents were also included to understand the evolution of the concepts and deepen the discussion. For further details, please refer to the Research Methodology in Chapter 2.1.2.

In Chapter 2.2, in support of the discussion on the role of cultural values in influencing the intervention concepts, all sixty-nine documents were analyzed, as the definitions of the concepts were sometimes not fully explained but with value descriptions. For further details, please refer to the Research Methodology in Chapter 2.2.2.

In Chapter 2.3, learning from the lessons in the previous chapter on values, a more focused dataset of forty-one documents has been identified and analyzed to support the discussion on the role of cultural attributes in influencing intervention concepts. This chapter also selected eight intervention concepts that could present the relationships between the attributes and intervention concepts. For further details, please refer to the Research Methodology in Chapter 2.3.2.

1.3.3.4 Data Sources 2: Interviews of 20 stakeholders in NGS

The second data source is the interview transcripts of 20 stakeholders who participated in a selected case study in Singapore – the international architectural competition of the National Gallery Singapore. The selection process of the case study (Chapter 1.3.3.4.1), the selection process of the interviewees (Chapter 1.3.3.4.2), and the interview process (Chapter 1.3.3.4.3) are explained in the following paragraphs.

1.3.3.4.1. The selection process of the case study

This doctoral thesis is funded by the Ministry of Education of Taiwan, under the subject of "Tangible Cultural Heritage/ Preservation and Conservation of Built Environment or Artifacts in Southeast Asia." On the one hand, as a prerequisite of the funded research, it should include a discussion in the context of Southeast Asia. On the other hand, this research aims to explore and compare the differences and commonalities in understanding the terminology and concepts used and interpreted by a large group of people. Therefore, a single case study approach – an international competition – was selected as a data source and used to gain a deeper understanding of the issues at hand.

A systematic review of the case study was conducted (see FIG. 1.2). This research aimed to address the discussion in Southeast Asia. However, in order to establish a larger dataset and facilitate a more comprehensive discussion, the scope was expanded to include Asia and the Pan-Pacific region. A significant amount of data was collected through the internet, primarily from three architectural platforms: Archdaily, Competitions Archi, and Forgemind Archimedia. These websites were chosen because Archdaily is considered the world's most visited architecture website, Competitions Archi collects a substantial amount of information about international competitions, and Forgemind Archimedia has been one of the most frequented architectural information-sharing platforms in Asia and the Pan-Pacific since 2002.

In order to obtain more comprehensive data for the analysis, criteria were established during the screening process. A larger pool was formed during the collection process, resulting in a total of 615 cases after removing duplicates. After the initial screening, 98 cases were selected by filtering out those that fell under categories such as ‘closed competition’, ‘student competition’, ‘calling submission’, ‘not for built projects’, and ‘not located in Asia and Pan-Pacific’. During the second screening, additional criteria were set to exclude cases that focused on ‘new building design’, ‘not concerning built heritage’, ‘not architectural scale’, and ‘private use’, as this research specifically focused on the terminology and concepts of architectural interventions (see FIG.1.3). In the final screening stage, data with ‘language limitation’ or that was ‘not accessible’ were excluded to facilitate the analysis process and ensure sufficient descriptions to support the design ideas and architectural conservation philosophy. Tainan Art Museum (hereafter TAM) and National Gallery Singapore (hereafter NGS) were ultimately selected as case studies based on the aforementioned criteria. However, due to the significantly larger number of competition participant teams in NGS (n=111) compared to TAM (n=7), NGS was chosen as the case study for this research in order to achieve a larger sample group (see FIG. 1.4). For more information about the case study, please check Appendix: Overview of the Case Study.

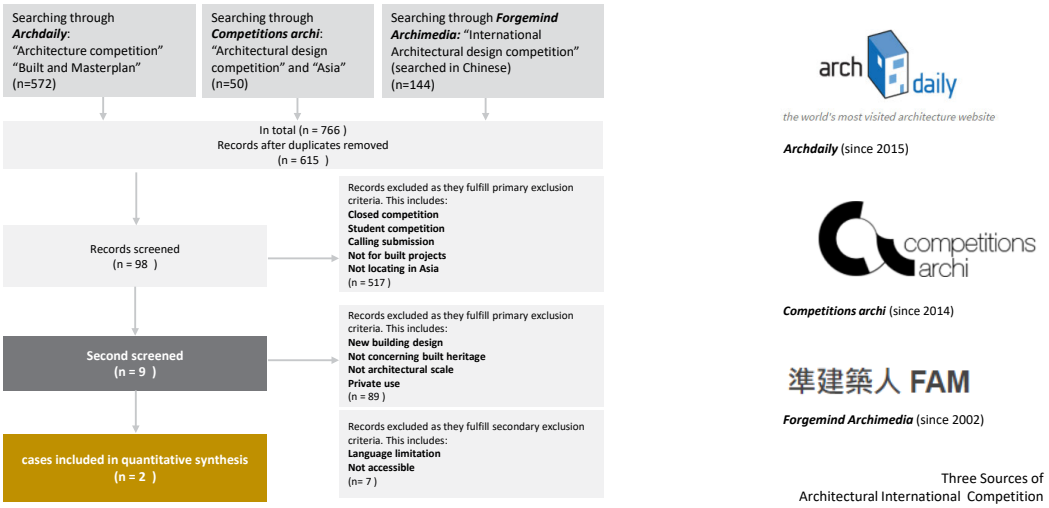


FIG. 1.2 The systematic reviewing process of the selection of the case study.

TOC

Name of the competition	Competition Year	Built year	Site	Redesign Strategies Terms used	New use	Original use	Heritage type	Authority	Participants' Nationalities at the Final stage of the competition	Qualification status
Singapore National Gallery	**2007**	**2017**	**Singapore**	**Adaptive reuse**	**Museum Gallery**	**Governmental office**	**National Monument**	**Ministry of Information, Communications and the Arts**	**France, Taiwan, Singapore, Australia**	**Qualified**
Museum National Indonesia	2012	2015	Indonesia	Extension	Museum	Museum	National Monument	National Museum	Indonesia	Unqualified
The National Museum of Natural History	2013	2018	Manila, Philippine	Adaptive reuse and Retrofitting	museum	Governmental office	Monument	Museum Foundation of the Philippines	Philippine	Unqualified
Tainan Art Museum	2014	2018	Tainan, Taiwan	Reuse	Museum	Police office	Monument	Tainan City Government	Taiwan, Japan	Qualified
Waterfront Park Master Plan of the Busan North Port International Competition	2014	Unknown	Busan, South Korea	Reuse	Cultural Use	Port and facilities	Historical building and site	Busan Port Authority	China, Korea, U.S.	Unqualified
Competition for the Urban Axis Regeneration in Tainan	2015	2020	Tainan, Taiwan	Demolition and Redevelopment	Water park	Residential and Market	Historic context	Tainan City Government	The Netherlands, Taiwan, Japan, Hong Kong	Unqualified
Singapore Rail Corridor Design Competition-Tanjong Pagar Railway Station Renovation	2015	2025	Singapore	Renovation	Cultural Use+ transportation	Train station	National Monument	Urban Redevelopment Authority	The Netherlands, Singapore, U.S., Japan	Unqualified
International Urban Design Competition for the Regeneration of Tongyeong Dockyard	2018	Unknown	Tongyeong, South Korea	Regeneration	Housing and Leisure	Industrial site	Unknown	The Korea Land and Housing Corporation	Not accessible	Unqualified
Reconstruction and Rehabilitation of Mosul's Al Nouri Complex	2020	Unknown	Iraq	Reconstruction and Rehabilitation	Unknown	Religious use	Monument	Iraqi Ministry of Culture and the Iraqi Sunni Endowment	Not accessible	Unqualified

FIG. 1.3 Preliminary comparison of the cases, such as the main concepts used, its building use, heritage type, authority/ competition organizer, and final participants teams during the second screening stage.

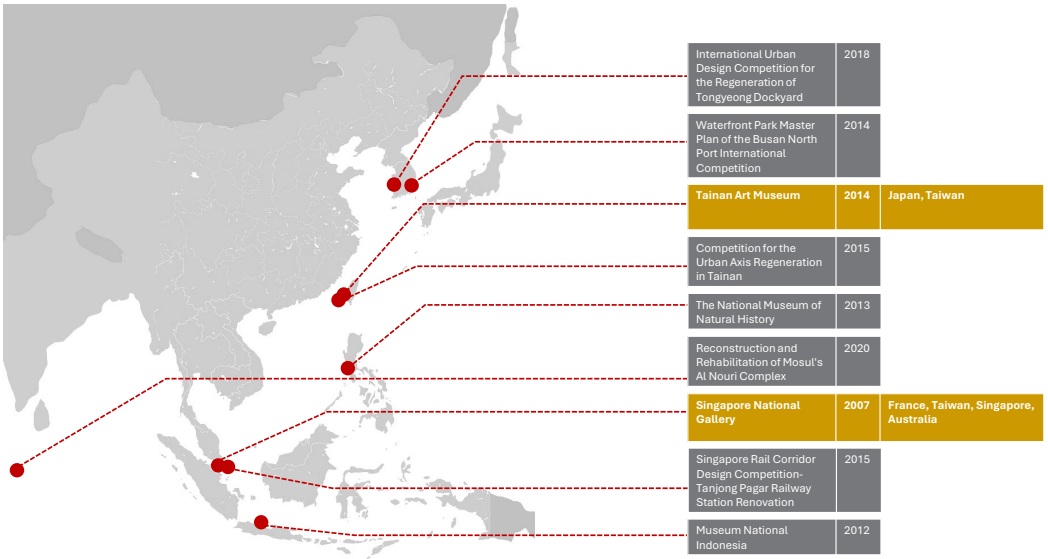
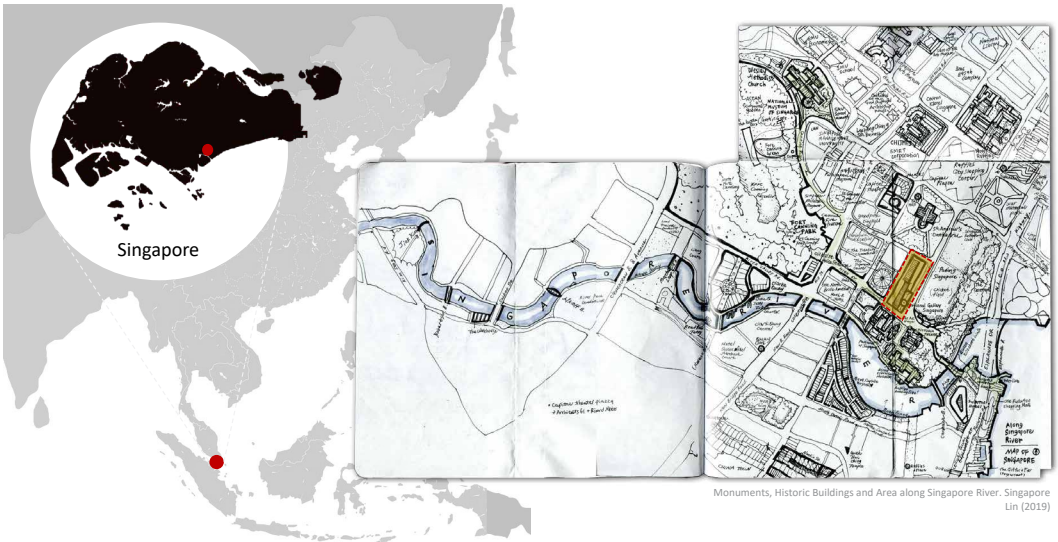


FIG. 1.4 The comparison of the geographical location and the composition of the participants in the cases. Although both the Tainan Art Museum and National Gallery Singapore qualified in the final screening process, the National Gallery Singapore was selected.



Monuments, Historic Buildings and Area along Singapore River. Singapore
Lin (2019)

Case Study: National Gallery Singapore (NGS)

FIG. 1.5 The geographical location of the case study of National Gallery Singapore.

TOC

1.3.3.4.2. The selection process of the interviewees

The process of selecting interviewees encountered challenges, despite the apparently large number of potential interviewees, which was stated to be 111 participants in the Introduction. There were obstacles in establishing contact. On one hand, after multiple attempts to contact the archive and organizer – the National Library of Singapore and the National Gallery Singapore – they maintained the confidentiality of the participants list. On the other hand, over twenty architectural firms were identified through Internet searches, but contacting them proved challenging due to the passage of almost fifteen years since the competition finished. Factors such as personal changes and lack of response contributed to the difficulty in reaching these firms, with only those that advanced to the final stage of the competition agreeing to participate in interviews and accepting the interview invitations.

To expand the pool of interviewees, the focus shifted from exclusively relying on architectural design firms to include all stakeholders, whether directly or indirectly associated with the international competition (FIG. 1.6). Potential interviewees were contacted directly by the author or through local connections in Singapore. Ultimately, twenty interviews (P1 to P20) were conducted and selected. Each interviewee exhibited varying degrees of connection to the competition at different stages. These stakeholders were professionals in architecture, conservation, and museum fields, both from governmental and non-governmental entities (see TABLE 1.7). Notably, some stakeholders underwent positional transitions after the competition, moving from government roles to scholarly pursuits or engaging in both practical and academic domains. This table listed their identities based on their positions during and after the competition from the interviews.

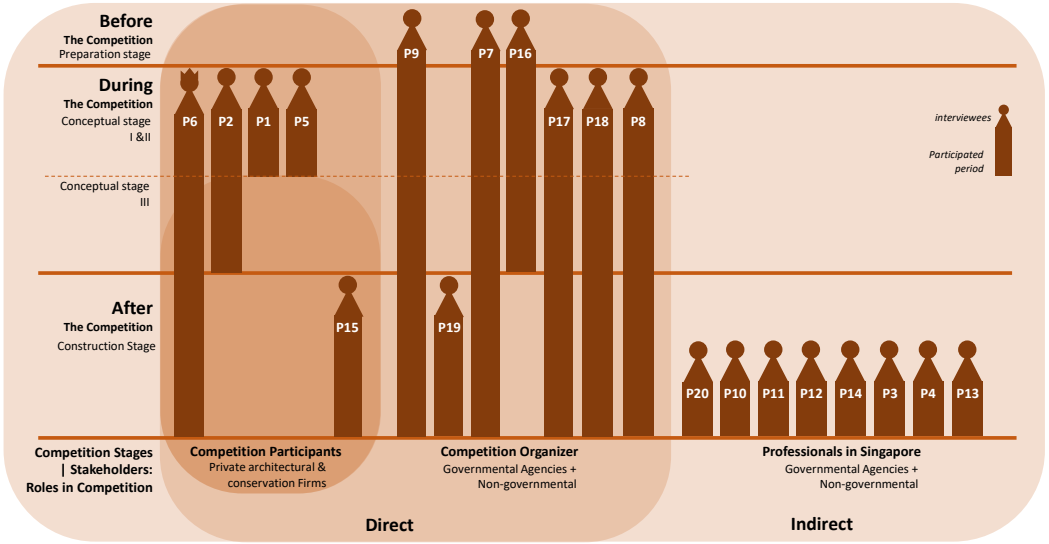


FIG. 1.6 The interviewees' roles were categorized by the competition stages (preparation/ conceptual/ construction), their relationship (direct/ indirect), and their participation time in the competition.

TABLE 1.7 Interviewees' positions during and after the competition.

Profession		Quantity (persons): 20		
Type Of Organizations			During	After
Government Agencies		Urban Redevelopment Authority (URA)	P7, P8, P11	P11
		Preservation of Sites and Monuments (PSM)	P19	P19
		Land Transport Authority (LTA)	P9	P9
Non-Governmental Organizations	local institutions	Singapore Institute of Architecture (SIA)	P12, P14	
		National Gallery of Singapore (NGS)	P17, P18	P17, P18
		Nation University of Singapore (NUS)	P3	P4, P13, P14, P15, P20
		Singapore University of Technology and Design (STUD)	X	P7, P12
		Taiwan Tunghai University (THU)	X	P3
	Private architectural and conservation Firms	W Architects	P8	P8
		Studio Milou	P6	P6
		Ho+Hou	P2	P2
		Smart Studio	P1	P1
		DP architects	P5	P5
		Takenaka Asia Singapore	P15	P15
		Studio Lapis	X	P10

TOC

1.3.3.4.3. The interview process

Since this research specifically focuses on understanding intervention concepts and terminology, interviews were conducted in English to avoid potential confusion during translation and interpretation. This applies to all aspects of the interviews, including the material sent beforehand, recordings, and notes.

A total of twenty interviews were conducted over a five-month period, from November 2022 to March 2023. One interview was conducted using the online communication platform Zoom, while the remaining nineteen were held at participants' offices in Taiwan and Singapore. The average duration of each interview ranged from 30 to 45 minutes. A predetermined set of interview questions was sent to the interviewees at least three days before the scheduled interview date to ensure proper preparation.

The interview consisted of two parts. The first part focused on the general understanding of intervention concepts in the Singapore context. The second part explored how these concepts were applied in the case study and their relationship to specific values and attributes of cultural significance.

Building upon insights derived from preceding chapters, which outlined three clusters of concepts – 'conservation', 'preservation', 'restoration' and 'adaptive reuse' – these were established as the initial contents for the interview questions. The interviews involve the exploration of a series of pre-determined questions :

First Part: On Intervention Concepts

(1) What is your definition of "conservation," "preservation," "restoration," and "adaptive reuse"?

(2) What kinds of values are related to the definition of "conservation", "preservation", "restoration", and "adaptive Reuse" from your understanding?

(3) What kinds of attributes are related to the definition of "conservation", "preservation", "restoration", and "adaptive Reuse" from your understanding?

Second Part: Intervention Concepts Applied in the Competition

(4) How do you apply these concepts to the case study? Could you provide an example?

(5) How do you think these concepts might change from the conceptual to the application stage? Could you provide an example?

(6) Have you ever encountered any difficulties due to the conflict of using these concepts? If so, could you provide an example?

1.3.3.5 Data Analysis

This thesis uses a qualitative method and includes the methods following three steps:

The author extracted the sentences that involved the terminology of intervention concepts (Chapter 2.1 and Chapter 3.1); interventions and values (Chapter 2.2 and Chapter 3.2), interventions and attributes (Chapter 2.3 and Chapter 2.4), including contents implying their explanations, interpretations, and definitions from the two data sources: international doctrinal documents and twenty interview transcripts. These transcripts were converted from audio recordings through an automatic transcription software – Amberscipt, and then further edited manually.

The extracted contents were structured and classified during pre-coding, following the theoretical framework on cultural values (Chapter 1.3.3.1), and attributes (Chapter 1.3.3.2).

Analysis and comparison of the structured data sources:

Targeting the data resource 1, the 69 international doctrinal documents, to reveal (1) the frequency of mentioning the intervention concepts (Chapter 2.1), values (Chapter 2.2) and attributes (Chapter 2.3) within the documents and (2) comparing the relationships between the selected intervention concepts and values (Chapter 2.2); interventions and attributes (Chapter 2.3) from different international doctrinal documents and organizations.

Targeting the data resource 2, to reveal (1) the frequency of mentioning the intervention concepts (Chapter 3.1), values (Chapter 3.2) and attributes (Chapter 3.3) within the documents and (2) comparing the relationships between the selected intervention concepts and values (Chapter 3.2); interventions and attributes (Chapter 3.3) from different international doctrinal documents and organizations.

1.4 Thesis Structure

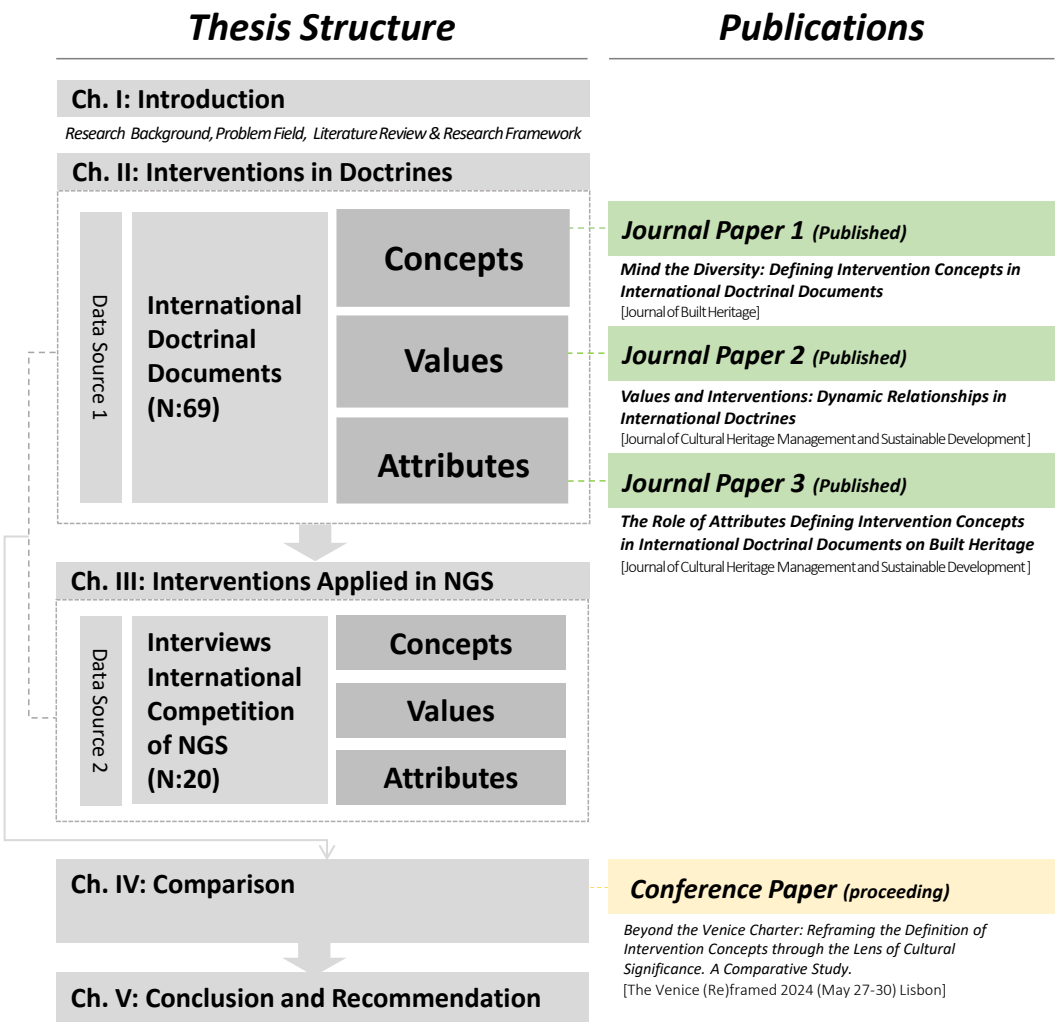


FIG. 1.7 Thesis structure, including chapters and contents published or submitted as papers.

TOC

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2 Interventions in Doctrines

This chapter provides a theoretical background of the research on the trends of intervention concepts used, and how the role of cultural values and attributes influenced the definition process of intervention concepts, in the scope of the international doctrinal documents. This chapter is composed of three parts: Chapter 2.1 focused on the concepts, and this Chapter has been accepted in June 2024 at Journal of Built Heritage, and published in July 2024 in Lin et al. (2024). Chapter 2.2 focused on defining concepts from the cultural values aspect, and this chapter has been published by the Journal of Cultural Heritage Management and Sustainable Development in Lin et al. (2023a). Chapter 2.3 focused on defining concepts from the cultural attributes aspect, and this chapter has been published by the Journal of Cultural Heritage Management and Sustainable Development in Lin et al. (2023b).

2.1 Mind the Diversity: Defining Intervention Concepts in International Doctrinal Documents

ABSTRACT Purpose: Interventions are essential for the management of built heritage because they extend the lifespan of buildings and enable them to be enjoyed by multiple generations. International organisations and institutions, such as UNESCO and ICOMOS, have adopted doctrinal documents over time, stimulating best practices in built heritage management worldwide. Although these documents are often referenced in academic work, they are seldom systematically researched. Which interventions are referenced or omitted? Are they defined? What trends are noted in the understanding of best practices as interventions?

Design/methodology/approach: This research consists of a systematic content analysis of nine international doctrinal documents, which were selected from nearly seventy international doctrinal documents—mainly adopted by UNESCO and ICOMOS. The main aim is to reveal and compare the concepts used for reference interventions and further use the definitions to reveal and discuss the relationships between them. The trends of these interventions being used were determined based on the frequency of mentions per intervention term in the selected documents.

Findings: Regarding the definition of the intervention concepts, there are three main findings. First, instead of being treated as a single concept, 'conservation' has been presented as an umbrella concept for other interventions and thus has been the most popular concept since the first version (1992) of the New Zealand Charter was implemented. In contrast, 'preservation' remains a single concept, among the highest scales, to maintain the integrity of built heritage, including use. Second, 'repair' was found to play a paradoxical role between 'restoration' and 'reconstruction', which created divergent opinions in the documents. Third, since the notions of 'use' have expanded from the functions of monuments (ICOMOS, 1964) to the 'associations of places' (ICOMOS Australia, 1999; ICOMOS Australia revised 2013), which include activities, traditional habits, accessibility, etc., the complexity of mentioning different forms of 'use' has led to some (re)interventions, such as 'adaptation', 'adaptive reuse', and 'rehabilitation', being put into grey areas and used interchangeably.

Originality: This part of the research advances the current understanding of intervention concepts and their relationships, as well as differences and similarities in definitions.

KEYWORDS Interventions, Level of Interventions, International doctrinal documents, Built heritage, Conservation, Preservation, Restoration, Reconstruction, Repair, Relocation, Rehabilitation, Adaptation, Adaptive reuse, Maintenance

2.1.1 Introduction

Interventions are essential for the management of built heritage because they expand the lifespan of buildings and enable their (re)use by multiple generations. In addition to the challenge of finding solutions to continue expanding the durability of materials and technologies, interventions may vary. They may even involve the risk of demolishing and/or replacing the elements that led to these buildings being listed as built heritage originally. Countries around the world share this concern and have been using intergovernmental organisations as a platform to build common ground and exchange experiences. This platform has evolved over time, with great diversity not only in intervention terms but also in their definitions when defined.

To ensure that this part of the research can be clearly understood, the key terminology used within the context of this chapter ——intervention—needs to be clarified. While intervention has different connotations across various fields, such as political science, economics, international law, sociology, and medicine, this chapter specifically addresses intervention in the context of built heritage or environment, as defined in international doctrinal documents: 'Intervention within the built environment may occur at many levels (from preservation to redevelopment), at many scales (from individual building elements to entire sites), and will be characterized by one or more activities, ranging from maintenance to addition' (ICOMOS Canada, 1983). Scholars such as Feilden (1982) have also emphasised that interventions inevitably involve some loss of cultural property 'value' but are justified because they ensure the preservation of objects for the future.

Occurring at many levels according to different situations, interventions can be categorised into multiple intervention concepts. For example, the definitions of preservation, reconstruction, restoration, and renovation often overlap in practice (Petzet, 2004). Due to the imprecise understanding of these concepts, the unawareness and misinterpretation of intervention concepts has often caused conservation projects to fall short of their goal and even led to the destruction of built heritage, which raises questions about the recommended 'best practices' (Petzet, 2004). As this research does not cover the field of linguistics or anthropology, debates about whether 'conservation' and 'preservation' are synonymous in some parts of the world, particularly North America (notably the U.S.), will not be discussed. In support of the practice of intervention in built heritage, intergovernmental organisations such as the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the Council of Europe (CoE), as well as non-governmental organisations such as the International Council on Monuments and Sites (ICOMOS), have been developing doctrinal documents for more than half a century. These documents have 'the fundamental role of offering statements or principles and guidelines for the conservation and management of places of cultural significance' (Taylar, 2004) and therefore can be seen as having a professional ethics role in guiding the conduct of heritage conservation practice (Taylar, 2004; Lin et al., 2023).

Many researchers have focused on international doctrinal documents. Specifically, they have noted the lack of understanding of the concepts and definitions in these documents, although they were not only focusing on addressing intervention (Pereira Roders, 2007; Veldpaus, 2013; Castriota & Marçal, 2021; Vecco, 2010; Rosetti et al., 2021; Albert et al., 2022; Rodwell, 2022; Zerrudo, 2022). Some scholars have also stated that international doctrinal documents have evolved over time, and this evolution could be seen as a reflection of practice (Jokilehto, 2007).

Through ratifications, these documents elaborate on definitions and broaden concepts (Jokilehto, 2007; LeBlanc, 2008; Rodwell, 2022), benefit future identification (LeBlanc, 2008), provide important practical experiences (Silberman, 2008), and generate new knowledge and insights (Vecco, 2010; Rosetti et al., 2021).

However, since these documents are meant to be applicable to different contexts, they tend to be universally applied (Vecco, 2010; Al-Sakkaf et al.,2020b) to bridge all countries, cultures and priorities (of experts) involved in their drafting as well as to support future adoption at the national level (Francioni, 2003; Al-Sakkaf et al.,2020a; Al-Sakkaf et al.,2020b). Thus, this generalisation might limit intervention concepts and definitions and cause them to overlap (Pereira Roders, 2007; Silberman, 2008; Veldpaus & Roders, 2013; Khalaf, 2015; Castriota & Marçal, 2021).

Intervention concepts and definitions can vary over time, so comparing them is difficult. In recent decades, international doctrinal documents have defined intervention concepts with different levels, scales, and activities (ICOMOS Canada, 1983). Moreover, scholars have researched and categorised the level/degree/scale of intervention for more than a century to further the understanding of intervention concepts and definitions (Dobby, 1978; Feilden, 1982; Woodcock, 1988; Henket, 1998; Douglas, 2006; Pereira Roders, 2007). However, the categories and definitions of intervention within the scope of international doctrinal documents have not yet been discussed comparatively and systematically.

One of the first scholars to theorise intervention concepts and their relationships, albeit with a planning perspective, Dobby (1978) presented a table of terms used in conservation and implied their degree of change—none, some, much, and total. From Dobby's perspective, 'conservation' was presented as an intervention that made no changes to total changes. Other interventions, such as 'repair' and 'preservation', were considered to make no changes, while 'enhancement', 'restoration', 'reconstruction', and 'demolition' made changes ranging from some to total changes.

With more detailed categorisations, Feilden (1982) presented seven ascending degrees of intervention, ranging from (1) prevention of deterioration (indirect conservation); (2) preservation of the existing state; (3) consolidation (direct conservation); (4) restoration; (5) rehabilitation; and (6) reproduction to (7) reconstruction. In his work, Feilden defined that 'interventions practically always involve some loss of value in cultural property but are justified in order to preserve the objects for the future' (Feilden, 1982; p.8). Additionally, Feilden's categorisation implies that interventions started not only from the action of 'retaining' but also from the earlier 'indirect' and 'control' of the historic environment.

From the perspective of performance management, Henket (1998) distinguished between ‘maintenance’ and ‘adaptation’. ‘Adaptation’ was then further divided into three categories, and within each of these categories, another third hierarchy of categories was created: ‘change to same/other use’ under ‘change in functions’, lateral/vertical extensions under ‘change in capacity’, and refurbishment and rehabilitation/renovation and restoration under ‘change in performance’.

Woodcock (1988) created a table in which the terms from Preservation News in the American context were scoped. His table not only presented four main categories—’keep, change, destroy, and return’—which included thirty-five terms—but also displayed the various actions that can be taken towards historic resources, along with his subjective evaluation of whether a particular action is positive (+), neutral (0), or questionable (-) (Woodcock, 1988, p.5). According to Woodcock’s perspective, ‘change’ means something different from ‘keep’, ‘destroy’, and ‘return’, and it does not necessarily mean negative, as it includes all three kinds of actions. Woodcock’s categorisation implied connotations in each action.

Douglas (2006) presented profound research on ‘adaptation’ based on Henket’s theory (1998). In the context of his book, Douglas mentioned that unlike the traditional way of using ‘adaptation’ as a narrow term that only suggests some form of change, he used ‘adaptation’ to describe the full range of work—any intervention to adjust, reuse, or upgrade a building to suit new conditions or requirements—to property that goes beyond maintenance. A figure of ‘the range of interventions’ has been created, which shows the relationship between the level of intervention and the risk of obsolescence and deterioration. These include eight interventions: (1) preservation (arrest decay), (2) conservation (preserve purposely), (3) refurbishment (facelift or makeover), (4) rehabilitation (modernise), (5) renovation (upgrade), (6) remodelling (improve/extend), (7) restoration (bring back), and (8) demolition (remove). There are also four other interventions—maintenance, stabilisation, consolidation, and reconstruction—presented according to the scale of adaptation—small, medium, and large—as well as their degrees of change—low key, substantial, and drastic—respectively.

Pereira Roders (2007) went a step further, summarising from both international organisations and the aforementioned scholars, and created a scale of interventions that includes categorised seven main categories that each have their own two subcategories, ‘passive’ and ‘active’. This scale ranges from (1) deprivation: abandon and vandalism, (2) preservation: inventory and prevention, (3) conservation: maintenance and safeguard, (4) restoration: restitution and reconstitution, (5) rehabilitation: reuse and conversion, and (6) reconstruction: rebuilding and building new to (7) demolition: reduce and waste. Within this theoretical framework, other

aspects such as ‘reality’, ‘use’, ‘aim’, ‘built’, and ‘impact’ were also discussed. Intervention concepts and definitions have evolved in both academia and practice over the years.

However, although international doctrinal documents are often referenced, targeting more diverse heritage types and facing various stakeholders, they are seldom researched comparatively and systematically. This chapter will focus on the following questions: What interventions are referenced or omitted? Are they defined? In the context of international doctrinal documents, what trends are noted in the understanding of best practices as interventions?

2.1.2 Research methodology

2.1.2.1 International Doctrinal Documents

In this study, a systematic content analysis of nine international doctrinal documents was conducted to uncover and compare the concepts utilised to reference interventions; then, the definitions were employed to elucidate and discuss their interrelations. The trends in the use of interventions were discerned based on the frequency of mentions per intervention term in the selected documents.

The dataset selection process consisted of two stages. In the initial stage, nearly seventy international doctrinal documents spanning various periods and geographical regions, renowned for their exemplar status in built heritage practices and endorsed by esteemed entities such as the Council of Europe (CoE), UNESCO, and ICOMOS between 1877 and 2021, were collected. These documents were sourced from the official websites of the CoE, ICOMOS, UNESCO digital library, and Getty Conservation Institute utilising a comprehensive set of keywords, including ‘intervention’, ‘definition’, ‘glossary’, ‘built heritage’, ‘built cultural heritage’, ‘built environment’, ‘conservation’, ‘preservation’, ‘restoration’, ‘maintenance’, ‘repair’, ‘reconstruction’, ‘rehabilitation’, ‘adaptive reuse’, ‘renovation’, and ‘relocation’. Additionally, seminal documents predating the establishment of the aforementioned organisations, such as the Manifesto of The Society for the Protection of Ancient Buildings (SPAB) and the Charter of Athens by Congress Internationaux d’Architecture moderne (CIAM), were included due to their acknowledged doctrinal significance within the conservation field.

In the second stage of the selection, documents that lacked intervention definitions or terminology explanations within the 'definition', 'glossary', or other sections were excluded from the dataset. Moreover, documents that solely referenced a single terminology, such as conservation, without delineating the interrelation between intervention concepts concerning the 'level of interventions' within the same document were also excluded. During this phase, all twenty CoE documents, nine UNESCO documents, and thirty ICOMOS documents were excluded. Ultimately, nine documents spanning diverse geographic regions—Europe, North America, Asia, and the Pan-Pacific—and a temporal scope of nearly sixty years (1964 to 2021) were chosen for further comparative analysis and discussion.

These documents encompass various iterations of the same document, exemplified by the 1979, 1999, and 2013 versions of the Burra Charter, as well as the 1992 and 2010 versions of the New Zealand Charter. They have been incorporated into this chapter for comparison and analysis, owing to their citation in subsequent documents. For example, despite its earlier iterations, the Burra Charter underwent its most significant revision in 1999, as outlined in the introduction of the revision history. Consequently, alongside the first (1979) and most recent (2013) versions, the 1999 version was included. Similarly, the first version of the New Zealand Charter (1992) is included due to its reference to the Hoi An Protocol (UNESCO Bangkok, 2009). Although the Hoi An Protocol (UNESCO Bangkok, 2009) is a regional document, it endeavours to establish rigorous standards of conservation practice and enjoys widespread citation by scholars and local authorities, particularly in Asia and the Pan-Pacific region. Its inclusion in this part of the research is deemed essential for enhancing the discourse on the diversity of definitions.

2.1.2.2 Intervention Concepts

As many intervention concepts were identified during the selection process, concepts were excluded or included for the following reasons.

On the one hand, given that the documents did not provide definitions or explanations in the glossary, articles, or sections to enable their comparison, twenty-one other intervention concepts were excluded. The excluded intervention concepts were, in alphabetical order, as follows: 'alternation', 'change', 'clearing', 'consolidation', 'demolition', 'dislodge', 'dismantling', 'dismemberment', 'integration', 'modernisation', 'modification', 'rearrangement', 'recreation', 'recycle', 'redecoration', 'refurbishment', 'renewal', 'replacement', 'reproduction', 'safeguard', and 'transformation'. On the other hand, intervention concepts such as 'change function/

use', 'conserving use', and 'reintroducing use' were included because these concepts were considered earlier forms of the idea of 'use-related' concepts. Following the same logic, 'retaining associations and meanings' concerning intangible perspectives other than 'use' were also included.
Consequently, thirty intervention concepts were chosen from the selected documents and further analysed in this research. To support the understanding of the development of the concepts evolving between the documents, the order of the concepts in FIG. 2.1 of Chapter 2.1.3 is presented according to the chronological order of the international doctrinal documents (from 1964 to 2015).

2.1.3 Findings

2.1.3.1 The trends of the intervention concepts evolving across documents

The results confirmed that the intervention concepts evolved across the doctrinal documents over time and place (see FIG. 2.1). Overall, thirty concepts with defined or undefined content were identified in the selected documents. On average, each document had eighteen identified concepts; however, only 60% of them were clearly defined. The highest rate of having sixteen defined concepts (80%) was found in the New Zealand Charter (revised 2010), while the lowest percentage was found in the Venice Charter, with only three defined concepts (30%) (see FIG. 2.1). Although they appear to fluctuate, the trends in the number of defined concepts have grown since the first version (1979) of the Burra Charter. Particularly in New Zealand Charters, although the number of identified concepts remained the same in the versions of 1992 and 2010, more profound definitions were provided after the revision, meaning that more attention was given to the definition of the intervention concepts over the years.

TOC

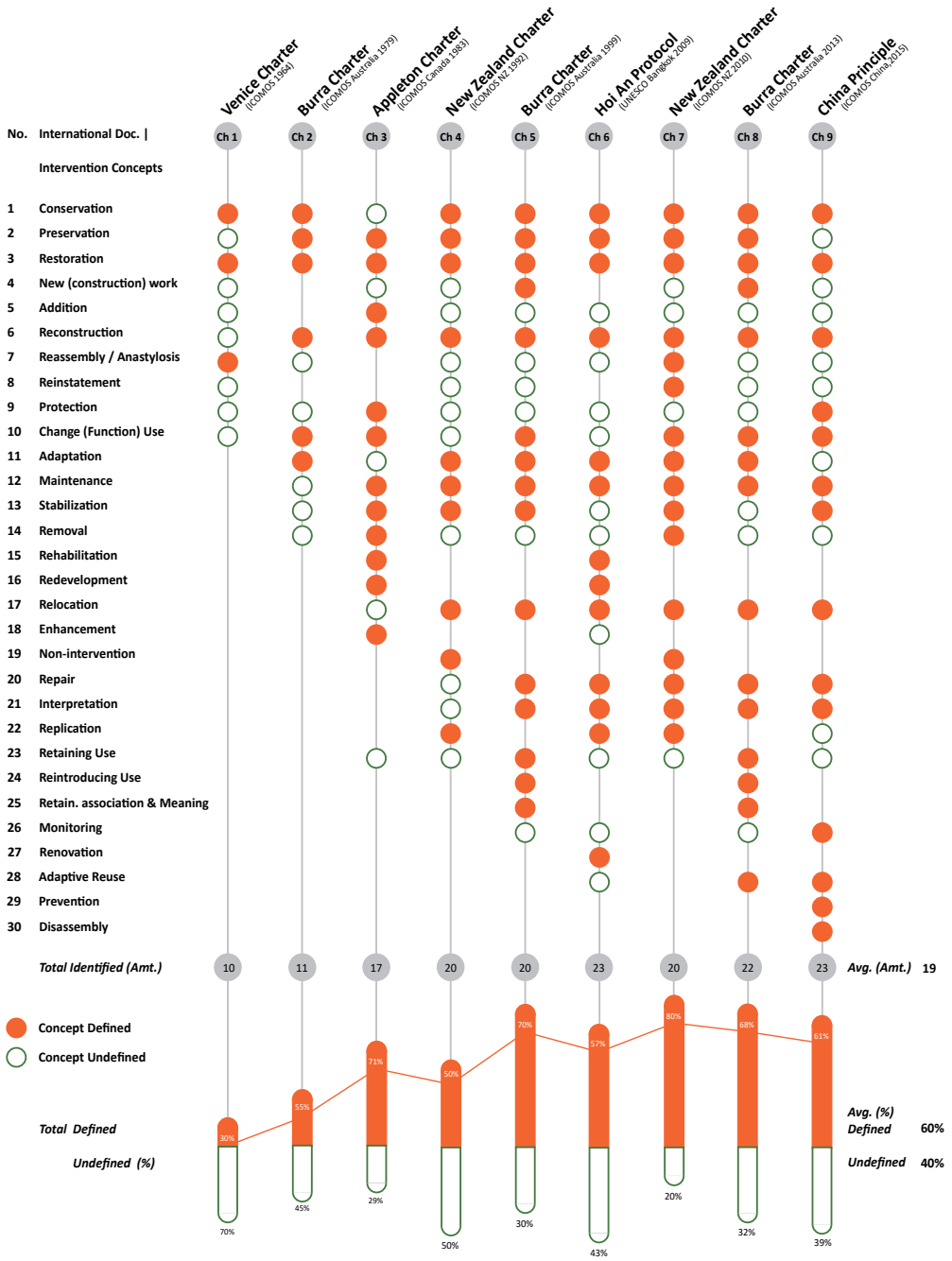

FIG. 2.1 The intervention concepts that have been defined (CD), or identified but undefined (CU), and with no concepts (NC) found in the selected documents (upper part), and the trend of their defined/undefined situation (bottom part).

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Notably, while different versions of the Burra Charter showed growth in the numbers of referenced concepts—from eleven (1979), twenty (1999), and twenty-two (2010)—the percentage of definitions fluctuated, from 55% in the first version (1979), growing dramatically and reaching 70% in the 1999 version, and slightly decreasing to 68% in the latest version (2013).

New intervention concepts have been identified over the years. 'Adaptation' was introduced to signal the 'allowance for changes' (ICOMOS Australia, 1979), and its high frequency of reference was only lower than 'conservation'. This attitude was further revealed when another new concept—'adaptive reuse'—appeared, as identified in the latest version (ICOMOS Australia, revised 2013). Generic concepts such as 'intervention', used in the versions of 1979 and 1999, have been replaced by 'change' in the latest version of the Burra Charter (ICOMOS Australia, revised 2013). This also reflected the promotion of a more positive attitude towards 'change', which was addressed in the document 'do as much as necessary to care for the place and to make it usable, but otherwise change it as little as possible so that its cultural significance is retained'.

The documents also had similar patterns of identification of the intervention concepts. Similar definitions could be found among the charters, such as The New Zealand Charter (1999/2010), the Burra Charter (1979/1999/2013), and the China Principle (ICOMOS China, 2015). Although in the earliest version, the Burra Charter exhibited some influence from the Venice Charter (1964), such as from Articles 8 to 10, in maintaining visual settings and relations, as well as returning to historical locations after temporary removal, Burra Charters paved a new path to develop their own definitions and philosophy.

The Appleton Charter (ICOMOS Canada, 1983) demonstrates a unique level of intervention, which was later referenced by the Hoi An Protocol (UNESCO Bangkok, 2009), including the use of two concepts: 'rehabilitation (C15)' and 'redevelopment (C16)'. However, in addition to the aforementioned charter, the Hoi An Protocol also references multiple documents, such as the Burra charters and New Zealand charters, creating some confusion—for example, between 'rehabilitation (C15)' and 'adaptive reuse (C28)'.

Among the thirty concepts, seven concepts were identified with definitions in only one document—for example, 'renovation' in the Hoi An Protocol—or directly referenced from previous versions or another document with subtle alterations, such as 'non-intervention', in different versions of the New Zealand Charter. These concepts were 'reinstatement' (C8), 'redevelopment' (C16), 'enhancement' (C18), 'non-intervention' (C19), 'retaining association and meaning' (C25), 'monitoring' (C26), 'renovation' (27), 'prevention' (C29), and 'disassembly' (C30). Another seven concepts were

found in multiple documents but had relatively consistent definitions compared to the concepts introduced in Sections 3.2 to 3.4. These seven concepts were 'new (construction) work' (C4), 'addition' (C5), 'protection' (C9), 'stabilisation' (C13), 'relocation' (C17), 'interpretation' (C21), and 'replication' (C22). For example, in different versions of the New Zealand Charter, 'replication' was defined as 'making a copy of an existing structure or place; or the construction of generalized representations of typical features or structures, which are not conservation processes and are outside the scope of this charter' (ICOMOS New Zealand, 2010). In further detail, 'replication' was defined as the intervention for 'copying an existing structure in order to maintain aesthetic unity and harmony' (UNESCO Bangkok, 2009).

In addition to the aforementioned concepts, the remaining fifteen concepts have been identified with notable differences in definitions, as they are often used interchangeably and have complex relationships with each other. These concepts will be further discussed in Sections 2.1.3.2 to 2.1.3.4.

2.1.3.2 "Conservation (C1)" versus "preservation (C2)"

'Conservation' and 'preservation' were both identified as the earliest concepts that emerged and were defined in the majority of the documents. In the discourse surrounding the distinction between 'conservation' and 'preservation', multiple precedents for using these concepts and interpretations appeared in documents. Accordingly, the Venice Charter (ICOMOS, 1964) was found to employ both concepts interchangeably. Although their relation was implied, as in the case of the Appleton Charter (ICOMOS Canada, 1983), where 'conservation' was used in the title, in the content, only 'preservation' was found to be defined in the document. Conversely, 'preservation' was not defined in the China Principle (ICOMOS China, 2015) but was used as a substitution for 'conservation' and 'protection' (see FIG. 2.2).

In the Venice Charter (1964), where historic monuments are described as 'living witnesses of age-old tradition' and 'historical evidence', the definition of 'conservation' was about safeguarding the attributes, particularly from a visual perspective. This encompassed the setting, layout, decoration, and relations of mass and colour, as well as items of sculpture and painting. 'Conservation' revealed itself as an intervention concept characterised by delimited actions; terms such as 'must not change', 'no new construction, demolition, or modification', or 'not allowed to remove' are recurrently employed in the texts. However, under exceptional circumstances, such as when national or international interests necessitate it or when on-site preservation is unattainable, 'conservation' may permit alteration (see FIG. 2.2).

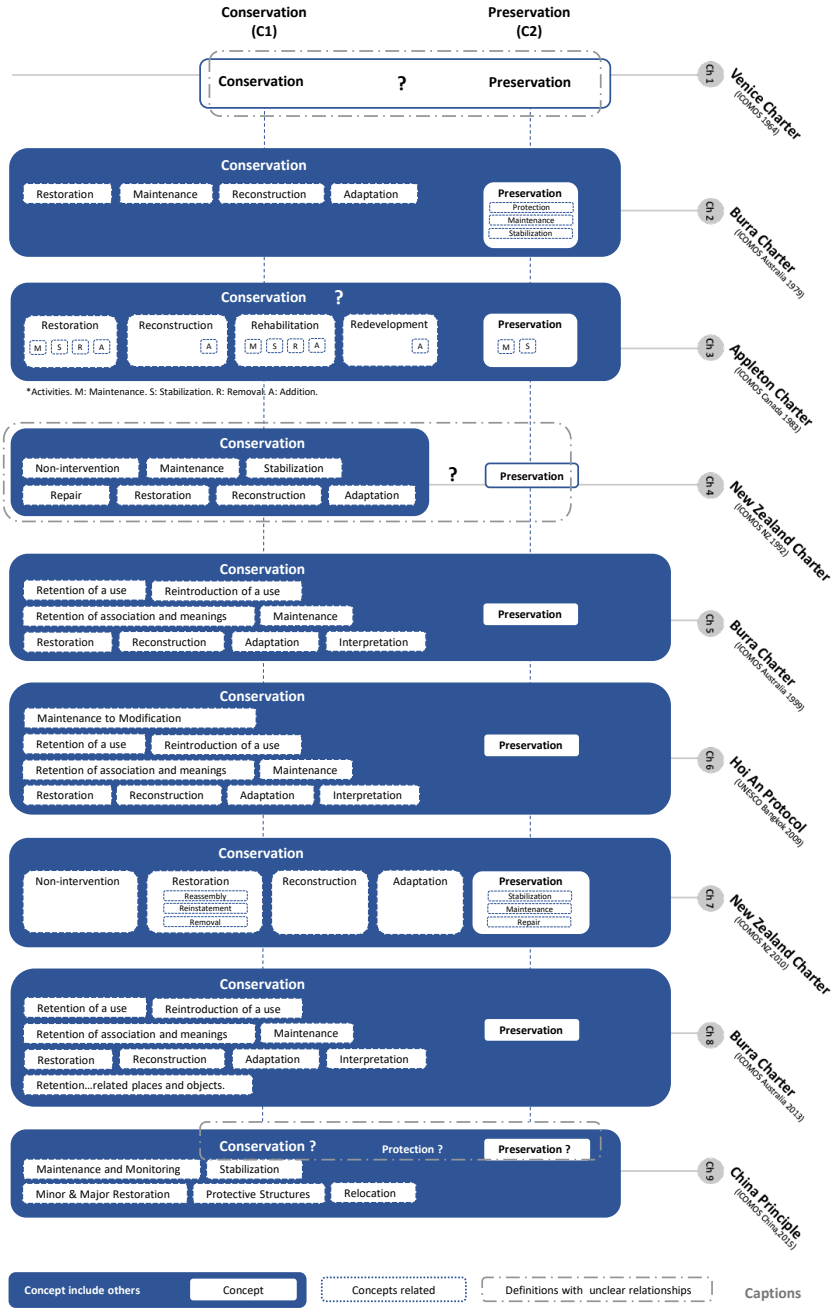

FIG. 2.2 The development of the relationships between conservation and preservation.

TOC

In contrast, what has been clearer since the outset is that the Burra Charter (1979) and its subsequent revisions have delineated the differences between 'conservation' and 'preservation'. 'Conservation' was a general term and a process with the goal of 'looking after a place to retain its cultural significance'. Within this process, 'preservation' was treated as a subconcept sharing the same hierarchical level as other intervention concepts, such as 'restoration', 'maintenance', 'reconstruction', and 'adaptation'. Thus, 'preservation' was defined as the act of 'maintaining the fabric of a place in its existing state and retarding deterioration', with its scope limited to protecting, maintaining, and stabilising the existing fabric when necessary. Notably, in 'conservation', the use of 'modern techniques' was permitted when traditional methods proved inadequate. Furthermore, differences in the level of cultural significance were acknowledged (see FIG. 2.2). Departing from the poetic manner of defining the concepts in the aforementioned charters, the Appleton Charter (1983) presented more applicable guidelines, clearly illustrating the relationships between each concept and their associated activities and scales. 'Conservation' represented all intervention concepts, whereas 'preservation' was defined as the 'retention of the existing form, material', and more comprehensively, the 'integrity of site'. This included activities such as maintenance and stabilisation, ranging from scales of building elements to groups of buildings, settings, and sites (see FIG. 2.2).

Heavily influenced by the Burra Charter, the New Zealand Charter (1992) substituted the term 'cultural significance' with 'cultural heritage values', defining 'conservation' as 'the processes of caring for a place so as to safeguard its cultural heritage values'. Additionally, it expanded on the Venice Charter (1964), highlighting that conservation serves not only social purposes but also cultural and economic purposes. While 'preservation' was defined as 'maintaining a place with as little change as possible', 'conservation' was defined as 'the processes of caring for a place to safeguard its cultural heritage value'. However, their relationships remained unclear, as 'preservation' was notably absent from the conservation process (see FIG. 2.2).

Building upon its previous versions, the Burra Charter (1999) broadened the understanding of cultural significance by providing explicit details regarding fabric, use, association, and meaning. Notably, the definition of 'conservation' was expanded to include the following: 'Conservation may, according to circumstance, include the processes of retention or reintroduction of a use; retention of associations and meanings; maintenance, preservation, restoration, reconstruction, adaptation, and interpretation; and will commonly include a combination of more than one of these'. This implied that 'conservation' not only involves safeguarding but also entails managing the cultural significance of the place, which did not rule out changes.

In contrast, the definition of 'preservation' remained unchanged from the previous versions and continues to signify the passive maintenance of the physical, existing state (see FIG. 2.2).

The Hoi An Protocol (UNESCO Bangkok, 2009), in addition to referencing the Burra Charter (1999), also adopted the definition from Park Canada (2003), which stated, 'Conservation encompasses the activities that are aimed at the safeguarding of a cultural resource to retain its historic value and extend its physical life…(Conservation) embraces one or more strategies that can be placed on a continuum that runs from least intervention to greatest; that is, from maintenance to modification of the cultural resource'. However, 'preservation' was defined as the 'retention of the greatest amount of historic fabric' and 'encompasses conservation activities that consolidate and maintain the existing form, material and integrity of a resource', including 'short-term protective measures as well as long-term actions to retard deterioration or prevent damage' (see FIG. 2.2).

In the latest version (revised 2010) of the New Zealand Charter, unlike the Burra Charter, which has substantial changes, a more in-depth definition of the 'degrees of interventions for conservation purposes' was presented. It addressed four main categories—preservation, restoration, reconstruction, and adaptation—along with their subcategories. Within this document, 'conservation' remained broadly defined, whereas 'preservation' was defined as a concept that 'involves as little intervention as possible, to ensure its long-term survival and the continuation of its cultural heritage value' (see FIG. 2.2).

In the latest version of the Burra Charter (2013), the definition of 'conservation' was further expanded, including 'retention of the contribution that related places and related objects make to the cultural significance of a place (2013)'. Additionally, 'conservation' also implied the potential absence of physical intervention towards the heritage itself. As stated, 'There may be circumstances where no action is required to achieve conservation'. This notion is in harmony with the definitions in the New Zealand Charter (1992) and (2010) that 'conservation' encompasses the concept of 'non-intervention'. In contrast to 'conservation', 'preservation' was defined as the protection of fabric 'without obscuring evidence of its construction and use' (ICOMOS Australia, revised 2013) (see FIG. 2.2).

Informed by Australian experiences during the drafting of the documents, the China Principle (2015) showed influences from the Burra Charter in defining 'conservation' as 'a broad concept and conveys the meaning of protection, maintenance, technical intervention, and management'. Furthermore, 'conservation' was then elaborated as direct and indirect interventions to slow or arrest the process of deterioration.

However, this also implied that the definitions of 'conservation' and 'preservation' overlapped with each other. Notably, in its glossary, after translation, 'conservation' was 'conserve + protect', and 'preservation' was 'conserve + keep' or 'conserve + protect', meaning that there were no differences in the Mainland Chinese context between these two concepts, both of which were translated into one single concept – 'Bao Hu' (保护). (see FIG. 2.2)

In summary, while the definition of 'conservation' has broadened, the definition of 'preservation' has become more stringent.

2.1.3.3 "Restoration (C3)", "Reconstruction (C6)", "Reassembly/ Anastylosis (C7)", "Maintenance (C12)", "Removal (C14)" and "Repair (C20)"

In addition to the concepts identified in a single document, the concept of 'restoration (C3)' was the only one found in all of the selected documents and provided with definitions. There were slight differences in categorising 'period restoration' (ICOMOS Canada, 1983; UNESCO Bangkok, 2009) together with 'restoration'. However, 'restoration' was found to be related to other concepts such as 'reconstruction', 'reassembly/Anastylosis', 'maintenance', 'removal', and 'repair', involving different activities and situations across the documents (see FIG. 2.3).

The Venice Charter (1964) first mentioned 'restoration' as a highly specialised process in which material originality is pursued based on aesthetic, historical, and archaeological values. Meanwhile, this intervention should stop at the point where any conjecture occurs and leave a contemporary stamp if implemented. Modern techniques can be applied where traditional techniques are inadequate. The values of all periods should be respected; thus, restoration in pursuing the unity of style is not permitted. Exceptional circumstances for removal, in revealing the great historical, architectural, or aesthetic value of a certain period, can only be allowed after careful justification. With limited information, 'reconstruction' was mentioned in a strict manner as it 'should be ruled out as prior'. When objects still exist, it could be 'reassembly/anastylosis' or 'reinstatement' to the original situation. 'Anastylosis' means 'reassembling of existing but dismembered parts' (see FIG. 2.3).

Without being mentioned in the Venice Charter, the first version of the Burra Charter (1979) emphasised that 'restoration' aims to 'return' the existing fabric of a place to a known earlier state and slow deterioration. To achieve this 'return', the 'reassembling' of displaced components or the 'removal' of accretions with 'slight

cultural significance' compared to 'much greater cultural significance' were allowed. Here, cultural significance is determined by hierarchies that affect decision-making, which is an elaboration of the idea of evaluating the importance of elements in the Venice Charter (1964). Additionally, 'restoration' was assigned a new function: to 'reveal new culturally significant aspects of the place'. Meanwhile, 'reconstruction' was defined as 'returning a place as close as possible to a known earlier state' and was distinguished by the introduction of materials (new or old) into the fabric. Furthermore, the reasons for considering 'reconstruction' and the proportion in which it should be implemented within a heritage place were explained. Most importantly, it is emphasised that 'reconstruction' should not be confused with either recreation or conjectural reconstruction (see FIG. 2.3).

The Appleton Charter (1983) introduced intervention concepts that involve the idea of 'time', such as 'period' and 'continual'; the former is defined as the main concepts, while the latter refers to activities. 'Period restoration' is defined as the 'recovery of an earlier form, material, and integrity of a site' and encompasses all activities – 'maintenance', 'stabilisation', 'removal', and 'addition'. Due to this layered relationship, it is important to understand the definition of 'maintenance', which is a 'continual activity to ensure the longevity of the resource without irreversible or damaging intervention'. At the same time, the definition of 'reconstruction' is the 'recreation of vanished or irreversibly deteriorated resources' and only involves the activity of 'addition'. This means that 'reconstruction' is completely new work for the site. All of these concepts apply to multiple scales, ranging from building elements to the entire site. Notably, the document provides a clear definition of 'removal', which is a 'periodic activity' that occurs only in 'restoration' and 'rehabilitation'. It refers to modifications involving the subtraction of surfaces, layers, volumes, and/or elements (see FIG. 2.3).

The New Zealand Charter (1992), on the one hand, defines 'restoration' as 'returning a place as nearly as possible to a known earlier state by 'reassembly', 'reinstatement', and/or the 'removal' of extraneous additions'. This concept should be 'based on respect for existing material and on the logical interpretation of all available evidence so that the place is consistent with its earlier form and meaning. It should only be carried out if the cultural heritage value of the place is recovered or revealed by the process'. On the other hand, 'reconstruction may be appropriate if it is essential to the function or understanding of a place, if sufficient physical and documentary evidence exists to minimize conjecture, and if surviving heritage values are preserved'. Importantly, the New Zealand Charter (1992) hints at the distinction between 'restoration' and 'reconstruction', with the latter being distinguished from the former by 'the introduction of additional materials where loss has occurred'.

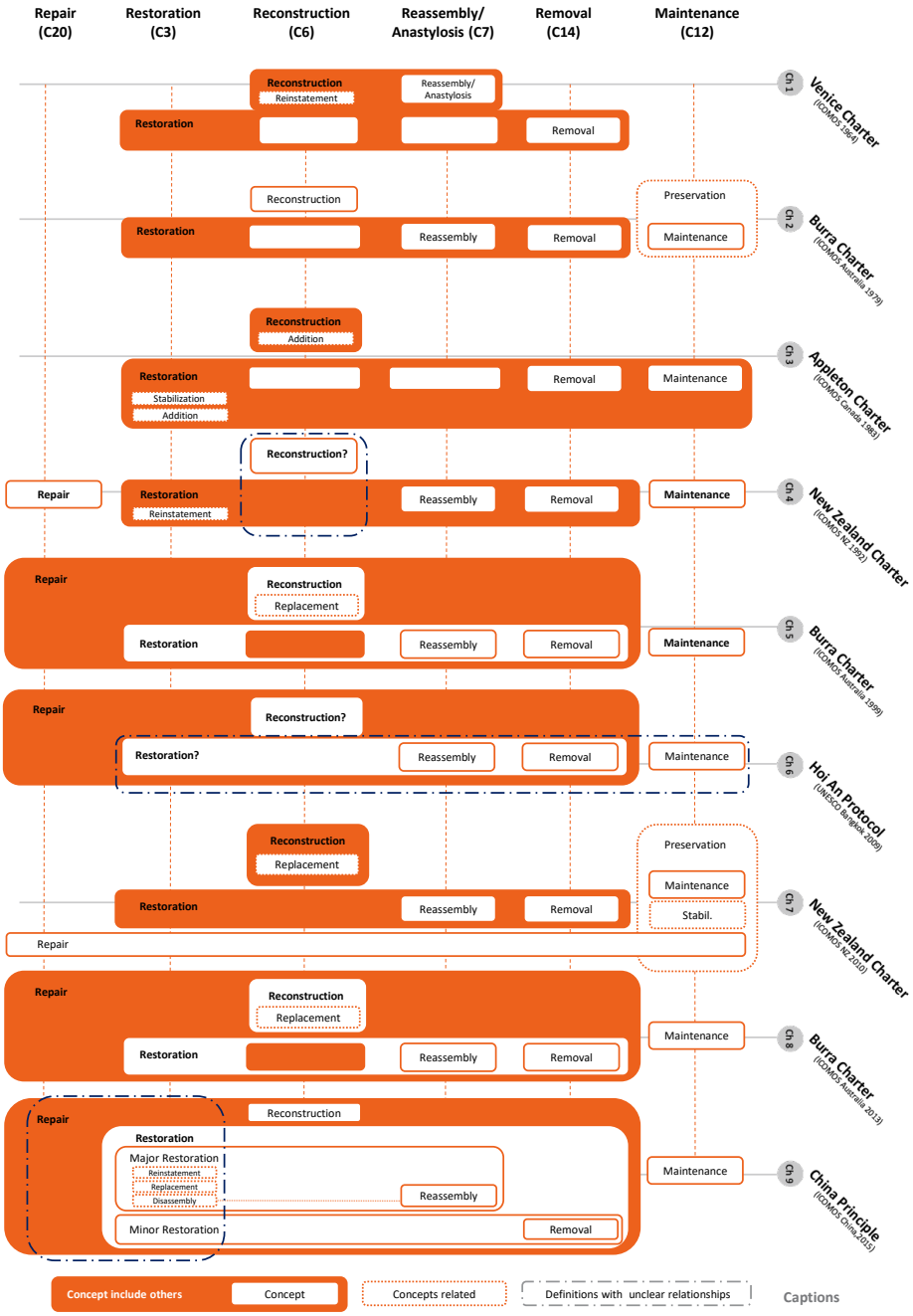

FIG. 2.3 The development of the relationships between repair, restoration, reconstruction, reassembly/anastylosis, removal and maintenance.

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However, later in the document, it becomes confusing as it again addresses that 'reconstruction means to build again in the original form using old or new material'. The relationships among the 'old material', 'new material' and 'additional material' in influencing the definition are not clear. In addition to defining the two aforementioned concepts, two additional concepts emerge, 'repair' and 'maintenance'. These two concepts differ; while 'maintenance' is defined as the regular and protective care of a place, 'repair' is a concept aimed at 'making good on decayed or damaged parts using original or similar materials, even new materials, when considering the cultural heritage value is not diminished.

Substantial changes were adopted in the 1999 version of the Burra Charter (ICOMOS Australia, 1999), highlighting strong distinctions between 'restoration' and 'reconstruction', as well as 'repair' and 'maintenance'. Importantly, 'repair' encompassed both 'restoration' and 'reconstruction'. 'Restoration' was defined as 'returning the existing fabric of a place to a known earlier state by "removing" accretions or by "reassembling" existing components "without the introduction of new material"'. On the other hand, 'reconstruction' meant 'returning a place to a known earlier state and is distinguished from restoration by the introduction of new material into the fabric'. 'Maintenance' was addressed as a fundamental concept of 'conservation' that aimed to retain cultural significance. It was defined as 'the continuous protective care of the fabric and setting of a place and is to be distinguished from repair'. Moreover, this charter also recognised that both 'restoration' and 'reconstruction' were 'acts of interpretation'. Particularly when implementing 'reconstruction', identifiable intervention with close inspection or additional interpretation is needed.

To define the concepts of 'restoration', 'reconstruction', 'repair', and 'maintenance', the Hoi An Protocol (2009) mainly referenced the Burra Charter (1999). The Burra Charter followed the logic of 'repair' as an overarching concept, which included both 'restoration' and 'reconstruction'. It also distinguished 'repair' from 'maintenance'. The Hoi An Protocol also referenced other documents, such as The Appleton Charter (1983) for the concept of 'reconstruction', Parks Canada (2003) and the Management Guidelines for World Cultural Heritage Sites (Feilden and Jokilehto, 1998) for the concept of 'restoration'. 'Restoration' was defined as 'the accurate recovery of an earlier form, fabric, and detailing of a site or structure, based on evidence from recording, research, and analysis, through the 'removal' of later additions and the replacement of missing or deteriorated elements of the earlier period. Depending on the intent and degree of intervention, period restoration may be a presentation rather than a conservation activity (Parks Canada)'. Additionally, 'restoration' is defined as 'to reveal the original state within the limits of existing material…to reveal cultural values and to improve the legibility of its original design' (Feilden & Jokilehto, 1998).

Based on the previous version, certain contents of most of the concepts were revised in the New Zealand Charter (2010); more importantly, they were presented in hierarchies. In addition to 'reconstruction' with its own category, 'reassembly', 'reinstatement', and 'removal' were presented under 'restoration'; 'repair', 'maintenance', and stabilisation were presented under 'preservation' (see FIG. 2.3). 'Reassembly/anastylosis' was closely related to 'reinstatement' and defined as 'uses existing material and, through the process of reinstatement, returns it to its former position. Reassembly is more likely to involve work on part of a place rather than the whole place'. Notably, the differences between 'restoration' and 'reconstruction' were emphasised by substituting 'additional material' with 'new material'. The document states that 'reconstruction is distinguished from restoration by the introduction of new material to replace material that has been lost'. However, the paragraphs of 'recreation meaning conjecture reconstruction…' were deleted and explained with 'reconstruction means to build again as closely as possible to a documented earlier form, using new materials'. In 'restoration', terms were revised and substituted with more plain words to avoid interpretations, such as '(restore)…as near as possible', '(restore)…on the logical interpretation' and '(removal) of …extraneous additions'. 'Restoration' was then revised as follows: 'to return a place to a known earlier form, by reassembly and reinstatement, and/or by the removal of elements that detracted from its cultural heritage value'. Within the category of 'restoration', 'removal' was seen as a subconcept under its category, defined as follows: 'Occasionally, existing fabric may need to be permanently removed from a place. This may be for reasons of advanced decay, loss of structural integrity, or because the particular fabric has been identified in a conservation plan as detracting from the cultural heritage value of the place'. However, the impact of 'removal' has also been emphasised: 'the removal or obscuring of any physical evidence of any period or activity should be minimised and should be explicitly justified where it does occur. The fabric of a particular period or activity may be obscured or removed if (an) assessment shows that its removal would not diminish the cultural heritage value of the place'. Within a different category, 'preservation', in the aim of maintaining – to ensure its long-term survival and the continuation of its cultural heritage value – 'repair' was defined as utilising matching or similar materials to maintain the cultural heritage value. Additionally, when 'it is necessary to employ new materials, they should be distinguishable by experts and should be documented'. The aim of 'maintenance' was also further detailed by adding 'prevent deterioration'.

Based on the previous versions, the Burra Charter (2013) added only some additional explanations with local indigenous perspectives that went beyond the physical care of the heritage place. For example, in relation to 'maintenance', it mentioned that 'maintaining a place may be important to the fulfilment of traditional laws and customs in some Indigenous communities and other cultural groups'.

The China Principle (ICOMOS China, 2015) presented two subcategories under 'restoration' – 'minor restoration' and 'major restoration' – which implied different actions, situations, and levels of significance. While 'minor restoration' focused on repairing damaged elements, 'major restoration' specifically addressed the 'repair or replacement' of key missing components. Although the former was called 'minor restoration', its actions involved 'rectifying' components and 'removing inappropriate additions' that could have an impact equal to that of the 'major' category. This document also mentioned that 'minor and major restoration may also be categorized as repair of a building'. Notably, 'major restoration' involved 'complete disassembly/reassembly', specifically for the treatment of wooden structures. Furthermore, 'disassembly' (C30) was the last concept identified and was only officially mentioned in the China Principle (ICOMOS China, 2015) as a 'traditional method of restoring wooden buildings'. While other documents mentioned only 'reassembly' and omitted 'disassembly', the China Principle referenced 'disassembly' almost fifteen times more than 'reassembly'.

2.1.3.4 "Change use (C10)", "Adaptation (C11)", "Rehabilitation (C15)", "Retaining use (C23)", "Reintroducing use (C24)", "Adaptive Reuse (C28)"

When 'adaptation', 'rehabilitation', 'adaptive reuse', or other intervention concepts related to 'use' have not been introduced in documents, the concept of 'use' has already been discussed in different forms (see FIG. 2.1 and FIG. 2.4). These forms include modifications required for a 'change (of function or) use (C10)' (ICOMOS, 1964; ICOMOS Australia, 1979; ICOMOS Canada, 1983; ICOMOS Australia, 1999; UNESCO Bangkok, 2009; ICOMOS New Zealand, revised 2010; ICOMOS Australia, revised 2013; ICOMOS China, 2015). They also include modifications for 'retaining use (C23)' (ICOMOS Australia, 1999; ICOMOS Australia, revised 2013), such as accommodating 'existing use' (ICOMOS Australia, 1999; UNESCO Bangkok, 2009; ICOMOS Australia, 2013), continuing 'original use' (ICOMOS China, 2015), and maintaining 'originally intended use' (ICOMOS Canada, 1983). Additionally, they include 'maintaining continued use' (ICOMOS New Zealand, 1992; ICOMOS New Zealand, 2010; ICOMOS China, 2015) when the use is no longer present on a site. In such cases, 'reintroducing use (C24)' (ICOMOS Australia, 1999; ICOMOS Australia, revised 2013) may be an option.

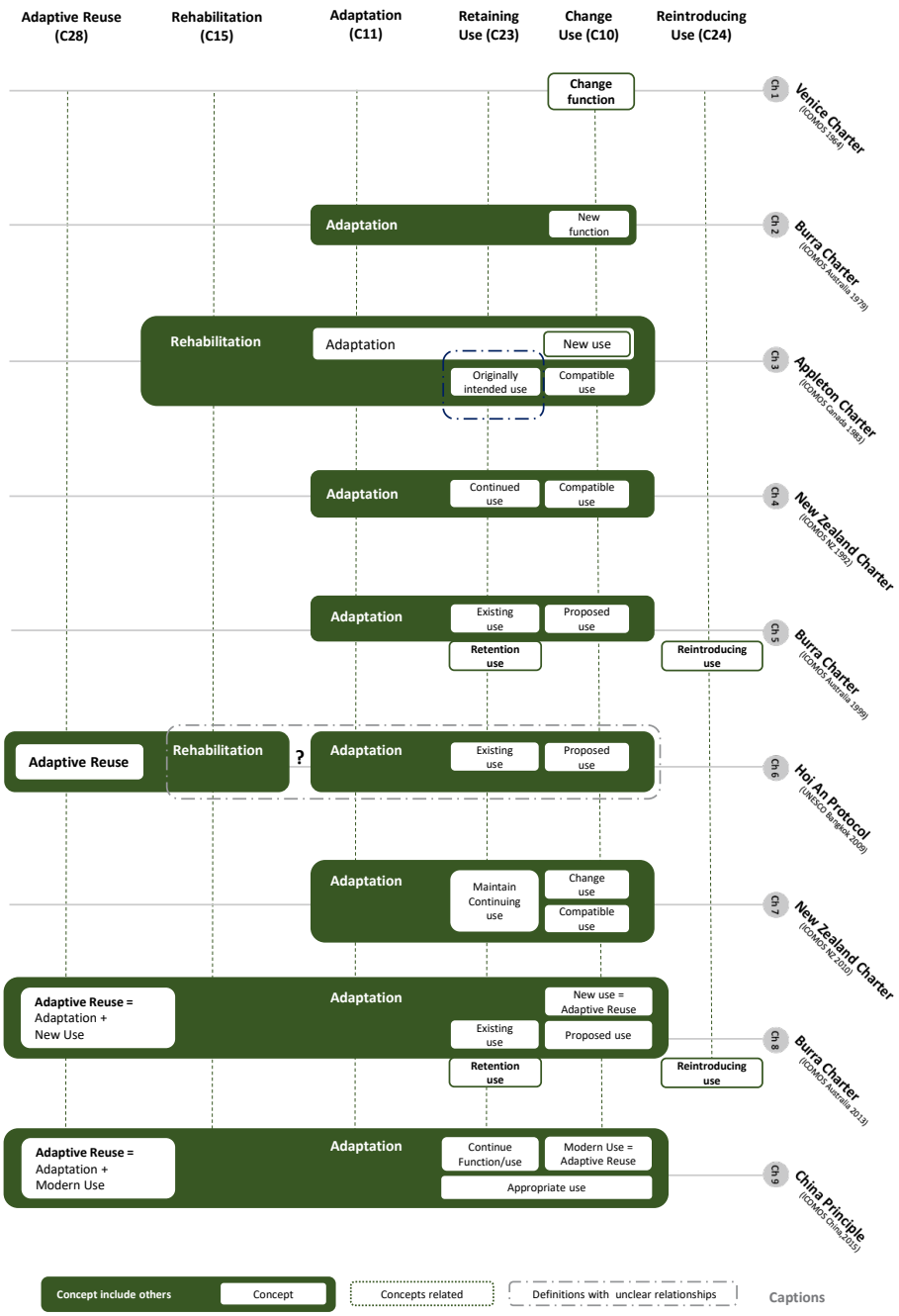

FIG. 2.4 The development of the relationships between adaptive reuse, rehabilitation, adaptation, retaining use, change use, and reintroducing use.

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The concept of ‘change function use’ (C10) was first mentioned in the Venice Charter (ICOMOS, 1964). The document highlighted that one of the main aims of conservation was to utilise the built heritage, especially for social purposes. However, during the process of ‘change of function’, there are limitations in terms of altering the layout and decoration of the monument (see FIG. 2.4).

In the Burra Charter (1979), the concept of ‘adaptation’ was formally introduced in the initial version of the charter. It addressed the idea of modifying a place to accommodate new functions without compromising its cultural significance, particularly in cases where conservation of the place could not be achieved otherwise. Additionally, this document highlighted the importance of ‘compatible use’, which involved no changes, changes that were reversible, or changes that had minimal impact on the culturally significant aspects of the site. Only in exceptional cases, when the removal of significant material was unavoidable during the adaptation process, could it be securely preserved for future restoration purposes.

In the Appleton Charter (ICOMOS Canada, 1983), the concept of ‘rehabilitation’ was identified alongside ‘adaptation’. Although ‘rehabilitation’ was mentioned in various documents of the Council of Europe during the selection process, it was officially defined in the Appleton Charter as the modification of a resource to contemporary functional standards, which could include adaptation for new use. This document also suggested different levels of change in use, ranging from using the place for its original purpose to proposing a completely new use. However, the term ‘used for its originally intended purpose’ may also imply the reintroduction of previous uses, although this was not further explained.
In the New Zealand Charter (1992), ‘adaptation’ was defined as modifying a place to suit a compatible use while minimising the loss of cultural heritage value. Under certain circumstances, alterations and additions that were essential for continued use, culturally desirable, or necessary for the conservation of the place were deemed acceptable. Furthermore, the alterations should be compatible with the original fabric but distinct enough to be recognised as new work.

In the Burra Charter (1999), the definition of ‘adaptation’ was changed significantly compared to the previous version. It was defined as modifying a place to suit the existing or proposed use, which could involve the introduction of new services, a new use, or changes to ensure the place’s safeguarding. The document also highlighted that ‘use’ encompassed functions, activities, and practices that could occur at the site. Furthermore, it emphasised that ‘use’ itself could be a form of cultural significance or contribute to overall cultural significance when combined with other attributes such as fabric, associations, meanings, and related places and objects. Therefore, the impact on ‘use’ should be minimal to preserve its value.

Subsequently, the Hoi An Protocol (UNESCO Bangkok, 2009) was influenced by the aforementioned charters, presenting both 'adaptation' and 'rehabilitation' together without explaining their differences and relationships. Nevertheless, based on the definition provided in the Appleton Charter (ICOMOS Canada, 1983), this document further elaborated on the 'contemporary functional standards' in 'rehabilitation' with more details such as safety, property protection, and access, whereas 'adaptation for new use' has been substituted with a new concept – 'adaptive reuse' (C28) (see FIG. 2.4).

In the New Zealand Charter (2010), 'adaptation' was listed as one of the main concepts under the degree of intervention for conservation purposes, together with 'preservation', 'restoration', and 'reconstruction' (see FIG. 2.4). Following the idea that 'conservation is facilitated by serving a useful purpose', the proposals for 'adaptation' to a place 'may arise from maintaining its continuing use or from a proposed change of use' (see FIG. 2.4). These 'adaptation' processes include alteration and addition but with restrictions, as 'Any alterations or additions should be compatible with the original form and fabric of the place and should avoid inappropriate or incompatible contrasts of form, scale, mass, colour, and material'. Moreover, 'adaptation should not dominate or substantially obscure the original form and fabric and should not adversely affect the setting of a place of cultural heritage value. New work should complement the original form and fabric'.

In the latest version of the Burra Charter (revised 2013), 'adaptation' was defined as potentially involving 'additions' to the place, the introduction of new services, a new use, or changes to safeguard the place. Most importantly, in the Explanatory Note, 'adaptive reuse' was mentioned in reference to the 'adaptation' of a place for a 'new use' (see FIG. 2.4).

With the absence of 'rehabilitation' and without defining 'adaptation', the China Principle (2015) highlighted the importance of 'appropriate use' and 'adaptive reuse'. 'Appropriate use' includes the 'continuation of the original function' or 'adaptation for an appropriate modern use' when a site has lost its original function. Both could create social and economic benefits as well as bring the heritage place up to modern living standards. However, when implementing 'adaptation', if the new facilities added to a site were for the purpose of use, they must not negatively impact the identified values; they must not be overused and should be reversible in the future.

In summary, 'rehabilitation' was emphasised as a modification for meeting contemporary functional standards and requirements (ICOMOS Canada, 1983; UNESCO Bangkok, 2009), whereas 'adaptation' focused on a broad range of 'change' to not only suit use but also safeguard cultural significance. Paradoxically, the

definitions of ‘rehabilitation’ and ‘adaptation’ still overlapped. Regarding common ground, it was found that ‘adaptive reuse’ was a subcategory of ‘adaptation’ or ‘rehabilitation’, which were related to ‘new use’.

2.1.3.5 Summary of the definitions

According to the historical review and analysis of the selected concepts in Sections 2.1.3.3 to 2.1.3.4, the definitions of the concepts are then summarised and presented as follows:

Conservation (C1) is a broader concept that includes all intervention concepts (as an umbrella concept), ranging from non-intervention, maintenance, preservation, restoration, adaptation, and reconstruction, including retaining, reintroducing, and changing use. Conservation manages changes and pursues a continuous balance between contemporary values and the layers of cultural significance and its attributes.

Preservation (C2) is a concept that maintains all the attributes that convey cultural significance, aiming to maintain the maximum integrity of cultural significance. It is different from, and sometimes goes beyond, maintenance. Other interventions, such as repair and restoration, may be applied together to maintain the maximum integrity of cultural significance.

Restoration (C3) occurs when the attributes conveying cultural significance are damaged but mostly recognisable. Restoration refers to bringing the attributes back to a previously known stage using the same material. Restoration involves not only pursuing unity in style but also ensuring the integrity of the attributes and the conveyed cultural significance. Restoration can also reveal ‘preferred’ values through the removal of earlier additions considered dissonant with cultural significance. It could also be seen as a partial reconstruction.

Reconstruction (C6) occurs when cultural significance is lost due to either human or natural intervention. Reconstruction involves rebuilding the elements that convey cultural significance, returning them to their previously known state using new materials. Therefore, reconstruction is considered new construction work.

Reassembly/Anastylosis (C7) occurs when a building or elements have been dismantled due to a natural or human-induced disaster or a disassembly history according to the local tradition. The purpose of reassembly/anastylosis is to

bring the existing separated building elements back together to restore the building to its previous state. This concept can be considered a subconcept of the restoration process.

Change (of) use (C10) refers to proposing a new and different purpose for a building than what was originally intended or currently in use. The change of use is a crucial subconcept of adaptive reuse.

Adaptation (C11) refers to all the changes that involve, on the one hand, the alteration of the physical aspect of the building and the preservation of its cultural significance through continued or reintroduced use and, on the other hand, change of use when it is not considered to have cultural significance. The relationships among adaptation, adaptive reuse, and rehabilitation are strong but need to be better understood and further clarified.

Maintenance (C12) is an essential aspect of all conservation projects involving the regular and ongoing care of buildings and the preservation of their cultural significance. This includes activities such as cleaning and preventive measures.

Removal (C14) refers to all the changes involving the subtraction of building elements or buildings while ensuring that the maximum cultural significance is preserved. The removed parts should be preserved for future reinstatement or reuse in the same or similar buildings.

Rehabilitation (C15) refers to all the changes that involve, on the one hand, the physical aspect of a place to preserve its cultural significance, including its continued or renewed use, and, on the other hand, change of use, when it is no longer considered culturally significant. Specifically, this refers to all the changes necessary to make a place habitable again. This may involve introducing new facilities or systems to meet contemporary living requirements. The relationships among adaptation, adaptive reuse, and rehabilitation are complex and still need to be better understood and further clarified.

Repair (C20) occurs when accidental events occur and aims to prevent further damage and return the system to a normal or functional state. Repair is distinct from maintenance because it involves removing and replacing broken parts with new materials that respect cultural significance and match the original design. In the case of timber structures, repair can be part of a regular cycle, occurring annually or seasonally. From an action perspective, repair can also be seen as restoration, involving the removal and addition of original materials, or as reconstruction, involving the addition of new materials.

Retaining use (C23) refers to maintaining and not changing existing use. This may include some physical modifications to fit contemporary functional requirements.

Reintroducing use (C24) refers to bringing back the use that was originally planned for the site but is no longer the same as the existing one or is gone. This may include some physical changes.

Adaptive reuse (C28) refers to the adaptation to change (removing and adding) for a new/different use, which was not originally proposed. The new/different uses may range from functions, accessibility, activities and association of place. There is a strong relationship among adaptation, adaptive reuse and rehabilitation, but this relationship has yet to be understood and clarified.

2.1.4 Discussion

According to the analysis in the previous sections, differences and commonalities in concepts have been revealed. In Section 2.1.3.2, the concepts of 'conservation' and 'preservation' were discussed and treated as two distinct concepts based on a historical review. While the definition of 'conservation' has been expanded, the definition of 'preservation' has become stricter. However, some differences were found. On the one hand, documents presented different ideas about the extent of intervention, encompassing various concepts, and sometimes treated them as sub-concepts or activities within the conservation process. On the other hand, although cultural significance has gained importance, its criteria and how values or attributes are involved and influence decision-making in interventions are still unknown. Additionally, different documents also reflect various attitudes towards 'conservation' and other concepts. Notably, the Venice Charter defines 'conservation' as 'making use of' the monument, especially for social purposes, while maintaining the original layout and decoration, which could turn the monument into a museum-like entity and make it a 'mummified' monument. However, the Burra Charter (1979), which introduced the concept of 'adaptation' and allowed for changes, expanded the notion of 'conservation' beyond its traditional linguistic meaning, which closely aligned with 'preservation'.

From the results of Section 2.1.3.3, 'restoration (C3)', 'reconstruction (C6)', 'reassembly/anastylosis (C7)', 'maintenance (C12)' and 'removal (C14) and 'repair (C20)' were found to have overlapping definitions. Notably, a distinction was identified between 'maintenance', which involves preserving the existing state, and 'repair', which involves returning to a previous state. 'Maintenance' was considered to have a closer relationship with 'preservation' than with 'repair'.

These results also revealed differences among ‘restoration’, ‘reconstruction’, and ‘maintenance’, particularly in relation to ‘repair’. There is a significant difference between ‘restoration’ and ‘reconstruction’ regarding the introduction of new materials to built heritage. This difference is evident in both the Burra Charter (ICOMOS Australia, 2013) and the New Zealand Charters (ICOMOS New Zealand, 2010). If no new materials are introduced, it is considered ‘restoration’. The introduction of new materials is considered ‘reconstruction’.

Furthermore, the Burra Charter (2013) explains the relationships among ‘maintenance’, ‘repair’, ‘restoration’, and ‘reconstruction’. This suggests that ‘repair’ is not only different from ‘maintenance’ but also broader than ‘restoration’ and ‘reconstruction’. In contrast, in The New Zealand Charter (2010), ‘repair’ is considered a subcategory that shares the same hierarchy as ‘maintenance’, supporting the concept of ‘preservation’. The paradox here is that in The New Zealand Charter, ‘repair’ is allowed to introduce new materials, which, according to the earlier logic, would make it the same as ‘reconstruction’. This means that ‘repair’ is a concept that goes beyond mere ‘preservation’.

In Section 2.1.3.4, definitions with significant overlap among ‘adaptation (C11)’, ‘rehabilitation (C15)’, and ‘adaptive reuse (C28)’ were identified, mainly due to the involvement of different levels of changing use, ranging from ‘retaining use (C23)’ to ‘chang (ing) use (C10)’ to ‘reintroducing use (C24)’. These different levels of change can be seen as subconcepts and merged into ‘rehabilitation’, ‘adaptation’, and ‘adaptive reuse’. Following the notion that ‘use’ has expanded from the functions of the monuments (ICOMOS, 1964) to the ‘associations of places’ (ICOMOS Australia, 1999; ICOMOS Australia, 2013), including activities, traditional habits, and accessibility, the complexity of mentioning different forms of ‘use’ has probably later become the reason why some (re)interventions were put into a grey area and used interchangeably. Although in this chapter, the definitions of ‘adaptation’ and ‘rehabilitation’, as well as their relationships, are still unclear, the findings show that while the majority (five) of the documents mentioned ‘adaptation’ in relation to ‘new use or change of use’, two documents—the Burra Charter (1999) and (2013)—mentioned ‘changes to safeguard the place’. This implies that ‘adaptation’ could also be related to the same use and involve physical changes. Thus, in the latest version (2013) of the Burra Charter, ‘adaptation’ has a more comprehensive meaning, which includes multiple situations ranging from retaining the existing use to reintroducing the use to proposing a new use. This finding resonates with the theory of Douglas (2006), as he noted that ‘adaptation’ has a broader meaning behind it.

In addition to the aforementioned concepts, one might think that some categories, such as 'retaining association and meanings', are unnecessary. However, since an intervention concept that solely focuses on preserving intangible aspects of heritage is still lacking, incorporating this concept could help us carefully reconsider how we intervene in built heritage and environments, particularly in diverse cultural contexts. According to the results, what we understand from its definition is that to 'retain association and meaning', various actions can be implemented, such as 'respect', 'retain', 'not obscure', 'continue', and 'revive'. Additionally, it is connected to the concepts of 'interpretation' and 'use', which encompass different values and cultural significance.

Since the Venice Charter was drafted in 1964 and adopted in 1965, the Burra Charter (1976) and other documents have been adopted for decades. Viewing them with a contemporary eye, these documents are still considered very forwards-thinking. Examples include addressing modern technologies and contemporary stamps in interventions (ICOMOS, 1964) and encouraging 'adaptation' (ICOMOS Australia, 1976). Nevertheless, concepts have evolved across documents, and when all the documents claimed to refer to the Venice Charter or others, those definitions were not exactly the same. Sometimes, this process resembled cherry-picking the definitions from others and interpreting them without consistency. This has created a dilemma, such as in the case of the Hoi An Protocol, which references different charters and documents simultaneously to select the most suitable references. This has caused confusion in terminology, let alone other conservation ideas. A possible solution could be to provide more customised and well-explained documents in addition to providing a general explanation of conservation principles and ethics. The example of the Burra Charter (ICOMOS Australia, 2013), which provides additional explanatory notes alongside the main articles, is very helpful for understanding the concepts both in general and in the local context. Additionally, a longer paragraph should be dedicated to 'use-related concepts', ranging from 'adaptive reuse' to 'adaptation' and 'rehabilitation'.

The discussion on the definition of intervention concepts is not only a linguistic matter. Every discipline and field has its own ontology. In medicine and biology, there are unique Latin concepts that are further translated into local concepts. These ontologies help disciplines evolve by comparing different research over time and place, as well as research and practice. The results of this research, even if preliminary, are a step forwards, helping to avoid creating barriers and misunderstandings. The definition of intervention concepts cannot remain random. As international doctrinal documents are supposed to be understood and assist in implementation in different cultural contexts, their concepts should be defined. Over time, experts may gain more knowledge, and the definitions may evolve. However, it is important to have a common base to enable better continuity and integration.

2.1.5 Conclusion

Understanding the frequency with which concepts are used and their relationships can provide insights into the evolution of ideas and shifts in mentality in policies and conservation theories. This part of the research has identified three main findings. First, notable trends were found in signalling the allowance of 'adaptation' in the historic environment in the New Zealand Charter (1992), as well as preferences for using 'conservation' as a broader concept. Second, 'repair' was found to play a paradoxical role between 'restoration' and 'reconstruction', leading to divergent opinions in documents. Third, in the concepts related to 'use' – 'adaptation', 'adaptive reuse', and 'rehabilitation' – their definitions have become more complex due to the expanded notions of 'use' from the functions of the monuments (ICOMOS, 1964) to the 'associations of places' (ICOMOS Australia, 1999; ICOMOS Australia, 2013). This chapter highlights the differences and commonalities in these concepts and provides a list of selected concepts with more diverse definitions that should be further researched.

Nevertheless, the definition of the intervention concepts cannot remain random, as revealed in some concepts in this research. Greater consistency in the concepts and definitions used can not only help experts build common ground but also foster cooperation among academics and practitioners. This chapter highlights the 'uncommon' concepts used in international doctrinal documents. By understanding this uncommonness, educators and students in academia can avoid cherry-picking and instead refer to more suitable materials for educational purposes. Thus, in practice, discrepancies can be uncovered, and misunderstandings and misleading in future decision-making processes can be prevented. More specifically, a clear definition of interventions can facilitate the decision-making process, especially at the local project level. Effective guidance from government policies and regulations can support professionals in selecting appropriate conservation categories, thus directing their efforts towards real projects. From a broader perspective, greater consistency also promotes cross-disciplinary cooperation. Although 'renovation' may not be emphasised in heritage protection documents, there is an ongoing wave of 'renovation' in energy-driven policies targeting built heritage in Europe. Essentially, while heritage protection documents may not prioritise 'renovation', energy-driven policies increasingly promote 'renovation' initiatives as part of efforts to conserve built heritage. The misalignment in language use and related criteria can create challenges, as it may lead to conflicting priorities and jeopardise the conservation of built heritage.

Further research involving new criteria, such as cultural values, attributes, and cultural significance, is suggested to assist in the process of defining the proposed

concepts. Their definitions often overlap with each other. A possible approach is to cooperate with professionals from linguistics or anthropology to analyse the respective charters based on cultural distinctions in intervention concepts. This analysis should focus on distinctions in light of the cultural and historical context in which these concepts emerged.

Research investigating international doctrinal documents in multiple languages and cultural contexts is also suggested. This research should compare the changes and consistency of intervention concepts used in heritage management across different cultural and historical contexts. Specifically, the implementation of recommendations over time and space should be examined after these concepts are translated and interpreted in relation to the cultural significance adopted by the relevant local community. For example, the UNESCO Convention on World Heritage and the Recommendation on the Historic Urban Landscape should be examined.

Moreover, further research can also explore material perspectives, focusing on the use of concepts for specific building materials and technologies. For example, the different meanings of 'repair' between wooden, steel, and concrete structures can be investigated.

Finally, this part of the research aims not to denounce the function of the selected documents and find perfect or generalisable intervention concepts but to acknowledge the importance of these international doctrinal documents as evidence of evolving conservation theory and practice. Therefore, it is relevant to revisit these documents from time to time to understand the trends in how built heritage is recommended for management and intervention. The more one can explore the differences between cultures over time, the more creativity and diversity will be promoted for the built environment and its interventions.

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2.2 Values and Interventions: Dynamic Relationships in International Doctrines

ABSTRACT

Purpose: Even if there is a wealth of research highlighting the key role of values and cultural significance for heritage management and, defining specific interventions on built heritage, seldom the relation to their leading values and values hierarchy have been researched. How do values and interventions relate? What values trigger most and least interventions on heritage? How do these values relate and characterize interventions? And what are the values hierarchy that make the interventions on built heritage differ?
Design/methodology/approach: This part of the research conducts a systematic content analysis of 69 international doctrinal documents – mainly adopted by Council of Europe, UNESCO and ICOMOS, during 1877 and 2021. The main aim is to reveal and compare the intervention concepts and their definitions, in relation to values. The intensity of the relationship between intervention concepts and values is determined based on the frequency of mentioned values per intervention.

Findings: There were three key findings. First, historic, social and aesthetical values were the most referenced values in international doctrinal documents. Second, while intervention concepts revealed similar definitions and shared common leading values, their secondary values and values hierarchy e.g. aesthetical or social values, are the ones influencing the variation on their definitions. Third, certain values show contradictory roles in the same intervention concepts from different documents, e.g. political and age values.

Originality: This chapter explores a novel comparison between different interventions concepts and definitions, and the role of values. The results can contribute to support further research and practice on clarifying the identified differences.

KEYWORDS

Intervention, Intervention concepts, Values, Cultural Significance, International doctrine, Built heritage

2.2.1 Introduction

Over half a century ago, international governmental and non-governmental organizations such as The United Nations Educational, Scientific and Cultural Organization (UNESCO), Council of Europe (CoE), as well as the International Council on Monuments and Structures (ICOMOS), emerged to tackle common challenges in heritage conservation and management. In order to ensure that heritage is well-managed and enjoyed by the society of present and future generations, these organizations define and adopt international doctrinal documents to address one of the challenges – interventions of built heritage. These documents have "the fundamental role of offering statements or principles and guidelines for the conservation and management of places of cultural significance" (Taylor, 2004), and therefore, they are seen to have a professional ethics role in guiding the conduct of heritage conservation practice (Taylor, 2004). Jokilehto (2007) once mentioned that international doctrinal documents are the outcome of a reflection based on practice, e.g. increasing focus on the natural and ecological aspects during the 1970s, and they become documentary evidence for the cultural evolution that has taken place over the years (Jokilehto, 2007).

However, these documents are not always perfect. Although the concepts and policies related to conservation are subject to continuous evolution over time (Jokilehto, 2007), there are actually two main problems concerning interventions: definitions and categories.

Firstly, the definitions vary between documents and organizations. While international doctrinal documents have defined that interventions can have different levels, scales, and activities (ICOMOS Canada, 1983), the definition of interventions often differs between various documents and may even be omitted (See TABLE 2.1). Take "conservation" and "preservation" as an example. Interventions like 'conservation' are only mentioned in the title of the Appleton Charter (ICOMOS Canada, 1983), but they are neither explained nor defined in the document. 'Conservation' is also occasionally referred to as an umbrella concept that includes other interventions (ICOMOS Australia, revised 2013; ICOMOS China, 2015), which differs from other documents. Moreover, the China Principle (ICOMOS China, 2015) uses 'conservation', 'protection', and 'preservation' interchangeably, while the Cultural Tourism Charter (ICOMOS, 1999) states that "preservation" is an alternative term to "conservation" in some English-speaking countries. In addition to "conservation" and "preservation", certain concepts have been placed in a gray area that cannot be aligned between documents, such as "rehabilitation" (ICOMOS Canada, 1983), "adaptation" (ICOMOS New Zealand, 2010; ICOMOS Australia, revised 2013), and adaptive re-use (ICOMOS Australia, revised 2013).

TABLE 2.1 Definitions and categories of interventions are often non-aligned or omitted (question marks) between documents and organizations.

International Charters	Ch1: The Appleton Charter (ICOMOS Canada, 1983)	Ch2: New Zealand Charter (ICOMOS NZ, 2010)	Ch3: The Burra Charter (ICOMOS Australia, 2013)			Ch4: The China Principle (ICOMOS China, 2015) Ch5: Hoi-an Protocol (UNESCO Bangkok, 2009)		
Levels Of Intervention	?	Non-intervention	?			?		?
	Protection	?	?			Protection (equal to conservation and preservation)		?
	?	?	Conservation	Maintenance		Conservation	Regular Maintenance and Monitoring Strengthening and Stabilization Measures Minor and Major Restoration - Repair Protective Structures	Maintenance
	Conservation	?						Conservation
	Preservation (Include Maintenance, Stabilization)	Preservation		Preservation				Preservation
	Period Restoration (Include Maintenance, Stabilization, Addition, Removal)			Repair	Restoration			Period Restoration
	?	Restoration			Reconstruction			Restoration
	Rehabilitation (Include Maintenance Stabilization, Addition, Removal) (Adaptation For New Use)	Adaptation (Maintain Continuing Use Change Of Use)		Retaining Or Reintroducing Use			Retaining Historic Function	Rehabilitation (Include Adaptive Reuse)
				Adaptation			Adaptive Reuse – Adaptation For Modern Use	Adaptation
				Adaptation For New Use – 'Adaptive Re-use'				?
	Period Reconstruction	Reconstruction		Reconstruction			Reconstruction	Reconstruction
	Redevelopment	?	?				?	Redevelopment
	Relocation	Relocation	Relocation				Relocation	Relocation
	?	?	New Work (Addition, Stabilization)			?		Replication
	?	?	?			?		Renovation (Include Refurbishing, Renew, Conservation Perception)

TOC

These interventions, which are seldom related and/or further defined, often lead to misunderstandings or misinterpretations in both research and practice.

Secondly, values and cultural significance are expected to influence the appropriate category/level of intervention (ICOMOS Canada, 1983). Cultural significance is decoded through conveyed values (Pereira Roders, 2007) and attributes (Veldpaus, 2015). Values justify why heritage is listed, while attributes characterize the resources (tangible and intangible) that convey such values (Pereira Roders, 2013). Although there is a wealth of research highlighting the key role of values and cultural significance in decision-making processes for heritage planning and management (De La Torre, 2002; Mason, 2005; Pultar, 1997; Taher Tolou Del et al., 2020; Augustiniok, 2020), as well as defining specific intervention concepts for built heritage, such as conservation, restoration, and reconstruction (Henket, 1998; Pereira Roders, 2007; Douglas, 2007), the relation to their leading values has rarely been researched or compared over time and place.

Many academics highlight the range of values that influence various processes, such as during the conservation process (Feilden, 1982), where values are expected to be prioritized, integrated, or ranked (Mason, 2005). Sometimes, values are assumed to conflict with each other (Rieigl,1903/1996; ICOMOS, 1994; De La Torre, 2002) because they are influenced by the stakeholders' diverging interests (Mason, 2005). Some researchers focus on one category of intervention with specific values, such as using adaptive reuse to promote social values (e.g. Kenneth and Lucian, 2019) or researching the balance between architectural and monument values in adaptive reuse (e.g. Augustiniok et al., 2020).

Without a proper definition, the tendentious interpretations often raise questions about the role of certain intervention concepts as best practices (Meskell, 2019). For example, the government has used "preservation" and "restoration" as strategies for gentrification under political and economic agendas (Meskell, 2019). "Conservation" and "adaptive reuse" have sometimes been considered to compromise contemporary needs too much and have a negative impact on the place (UNESCO Bangkok, 2009). While some documents have pointed out that "conservation" is an integral part of good management of places of cultural significance (ICOMOS Australia, revised 2013) and that 'conservation' does not exclude certain intervention concepts, as Jokilehto (2019) once mentioned that "conservation does not exclude 'reconstruction' when it is well motivated and correctly executed" (Jokilehto, 2019: p.71). These are just a few examples that highlight the importance of a proper definition of intervention, and a new approach to defining interventions may be necessary.

In order to find out the relationship between interventions and values and further contribute to the definition process of intervention concepts, this chapter will first explore the overall distribution of values per intervention concept. Second, it will reveal which values trigger specific intervention concepts. Third, it will determine which values differentiate these interventions from others, including a comparison between the Council of Europe, ICOMOS, and UNESCO perspectives. Through the use of a qualitative approach and systematic content analysis, the intensity of the relationship is determined based on the frequency of mentioned values per intervention.

2.2.2 Research methodology

2.2.2.1 International doctrinal documents

This part of the research conducted a systematic content analysis of international doctrinal documents, using a mixed method that integrates qualitative analysis and quantitative statistics. Its goal was to systematically collect, analyze, and present the narrative embedding intervention concepts in international doctrinal documents.

This research selected the concept of “intervention” as the general concept to address all the variations in man-made activities applied to built heritage, in order to ensure its survival over time against the natural process of degradation (Pereira Roders, 2007). Examples of such activities include conservation, restoration, and rehabilitation. A larger sample of 519 international doctrinal documents was selected because they referenced cultural heritage. The documents were examined by searching for the keywords “intervention” and “intervention concepts”, as well as terms such as “conservation”, “preservation”, “protection”, “restoration”, “adaptation”, “adaptive reuse”, “reconstruction”, “rehabilitation”, “revitalization”, “regeneration”, and “values”. The glossary and terminology sections were checked for value-related contents, as described in TABLE 2.1. If these sections were not available, the definitions of the intervention concepts were deduced through content analysis of the entire documents. However, the relationship between intervention concepts and values remained largely undisclosed, as the term “values” was seldom referenced in the definition or glossary section of the intervention concepts. There were some exceptions, such as the mention of aesthetical values in the definition of “replication” in the Hoi An Protocol (UNESCO Bangkok, 2009), and the mention of values in relation to “repair” in the Principles for the Conservation of Wooden Built Heritage (ICOMOS, 2017).

After the examination process, this research selected and analyzed 69 international doctrinal documents adopted between 1877 and 2021. These documents reveal a broad geographical spread, originating from Europe to Asia and the Pan-Pacific region. Specifically, nine (13%) of the international doctrinal documents were adopted by the United Nations Educational, Scientific and Cultural Organization (UNESCO), thirty-six (52%) by The International Council on Monuments and Sites (ICOMOS), and twenty-one (30%) by the Council of Europe (CoE). Additionally, two documents considered as ICOMOS were prepared in collaboration with other organizations, such as The International Committee for the Conservation of the Industrial Heritage (TICCHI). Six documents (11.5%) were adopted by other organizations, including the Society for the Protection of Ancient Buildings (SPAB), ICOM Architecture, the Organization of American States (OAS), the European Council of Town Planners (ECPT-CEU), and the Architect's Council of Europe. These documents were the first international doctrinal documents on cultural heritage, predating the establishment of these international organizations.

2.2.2.2 Intervention Concepts

Interventions and intervention concepts are used as synonyms in this part of the resaerch. Thirty-three intervention concepts (C1-C33) were selected for the present analysis, based on ongoing research on international doctrinal documents adopted by UNESCO, ICOMOS and the Council of Europe. In the FIG. 2.5, below shows on the left side, all thirty-three concepts from the least to the most impactful – going from prevention to demolition – and, on the right side, their relationship with the eight values.

Among the thirty-three intervention concepts, nine concepts – "cleaning" (C25), "demolition" (C17), "recycle" (C32), "prevention" (C33), "redevelopment" (C20), "refurbishment" (C29), "modernization" (C14), "retouching" (C27), and "reinforcement" (C28) – were not found to convey any value. Therefore, these concepts were excluded from this research analysis, and the remaining twenty-four concepts will be presented in the findings.

To present the findings, this part of the research is intended to select the ten most referenced terms from the selected documents. However, the findings revealed that only historic, economic, and common leading values were included, while aesthetical and scientific values were absent. In order to have a more comprehensive discussion on the findings, this part of the research has decided to present all the concepts found with value-related contents.

2.2.2.3 Cultural values

Although several typologies of value systems for heritage conservation have been defined in several studies (e.g. Riegl, 1903; Mason, 2002; Riganti and Nijkamp, 2005), a theoretical framework with concepts and definitions has rarely been developed (Pereira Roders, 2007; Tarrafa Silva & Pereira Roders, 2010). This theoretical framework on cultural values has been applied worldwide to both urban and architectural scales ever since its development in 2010 to compare perspectives from stakeholders (Silva & Roders, 2012), support policy evaluation (Veldpaus and Roders, 2014), analyze literature in residential neighborhoods (Spoormans et al., 2020), analyze social media (Bai et al., 2022; Foroughi et al., 2022), and serve as a baseline for fieldwork in cities such as Galle (Boxem et al., 2012) and Willemstad (Speckens et al., 2012). This theoretical framework consists of eight primary values and 30 secondary values (see TABLE 2.2) to guide their identification: historic, aesthetic, scientific, ecological, social, economic, political, and age values. To clarify further, this theoretical framework only applies to urban and architectural scales. Certain important attributes, such as setting, landscape, and visibility issues, which are related to a broader range, such as natural and rural scales, were not considered within this part of the research.

The method included three steps:

First, The author extracted the sentences that involved the terminology of intervention concepts and values, including contents that imply their explanations, interpretations, and definitions from the international doctrinal documents.

Second, The extracted contents were structured and classified in pre-coding according to the theoretical framework on cultural values (Pereira Roders, 2007) (see TABLE 2.2).

Third, Analysis and comparison of the structured data, to reveal (1) the frequency of mentioning the values within the 69 documents, and (2) comparing the relationships between values and the selected intervention concepts from different international doctrinal documents and organizations.

TABLE 2.2 The theoretical framework on cultural values (ICOMOS Australia, 1999; Mason, 2002; Pereira Roders, 2007; English Heritage, 2008;Tarrafa Silva & Pereira Roders,2010)

Primary Values	Secondary Values		References
	Social	Spiritual	beliefs, myths, religions (organized or not), legends, stories, testimonial of past generations;
		Emotional, individual	memory and personal life experiences;
		Emotional, collective	notions related with cultural identity, motivation and pride, sense of "place attachment" and communal value.
		Allegorical	objects/places representative of some social hierarchy/status;
	Economic	Use	the function and utility of the asset, original or attributed;
		Non-use	the asset's expired function, which has its value on the past, and should be remained by its existence (of materials), option (to make some use of it or not) and bequest value (for future generations);
		Entertainment	the role that might have for contemporaneous market, mainly for tourism industry;
		Allegorical	oriented to publicizing financial property;
	Political	Educational	the education role that heritage assets may play, using it for political targets (e. g. birth-nations myths, glorification of political leaders, etc.);
		Management	made part of strategies and policies (past or present);
		Entertainment	it is part of strategies for dissemination of cultural awareness, explored for political targets;
		Symbolic	emblematic, power, authority and prosperous perceptions stem from the heritage asset;
	Historic	Educational	heritage asset as a potential to gain knowledge about the past in the future through;
		Historic-artistic	quality of an object to be part of a few or unique testimonial of historic stylistic or artistic movements, which are now part of the history;
		Historic-conceptual	quality of an object to be part of a few or unique testimonial that retains conceptual signs (architectural, urban planning, etc.), which are now part of history;
		Symbolic	fact that the object has been part/related to an important event in the past;
		Archaeological	connected with Ancient civilizations;
	Aesthetical	Artistic	original product of creativity and imagination;
		Notable	product of a creator, holding his signature;
		Conceptual	integral materialization of conceptual intentions (imply a conceptual background);
		Evidential	authentic exemplar of a decade, part of the History of Art or Architecture;
	Scientific	Workmanship	original result of human labour, craftsmanship;
		Technological	skillfulness in techniques and materials, representing an outstanding quality of work;
		Conceptual	integral materialization of conceptual intentions (imply a conceptual background);
	Age	Workmanship	craftsmanship value oriented towards the production period;
		Maturity	piece of memory, reflecting the passage/lives of past generations;
		Existential	marks of the time passage (patina) present on the forms, components and materials;
	Ecological	Spiritual	harmony between the building and its environment (natural and artificial);
		Essential	identification of ecological ideologies on its design and construction;
		Existential	manufactured resources which can either be reused, reprocessed or recycled;

2.2.3 Findings: The dynamic relationship between values and intervention concepts

By applying the theoretical framework on cultural values (Pereira Roders, 2007), different relationships were found between intervention concepts and values during the analysis of selected documents. Most international doctrinal documents (over 80%) tend to define the concepts based on what (attributes) to target during the intervention and how (actions) to carry out such intervention. Only a few relate interventions directly to values.

2.2.3.1 Overall values across thirty-three intervention concepts

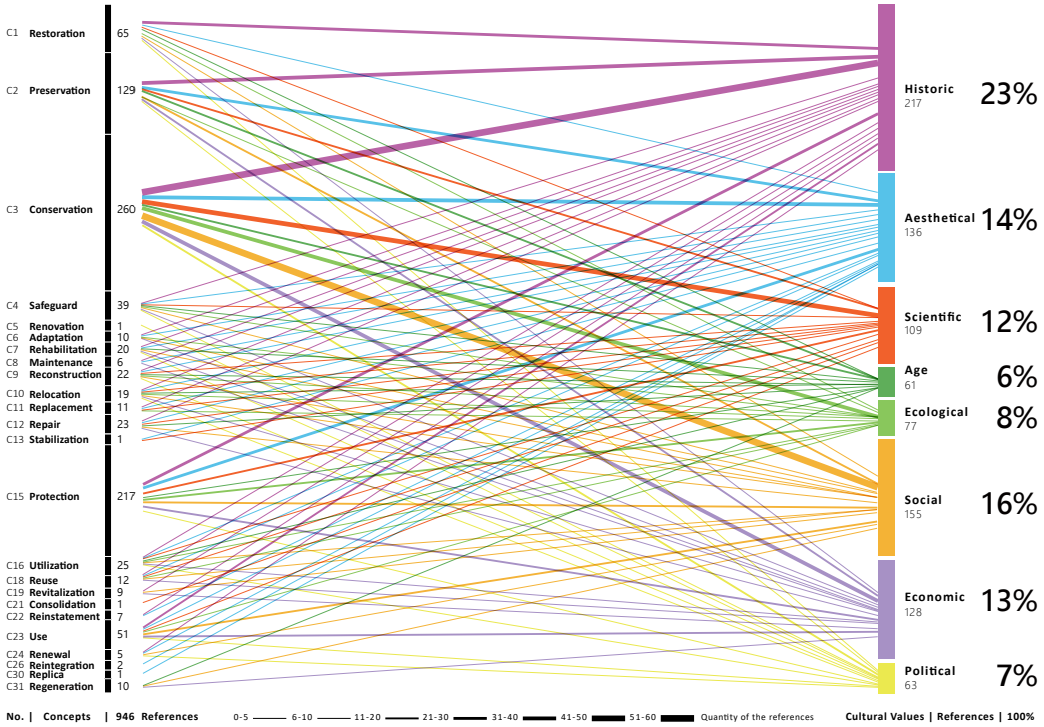

FIG. 2.5 The overall distribution of the eight values referenced by the twenty-six intervention concepts.

TOC

Results reveal that historic (23%), social (16%), and aesthetical (14%) values are the most referenced values across the thirty-three intervention concepts (see FIG. 2.5). When ranked by frequency, age (6%), political (7%), and ecological (8%) values are the least referenced. Although historic values were the most referenced values (217 references), aesthetic values were the ones found to be related to the most intervention concepts (19 out of 33).

As for the rest of the twenty-four concepts, the number of their references differs greatly across the concepts, ranging from the highest-ranking "conservation," with 260 references mentioning its values, to the lowest-ranking "stabilization" and "replication," which only have one reference each.

2.2.3.2 Intervention concepts and their leading values

TABLE 2.3 Locating the eight values referenced in twenty-six intervention concepts from the 69 documents.

No.	short ref/ concept	organi-zation	Historic	Aesthe-tical	Scien-tific	Age	Ecolo-gical	Social	Eco-nomic	Political
D1	**1877 The SPAB**	SPAB	**C1, C12**	**C1**	0	**C1, C12**	0	0	0	0
D2	**1931 The Athens Charter**	IMO	**C1, C2, C23**	**C1, C2, C23**	0	**C2**	0	0	0	0
D3	**1933 Charter of Athens**	CIAM	0	**C18**	0	0	0	0	0	0
D4	**1945 UNESCO Constitution**	UNESCO	**C3, C15**	**C3, C15**	**C3, C15**	0	0	0	0	0
D5	**1954 The Hague Convention**	UNESCO	**C15**	**C15**	**C15**	**C15**	**C15**	**C15**	**C15**	**C15**
D6	**1964 The Venice Charter**	ICOMOS	**C1, C11**	**C1, C11**	**C1, C21**	0	0	**C3, C23**	0	0
D7	**1966 Res (66) 19**	CoE	**C15**	**C15**	0	0	0	0	0	0
D8	**1966 Res (66) 20**	CoE	**C8**	**C23**	0	0	0	0	**C15**	0
D9	**1967 The Norms of Quito**	ICOMOS	**C1, C2, C3, C4, C12, C15, C16, C23**	**C1, C2, C3, C12, C15, C16, C23**	**C15**	**C1**	**C4**	**C1, C2, C15, C23**	**C1, C2, C15, C16, C23**	**C1, C23**
D10	**1968 Res (68) 11**	CoE	**C2, C6, C7, C15**	**C2, C6, C7, C15**	0	0	0	0	**C6, C7**	**C7**
D11	**1968 Res (68) 12**	CoE	**C2, C7, C15**	**C7, C15**	0	0	0	**C7, C15**	0	0
D12	**1972 Res (72)**	CoE	**C2**	0	0	**C2**	0	0	0	0

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TABLE 2.3 Locating the eight values referenced in twenty-six intervention concepts from the 69 documents.

No.	short ref/ concept	organi-zation	Historic	Aesthe-tical	Scien-tific	Age	Ecolo-gical	Social	Eco-nomic	Political
D13	1972 UNESCO Convention	UNESCO	C4, C15	C3, C15	C3, C15	0	C3, C4, C15	0	0	0
D14	1975 Res (75)	CoE	C2	C2	C2	C2, C7	C2	C2, C3	C2, C3	C2
D15	1975 The Declaration of Amsterdam	CoE	C2	C2	0	0	0	C3, C23, C31	0	0
D16	1976 Charter of Cultural Tourism	ICOMOS	0	C8	0	0	0	C15	C8, C15	0
D17	1976 Nairobi Recommendation	UNESCO	C2	C2	C2	C2	C2	C2, C19	C2, C7, C19	C2
D18	1976 Res (76) 28	CoE	0	0	0	0	0	C19, C23	0	0
D19	1981 The Florence Charte	ICOMOS	C2	C2	C1, C2		C2, C11	C2, C3	0	C2
D20	1982 Declaration of Dresden	ICOMOS	C1, C9	C9	C9	C9	C2, C9, C23	C1, C9, C23	0	C1, C2, C9
D21	1982 Tlaxcala Declaration	ICOMOS	C3, C19	C3	C3	0	C3	C2, C3, C19	C2, C3, C19	0
D22	1983 The Appleton Charter	ICOMOS	C2, C15	0	0	0	0	0	0	0
D23	1985 Convention	CoE	C3, C15, C23	C3, C15, C23	C3, C15, C23	C15	C3, C15	C3, C15	C15	C15
D24	1987 Washington Charter	ICOMOS	C2	0	0	0	0	0	0	0
D25	1987 No. R (87) 24	CoE	0	0	0	C7, C31	0	C31	C31	0
D26	1989 No. R (89) 6	CoE	C4	C4	C4	0	C4	C4, C15	C1, C4, C15, C18	0
D27	1990 Charter	ICOMOS	0	C8	C9	0	0	0	0	0
D28	1990 No. R (90) 20	CoE	C3, C15, C23	C15	C3, C15	C15	C15	C15	C15	C15
D29	1991 Recommendation No. R(91) (a	CoE	C23	C23	C23	0	0	0	C23	0
D30	1991 No. R (91) 6 (b	CoE	0	0	0	C2, C3, C7	0	0	C1, C3, C7	0
D31	1992 Convention	CoE	C2, C3, C15	0	C2, C3, C15	0	0	0	0	0
D32	1993 GUIDELINE	ICOMOS	C3	C3	C3	C3	C3	C3	C3	C3
D33	1994 The Nara Document on Authenticity	ICOMOS	0	0	0	0	0	0	0	0

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TABLE 2.3 Locating the eight values referenced in twenty-six intervention concepts from the 69 documents.

No.	short ref/ concept	organi-zation	Historic	Aesthe-tical	Scien-tific	Age	Ecolo-gical	Social	Eco-nomic	Political
D34	1995 No. R (95) 9	CoE	C3, C15	C3, C15	C3, C15	C3, C15	C3, C15	C3, C15	C3, C15, C18, C23	C3, C15
D35	1996 Principle	ICOMOS	C3, C8	0	0	0	0	0	0	0
D36	1996 Declaration	CoE	C2	0	C2	C7	C15, 23	C23	C31	C2
D37	1996 The Declaration of San Antonio	ICOMOS	C1, C9	0	0	0	0	C3	C3	C9
D38	1996 Charter	ICOMOS	0	0	0	0	0	C3	0	0
D39	1998 NEW CHARTER OF ATHENS	CoE	0	0	0	0	C3	C3	0	0
D40	1998 Suzhou Declaration	UNESCO	0	0	C15	C7	0	C2	C2, C15	C7
D41	1999 Charter	ICOMOS	C12, C15	0	C12, C15	0	C6, C15	C6, C12, C15	C15	C15
D42	1999 Cultural Tourism Charter	ICOMOS	0	0	0	0	C3, C15	C3, C15	C3, C15	C3, C15
D43	1999 Principle	ICOMOS	C1, C2, C11, C12	C1, C2, C4, C12	C1, C11	C1, C11	C1	C1	C1	C1
D44	1999 The Hague Convention	UNESCO	C15	C15	C15	C15	C15	C15	C15	C15
D45	2001 Resolution	CoE	0	0	0	0	0	C3	0	0
D46	2003 Principle of Wall Painting	ICOMOS	C1, C2, C3, C9, C15, C24	C2, C3, C15, C24, C26	C2, C3, C15	C2	0	C3, C24	C3	C3, C24
D47	2003 The New Charter of Athens	CoE	0	C8	0	0	0	0	0	0
D48	2003 Zimbabwe Charter	ICOMOS	0	0	0	0	0	0	0	0
D49	2003 Indonesia Charter	ICOMOS	C3	0	0	0	0	C3, C10	C3, C10	C3
D50	2003 Nizhny Tagil Charter	ICOMOS	C3	C15	C15	0	C6, C15, C18	C15, C18	C3, C6, C31	0
D51	2005 Xian Declaration	ICOMOS	0	0	0	0	0	0	0	0
D52	2005 Faro Convention	CoE	C16	C16	C16	C16	C16	C16	C16, C23	C16
D53	2005 VIENNA MEMORANDUM	UNESCO	C15	C15	C15	0	C15	C3, C15	C3, C15	0

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TABLE 2.3 Locating the eight values referenced in twenty-six intervention concepts from the 69 documents.

No.	short ref/ concept	organi-zation	Historic	Aesthe-tical	Scien-tific	Age	Ecolo-gical	Social	Eco-nomic	Political
D54	2008 Québec Charter	ICOMOS	0	0	0	0	0	C4, C23	C23	0
D55	2008 CHARTER ON CULTURAL ROUTES	ICOMOS	C23	0	0	0	0	C10, C23	C10, C23	0
D56	2008 QUÉBEC DECLARATION (intangible)	ICOMOS	0	0	0	0	0	C2	0	0
D57	2009 Hoi An Protocols	UNESCO	C3, C4	C11, C30	0	0	0	C18	C18	C3, C5, C9
D58	2010 New Zealand Charter (revised 2010)	ICOMOS	C1, C2, C10	C1, C2, C10	C1, C2, C10	C1, C2, C10	C1, C2, C10	C1, C2, C10	C1, C2, C10	C1, C2, C10
D59	2011 Madrid Document	ICOMOS	0	0	0	0	0	0	C8	0
D60	2011 HUL	UNESCO	C2, C3	C2, C3	C3	C2, C3	C3	C2, C3	C3	C3,
D61	2011 The Dublin Principles	ICOMOS	C3	C3	C3, C23	0	C3	C3, C10	C3, C10, C23	0
D62	2011 The Valletta Principles	ICOMOS	C3, C4, C15	C4, C15	C3, C4, C15	C4, C15	C4, C15	C3, C4, C15	C3, C4, C15	C4, C15
D63	2011 The Paris Declaration	ICOMOS	C2, C3, C15	C2, C3, C15	C2, C3, C15	C2, C3, C15	C2, C3, C15	C1, C2, C3, C15, C18	C1, C2, C3, C15, C18	C2, C3, C15
D64	2013 The Burra Chater (revised 2013)	ICOMOS	C10	0	0	0	C3, C9	C3, C9	0	0
D65	2015 China Principle	ICOMOS	C1, C2, C3, C9, C10, C15, C22, C23	C1, C2, C3, C12, C15, C22	C1, C3, C12, C13, C23	C1, C12	0	C2, C3, C23	C8, C15, C23	C2, C9
D66	2017 Document	ICOMOS	C2	0	0	0	C2	C2	0	0
D67	2017 Principle	ICOMOS	C2, C3, C12	C2, C11, C12	C3, C12	C3, C11, C12	C3	C2, C3, C10	C10	C2
D68	2017 SALALAH GUIDELINES	ICOMOS	C2, C12	C12	C2, C12	0	C2	C2, C23	C2	0
D69	2021 Guidelines	ICOMOS	C3, C6, C15, C18	C3, C6, C15	C3, C15, C18	C15	C3, C15	C15	C15	C3, C15

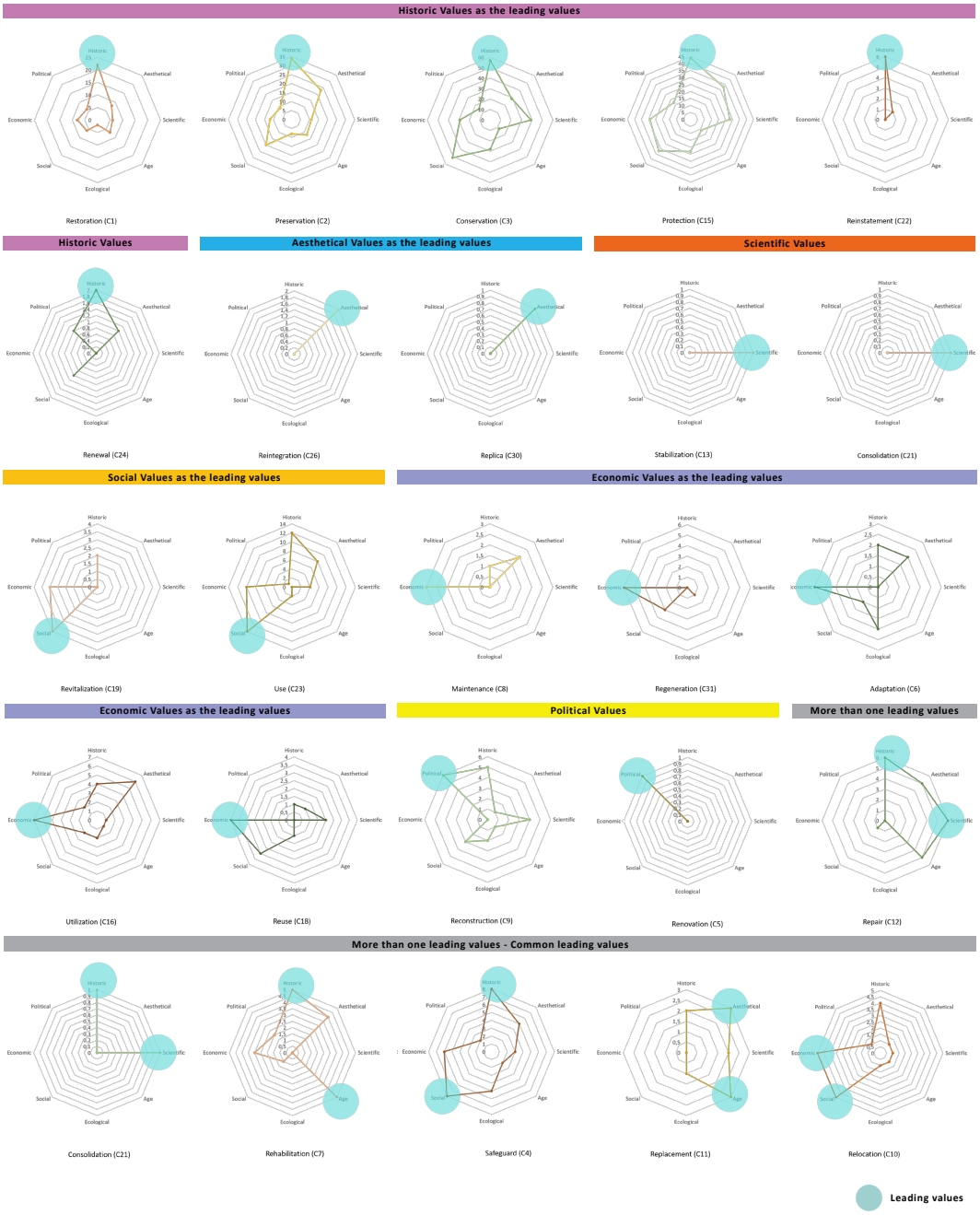

FIG. 2.6 Twenty-six intervention concepts and their leading values.

TOC

In order to compare the intervention concepts according to their hierarchies, this section categorizes the intervention concepts based on their leading value. Apart from age and ecological values, all other values have their own group of intervention concepts (FIG. 2.6). However, six intervention concepts were found to have more than one value sharing the first ranking – a common leading value. Therefore, another category is created for discussion.

2.2.3.2.1. Historic values as the leading values

Among all the intervention concepts researched within this chapter (TABLE 2.3), there are six intervention concepts that mention historic value as the leading values: 'conservation' (C3), 'preservation' (C2), 'restoration' (C1), 'protection' (C15), 'reinstatement' (C22) and 'renewal' (C24). It is worth mentioning that, besides 'reinstatement' and 'renewal', the other four intervention concepts have mentioned all eight values but with diverse value preferences.

According to the analysis, aesthetic values have been most closely associated with 'preservation' (C2) in fifteen documents. Interestingly, in the context of 'preservation', aesthetic values were first identified in The Athens Charter (IMO, 1931) and have since been consistently paired with historic values in all fourteen documents (IMO, 1931; ICOMOS, 1967; CoE, 1968a; CoE, 1968b; CoE, 1975a; CoE, 1975b; UNESCO, 1976; ICOMOS, 1981; ICOMOS, 1999c; ICOMOS, 2003a; ICOMOS New Zealand, 2010; UNESCO, 2011; ICOMOS, 2011d; ICOMOS China, 2015; ICOMOS, 2017b). These documents address various aspects, ranging from "the character and external appearance of cities" (IMO, 1931) to "groups and areas of historical or artistic interest" (ICOMOS, 1967) and "architectural surfaces" (ICOMOS, 2003a).

Although this phenomenon also occurred with 'restoration' (C1) in all seven documents (SPAB, 1877; ICOMOS, 1964; ICOMOS, 1967; ICOMOS, 1999c; ICOMOS New Zealand, 2010; ICOMOS China, 2015), the historic value (22 references) is still referenced almost three times more than the aesthetic value (8 references) in 'restoration'.

With a similar value hierarchy shared with 'preservation' in terms of historic, aesthetical, and social value, 'protection' (C15) also places relatively higher focus on the scientific and economic value, as reflected in seventeen documents. This is particularly evident in regards to the protection of "cultural property" (UNESCO, 1954), "industrial, technical, and civil engineering heritage in Europe" (CoE, 1990), and "fortifications and military heritage" (ICOMOS, 2021).

Social value was found to be most closely related to 'conservation' (C3) in twenty-three documents. Specifically, the Recommendation on the Historic Urban Landscape (UNESCO, 2011) was the first and only international doctrinal document identified that referenced social values more than historic values. Moreover, in addition to the 1985 convention concerning the protection of architectural heritage in Europe, documents with value-related content in "conservation" were found to mention the site, cultural landscape, landscape, and place, which have a broader scale than built heritage. As the scales and categories of attributes in conservation become broader - from single monuments to the historic urban landscape, tangible to intangible - more values were mentioned within a single concept.

'Reinstatement' (C22) and 'renewal' (C24) were found in only one document. However, while 'reinstatement' mainly focuses on historic value (ICOMOS, 2015), 'renewal' has more diverse values – aesthetical, social, and political – and prefers the "tradition of renewal" in specific regions of the world (ICOMOS, 2003a).

2.2.3.2.2. Aesthetic values as the leading values

Two intervention concepts ranked aesthetic value as the first and only value, and each of them was found in one selected document. 'Reintegration' (C26) was identified mentioning aesthetic reintegration (ICOMOS, 2003a) when concerning wall painting. 'Replication' (C30) was identified for maintaining aesthetic unity and harmony (UNESCO Bangkok, 2009).

2.2.3.2.3. Scientific value as leading value

Two intervention concepts were found to have scientific value as leading principles. 'Stabilization' (C13) is mentioned in a document (ICOMOS China, 2015) which discusses the technical approach required under this concept. 'Consolidation' (C21) is mentioned in only one document (ICOMOS, 1964) which states: "where traditional techniques prove inadequate, the consolidation of a monument can be achieved by using modern techniques for conservation and construction, provided their efficacy has been demonstrated by scientific data and proven by experience."

2.2.3.2.4. Social value as the leading value

Two intervention concepts – 'use' (C23) and 'revitalization' (C19) – have been identified with social value as the leading value. Although sharing a similar hierarchy in social, historic, and economic value, 'revitalization' has fewer values identified than 'use'. With three documents (UNESCO, 1976; CoE, 1976; ICOMOS, 1982a) identified in 'revitalization', 'use' was found referencing social value in ten documents (ICOMOS, 1964; ICOMOS, 1967; CoE, 1975b; CoE, 1976; ICOMOS, 1982a; CoE, 1996; ICOMOS, 2008a; ICOMOS, 2008b; ICOMOS, 2015; ICOMOS, 2017c). In the document of Cultural Route, it was considered social and economic interests promoted by sustainable 'use' (ICOMOS, 2008b).

Although ranked second, the historic value was found to be related to fewer documents than the economic value in both concepts. Only one document (ICOMOS, 1982) was found referencing historic value in 'revitalization', and seven documents were found in 'use' (IMO, 1931; ICOMOS, 1967; CoE, 1985; CoE, 1990; CoE, 1991b; ICOMOS, 2008b; ICOMOS, 2015). It is worth mentioning that historic value is highly concentrated in The Norm of Quito (OAS, 1967).

Economic value in 'use' was first identified in The Norm of Quito (OAS, 1967) and later in the 1991 Recommendation (CoE, 1991b) as "Use of the heritage…encourage the most appropriate use to be made of the protected heritage of this period, whether it be used for cultural or economic purposes." Furthermore, the Dublin Principle also addressed the importance of "the continued use of the industrial heritage would bring economic sustainability" (ICOMOS, 2011b). Additionally, in relation to 'revitalization,' economic value is found in two (out of three documents with historic value) (UNESCO, 1976; ICOMOS, 1982), which also simultaneously mentioned social value in the same document.

2.2.3.2.5. Economic value as the leading value

Five intervention concepts have been identified, with economic values as their leading values.

'Adaptation' (C6) was found to be related to economic value in two documents (CoE, 1968a; ICOMOS, 2003c). However, it was also found to be related to many other values in different documents. Historic and aesthetical values were mentioned in two other documents (CoE, 1968a; ICOMOS, 2021), while ecological value was mentioned in another two other documents (ICOMOS 1999a; ICOMOS, 2003c), addressing the avoidance of energy waste and concerns about environmental change.

‘Maintenance’ (C8) is mentioned in three documents (ICOMOS, 1976; ICOMOS, 2011a; ICOMOS, 2015), which highlight its economic value. The importance of timely maintenance is emphasized as it can reduce long-term repair costs (ICOMOS, 2011a) and bring economic benefits (ICOMOS, 1976). Although ranked as the second, aesthetic value serves different functions within the two referenced documents (ICOMOS, 1976; ICOMOS, 1990). The former mentions that maintenance is linked to the aesthetic quality of urban areas, while the latter emphasizes that aesthetical value alone should not be the sole reason for conducting maintenance.

‘Utilization’ (C16) was identified only in two documents (ICOMOS, 1976; CoE, 2005) with economic value. Besides economic value, The Norm of Quito (OAS, 1976) also emphasized the historic and aesthetic values, treating “archaeological, historic and artistic monuments” as “economic resources”.

‘Reuse’ (C18) is mentioned as having economic value in four documents (CoE, 1989; CoE, 1995; UNESCO Bangkok, 2009; ICOMOS, 2011d) that address the ‘reuse’ of monuments and historical buildings as being “economically viable” (UNESCO Bangkok, 2009) and potentially a “cost-effective way of ensuring the survival of industrial buildings”. Three documents also mention the social value of ‘reuse’ (ICOMOS, 2003d; UNESCO Bangkok, 2009; ICOMOS, 2011d). These include social benefits (UNESCO Bangkok, 2009), psychological stability (ICOMOS, 2003d), and socio-economic regeneration (ICOMOS, 2011d) that can be achieved through ‘reuse’. Interestingly, the aesthetical values of ‘reuse’ was first and only identified in The Charter of Athens (CIAM, 1933), and its meaning was different from today as it referred to “style”.

‘Regeneration’(C31) mentioned economic value in three documents (CoE,1987; CoE,1996; ICOMOS,2003d) especially addressing “economic regeneration in decayed area” (ICOMOS,2003d). Two documents (CoE,1975b; ICOMOS,1987) mentioned social value. Only one document (CoE,1987) mentioned age value concerning the old industrial town.

Within this group, the value hierarchies show that ‘adaptation’, ‘maintenance’ and ‘utilization’ share similar character because of aesthetical value; ‘reuse’ and ‘regeneration’ share similar character because of social value.

2.2.3.2.6. Political value as the leading value

Two concepts were found to reference political value as the leading value – 'renovation' (C5) and 'reconstruction' (C9). What's intriguing is that the term 'renovation' was never found in the selected ICOMOS documents, but it was found in only one document (UNESCO Bangkok, 2009) with value-related contents – political value. In 'reconstruction', four documents mentioned political values (ICOMOS, 1982; ICOMOS, 1996; UNESCO Bangkok, 2005; ICOMOS, 2015), and two documents (ICOMOS, 1982; ICOMOS, 1990) mentioned scientific value. Both values were found highly concentrated in The Declaration of Dresden (ICOMOS, 1982). Contradictorily, in 'reconstruction', the political value was addressed in The Declaration of Dresden (ICOMOS, 1982) as the reasons for initiating their reconstruction as in "the spiritual values of monuments and the desire to acknowledge them both intellectually and politically"; whereas in the Hoi An Protocol (UNESCO Bangkok, 2009), it is forbidden for the political value to become the reason for leading the 'reconstruction' and 'renovation' "in order to legitimize regimes and substantiate ethnic or religious claims". 'Reconstruction' was also mentioned as an intervention concept which brings scientific value through "experimental research" (ICOMOS, 1990) and as a way to develop "new technology and craftsmanship" (ICOMOS, 1982). Additionally, in some cases, in 'reconstruction', the social value could be found to overwrite historic value. For example, in the case of housing, the building would be demolished and reconstructed in a copy of the previous style (ICOMOS, 1982).

2.2.3.2.7. More than one leading value – Common leading values

Five intervention concepts were found to share common leading values.

'Repair' (C12) holds both historic and scientific value, ranking first. However, historic value was mentioned in six more documents than scientific value (SPAB, 1877; ICOMOS, 1967; ICOMOS, 1999a; ICOMOS, 1999c; ICOMOS, 2017b; ICOMOS, 2017c). Four documents mentioned scientific value (ICOMOS, 1999a; ICOMOS, 2015; ICOMOS, 2017b; ICOMOS, 2017c). While some documents (ICOMOS, 1967; ICOMOS, 1999a; ICOMOS, 1999c) suggest that 'repair' should keep or continue the historic and scientific value of the built structures, both the Manifesto (SPAB, 1877) and Salalah Guidelines (ICOMOS, 2017c) highlight that 'repair' may reduce the historic value (SPAB, 1877) and both values in archaeological sites (ICOMOS, 2017c). Aesthetic value was mentioned in five out of seven documents (ICOMOS, 1967; ICOMOS, 1999c; ICOMOS, 2015; ICOMOS, 2017b, ICOMOS, 2017c). On the contrary, while the China Principle (ICOMOS China, 2015) states that 'repair' should not redo wall paintings for "cosmetic purposes," the Salalah Guidelines

(ICOMOS, 2017c) allow for “cosmetic repair” of standing structures. Age value is mentioned in three out of seven documents (SPAB, 1877; ICOMOS, 2015; ICOMOS, 2017b). What makes this concept complex is that, although the Manifesto (SPAB, 1877) emphasizes that ‘repair’ may leave a “gap in history” when applied to built structures within a specific cultural context, the latter two documents (ICOMOS, 2015; ICOMOS, 2017b) clarify that ‘repair’ can only remove the “decayed” and “extremely old” parts and replace them with similar ones from other built structures. Additionally, the technique of ‘repair’ can also bring social and scientific value while preserving traditional craftsmanship (ICOMOS, 1999a).

Although the historic and social values are both ranked as the first in ‘safeguard’ (C4), the historic value was found to be related to more (five) documents (ICOMOS, 1967; UNESCO, 1972; CoE, 1989; UNESCO Bangkok, 2009; ICOMOS, 2011c). As for the social value, it was only mentioned in three documents (CoE, 1989; ICOMOS, 2008a; ICOMOS, 2011c), with a particular focus on The Valletta Principle (ICOMOS, 2011c). It is worth mentioning that ecological values have also been identified in more (four) documents (ICOMOS, 1967; UNESCO, 1972; CoE, 1989; ICOMOS, 2011c), which highlights the importance of the natural environment (UNESCO, 1972), geographical factors (ICOMOS, 1967), and the traditional cultural diversity of the site (ICOMOS, 2011c).

In ‘rehabilitation’ (C7), although historic and age values are ranked as the first, historic value was referenced by only two documents and often found paired with aesthetic value when they address the ‘rehabilitation’ of groups and areas of historical or artistic interest (CoE, 1968a; CoE, 1968b). Five documents mention age value. Age value is described as ‘old lodging’ (CoE, 1975a), ‘old building’ (CoE, 1996; CoE, 1991a), and could ‘provide the inhabitants with a sense of continuity of civilization from the past into the future’ (UNESCO, 1998) by ‘rehabilitation’.

In ‘replacement’ (C11), more documents (three out of five) mentioned aesthetic value, while aesthetic and age values were both ranked first. In particular, two documents (UNESCO Bangkok, 2009; ICOMOS, 2017b) mentioned that aesthetic value should not be the sole reason for replacement. Age value was mentioned in two other documents (out of five), however, they were addressed differently. One document mentioned that original, natural decay (ICOMOS, 1999c) should not be replaced, while the other document stated that in some cultures, aged building parts (ICOMOS, 2017b) could be substituted with parts from other built structures.

In ‘relocation’(C10) all (five) the documents mentioned and ranked economic and social values as the first. Especially in one of the two documents concerning industrial heritage, Nizhny Tagil Charter addressed that ‘relocation’ can only happen

"by objectively proved overwhelming economic or social needs (ICOMOS,2003d)." And The Dublin Principles (ICOMOS, 2011b) copied the same statement from it later on. Most of the documents (three out of five) mentioned historic value, such as historical location (ICOMOS Australia, revised 2013), historical information (ICOMOS China, 2015) would lost during the 'relocation'. Only one document, The Burra Charter was identified with all values when it addressed: "The on-going association of a structure or feature of cultural heritage value with its location, site, curtilage, and setting is essential to its authenticity and integrity"(ICOMOS Australia, revised 2013).

2.2.4 Discussion

Values precedence has been found in international doctrines that affect the definitions of specific intervention concepts.

The findings are consistent with Mason's theory (2005), which states that values can coexist with, oppose, and overwrite each other within a single intervention concept. As a result, the role of values influences the definition. Within an intervention concept, the same value can play contradictory roles in different situations and cultural contexts. For example, age values in 'repair' can have different implications. Interestingly, while it is important to maintain values, some values are considered a threshold, such as aesthetic values, which should not be the sole reason for dominating the aim, as it could harm heritage. This leads to diverse intervention decisions, where certain values are maintained in some cases but removed in others.

To further clarify, while having the same leading values, the second and third hierarchies are the ones that bring about the variation in intervention concepts. The results have proven that 'conservation' is distinct from 'preservation' and 'protection'. This means that the interchangeability of these concepts, as stated in The Cultural Tourism (ICOMOS, 1999b) and The China Principle (ICOMOS China, 2015), is incorrect. Furthermore, while 'preservation' and 'conservation' may appear similar linguistically, 'preservation' and 'protection' exhibit more similar value hierarchies. This finding highlights that a linguistic viewpoint alone is insufficient for defining terminology in the heritage field.

To reflect in a broader sense, three points have been found to be proven and further discussed within this chapter. First, according to the theory of Jokilehto (2007), since the objectives and policies of 'conservation' have evolved between documents, this phenomenon also reflects on the relationship between values and intervention concepts.

The findings of this chapter have shown that when the targeted heritage scales or categories of attributes in 'conservation' have become broader – from single monuments to the historic urban landscape, tangible to intangible – consequently, more values were mentioned within one single concept. Intervention concepts mentioned with more values at the same time might also indicate that they are more complex in their definitions.

Second, value precedences are dynamic and can lead to divergent definitions from time to time. In particular, the Recommendation on the Historic Urban Landscape (UNESCO, 2011) was the first and only international doctrinal document that identified social values as being more important than historic values. It was the first time that 'conservation' highly referenced social values and surpassed other values. This could possibly mean that when there are more stakeholders involved, such as the local community or broader heritage scale, the definition might also shift or imply other values. Additionally, new values were discovered as new technologies or methods were developed. However, although the natural and ecological aspects were gradually mentioned after the 1970s (Jokilehto, 2007), the intervention concepts did not have many relations to ecological value. The concepts only included terms like 'protection' and 'adaptation' with limited content. While the concept of 'rehabilitation', which some documents assumed to be in the same gray area of intervention categories as 'adaptation' and 'reuse', was found to only relate to historic and age values. The lack of an ecological values perspective might prompt us to consider whether the intervention concepts need new criteria for categorization.

Third, tendentious interpretation can possibly be clarified by identifying the definition of intervention concepts from a value perspective. The issue raised by Meskell (2019) is that certain interventions carried out under the labels of 'preservation' and 'restoration', driven by political and economic motives, could actually be interpreted as 'renovation', 'reconstruction', or other terms, as revealed by the findings of this chapter. This implies that the government may mistakenly categorize these actions under incorrect intervention concepts, either as a form of propaganda or due to ignorance. This finding demonstrates that the lack of clear definitions for intervention concepts is one of the factors contributing to a culture of misjudgment.

2.2.5 Conclusion

This research demonstrates the precedence of values within different intervention concepts in international doctrines. Rather than discriminating specific interventions upfront, one can better understand the leading values involved first and, eventually, reveal patterns of strategies and actions on built heritage.

However, reaching the alignment of the intervention definition by tackling a single aspect - values - is not enough. Other aspects such as attributes, actions, etc. will be considered together in the next steps of this research. Since this part of the research only focused on the urban and architectural scales, further research could broaden the scope to include the natural and rural scale. Additionally, new concepts from outside the scope of this part of the research should also be considered. Future research should also focus on distinguishing the values between the internal and external context of cultural significance, which both have certain influences on the decision-making of intervention concepts.

Last but not least, even though this chapter has developed a possible way of analyzing the values related to certain interventions, it is important to always consider the context of the assessed significance and intervention concepts. This also serves as a reminder for conservation and architectural experts about the importance of constantly revisiting the definition and reflecting on both theory and practice.

By identifying the relationship between interventions and values, this reacher encourages a more open discussion and comparison among different interventions and their definitions, fostering a greater understanding of the diversity of redesign projects worldwide.

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2.3 The Role of Attributes Defining Interventions in International Doctrinal Documents on Built Heritage

ABSTRACT

Purpose: Attributes that convey cultural significance play a key role in heritage management, as well as in differentiating interventions in built heritage. However, the relationship between interventions and attributes, whether tangible or intangible, has seldom been systematically researched. How do tangible and intangible attributes and interventions relate? What attributes make interventions on built heritage different?
Design/methodology/approach: This part of the research conducts a systematic content analysis of forty-one international doctrinal documents – mainly adopted by the Council of Europe, UNESCO, and ICOMOS, between 1877 and 2021. The main aim is to reveal and compare the selected eight intervention concepts, namely – restoration (C1), preservation (C2), conservation (C3), adaptation (C4), rehabilitation (C5), relocation (C6), reconstruction (C7) and renewal (C8) – and their definitions, in relation to attributes, both tangible and intangible. The intensity of the relationship between intervention concepts and attributes is determined based on the frequency of the mentioned attributes per intervention.

Findings: There were three key findings. First, although attention to intangible attributes has increased in the last decades, the relationship between interventions and tangible attributes remains stronger. The highest frequency of referencing tangible attributes was identified in “relocation” and “preservation”; while the lowest was in ‘rehabilitation’. Second, certain attributes play contradictory roles, e.g. “material”, “use” and “process” which creates inconsistent definitions between documents. Third, as attributes often include one another in building layers, they trigger intervention concepts in hierarchical patterns.

Originality: This section of the research explores and discusses the findings of a unique comparative analysis between different intervention concepts and definitions, with a specific emphasis on the attributes. The results can provide support for future research and practice by clarifying the identified differences and similarities.

KEYWORDS

Intervention, Intervention concepts, Attributes, Cultural Significance, International doctrinal documents, Built heritage, Conservation, Preservation, Restoration, Rehabilitation, Adaptation, Renewal, Reconstruction, Relocation.

2.3.1 Introduction

To ensure that heritage is well-managed and appreciated by present and future generations, international governmental and non-governmental organizations such as the United Nations Educational, Scientific and Cultural Organization (UNESCO), the Council of Europe (CoE), and the International Council on Monuments and Structures (ICOMOS) have been developing international doctrines for over half a century. These documents play a pivotal role by providing statements of principles and guidelines for the conservation and management of places of cultural significance, thereby establishing a professional ethical role in guiding the conduct of heritage conservation practice (Taylor, 2004; Lin et al., 2023).

These documents, however, are not meant to be perfect or tailored to a specific context, given their need to bridge all countries, cultures and priorities (from the experts) involved in their drafting. Consequently, the concepts and policies guiding built heritage interventions are subject to continuous evolution over time (Jokilehto, 2007). In supporting the definition of intervention concepts, during the last decades, although international doctrinal documents have defined intervention concepts with different levels, scales, and activities (ICOMOS Canada,1983), their definitions and categories are often non-aligned and omitted between documents and organizations (Lin, et al, 2023).

Moreover, cultural significance is expected to influence the selected category/ level of intervention on built heritage (ICOMOS Canada,1983). Cultural significance is decoded by the conveyed values (Pereira Roders, 2007) and attributes (Veldpaus, 2015). Values justify why heritage is listed, and the attributes characterize the resources (tangible and intangible) that convey such values (Veldpaus &Roders,2013). Unlike values, attributes follow “a more hierarchical pattern of including and overlapping each other, while the values exist in parallel to each other, although they are usually ranked in importance, whenever set concerning each other, to support decision-making” (Veldpaus, 2015).

Even though research highlighting the key role of attributes of cultural significance in the processes of decision-making in heritage planning and management is growing (De la Torre, 2002; Junyong et al., 2008; Throsby, 2002; Worthing & Bond, 2008; Teutonico, 2019; Avrami et al., 2019; Havinga et al., 2020; Olimpio et al., 2021; 西和彦 et al., 2021), theorizing the relation between intervention concepts on built heritage, such as conservation, restoration, reconstruction, and adaptation (Henket, 1998; Pereira Roders, 2007; Douglas, 2006; Shahi et al., 2020), has rarely been researched in relation to their attributes, nor compared systematically over time and place.

Furthermore, as the range of attribute categories expanded (Sullivan, 2004; Jokilehto, 2006; Landorf, 2009; Vecco, 2010; Araoz, 2011; Labadi, 2013; Veldpaus, 2015), the heritage paradigm shifted from tangible to intangible aspects in recent decades (Ruggles & Silverman, 2009; Vecco,2010; Silva,2020), scholars have highlighted the object of preservation remains in a tangible and physical approach (Ruggles & Silverman, 2009). Ongoing debates also focusing on whether certain intervention concepts are in favour of tangible or intangible attributes, such as restoration, renewal or reconstruction, especially in different cultural contexts (Mastero, 2006; Mansfield,2008; Kwanda,2009; Park,2014; Okahashi, 2018; Sharma, 2019). This underscores that idea that as the meanings of the significance and attributes changed between cultures (ICOMOS,1994) and over time (ICOMOS Australia, revised 2013; Worthing & Bond, 2008; De la Torre, 2002), our intervention will impact how future generations perceive the conserved heritage and engage new interventions, including the use of new digital technologies and artificial intelligence (Ceccarelli, 2017). In this dynamic context, the focus should be not on preventing change, but on finding alternative ways to enact change without compromising significance (Worthing & Bond, 2008:p.162).

Therefore, understanding the relationship between interventions and attributes, as well as contributing further to the definition process of intervention concepts, becomes essential. This chapter aims to address the following questions: First, what is the overall distribution of attributes per intervention concept? Second, what aspects of attributes trigger specific intervention concepts? Third, which attributes differentiate these interventions from others? Using a qualitative approach and systematic content analysis, the intensity of the relationship is determined based on the frequency of the mentioned attributes per intervention.

2.3.2 Research methodology

2.3.2.1 International doctrinal documents

This chapter conducts a systematic content analysis of international doctrinal documents. This mixed method approach combines qualitative and quantitative statistics, enabling the systematic collection, analysis, and presentation of the narratives that embed intervention concepts in international doctrinal documents. This methodology has been applied to identify the role of values in defining intervention concepts (Lin et al.,2023).

This research selected the term of “intervention” as the general concept to address all variations in man-made activities applied to built heritage. The goal is to ensure its survival over time, protecting it from natural degradation (Pereira Roders, 2007). Examples of such interventions include conservation, restoration, and rehabilitation. A larger sample of 519 international doctrinal documents was selected based on their reference to cultural heritage. These documents were examined by searching for keywords such as “intervention” and “intervention concepts”, including terms like “conservation”, “preservation”, “restoration”, “adaptation”, “reconstruction”, “rehabilitation”, “relocation”, “renewal”, and “attributes”. In cases where glossary and terminology sections were unavailable, the definitions of the intervention concepts were deduced through content analysis of the integral documents.

After the examination, this research selected and analyzed nearly seventy international doctrinal documents adopted during 1877-2021, revealing a broad geographical spread by their origin, ranging from Europe to Asia and the Pan-Pacific. Out of these, forty-one documents (TABLE 2.4) have been identified with relationships between intervention concepts and attributes. They are, respectively, four (10%) international doctrinal documents adopted by the United Nations of Educational, Scientific and Cultural Organization (UNESCO), twenty-four (58%) by The International Council on Monuments and Sites (ICOMOS), and nine (22%) by the Council of Europe (CoE). Two documents considered as ICOMOS have also been prepared with other organizations, such as The International Committee for the Conservation of the Industrial Heritage (TICCHI). Four documents (9%) were adopted by other organizations, such as the Society for the Protection of Ancient Buildings (SPAB), ICOM Architecture, and the Architect’s Council of Europe. They were considered the first international doctrinal documents on cultural heritage before or at the beginning of the establishment of these international organizations.

TABLE 2.4 Forty-one international doctrinal documents.

Doc.	Year	Short Reference	Full Reference	Org.
1	**1877**	**The Manifesto**	The SPAB Manifesto	SPAB
2	**1931**	**The Athens Charter**	The Athens Charter for the Restoration of Historic Monuments	IMO
3	**1933**	**Charter of Athens**	The Charter of Athens	CIAM
4	**1964**	**The Venice Charter**	International Charter for the Conservation and Restoration of Monuments and Sites	ICOMOS
5	**1967**	**The Norms of Quito**	Final Report of the Meeting on the Preservation and Utilization of Monuments and Sites of Artistic and Historic Value	OAS

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TABLE 2.4 Forty-one international doctrinal documents.

Doc.	Year	Short Reference	Full Reference	Org.
6	1968	Res (68) 12 (b	Resolution (68) 12 On the Active Maintenance of Monuments, Groups and Areas of Buildings of Historical or Artistic Interest within the Context of Regional Planning	CoE
7	1975	The Declaration of Amsterdam (b	The Declaration of Amsterdam	CoE
8	1976	Res (76) 28	Resolution (76) 28: Concerning the Adaptation of Laws and Regulations to the Requirements of Integrated Conservation of the Architectural Heritage, Council of Europe (1976)	CoE
9	1981	The Florence Charter	The Florence Charter on the Protection of Historic Gardens	ICOMOS
10	1983	The Appleton Charter	The Appleton Charter on the Protection and Enhancement of the Built Environment	ICOMOS
11	1985	Convention	Convention for the Protection of the Architectural Heritage of Europe	CoE
12	1987	Washington Charter	Charter for the Conservation of Historic Town and Urban Areas	ICOMOS
13	1991	No. R (91) 6 (A	Recommendation No. R (91) 6 Of The Committee of Ministers to Member States on Measures Likely to Promote the Funding of The Conservation of the Architectural Heritage	CoE
14	1992	Convention	European Convention on the Protection of the Archaeological Heritage	CoE
15	1993	Guideline	Guidelines on Education and Training in the Conservation of Monuments, Ensembles and Sites	ICOMOS
16	1995	No. R (95) 9	Recommendation No. R (95) 9 of The Committee Of Ministers to Member States on The Integrated Conservation of Cultural Landscape Areas as Part of Landscape Policies	CoE
17	1996	Principle (a	Principles for the Recording of Monuments, Groups of Buildings and Sites	ICOMOS
18	1996	Declaration	Fourth European Conference of Ministers responsible for the Cultural Heritage	CoE
19	1996	The Declaration of San Antonio (b	The Declaration of San Antonio	ICOMOS
20	1998	Suzhou Declaration	Suzhou Declaration on International Co-operation for Safeguarding and Development of Historic Cities	UNESCO
21	1999	Charter (a	Charter on the Built Vernacular Heritage	ICOMOS
22	1999	Cultural tourism charter (b	International Cultural Tourism Charter Managing Tourism at Places of Heritage Significance	ICOMOS
23	1999	Principle (c	Principle for the Preservation of Historic Timber Structures	ICOMOS
24	2001	Resolution	Fifth European Conference of Ministers responsible for the Cultural Heritage	CoE
25	2003	Principle of Wall Painting (a	Principles for the Preservation and Conservation/Restoration of Wall Painting	ICOMOS
26	2003	Zimbabwe Charter (b	Principles for the Analysis, Conservation and Structural Restoration of Architectural Heritage	ICOMOS

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TABLE 2.4 Forty-one international doctrinal documents.

Doc.	Year	Short Reference	Full Reference	Org.
27	2003	Nizhny Tagil Charter (d	The Nizhny Tagil Charter for the Safeguard of Industrial Heritage	ICOMOS
28	2005	Vienna Memorandum	Vienna Memorandum on "World Heritage and Contemporary Architecture – Managing the Historic Urban Landscape"	UNESCO
29	2008	Québec Declaration (c	Québec Declaration on the Preservation on the Spirit of Place	ICOMOS
30	2009	Hoi An Protocols	Hoi An Protocols for Best Conservation Practice in Asia: Professional Guidelines for Assuring and Preserving the Authenticity of Heritage Sites in the Context of the Cultures of Asia	UNESCO
31	2010	New Zealand Charter (revised 2010)	New Zealand Charter for the Conservation of Places of Cultural Heritage Values	ICOMOS
32	2011	Madrid Document (a	Approaches for the Conservation of Twentieth-century Architectural Heritage	ICOMOS
33	2011	HUL	Recommendation on the Historic Urban Landscape	UNESCO
34	2011	The Dublin Principles (b	Principles for the Conservation of Historic Industrial Sites, Structures, Areas and Landscapes	ICOMOS
35	2011	The Valletta Principles (c	The Valletta Principles for the Safeguarding and Management of Historic Cities, Towns and Urban Areas	ICOMOS
36	2011	The Paris Declaration (d	The Paris Declaration on Heritage as a Driver of Development	ICOMOS
37	2013	The Burra Charter (revised 2013)	The Burra Charter: the Australia ICOMOS Charter for Places of Significance	ICOMOS
38	2015	China principle	Principles for the Conservation of Heritage Sites in China	ICOMOS
39	2017	Document (a	Document on Historic Urban Public Parks	ICOMOS
40	2017	Principle (b	Principles for the Conservation of Wooden Built Heritage	ICOMOS
41	2021	Guidelines	Guidelines on Fortifications and Military Heritage	ICOMOS

2.3.2.2 Intervention Concepts

Interventions and intervention concepts are used as synonyms in this research. Eight intervention concepts – restoration (C1), preservation (C2), conservation (C3), adaptation (C4), rehabilitation (C5), relocation (C6), reconstruction (C7) and renewal (C8) – were selected for the present analysis, based on their highest frequency of mentioning in the selected international doctrinal documents adopted by UNESCO, ICOMOS and the Council of Europe (Lin et.al, 2023).

2.3.2.3 Cultural attributes

On the one hand, despite the previous development of the Nara Grid by Van Balen (2008) for assessing the chosen case study, this chapter has revealed that the complexity of the attributes cannot be comprehensively assessed through these categorizations. This limitation stems from identifying some categories that exhibit overlapping or implicit characters. On the other hand, an attributes taxonomy theoretical framework was created by Veldpaus (2015) to enhance the understanding of the attributes and to facilitate the identification process. However, considering the specific focus of this research on built heritage, it became evident that Veldpaus (2015)'s framework which primarily targeted an urban scale, did not adequately address the attributes pertinent to built heritage. Among the five overarching categories of tangible attributes, only two main categories were found applicable to built heritage: "building elements", and "urban elements" under objects. Another was the "group of buildings" and "building(s)+context" under "ensemble/complex". Recognizing the inadequacy of suitable attribute categories of built heritage during the analysis, this chapter proposes an attributes theoretical framework with two categories: tangible and intangible attributes (TABLE 2.5 and TABLE 2.6). Each category comprises sub-categories, with eight sub-categories falling under tangible attributes and six under intangible attributes. These sub-categories were referenced from the prior framework by Veldpaus and Pereira Roders (2013), Veldpaus (2015), The Nara Document (ICOMOS,1994), The New Zealand Charter (ICOMOS New Zealand, revised 2010), The Burra Charter (ICOMOS Australia, revised 2013), and Operational Guidelines (UNESCO, revised 2021).

TABLE 2.5 Attributes theoretical framework – tangible attributes in built heritage. (Adapted from ICOMOS, 1994; Veldpaus and Pereira Roders, 2013; ICOMOS New Zealand, revised 2010; ICOMOS Australia, revised 2013; Veldpaus, 2015, UNESCO, revised 2021).

No.	Tangible Attributes	Contents
1	Setting	Including Visual Setting (Focal Point, View Cone, Distance Panorama), Spatial Setting (Spatial Volume and Void and Others, Configuration, Topography)
2	Location	Siting, Lot, Footing, Layout
3	Form	Scale, Size, Height, Mass, Dimension, Proportion, Density, Rhythm
4	Style	Including Decoration, Appearance, Character of The Period
5	Surface (Specifically Building Elements)	Patina, Colour, Signage, Hidden Marks; Natural Elements, Vertical Vegetation
6	Structure	Principle Structure
7	Materials	Colour, Texture, Material Pattern
8	Fixtures And Fittings	Furniture, Lighting, Facilities for Services, Non-Structural Elements

TABLE 2.6 Attributes theoretical framework – intangible tangible attributes in built heritage. (Adapted from ICOMOS, 1994; UNESCO,2005; Veldpaus and Pereira Roders,2013; ICOMOS New Zealand, revised 2010; ICOMOS, Australia, revised 2013; Veldpaus,2015).

No.	Intangible Attributes	Contents
1	Use And Functions	Services, Circulation, Practices, Activities, Ritual, or Other Representation of Living Tradition
2	Design	Design
3	Craftmanship And Techniques	Craftmanship, Technology, Workmanship, Manual Skills
4	Manage System	The Process of Managing, Type of Strategies, Approach.
5	Process (Development And Evolution)	The Process of Layering, Development or Evolution (Instead of The Result)
6	Relation	Other Senses or Associations (not physically and visually related to the user, such as sounds, smells, and feelings, may compose part of the Setting)

The analysis process includes three steps:

First, the author extracted sentences from international doctrinal documents that discuss intervention concepts and attributes, including their explanations, interpretations, and definitions.

Next, the extracted contents were organized and categorized using a pre-coding system based on the attributes' theoretical framework (TABLE 2.5 and TABLE 2.6). If a description fell into multiple sub-categories or applied to both tangible and intangible attributes, the authors classified it accordingly.

Finally, the structured data was analyzed and compared to determine two things: (1) the frequency with which attributes were mentioned in the selected documents, and (2) the relationships between attributes and the intervention concepts specified in various international doctrinal documents and organizations.

2.3.3 Findings: The relationship between attributes and intervention concepts

2.3.3.1 Overall attributes across eight intervention concepts

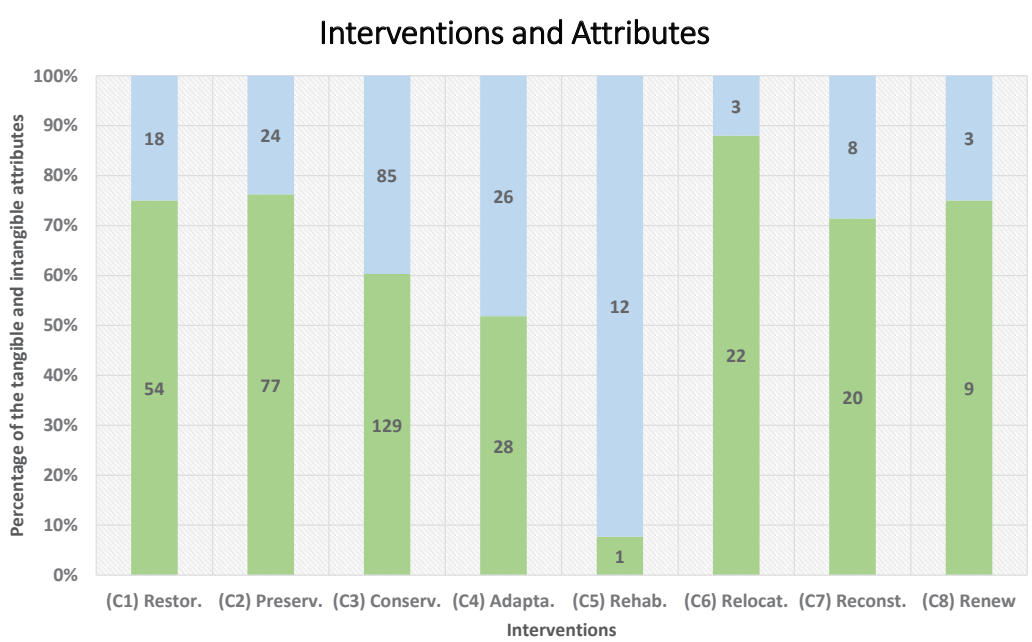

FIG. 2.7 The percentage of tangible and intangible attributes in each intervention.

TOC

FIG. 2.8 The eight intervention concepts (restoration, preservation, conservation, adaptation, rehabilitation, relocation, reconstruction and renew/renewal) and their proportional references to the fourteen sub-categories (tangible and intangible attributes).

TOC

Concerning the focus ranging between the tangible and intangible attributes, results (see FIG. 2.7) revealed that only “rehabilitation”(C5) exhibited a predominant focus on intangible attributes, with only a minor reference to tangible attributes (8%). Conversely, “relocation” (C6) (88%) and “preservation” (C2) (81%) both primarily emphasized tangible attributes, with references to tangible attributes being seven to three times more frequent than those to intangible attributes.

Instead of sharing similar percentage patterns between “preservation”(C2) and “conservation”(C3), “conservation” presents more focus on the intangible attributes, especially in “use and function”, and “craftsmanship and techniques” (see FIG. 2.7).

Comparable percentage distributions emerged in “restoration” (C1), “preservation” (C2), “reconstruction” (C7) and “renewal” (C8). However, “renewal” references relatively fewer categories, such as “location”, “material”, “surface”, “form” and “craftsmanship and techniques”, while the other three intervention concepts shared a common and broader array of categories encompassing both tangible and intangible aspects.

While both “rehabilitation”(C5) and “adaptation”(C4) displayed strong relations to “use and function”, “adaptation” maintained a more equitable distribution between tangible and intangible attributes. It incorporated a wider range of categories, including “material”, “settings”, and others.

TABLE 2.7 The overall attributes identified in eight intervention concepts within International doctrinal documents.

Doc	Year	Short Reference	Org.	Tangible Attributes								Intangible Attributes					
				Setting	Location	Form	Style	Surface	Structure	Material	Fix & Fit	Use & Fun	Craft & Tech	Design	Manage	Process	Relation
D01	1877	The Manifesto	SPAB	0	C2	0	C1	C1	C1	C1	0	0	C1	0	0	0	0
D02	1931	The Athens Charter	IMO	C2	0	0	0	C2	0	C1	0	0	C1	0	0	0	0
D03	1933	Charter of Athens	CIAM	0	0	0	0	0	0	C3	0	0	0	0	0	0	0
D06	1964	The Venice Charter	ICOMOS	0	C3	C1, C3, C7	C3	C2, C3	0	C1, C3, C7	0	C3	C1, C3	0	0	0	0
D09	1967	The Norms of Quito	OAS	0	C8	0	0	0	0	0	0	0	0	0	0	0	0
D11	1968	Res (68) 12 (b	CoE	0	0	0	0	0	0	0	0	0	0	0	0	C5	0
D15	1975	The Declar. of Amsterdam (b	CoE	0	0	C3	0	0	C1, C3	0	0	C3	C3	0	0	0	0

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TABLE 2.7 The overall attributes identified in eight intervention concepts within International doctrinal documents.

Doc	Year	Short Reference	Org.	Tangible Attributes								Intangible Attributes					
				Setting	Location	Form	Style	Surface	Structure	Material	Fix & Fit	Use & Fun	Craft & Tech	Design	Manage	Process	Relation
D18	1976	Res (76) 28	CoE	0	0	0	0	0	0	0	0	C3, C5	0	0	0	0	0
D19	1981	The Florence Charter	ICOMOS	C2	C2	C2	0	C2, C8	C2	C2	C2	C2	0	C1	0	C1	C2
D22	1983	The Appleton Charter	ICOMOS	0	C1, C2	C1, C2	0	0	0	C1, C2	0	C5	0	0	C5	0	0
D23	1985	Convention	CoE	C3	0	0	0	0	C3	0	C3	C4	0	0	0	0	0
D24	1987	Washington Charter	ICOMOS	0	C4	C4	0	0	0	0	C4	C4	0	0	0	0	0
D29	1991	No. R (91) 6 (a	CoE	0	0	0	C3	0	C3	C3	0	0	C3	0	0	0	0
D31	1992	Convention	CoE	C3	C3	0	0	0	0	0	0	0	0	0	0	0	0
D32	1993	Guideline	ICOMOS	C3	0	0	0	0	0	C3	0	C3	C3	0	0	0	0
D34	1995	No. R (95) 9	CoE	0	0	0	0	0	0	0	0	C3	0	0	0	C3	0
D35	1996	Principle (a	ICOMOS	0	0	C3	0	0	0	C3	0	0	0	0	0	0	0
D36	1996	Declaration	CoE	0	0	0	0	0	0	C3	0	C3	0	0	0	0	0
D37	1996	The Declar. of San Antonio (b	ICOMOS	0	C1, C3, C7	0	C7	0	C3	C3, C4, C7	0	C4	0	0	0	C4	C3
D40	1998	Suzhou Declaration	UNESCO	0	0	0	0	0	0	C1	0	0	0	0	0	0	C5
D41	1999	Charter (a	ICOMOS	0	C3	C3, C4	0	0	C1, C3, C4	0	0	0	C1	0	C1, C4	C1	C3
D42	1999	Cultural tourism Ch. (b	ICOMOS	0	0	0	0	0	0	0	0	C7	0	0	0	0	0
D43	1999	Principle (c	ICOMOS	0	0	0	0	C8	C1	C1, C8	0	C1	C8	C1	0	0	0
D45	2001	Resolution	CoE	0	0	0	0	0	0	C3	0	C3	C3	0	0	0	0
D46	2003	Prin. of Wall Painting (a	ICOMOS	0	0	0	C7	C7	0	C7, C8	C7	0	C7, C8	0	0	0	0
D48	2003	Zimbabwe Charter (b	ICOMOS	0	0	C3	C3	0	C1, C3	C1, C3	0	0	C3	0	0	0	0
D50	2003	Nizhny Tagil Charter (d	ICOMOS	0	C3	C3	0	0	0	C4	C3	C3, C4	0	0	0	C3, C4	0
D53	2005	Vienna Memorandum	UNESCO	0	C8	C8	0	0	0	0	0	0	0	0	C4	0	0
D56	2008	Québec Declaration (c	ICOMOS	0	0	0	0	0	0	0	0	C3, C7	C8	0	0	C7	C3, C7

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TOC

TABLE 2.7 The overall attributes identified in eight intervention concepts within International doctrinal documents.

Doc	Year	Short Reference	Org.	Tangible Attributes								Intangible Attributes					
				Setting	Location	Form	Style	Surface	Structure	Material	Fix & Fit	Use & Fun	Craft & Tech	Design	Manage	Process	Relation
D57	2009	Hoi An Protocols	UNESCO	0	C1, C6	C6, C7	C6	0	C1, C3, C5	C1, C3, C7	0	C3, C4, C5, C6	0	C1	C5	0	C3
D58	2010	New Zealand Charter	ICOMOS	C3, C6, C7	C1, C6	C1	0	0	C3, C6, C7	C1, C3, C7	0	C3	0	0	0	0	C3, C6
D59	2011	Madrid Document (a	ICOMOS	0	C7	0	0	0	0	0	0	0	0	0	0	0	0
D60	2011	HUL	UNESCO	C3, C4	C3	C3	0	0	0	0	0	C3	0	0	C3	0	C3, C4
D61	2011	The Dublin Principles (b	ICOMOS	0	C4	0	0	0	C4	C4	C4	C4	0	0	0	C4	C4
D62	2011	The Valletta Principles (c	ICOMOS	C2, C4	C4	C2, C4	C2	0	C2, C4	C2, C4	C2	C2	C2	0	0	0	0
D63	2011	The Paris Declaration (d	ICOMOS	0	0	0	0	0	C1	C1, C3	0	0	C1, C3	C3	0	0	0
D64	2013	The Burra Charter	ICOMOS	C3, C6	C6, C7	0	C6	0	C6	C1, C3, C7	C2	C2, C3, C4, C7	C3	C6	0	0	C3
D65	2015	China principle	ICOMOS	C1, C3, C4	C1, C2, C3, C7	C1	C1, C7	C1, C3	C1, C3	C1, C3	C4	C4	C1, C2, C3, C7	C2, C3, C4	0	0	C1, C2
D66	2017	Document (a	ICOMOS	C2	0	C2	0	C2	0	C2	0	0	0	C2	0	0	C2
D67	2017	Principle (b	ICOMOS	0	C3	0	0	C3	C1, C3	C3	C3	0	C1, C3	0	0	0	0
D69	2021	Guidelines	ICOMOS	C2, C3	C3	C3	0	0	C3	C3	0	C3	0	C3	C2, C3	0	C3
In total: 41 documents / Concepts mentioned in each sub-category				C1, C2, C3, C4, C6, C7	C1, C2, C3, C4, C6, C7, C8	C1, C2, C3, C4, C6, C7, C8	C1, C2, C3, C6, C7	C1, C2, C3, C7, C8	C1, C2, C3, C4, C5, C6, C7, C8	C1, C2, C3, C4, C7, C8	C2, C3, C4, C7	C2, C3, C4, C5, C6, C7	C1, C2, C3, C7, C8	C1, C2, C3, C4, C6	C1, C2, C3, C4, C5	C1, C3, C4, C5, C7	C1, C2, C3, C4, C5, C6, C7
Number of Documents identified with attributes				12	21	17	10	9	16	27	10	24	17	8	6	8	13

TOC

In the following sections, the sub-categories will be delineated within each intervention concept to elucidate the attributes that wield substantial influence on the intervention concepts.

2.3.3.2 RESTORATION (C1)

Among the selected forty-one documents, seventeen (41%) were identified with attribute-related contents in “restoration”.

The majority of these (twelve) documents (SPAB,1877; IMO,1931; ICOMOS,1964; ICOMOS Canada,1983; UNESCO,1998; ICOMOS,1999c; ICOMOS, 2003a; UNESCO Bangkok,2009; ICOMOS New Zealand, revised 2010; ICOMOS,2011d; ICOMOS Australia, revised 2013; ICOMOS China, 2015) detailed the role of restoration towards the attribute “material”, either “modern” (SPAB,1877; IMO,1931), “original” (ICOMOS,1964), “earlier” (ICOMOS Canada,1983), “traditional construction” (UNESCO,1998), “new” (ICOMOS,2003a; ICOMOS New Zealand, revised 2010), “existing”(ICOMOS,2003a) and “recycled” (ICOMOS New Zealand, revised 2010). A significant portion of the documents (nine) (SPAB,1877; CoE,1975; ICOMOS,1999a; ICOMOS,1999c; ICOMOS,2003a; UNESCO Bangkok,2009; ICOMOS,2011d; ICOMOS China,2015; ICOMOS, 2017b) predominantly emphasized the restoration of the building’s “structure”.

Additionally, seven documents (SPAB,1877; IMO,1931; ICOMOS,1964; ICOMOS,1999a; ICOMOS,2011d; ICOMOS, 2015; ICOMOS, 2017b) addressed the restoration of “crafts and techniques” as a crucial attribute. This was articulated through “technology” (SPAB,1877; ICOMOS China, 2015), “technical features” (ICOMOS,1964), techniques (ICOMOS China, 2015), “modern techniques” (SPAB, 1877), “craft skills” (ICOMOS, 1999a), “craftmanship” (ICOMOS China,2015) and “traditional building system” (ICOMOS,1999a).

Furthermore, two documents related “restoration” to the building “process” (ICOMOS,1981; ICOMOS,1999a). This encompassed “successive stages of evolution” (ICOMOS,1981), particularly in the context of historic gardens and “traditional building system” (ICOMOS,1999a) concerning vernacular architecture.

2.3.3.3 PRESERVATION (C2)

Thirteen documents (31%) exhibited content related to attributes in "preservation"(C2).

A majority of these documents (seven) (IMO,1931; ICOMOS,1981; ICOMOS,1987; UNESCO Bangkok,2009; ICOMOS, 2011c; ICOMOS,2017a; ICOMOS,2021) featured the attribute "setting", which encompassed "neighbourhood of ancient monuments" (IMO,1931), "surroundings" (ICOMOS,1981), "surrounding setting, both natural and man-made" (ICOMOS,1987), "relationships between buildings and green and open spaces" (ICOMOS,1987), and "spatial relationships" (ICOMOS,2017a; ICOMOS,2021). Further elaborations were identified, particularly in documents about historic public parks, where aspects like "views, focal points, and viewpoints, distant panoramas, sight-lines, vistas and views, views and vistas, microclimate (sun/shade/wind), natural light, sunshine, and shade, night lighting, movement"(ICOMOS,2017a) were detailed. Additionally, in the context of historic gardens, "water, running or still, reflecting the sky" (ICOMOS,1981) was notably associated.

Six documents (ICOMOS,1981; ICOMOS Canada,1983; ICOMOS,1987; UNESCO Bangkok, 2009; ICOMOS,2011c; ICOMOS,2017a) elucidated the role of "form" in relation to "preservation". Besides being mentioned more directly as "form"(ICOMOS Canada,1983), "existing form" (UNESCO Bangkok, 2009), and "historic form" (UNESCO Bangkok, 2009), more extensive descriptions were encountered, such as, "the form and appearance, interior and exterior, of buildings as defined by their structure, volume, style, scale,…" (ICOMOS,2011c) and "scale, height, massing" (ICOMOS,2017a). Notably, in the context of historic garden, "vegetation, including its species, proportions, colour schemes, spacing and respective heights" (ICOMOS,1981) were also categorized.

Another set of six documents (ICOMOS,1981; ICOMOS Canada,1983; ICOMOS,1987; UNESCO Bangkok, 2009; ICOMOS,2011c; ICOMOS,2017a) correlated "materials" with "preservation", including "colour" (ICOMOS,1987; UNESCO Bangkok, 2009; ICOMOS,2017a) and "colour schemes" (ICOMOS,1981).

Five documents (SPAB,1877; ICOMOS,1981; ICOMOS Canada,1983; ICOMOS,1996c; ICOMOS China, 2015) underscored the role of "location" in "preservation" with more specific descriptions such as "plan and its topography"(ICOMOS,1981), "site" (ICOMOS Canada,1983), "in situ" (ICOMOS,1996c) and "layout"(ICOMOS China, 2015).

Finally, four documents (IMO,1931; ICOMOS,1981; ICOMOS,1964; ICOMOS,1987) associated “surface” with “preservation”. These included “ornamental vegetation” (IMO,1931), “vegetation, including its species, … colour schemes” (ICOMOS,1981), “sculpture, painting or decoration” (ICOMOS,1964), “decoration” (ICOMOS,1987) and “shade of the vegetation” (ICOMOS,1981).

2.3.3.4 CONSERVATION (C3)

Within the pool of forty-one documents, twenty-five (61%) were found with attribute-related content related to “conservation”. Notably, “conservation” is the only concept that references all attribute categories.

A large proportion (thirteen documents) (CIAM,1933; ICOMOS,1964; CoE,1975b; CoE,1991; ICOMOS,1993; ICOMOS,1996a; ICOMOS,1996b; ICOMOS,1996c; CoE,2001; ICOMOS,2003a; UNESCO Bangkok,2009; ICOMOS New Zealand, revised 2010; ICOMOS,2011d) were focused on the role of “materials” in “conservation”. While certain documents introduced contents such as “traditional materials” (CoE,1975b; COE,2001; ICOMOS Australia, revised 2013), and “original material”(ICOMOS China, 2015), an exceptional instance involved the mention of “new material” (CIAM,1933) in “conservation”, particularly when relating to “anastylosis”. Additionally, “modern material”(ICOMOS Australia, revised 2013) was highlighted as an appropriate addition when providing “conservation”.

“Conservation” also demonstrated a noteworthy frequency of references to intangible attributes, especially on “use and functions”, across fourteen documents (ICOMOS,1964; CoE,1975b; CoE,1976; ICOMOS,1993; COE,1995; CoE,1996c; CoE,2001; ICOMOS,2003b; ICOMOS,2008a; UNESCO Bangkok,2009; ICOMOS New Zealand, revised 2010; UNESCO,2011; ICOMOS Australia, revised 2013; ICOMOS,2021). These documents underscored their relations, providing nuanced descriptions such as “purpose”(ICOMOS,1964), “service” (UNESCO,2011), “activity”(UNESCO Bangkok,2009; ICOMOS New Zealand, revised 2010), and “events” (ICOMOS China, 2015). Notably, some documents acknowledged the potential introduction of “modern function” (CoE,1976) in the context of “integrated conservation”, and the possibility of introducing “new use” (ICOMOS New Zealand, revised 2010) when it does not compromise heritage values.

Ten documents (ICOMOS,1964; CoE,1975b; CoE,1991; ICOMOS,1993; CoE,2001; ICOMOS,2003a; ICOMOS,2011d; ICOMOS Australia, revised 2013; ICOMOS China, 2015; ICOMOS, 2017b; ICOMOS,2021) emphasized on the role of “craftsmanship

and techniques" in "conservation". One document (CoE,1991) specifically addresses the "method of construction" in "physical conservation". Other documents echo with more elaborate insights, such as "manual skills" (ICOMOS,1993), "traditional craft" (ICOMOS,1993), "traditional techniques" (COE,2001; ICOMOS Australia, revised 2013), and "traditional tools" in conjunction with "traditional building skills" (ICOMOS,2011d). Notably, some documents acknowledged the appropriateness of "modern techniques" (ICOMOS Australia, revised 2013) when they substantially contribute to "conservation". Also, "new techniques"(ICOMOS,1963) can be used when "traditional techniques" are proven not to be adequate (ICOMOS,1963). It is important to highlight that the removal of the "inner structure" representing "specific building technology" (ICOMOS,2003a) of its time is regarded as façadism, distinct from "conservation".

Nine documents (ICOMOS,1964; ICOMOS,1996b; ICOMOS,1999a; ICOMOS,2008a; UNESCO Bangkok,2009; ICOMOS New Zealand, revised 2010; UNESCO,2011; ICOMOS Australia, revised 2013; ICOMOS,2021) center on "relations" when mentioning "conservation", including "connection" (UNESCO,2011), "relationship" and "association"(ICOMOS Australia, revised 2013). Especially, "intangible associations" (ICOMOS,1999a) are emphasized, extending beyond physical form when concerning vernacular architecture.

Two documents (UNESCO,2011; ICOMOS, 2021) focused on the role of the "management system" in "conservation". This not only includes the "traditional and customary systems"(UNESCO,2011) but also the "system" which treats the military heritage "network as a whole" (ICOMOS,2021).

Two additional documents (CoE,1995; ICOMOS,2003c) associate "conservation" with "process". For instance, "evolution"(CoE,1995) is highlighted, particularly in the context of cultural landscape and "industrial processes"(ICOMOS,2003c) within industrial heritage.

2.3.3.5 ADAPTATION (C4)

Thirteen dataset documents (31%) were found to contain content related to attributes in "adaptation" (C4).

Although a majority of the documents (nine) (ICOMOS,1996b; ICOMOS,2003c; UNESCO Bangkok,2009; ICOMOS,2011b; ICOMOS,2011d; ICOMOS Australia, revised 2013; ICOMOS China,2015) mentioned "use", subtle variations emerged. These ranged from the "former use" (ICOMOS,2003c), "original or principal use"

(ICOMOS, 2003c), “existing use” (ICOMOS Australia, revised 2013; UNESCO Bangkok, 2009) to “proposed use”(ICOMOS Australia, revised 2013; UNESCO Bangkok, 2009), “new use” (CoE,1985; ICOMOS, 2003c; ICOMOS, 2011d; ICOMOS Australia, revised 2013), “modern use” (ICOMOS China,2015), and “communal use”(ICOMOS,1996b). Notably, when mentioned “new use” (ICOMOS Australia, revised 2013), the Burra Charter was also referring to another concept, “adaptive reuse”.

Besides referring to the “use” in “adaptation”, other documents also mentioned “functions” (ICOMOS,2011d), “functioning” (ICOMOS,2011b), “activities” (ICOMOS,1987; ICOMOS,2003c), “new functions” (ICOMOS,1987), “new services” (ICOMOS Australia, revised 2013; ICOMOS China,2015), and “human need” (ICOMOS,1996b).

Three documents (ICOMOS,1999a; UNESCO,2005; ICOMOS,2011d) placed a spotlight on the role of the “manage system” in influencing “adaptation”. This included the “technical standards” (UNESCO,2005), “acceptable standard of living” (ICOMOS,1999a), “code of ethics” (ICOMOS,1999a), and “modern living standard”(ICOMOS, 2011d).

While the attention to tangible and intangible attributes was nearly balanced, certain attributes such as “style”, “surface”, as well as “craftsmanship and technology” were absent from “adaptation”.

2.3.3.6 REHABILITATION (C5)

Five documents have been identified with attribute-related contents pertinent to “rehabilitation”. Notably, the emphasis in these documents varied between tangible and intangible attributes. Among the five documents, only one document (UNESCO Bangkok,2009) mentioned the aspect of tangible attributes. Specifically, it mentioned the importance of keeping the “historic character of the structure” during the “rehabilitation” process.

On the contrary, the majority (four) documents (CoE,1968b; CoE,1976; ICOMOS Canada,1983; CoE,1987; UNESCO,1998) focused primarily on intangible attributes when discussing “rehabilitation”. Specifically, three of these documents (CoE,1976; ICOMOS Canada,1983; UNESCO Bangkok,2009) showed a strong connection to “use and function”. While one document (CoE,1976) presented a broader definition – for “habitation”, the other documents provided more detailed information about

adhering to “manage system”. This included meeting “contemporary functional standards” (ICOMOS Canada,1983) as well as “functional requirements” (UNESCO Bangkok, 2009) encompassing “safety”, “property protection”, and “access” in “rehabilitation”. Simultaneously, two other interventions – “adaptation” (ICOMOS Canada,1983) and “adaptive reuse” (UNESCO Bangkok,2009) – were mentioned while relating to “use and function”.

2.3.3.7 RELOCATION (C6)

Four documents (9%) have been identified with attribute-related content. “Relocation” is an intervention concept often regarded as the last resort (ICOMOS Canada, 1983; UNESCO Bangkok, 2009; ICOMOS New Zealand, revised 2010) or as “the sole means of ensuring its (heritage’s) survival” (ICOMOS Australia, revised 2013), particularly when the heritage is deemed “difficult to conserve in situ” (ICOMOS China, 2015).

One common attribute found in all (four) documents (UNESCO Bangkok, 2009; ICOMOS New Zealand, revised 2010; ICOMOS Australia, revised 2013; ICOMOS China, 2015) was “location”, encompassing the “site” and conservation “in situ”.

Two documents (ICOMOS New Zealand, revised 2010; ICOMOS China, 2015) mention “setting” in relation to “relocation”. Particularly, “relocation” is considered a viable option when natural disasters or changes destroy the “natural setting” (ICOMOS China,2015) of the heritage site.

The two documents address the attribute of “relation”, highlighting the importance of the “ongoing association” (ICOMOS New Zealand, revised 2010) and “significant links” (ICOMOS Australia, revised 2013) between the sites and structures. Notably, the Burra Charter (ICOMOS Australia, revised 2013) extends its concern to buildings, works, or elements specifically “designed ready to be removable” or that “already have a history of relocation”, a perspective not mentioned in other documents.

Additionally, two documents emphasized the role of “use and function” (UNESCO Bangkok, 2009; ICOMOS Australia, revised 2013). The Hoi An Protocol (UNESCO Bangkok, 2009) emphasized that the new location should contain a sympathetic environment of “building…function”. This perspective aligns with the “appropriate use” outlined in the Burra charter (ICOMOS Australia, revised 2013).

2.3.3.8 RECONSTRUCTION (C7)

A total of ten documents (24%) were identified with attribute-related contents in “reconstruction”.

Six documents (ICOMOS,1964; ICOMOS,1996b; ICOMOS,2003b; UNESCO Bangkok, 2009; ICOMOS New Zealand, revised 2010; ICOMOS Australia, revised 2013) were found referencing “material” in “reconstruction”. Notably, two documents (ICOMOS New Zealand, revised 2010; ICOMOS Australia, revised 2013) emphasized the use of “new material” as a distinguishing factor between “reconstruction” from “restoration”. In contrast, the “traditional material” (ICOMOS,2003b) is encouraged for use in wall painting, which contradicts the perspective presented in the aforementioned documents (ICOMOS New Zealand, revised 2010; ICOMOS Australia, revised 2013). Also, the Declaration of San Antonio (ICOMOS, 1996b) highlighted the misuse of “reconstruction” in the context of archaeological sites when it involved the introduction of “new materials” and led to alternations in the site’s “appearance”.

Instead of distinguishing new or traditional material, the Venice Charter (ICOMOS, 1964) mentions only “recognizable material and form” when explaining the other two concepts – “anastylosis” and “reinstatement” – within “reconstruction”.

Four documents (ICOMOS,1996b; ICOMOS,2011a; ICOMOS Australia, revised 2013; ICOMOS China,2015) address “location” in relation to “reconstruction”. Besides “sites”(ICOMOS,2011a; ICOMOS China, 2015), more detailed information is found, especially in the China Principle (ICOMOS China, 2015), such as, “lost sites”, “footings”, “ruins or ruins of the footings” concerning human or natural disasters.

Three documents (ICOMOS,1999b; ICOMOS,2008a; ICOMOS Australia, revised 2013) focused on “use and function” when mentioning “reconstruction”. Besides directly pointing out “use” and “function” (ICOMOS Australia, revised 2013), “practice” (ICOMOS,1999b; ICOMOS Australia, revised 2013) and “activities” (ICOMOS,1999b) were also mentioned. Interestingly, the Burra Charter (ICOMOS Australia, revised 2013) indicates that “reconstruction” may be seen as part of the “use” and “practice” itself in some cases.

Two documents (ICOMOS,2003b; ICOMOS China,2015) were found to be related to “craftsmanship and techniques” in “reconstruction”. “Traditional techniques” (ICOMOS,2003b) were endorsed, particularly wall painting. Although “reconstruction” for presentation and interpretation was generally discouraged,

the China Principle (ICOMOS China, 2015), mentioned the potential use of “modern technology” (ICOMOS China, 2015), such as “drawings, photos and sketches, and models, or “virtual reality presentations” based on accurate archaeological and documentary evidence.

Additionally, unique sub-categories were identified. Only one document (ICOMOS New Zealand, revised 2010) mentioned that the “setting” can be reconstructed. Another document (ICOMOS,2008a), introduced “process” and “relations” in “reconstruction”, addressing both tangible and intangible aspects by noting that “the spirit of place is a continuously reconstructed process, which responds to the needs for change and continuity of communities…” (ICOMOS,2008a).

2.3.3.9 RENEW/RENEWAL (C8)

Six documents (14%) were identified with relationships between attributes and “renew/renewal”.

Three documents (ICOMOS,1999c; ICOMOS,2003b; ICOMOS,2008b) made reference to “craftsmanship and techniques” in “renew/renewal”. These documents endorsed the use of “traditional techniques”, considering them integral to the “traditions of renewal” and “practices of artists and craftsman” (ICOMOS,2003b), particularly concerning wall painting. Furthermore, “modern techniques” concerning the conservation of the spirit of place (ICOMOS,2008d), enhanced diversity and played a crucial role in the constant renewal of the documentation related to the spirit of place.

In addition to “craftsmanship and techniques”, the concept of “renew/renewal” displayed diverse and equitable relations with other attributes, such as “location”, “surface”, and “material”. Notably, two documents (ICOMOS,1981; ICOMOS,1999c) provided more detailed insights into the sub-category of “surfaces”. One document (ICOMOS,1981) mentioned activities, such as cleaning “fallings” and replanting plantation “mature specimens”, while the other (ICOMOS,1999c) emphasized the duplication of “surface finishes” to the greatest extent possible during the renewal process.

2.3.4 Discussion

The discussion of the findings regarding the relationship between interventions and attributes in international doctrinal documents is as follows:

Dominance of Tangible Attributes. Although attention to intangible attributes has increased in the last decades since the Nara Document (1994) (西和彦 et al., 2021), the relationship between interventions and tangible attributes remains higher – seven to three times – more than the intangible attributes, especially in “preservation” and “relocation”. “Rehabilitation” was the only concept referencing more intangible than tangible attributes among the other seven. This finding reinforces the assertion made by Ruggles and Silverman (2009) that “preservation” remains primarily tangible-driven, indicating that the majority of intervention concepts in these documents prioritize tangible heritage aspects.

Attributes bring differentiation in Concepts. Comparing concepts often used interchangeably, this part of the research found distinctions in their relationships with tangible and intangible attributes. For instance, “conservation” was found to be closely related to intangible attributes, such as “use and function”, “craftsmanship and techniques”, and “process”. Conversely, preservation” is strongly associated with tangible attributes, such as “setting”, “form” and “material”. Similar distinctions are observed between “adaptation” and “rehabilitation”. Despite both concepts focusing on “use and function, the former concentrates more on tangible attributes, such as “material”, “structure”, “fixtures and fittings”, while the latter barely mentions any. Moreover, even when interventions appear similar in their aim to substitute or alter the existing, the results demonstrate that they focus on different attributes. For example, in “adaptation” and “renewal”, the former leans towards “use and function” as well as “manage system” , while the latter emphasizes “technology” and “surface”.

Attributes trigger interventions in hierarchical patterns. Unlike values, which tend to establish dynamic relationships between intervention concepts (Lin et al., 2023), attributes were found to be easier to relate to more than one intervention concept simultaneously. This is likely because attributes are often mentioned in a hierarchical manner, involving one attribute with others, such as “material” under “surface” or “structure” under “material”. This finding is consistent with Veldpaus’ theory (2015). Furthermore, this hierarchical phenomenon suggests that interventions may have unforeseen impacts on multiple layers of buildings when implemented.

Certain attributes play contradictory roles in the same intervention concepts across different documents. For example, “new materials” and “traditional materials” in “reconstruction”. While The Manifesto (SPAB,1877) addressed that modern techniques and materials are acceptable in restoration, it is going against the idea in the Burra Charter (ICOMOS Australia, revised 2013) and New Zealand Charter (ICOMOS New Zealand, revised 2010) of using “traditional material” in restoration. Within these two charters, “new material” is set as a criterion to distinguish between “restoration” and “reconstruction”. Moreover, the Burra Charter (ICOMOS Australia, revised 2013) addressed that “reconstruction” may be perceived as part of the “use” and “practice” itself, emphasizing not just the material aspect but also the intangible dimension of continuity and meaning. This finding is aligned with the theories of Kwanda (2009), Park (2014) and Okahashi (2018).

Some documents adopt paradoxical positions by referencing multiple international documents rather than creating regional definitions. For instance, the Hoi An Protocol (UNESCO Bangkok, 2009) draws from various documents. Take “reconstruction” for example; while documents such as the Burra Charter (ICOMOS Australia, revised 2013) and New Zealand Charter (ICOMOS New Zealand, revised 2010) mention “earlier state” in their definition, another document like the Appleton Charter (ICOMOS Canada, 1983) only mentions “vanished or irreversibly deteriorated resources”. The problem is that these documents do not specify “which state” they are referring to, nor do they provide criteria to determine what is considered “vanished or irreversible”. Furthermore, referencing multiple documents may lead to including different mindsets simultaneously, potentially resulting in misinterpretation. This finding highlights the need for more customized regional documents.

New categories were found to warrant more attention. For example, “Vegetation” and “lighting” would impact the atmosphere, setting, visual appearance, and emotional response. “Interior” and “fixtures and fittings” influence the “use” of a space. Additionally, identifying “movement” and other senses such as sound and smell proved challenging based on the researched documents. This observation supports the theories of Worthing and Bond (2008) and Ceccarelli (2017), indicating that future identification of new attributes may require reassessment and redefinition.

2.3.5 Conclusion

This chapter underscores the tangible-centric nature of intervention concepts within international doctrinal documents concerning built heritage, emphasizing the imperative for increased attention to intangible attributes. Different patterns influencing the relationship between intervention concepts and attributes of cultural significance have been explored. While the role of values brings a dynamic relationship, the role of attributes triggers intervention concepts in hierarchical patterns. This implies that a single intervention concept would impact multi-building layers, from the setting to the fixturse and fittings of the interior, and from the relation to use.

Future research can focus on setting up a more detailed attribute category, especially regarding new technologies and materials in intangible aspects. As definitions evolve over time and space, it is necessary to periodically revisit the interventions, their definitions, and philosophy. Future researchers can also compare the relationship between intervention concepts and attributes among stakeholders. However, defining interventions solely based on attributes is not enough. Other aspects such as time layers (earlier/later), actions, and aims should also be incorporated into the refining process. Lastly, when analyzing the attributes of cultural significance and interventions, their context should always be taken into consideration.

Identifying the role of “what” is affecting or being affected by “which” interventions can be a chance to provide a fundamental reference for decision-makers and related stakeholders to continue and reform the significance. This research serves as a foundation for further research and practical applications, elucidating distinctions and commonalities across diverse cultures, places, and times.

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TOC

3 Interventions applied in NGS

Chapter 3 focuses on four main concepts – conservation, preservation, restoration and adaptive reuse- selected to reveal how intervention concepts are implemented and defined at a local project level – taking as a case study the intervention of the National Gallery Singapore (NGS). This Chapter will discuss, first, the understanding of the concepts in Chapter 3.1, the role of cultural values in defining such concepts in Chapter 3.2, and the role of attributes in defining concepts in Chapter 3.3. A conclusion will be presented on how the concepts defined at the international level are being applied in a local context.

3.1 Mind the Flexibility: Defining Intervention Concepts applied in National Gallery Singapore (NGS)

ABSTRACT Interventions are key to built heritage management as they expand the lifespan of buildings, from building elements to the whole site, and enable their (re)use by varied generations. International organizations and institutions, such as UNESCO, ICOMOS, and the Council of Europe, have adopted doctrinal documents over time, stimulating best practices in built heritage management worldwide. Even if these documents are often referenced in academic work and practices, they are seldom examined in terms of how they are applied at a local project level. What interventions are referenced or omitted in a project? Are they defined? What trends are noted in the understanding of best practices as interventions?

This part of the research uses semi-structured interviews to collect data from 20 interviewees from a selected case study in Singapore – National Gallery Singapore (NGS). Using a systematic content analysis process, this research aims to

reveal and compare the concepts used to reference interventions and further use the definitions to reveal and discuss their relations. The trends of using the intervention concepts were determined based on the frequency of references per intervention term in the interviews.
There are three main findings. First, a prevailing consensus indicates that the definition of intervention concepts in Singapore is influenced by its dual legal framework, resulting in a discernible differentiation between 'preservation' and 'conservation'. This differentiation extends to varying scopes, including individual monuments, groups of buildings, historic zones, and diverse heritage types. Second, interviewees have a shared understanding regarding the definition of 'adaptive reuse', whereas significant discrepancies arise in the definition of 'restoration'. Third, a notable knowledge gap in conservation is observed among the interviewees, particularly between architects who have participated in conceptual and construction stages in the competition.

This research advances the current understanding of intervention concepts and the relationship between them, differences and similarities at a local project level.

KEYWORDS Interventions, Intervention Concepts, Built heritage, Cultural Significance, National Gallery Singapore, Conservation, Preservation, Restoration, Adaptive Reuse, Interview

3.1.1 Introduction

3.1.1.1 Problem field and research focus

Interventions play a pivotal role in built heritage management. Interventions can be distinguished into different intervention concepts, such as conservation, restoration, and adaptive reuse, and they all have different impacts on the built heritage. Therefore, to ensure that the heritage is managed properly and can be enjoyed and passed on to future generations, understanding the definition of the interventions is crucial. In theory, certain scholars have further researched and categorized interventions to improve the understanding of intervention concepts and definitions (Dobby, 1978; Feilden, 1982; Henket, 1988; Woodcock, 1988; Douglas, 2006; Pereira Roders, 2007). This has been introduced in the previous chapters (Chapter 1.2.1.1 and Chapter 2.1).

In practice, architects and designers often compile their experiences in publications to demonstrate their responsibility for their insights and interventions in designing a society (Alkemade et al., 2020). These publications typically categorize interventions and include examples of built projects, utilizing narratives, graphics, and images. However, it can be challenging to find a single term that adequately describes the complexity of a redesign project (Plevoets and van Cleempoel, 2019). The difficulty in finding a suitable term reflects the limitations of our language in describing the intricate nature of architectural reality, which in turn hinders effective comparison (Pezet, 2012).

Started from naming “interventions”, they are called differently, such as redesign strategies (Cramer and Breitling, 2007; Petzet & Heilmeyer, 2012; Brooker,2017; Fu, 2016; Plevoets and Cleempoel, 2019; Masoud and Einifar, 2020), transformation (Feireiss and Klanten, 2009; Bollack, 2013), “conversions” (Robert, 1989; Feireiss and Klanten, 2009; Plevoets and Cleempoel, 2019), “alternations” (Scott, 2007), “approaches” (Davies, 2003; Rogić, 2009; Hettema & Egberts, 2019), “principles” (Petzet,2010; Stone, 2005; Šijaković, 2015) and “rewriting actions” (Alkemade et al., 2020). Also, when categorizing different intervention concepts, researchers and architectural designers also borrowed terminology from other processes (Pezet, 2012), such as writing metaphors (Machado, 1976), waste disposal (Petzet & Heilmeyer, 2012), biological (Šijaković, 2015), and Japanese repairing techniques – Kintsugi (Posthuma, 2016). In further research, Plevoets and van Cleempoel (2019) conducted a more comprehensive review of publications on intervention concepts from the 1970s to 2019. They identified three different approaches: typological, technical, and architectural strategies, and additionally developed two additional approaches: programmatic and interior.

Although diverse terminologies were used to describe the projects, most were not defined. And even when defined, they use narratives and often overlap with each other. This caused issues, such as in educational use. When this is applied to design projects, the mixing of categories often creates confusion and difficulties in decision-making; in practice, such as architectural competitions, undefined concepts also bring less clarity to the design purposes and miscommunication.

According to a preliminary analysis (See TABLE 1.2 in Chapter 1) , these concepts simultaneously consider multiple aspects, such as aims, actions, values, attributes, waste and energy, and time (Turner, 1996; Pereira Roders, 2007; Veldpaus, 2015; Petzet & Heilmeyer, 2012), which makes them difficult to compare and research scientifically. Since plenty of publications and new concepts are being created now, the possible solution is not to create new concepts to categorize them, but a new approach to define and classify these intervention concepts is needed. Furthermore,

as architecture is a field that requires constant cooperation between theory and practice, the definitions and classification of interventions should reach more consensus. Therefore, a new approach to defining the intervention concepts is needed. As the new approach was developed in Chapter 2, this chapter will apply and verify how this approach works at a local project level.

3.1.1.2 A Brief on Conservation in Singapore

In local contexts worldwide, especially in fast-growing cities in Asia, interventions in built heritage management are crucial. Particularly, in Singapore, with such limited land, the tense relationship between heritage conservation and modern development has always been an issue (Widodo, 2011; Henderson, 2011; Watanamongkhol, 2014). Meanwhile, since self-governance began in 1958, Singapore has urged the formation of a new national identity (Ting, 2015). On the one hand, in heritage conservation, Singapore inherited its experiences of heritage management from different ethnicities and cultures (Qian, 2024). During this time, it reorganized the heritage list and established preservation authorities, while still being influenced by the British system (Blackburn et al., 2015). On the other hand, in modern development, to fulfil residential supply and promote economic development, the Singapore government launched the policy of "slum clearance" during the 1950s and 60s (Kong et al., 1994), which resulted in the demolition and rebuilding of a significant number of traditional communities and historic buildings.

However, there was a shift in thinking regarding the role of built heritage in modern development in the 1980s (URA, 1991; Henderson, 2010). It was understood that heritage could be utilized as a resource for national branding and marketing in order to attract investors and tourists (Yuen et al., 2002). Additionally, it was discovered that the decrease in international tourism was a result of excessive urban renewal and the disappearance of traditional street spaces (Yu, 2008). As a result, the government began to review the existing preservation authorities and their policies. The two state agencies involved were the Preservation of Monument Board (PMB, known since 2013 as the Preservation of Sites and Monuments, PSM) and the Urban Redevelopment Authority (URA). In the beginning, PSM was assigned to take charge of the gazetted monuments, and at that moment URA was not involved in heritage conservation (Blackburn et al., 2015). However, the primary issue emerged that PMB was only able to protect individual monuments and lacked the capabilities and financial strategies to care for historic building groups and areas (*ibid*). On the other hand, URA, which was originally responsible for urban development, gained experience and successfully attracted visitors through collaboration with

the Tourism Board in the conservation of characteristic historic areas (Yu, 2008). Therefore, in 1986, the government developed the Conservation Master Plan. This plan expanded the preservation targets from individual monuments to entire street areas and defined the criteria and methods to be used. Furthermore, it established clear roles for the two state agencies, assigning individual monuments to PMB for preservation and designating URA for the conservation of historic areas.

In the 1990s, the Singapore government took international charters and recommendations as a reference in order to raise the standards of heritage conservation to an international level (Ting, 2015). Regarding legislation, it formulated conservation principles, such as Objectives, Principles, and Standards for Preservation and Conservation, the 3R principles and the associated activities. From a technical standpoint, the government invited foreign experts from France and Britain to guide in restoration projects and conservation training courses; Furthermore, the URA established the Architectural Heritage Awards to encourage private stakeholders to get involved and promote a positive reputation in heritage protection, particularly within the Asia-Pacific context (Ting, 2015). Although the Singapore government made efforts to reach international standards, some scholars have pointed out that it has always prioritized urban development over heritage conservation (Blackburn & Alvin, 2015) and has only conserved for economic purposes to attract tourists (Teo et al., 1995; Watanamongkhol, 2014).

After the year 2000, conservation in Singapore underwent two paradigm shifts (Ting, 2015). The first shift involved a change in the narrative of colonial history, with a focus on emphasizing the multi-ethnic culture instead of the core colonial history. This shift also resulted in a change in the role of national monuments. The second shift was the emergence of the heritage business, which aimed to use culture and art to attract international attention and promote economic development at the same time (*ibid*). One of the most important policies during this period was the 12-year Renaissance City Plan. In addition to art activities and cultural software development, the museum business was given significant importance. This involved either extending existing museum buildings or converting national monuments into museums. The Singapore National Gallery was the flagship project under this plan (Ang, 2015).

3.1.1.3 Concepts in Singapore context

Although this research is not discussed from a linguistic perspective, understanding how the Singaporean government communicates the concepts of conservation with professionals and the public is relevant. Singapore is a multi-ethnic and multi-cultural society, comprised of Chinese (74%), Malays (13.6%), Indians (9%), and others (3.4%) (Singapore Statistics, 2023). Since Singapore's independence, in order to plan ahead for its future and be able to compete internationally, particularly in the academic field (Azal et al., 2014), Singapore has decided that English is the main language, with mother tongues being learned as a second language (ibid). Therefore, English has become the main communication language, including government official announcements on websites such as URA official websites or policies, which are published in English.

The Singapore government uses three documents to support the understanding of intervention concepts and definitions among professionals and the public, and promote best conservation practices (URA, 2024a). First, is the "Preservation of Sites and Monument Act" (Singapore Government Law Revision, revised 2020). Second, is the "Planning Act" (Law Revision Commission, 1983; revised 2009). Third, is the "Objectives, Principles and Standards for Preservation and Conservation in Singapore," jointly prepared in 1993 by the Urban Redevelopment Authority (hereinafter URA) and the Preservation Monuments Board (hereinafter PMB). This document provided concepts such as "levels of activity" under "preservation" and "conservation," including (1) Maintaining the essential character, (2) Preservation of deterioration, (3) Consolidation of fabric, (4) Restoration, (5) Rehabilitation, (6) Reproduction, and (7) Reconstruction. This last document references two international doctrinal documents, the Venice Charter (ICOMOS, 1964) and The Burra Charter (Australia ICOMOS, 1988). Additionally, it also referenced two national documents and one academic work which are the Historic Buildings and Conservation Areas - Policy and Procedures (Department of Environment, 1987), The Secretary of the Interior's Standards for Rehabilitating Historic Buildings (U.S. Department of the Interior National Park Service, Preservation Assistance Division, Revised 1983), and the Conservation of Historic Buildings (Feilden, 1982). To better disseminate knowledge and best conservation practices within the Singapore context, URA created a slogan for the public to follow in the Conservation Guidelines (2017), which is the 3R principle: "Maximum retention, sensitive restoration, and careful repair" (URA, 2024b).

There is growing attention for the intervention concepts and their definitions, also with professional practices as main focus. Although international or inter-governmental organizations provided certain intervention definitions, some scholars

argued that those definitions in certain doctrines, such as the Venice Charter (ICOMOS, 1964) were not culturally sensitive enough to incorporate traditional Asian views (Taylor, 2004; Blackburn et al., 2015) In particular, Kong and Yeoh (1994) conducted a survey to reveal whether there was consensus on the public's and state understanding of "conservation". Back then, both public and state agreed that "conservation" refers to "the improvement and enhancement of buildings and areas through refurbishing and landscaping, as well as preventing the demolition of existing buildings and areas" (Kong & Yeoh, 1994). Recently, a publication defined "adaptive reuse" (DiStefano, 2021: p1) in Singapore and two other international cities in Asia. Accordingly, "There is much to learn from the practice of adaptive reuse in large Asian cities and particularly in such major centers as… Singapore, where adaptive reuse (or its equivalent) has been considered one of the accepted forms of conservation in the twenty-first century" (DiStefano, 2021: p1). DiStefano explains that "adaptive reuse is understood to mean adapting or changing a place for a new use." She further compares three other terms – "repurposing," "revitalization," and "rehabilitation" – which are often used interchangeably with "adaptive reuse." The selected case study for this research, the National Gallery Singapore, was chosen as an example of best practices in "adaptive reuse" in Asia.

As intervention concepts and definitions evolve over time and in different contexts, it is necessary to periodically revisit these concepts, especially considering their cultural significance. This will help us understand how these defined intervention concepts are applied at a project level within Singapore's local context.

3.1.1.4 Case Study

The competition of the National Gallery Singapore has been selected as the case study for this research. The main aim of the competition was to convert the two national monuments of Singapore – the former Supreme Court and former City Hall – into the National Gallery Singapore (Hereinafter NGS). For a detailed description of the selection process of NGS, please refer to the Introduction, Chapter 1.3.3.4.1.

3.1.2 Research Methodology

3.1.2.1 Dataset: The interviewee selection process

The process of interviewee selection encountered challenges despite the apparently large number of potential interviewees, which amounted to 111 participants, as outlined in the Introduction. There were obstacles in establishing contact. On one hand, despite multiple attempts to contact the archive and organizer – the National Library of Singapore and the National Gallery Singapore – they maintained the confidentiality of the participants' list. On the other hand, a search on the Internet identified over twenty architectural firms, but contacting them proved challenging due to the passage of almost fifteen years since the competition ended. Factors such as personnel changes and lack of response difficulted the communication with these firms, with only those that advanced to the final stage of the competition having accepted the invitation to participate in the proposed interviews.

To broaden the pool of interviewees, the focus shifted from exclusively relying on architectural design firms to including all stakeholders, whether directly or indirectly associated with the international competition (see FIG. 3.1). Potential interviewees were contacted directly by the author or through local connections in Singapore. Ultimately, twenty interviews (P1 to P20) were conducted and selected. Each interviewee had varying degrees of connection to the competition at different stages.

Among all the stakeholders, twelve of them were directly involved in the competition. This direct group can also be divided into competition participants and competition organizers. According to the stages in which these stakeholders participated, there were three involved before the competition in the preparation stage, such as drafting the competition documents and supporting the administrative works. Seven stakeholders were involved during the competition in the conceptual stage. Among them, four were involved as competition participants in conceptual stages I & II of the competition, and they were from private architectural and conservation firms. Two of the participants (P1 and P5) remained in stage II, while one participant (P2) proceeded to stage III. Eventually, one participant (P6), who was part of the winning team, continued to the construction stage. Another three stakeholders participated in the competition from stages I & II (P17, P18, and P8). They were involved as technical professionals or committee members, providing suggestions from architectural or museum perspectives. Two additional stakeholders were included after the competition in the construction stage. These included the representative of the construction team (P15) and the decision-maker responsible for the final detailing of the monument (P19).

Besides the aforementioned stakeholders, there were an additional eight stakeholders who were indirectly involved in the competition. They were included in this part of the research because although they weren't directly involved in the competition of NGS, their interview content was considered valuable in providing knowledge on the intervention concepts in the conservation field in Singapore. Some of them were involved independently as researchers on the restoration of the two selected monuments of this research (P10), or the related historic urban landscape (P3), or took part in the conservation projects in an adjacent area as both practitioners and academics (P12), as well as academics (P4, P13, P14, P20), and a governmental staff (P11).

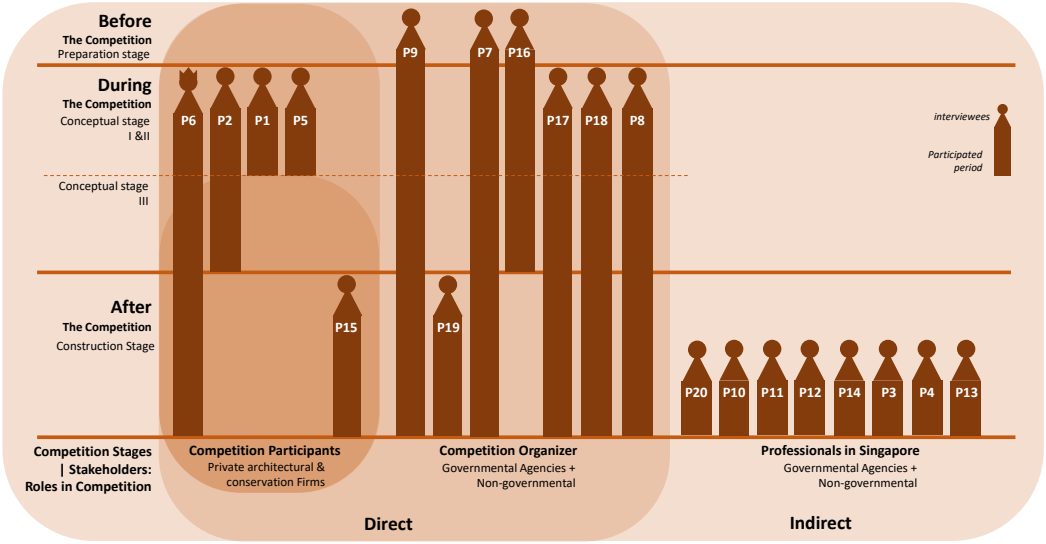

FIG. 3.1 The interviewees' roles were categorized by the competition stages (vertical: preparation/ conceptual/ construction), their relationship (horizontal: direct/ indirect), and their participation time in the competition.

These stakeholders were professionals in architecture, conservation, and museum fields, both from governmental and non-governmental organizations (see TABLE 3.1). Notably, some stakeholders underwent changes in their positions after the competition, transitioning from government roles to scholarly pursuits or engaging in both practical and academic domains, such as P3, P7, P8 and P15. This table listed their identities based on their positions during and after the competition, as revealed in the interviews.

TOC

TABLE 3.1 Interviewees' positions during and after the competition.

Profession		Quantity (persons): 20		
Type Of Organizations			During	After
Government Agencies		Urban Redevelopment Authority (URA)	P7, P8, P11	P11
		Preservation of Sites and Monuments (PSM)	P19	P19
		Land Transport Authority (LTA)	P9	P9
Non-Governmental Organizations	**local institutions**	Singapore Institute of Architecture (SIA)	P12, P14	
		National Gallery of Singapore (NGS)	P17, P18	P17, P18
		Nation University of Singapore (NUS)	P3	P4, P13, P14, P15, P20
		Singapore University of Technology and Design (STUD)	X	P7, P12
		Taiwan Tunghai University (THU)	X	P3
	Private architectural and conservation Firms	W Architects	P8	P8
		Studio Milou	P6	P6
		Ho+Hou	P2	P2
		Smart Studio	P1	P1
		DP architects	P5	P5
		Takenaka Asia Singapore	P15	P15
		Studio Lapis	X	P10

3.1.2.2 Data collection: Semi-structured Interview

Twenty interviews were conducted during a five-month period, spanning from November 2022 to March 2023. One interview was conducted through the online communication platform Zoom, while the remaining nineteen were held at the respective offices of participants in Taiwan and Singapore. The average duration of each interview ranged from 30 to 45 minutes. To facilitate preparation, a pre-determined set of interview questions was sent to the interviewees at least three days prior to the scheduled interview date.

The interview was composed of two parts. The first part was about the general understanding of the definition of intervention concepts in the Singapore context. The second part was about how the intervention concepts were applied in the case study – the Architectural Design Competition of the National Art Gallery Singapore (renamed as National Gallery Singapore) – and their relations to specific cultural significance.

Building upon insights concluded from preceding chapters, which delineated three clusters of concepts – 'conservation', 'preservation', 'restoration' and 'adaptive reuse' – were set as the preliminary contents for the interview questions. The interviews include the exploration of a series of pre-determined questions :

First Part: On the Intervention Concepts

(1) What is your definition of "conservation," "preservation," "restoration," and "adaptive Reuse"?

Second Part: Intervention Concepts Applied in the Competition

(2) How do you apply these concepts to the case of National Gallery Singapore? Could you make an example?

(3) Have you ever encountered any difficulties due to the conflict of applying these concepts?

3.1.2.3 Data Analysis: Intervention Concepts

A systematic content analysis was conducted on the audio records of the semi-structured interviews. The main objective was to reveal and compare the concepts used to refer to interventions and use the definitions to uncover and discuss their relationships. The trends in the use of interventions were determined based on the frequency of mentions per intervention term in the selected interviews. Forty-one intervention concepts have been identified in the selected documents and were further analyzed in this research. However, because four specific concepts – "conservation," "preservation," "restoration," and "adaptive reuse" – were set as the preliminary contents for the interview questions, most of the interviewees only defined the concepts that were asked. In order to enhance understanding of the relationships between concepts and expand the discussion, this chapter includes all forty-one concepts, both defined and undefined, as found in the findings.

Furthermore, to compare whether the concepts used in the competition guidelines have influenced the interviewees during the competition, fourteen concepts (defined and undefined) have been identified in the competition guidelines and are presented in the first and last columns of FIG. 3.2. These concepts are 'adaptive reuse', 'conservation', 'preservation', 'restoration', 'refurbishment', 'conversion', 'renovation', 'demolition', 'relocation', 'maintenance', 'extension', 'modification', 'addition', and 'protection'.

3.1.3 Findings

Fourteen concepts have been identified in the Supplementary Guidelines for the competition (MICA, 2008). Due to the fact that the guidelines only mentioned a few of the concepts hint at their definitions; for example, 'renovation' is mentioned when the building's use has changed over the years, 'demolition' refers to the previous building being torn down and a new one being built on the original site, and 'relocation' refers to the movement of the use. However, other additional governmental documents and resources were suggested to support the understanding of the definitions during the competition.

During the interviews, when asked to define "conservation," "preservation," "restoration," and "adaptive reuse," over half (twelve) of the interviewees provided definitions for all four concepts. With a few exceptions, some interviewees omitted one concept, 'restoration' emerged as the least defined concept, with four interviewees lacking a clear definition. Additionally, "restoration" was mentioned the least among the other three concepts during the interviews. Throughout the interviews, all interviewees frequently referenced additional concepts to support the definition process. In total, aside from the specified concepts, an additional thirty-seven concepts were identified. Concepts such as "repair", "demolition", "addition", and "protection" were referenced more frequently during the interviews, whereas "revamp," "stabilization," "alteration," "reinstallation," and "reconfiguration" were the least referenced (see FIG. 3.3).

Notably, the highest quantity of references to the concepts was found in the interview of a competition participant (P15) (twenty-three) and a non-governmental professional (P10) (twenty-two). Both of them had working experience in the construction stage of conservation projects. In particular, working as part of the construction team of NGS, the non-governmental professional and participant (P15) defined the concepts by presenting different detailed parts of the project, indicating that a large-scale project usually combines multiple concepts, from 'conservation'

and ‘demolition’ to ‘new addition’. Similarly, another non-governmental professional (P10) explained concepts through his research on the ‘restoration’ of Shanghai Plaster of NGS and the Conservation Technical Handbook – Managing Change, which featured NGS among four other projects to explain ‘alteration’ and ‘adaptive reuse’.

Conversely, the lowest quantity of references to the concepts was found in the interviews of non-governmental professionals with indirect (P14) and direct (P17) relationships with the competition, reflecting a comparatively smaller number of concepts discussed. Despite this, the interview of the organizer (P17) exhibited the highest percentage of defined concepts (80%). Notably, having transitioned from an architect to the manager of facilities management at NGS, this interviewee (P17) closely adhered to government-provided guidelines in his definitions. In contrast, the non-governmental professionals (P14), rather than focusing on the definition, delved into the meaning behind conservation and its historical development in Singapore, particularly its connection to tourism.

When asked to rank the four concepts most commonly used during the international competition, the interviewees ranked “conservation” highest, followed by “adaptive reuse,” “preservation,” and “restoration.” Most interviewees agreed that the primary objective of the competition was to conserve the two monuments and repurpose them for gallery use, categorizing it as both a ‘conservation’ and ‘adaptive reuse’ project. For example, one of the competition participants (P2) emphasized, “This competition is about conservation, and this has been clearly suggested in the competition guideline, as they ask to add new functions for the museum service… (so) it’s not restoration, it’s conservation and adaptive reuse. I think that would be the nature of this project”.

A minority of interviewees mentioned that this project was a preservation project, as it involved two monuments in Singapore. The term ‘restoration’ was used in discussions regarding the interior space. However, interviewees who were involved in the construction stages of the project believed that a significant portion of the space was demolished and new structures were added for structural safety reasons. One non-governmental professional (P4) expressed their views on this matter. He addressed “In the City Hall part, I perceive no ‘adaptive use’, only the addition of ‘new building’ after ‘demolition’ ”.

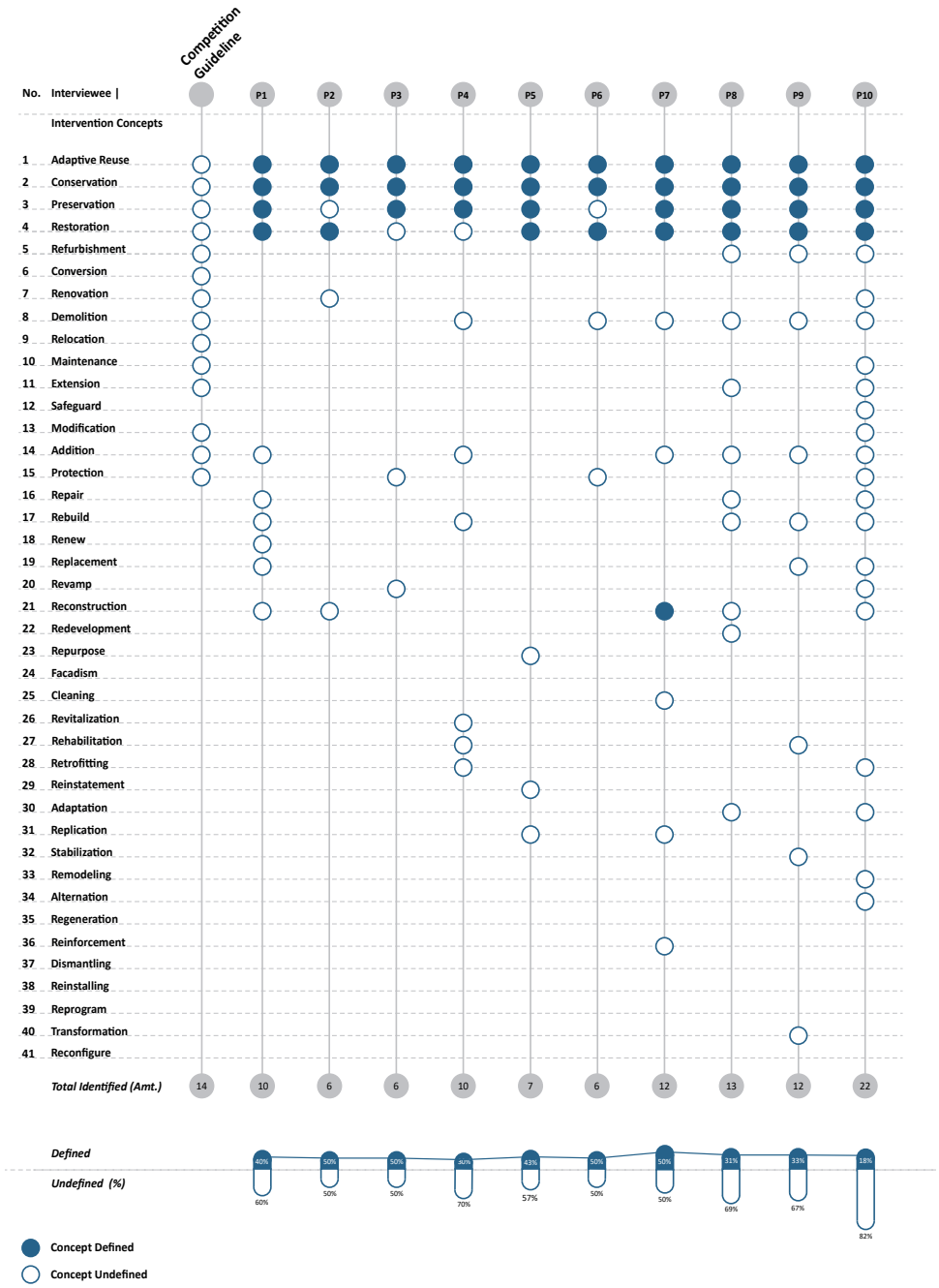

FIG. 3.2 The Defined and undefined concepts (upper part) and their percentages (bottom part) were identified in each of the interviews.

TOC

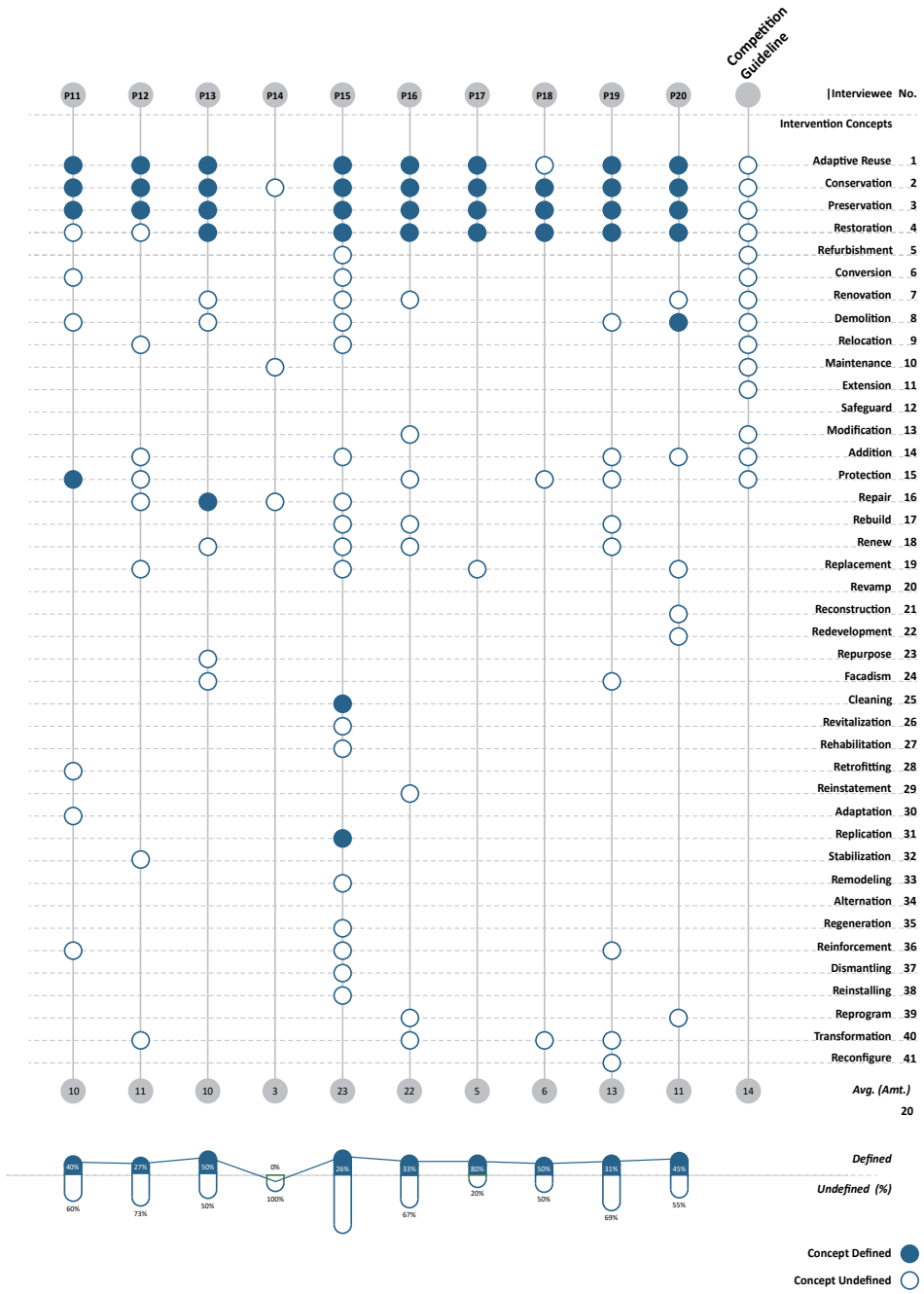

FIG. 3.3 The frequency of references to the intervention concepts during the interviews.

TOC

In order to present more clearly how the interviewees define specific concepts, the following paragraphs (3.3.3.1 to 3.3.3.3) will discuss their definitions and relations in between.

3.1.3.1 Conservation versus Preservation

When asked to define 'conservation' and 'preservation', most interviewees (85%) referred to both concepts as being very different. The factors identified as influencing the definition of these concepts are diverse. Eight interviewees (40%) attributed it to the influence of the Singapore legal framework. Specifically, Singapore has two relevant laws governing these aspects: the Preservation of Monuments Act and the Planning Act. The former falls under the jurisdiction of the Preservation of Sites and Monuments (PSM), formerly known as the Preservation of Monuments Board (PMB), whereas the latter is managed by the Urban Redevelopment Authority (URA). Consequently, within the Singapore context, when these two concepts are mentioned, stakeholders would relate to specific legal acts and heritage types. Such as one of the non-governmental professionals and organizers (P7) highlighted that the definitions of "conservation" and "preservation" in Singapore are neither British nor from elsewhere. In Singapore, preservation relates to the "preservation of national monument", which is of the highest order in Singapore, whereas "conservation" specifically refers to conservation under the Planning Act, where conserved structures and buildings are in the second tier of the national monument.

However, this way of categorizing, which is also called "government language", can easily lead to a misunderstanding of the concepts, creating a wrong impression regarding the types of heritage among academics, practitioners, and the public. "When members of the public draw a relationship, they tend to equate conservation with conserved buildings, which is the second tier of a national monument, which is preservation." This makes the heritage types under "conservation" seem less relevant. Nevertheless, other interviewees have different opinions on defining intervention concepts influenced by the legal framework. As one of the non-governmental professionals (P12) addressed, making distinctions between the definitions and types of buildings allows professionals to channel their efforts correctly.

Besides being affected by the legal framework, other interviewees referenced historical and geographical influences in a broader sense. Five interviewees (25%) mentioned the influence of British legislation in the conservation field in Singapore. Four interviewees (20%) also mentioned that the precedence of using the concepts

was influenced by the language context, which differed from the American-English speaking context. Interestingly, these interviewees were identified with conservation practices outside of Singapore. A non-governmental professional (P4) who was born in Singapore addressed being a British (post)colony here in Singapore, the term "conservation" is being used much more than "preservation". "Conservation" has also set a more active tone underlying it, whereas "preservation" is more passive preservation with preserved right. While "conservation" is also about preserving, it allows more flexibility and allows the values to be manifested.

However, among the interviewees who thought the two terms were very different, a few interviewees (two) mentioned that even though they know the concepts are different, in practice they are almost the same. For example, a non-governmental professional from Singapore (P4) and a competition participant from Japan (P15) both addressed that the two concepts are similar, and it is the implementation that counts. In particular, (P15) emphasized that conservation is a more theoretical term, and what is more specific is how much of the area that needs to be repaired or preserved when facing a real building.

Besides, interviewees tend to think of "being practical" when mentioning "conservation." As a small city-state with land scarcity, "conservation" is recognized as a pragmatic approach in Singapore. Seven (35%) interviewees addressed that "conservation" means flexibility, indicating more opportunity and freedom to allow change than in "preservation." Such change involves more room to mix the new and old and, hinting at other concepts such as "adaptive reuse" and "adaptation," especially relating to changes in contemporary needs or modern use; or "repair" relating to continuing use of the space. In alignment with this point, a major consensus has contributed to the idea that "conservation" is not only about allowing change but managing change. Additionally, "conservation" allows potentially new users that were not what the building was designed for. For some interviewees, if only considered nothing can change, the building or the area is doomed to fail.

Other concepts were identified that are outside the scope of this chapter, such as sustainability. The idea of the interviewees is that 'conservation' is no longer only related to historical buildings but also to considering the environment as a whole. An organizer (P17) highlighted that conserving these two buildings is no longer just about retaining the physical parts; in recent years, energy efficiency, which is related to the entire building environment, has also been taken into consideration.

On the contrary, in Singapore, since "preservation" is considered the highest order, referring to the legal system, particularly in relation to monuments, "preservation" is seen as the strictest concept of architectural interventions. Almost all (95%) of

the interviewees defined it as “no change” and keeping the existing state intact. The scope of preserving the existence includes intangible perspectives, such as use and activities. Some interviewees referred to “preservation” as a status of being “pickled” and “keeping everything intact” and in its “current state”. Particularly, a non-governmental professional (P12) described from the aspect of actions, that “preservation”, due to the significance of the buildings or building parts, it should not have “heavy-handed intervention” such as “adding new parts” or “fundamentally altering the nature of the building”.

However, although the definition of “preservation” seemed to be understood by most of the interviewees, according to a few interviewees, such as non-governmental professionals who have indirect (P10) and direct (P15) relationships with the competition, it is sometimes difficult to implement completely in practice. One of the interviewees, a non-governmental professional (P10), mentioned that even if it’s a national monument, the National Gallery Singapore, where “preservation” should happen, “it doesn’t mean that everything is kept.” In echo with this, one of the competition participants (P15) emphasized that in order to maintain the key concept of Milou and the winning idea of preserving all the exterior and some key characters of the interior without new additions or construction on the key part, a large amount of effort has been spent in solving the technical issues. These issues were caused by the unclear criteria for “preservation,” unrealistic preliminary conservation plan, and the abstractness of the competition scheme.

Particularly, one of the non-governmental professionals and organizers (P7) described the solution of keeping one of the most significant parts of the monuments, which are the Surrender Chamber and the shape of the two inner courtyards in reality: “They demolished everything except the interior balustrades (of the inner courtyards). And then this chamber was hung in the air through a transfer beam, and everything else was removed below... we are so adamant about keeping this… (by doing this) You will have this physical memory that this court is also part of the original fabric, as much as all the other spaces have changed…”

In general, most of the interviewees recognized the differences in the definitions between “conservation” and “preservation”. “Conservation” has also been recognized as having a more active tone and flexible concept than “preservation”. However, even though “conservation” and “preservation” have been clearly understood in theory, in practice, due to the complexity of reality, “preservation” cannot be completely implemented.

3.1.3.2 Restoration and other related concepts (repair and reconstruction)

Diverse definitions were identified for the concept of “restoration.” Various aspects were observed during the definition process, such as actions, goals, relations, and heritage type. Three of the interviewees did not define “restoration”; they considered its definition similar to other concepts, such as “preservation” or “conservation,” or used for unlisted buildings. Another three expressed the belief that “restoration” is one of the strategies under “conservation,” focusing on the “how” and only emphasizing the “most significant part.”

Offering a more extreme viewpoint, one of the non-governmental professionals and competition participants (P6) addressed a different perspective. Besides having “a good understanding of what exists” and learning the definitions from the international doctrinal documents, what is more important is that there should be “creativity” involved, even in “conservation” or “restoration”. He gave an example of the “restoration” of Gothic buildings. In his opinion, if the original building had a bad design, the architect is allowed to restore it to become “better” by using his design sensitivity and creativity.

In contrast, other interviewees, such as a non-governmental and competition participant (P1), defined “restoration” as the act of “fixing up or replacing” when there is something “wrong or broken” in a building or its elements. He mentioned that the main concept of “restoration” is about “repairing rather than keeping” and “bringing back or going back to what it was.”

With a more cautious defining approach, a few interviewees from academia, such as a former non-governmental organizer (P7) and a non-governmental professional (P13), emphasized that “restoration” has been misapplied in practice because architects are not critical enough about the terminology they use. As a consequence, the philosophy of “restoration” has also been ignored. In some cases, architects added architectural elements back in “the same style” without understanding the history. In their opinions, “restoration” is not only a subset of “conservation” but also almost a special category that has a different mindset, aiming to “return to an earlier state”. The interviewee (P7) gave an example of a 19th-century church that was recently added with new confession rules, mimicking the old style, which led to misunderstanding the history of the church. In his opinion, when a new intervention is made, it should also manifest its “time” of creation. Therefore, the new confession should be built in a contemporary way that represents today’s age. Moreover, from the latter interviewee’s point of view, “restoration” is a concept that can never exist because it is impossible for the restorer to go back to the “time” or situation when the building was built.

While defining “restoration,” some other concepts often discussed in relation to it, such as “reconstruction” and “repair,” were seldom defined. Only the definition of “reconstruction” was identified and associated with “new materials” in one interview (P7). The definition of “repair” was described as “fixing up or replacing...repairing rather than keeping.” Others also associated “repair” with “conservation,” as mentioned by a non-governmental professional (P13) who stated that “conservation is a form of repair.” Additionally, ‘repair’ was linked to “cleaning” within an adaptive reuse project, according to one of the competition participants (P15).

3.1.3.3 Adaptive Reuse

While defining the concepts, multiple interviewees highlighted the close relation between “conservation” and “adaptive reuse”. Interviewees share a general consensus that “conservation” and “adaptive reuse” are not in conflict with each other; instead, “adaptive reuse” can be seen as a practical way of implementing “conservation”. One of the non-governmental professionals (P12) mentioned that “adaptive reuse” is a concept that has not been given as high a priority as “preservation” and “conservation” and needs more attention.

Nevertheless, in defining the concept of “adaptive reuse”, the majority of the interviewees highlighted the core idea - to adapt. Particularly, a non-governmental professional and organizer (P7) addressed that “adaptive reuse” is not only about “reuse” but also about “adaptive.” Therefore, it means that it is “not just reusing and continuing the same function” but means something has changed. Specifically, it’s a “programmatic function change,” and this change needs to be “contextualized.”

Zoning in on the definition of “adaptive reuse,” when asked about the level of change in “adaptive reuse,” most interviewees agreed that there is almost no single principle or criteria to define it. Interviewees, such as the non-governmental professional and the competition winner (P6), doubted the approach of trying to define “adaptive reuse.” They mentioned that besides a good understanding of what exists, a creative mind is also needed. “So adaptive reuse is a creative thing... It doesn’t follow a kind of principle or recipe or is not driven by principle... So, for example, the Charter of Venice... There is a kind of recipe given. For me, that is not relevant... for me, I don’t talk about conservation or restoration or adaptive reuse... and very often people take... this kind of moral ground (which) is used in conservation as a recipe for everything, you know? ... And very often you see this very strict attitude of very rigid people using adaptive reuse.”

TOC

Although it is difficult to define the criteria for “adaptive reuse,” several interviewees mentioned it as a “degree of change” and “what can be changed.” From this perspective, one of the non-governmental professionals and organizers (P7) explained in detail the relationship between “adaptive reuse” and significance. He mentioned, “So what is allowable and what is not allowable, what needs to be mitigated, and what needs not be a backstop? This goes back to the question of what heritage significance is. If the heritage significance is not affected, go ahead, make changes. If the heritage significance is affected, then the next question is how badly it is affected. Can it be mitigated? If it can be mitigated, go ahead. If it cannot be mitigated, then maybe it will change your plans a little bit. And then you can change the plans a bit. And then, with some mitigation, you may go ahead. So these changes can be big or small changes, and in the (international) charters, they called it HIA (Heritage Impact Assessment).”

Instead of trying to define whether to follow the principle or not, some interviewees described the meaning of ‘adaptive reuse’ in a broader sense, relating to sustainability. One of the non-governmental professionals and organizers (P8) elaborated that “adaptive reuse” is usually just one of the ways to conserve buildings. “So this is something quite new because adaptive reuse usually is just one of the ways to adapt and conserve buildings to use. But I think that adaptive reuse should be taken apart and be seen really from the sustainability point of view. So most of our buildings should be kept for as long as they are allowed and allowed to change their use, to be adopted for a different use.”

With a more sentimental tone, another government professional and organizer (P16) reflected that “adaptive reuse” is also a middle path for Singapore. As such a small country, it is important “not to close off the option for future generations, because otherwise we have nowhere else to go.” Therefore, “adaptive reuse” is a pragmatic option to conserve certain buildings for the next generation to enjoy and also to make use of the existing buildings for them to live in.

3.1.4 Discussion

This chapter highlights the differences and commonalities in mainly four concepts – “conservation,” “preservation,” “restoration,” and “adaptive reuse” – and their definitions. According to the research results, a structural relation between these concepts is proposed to be further researched.

Conservation

Conservation is not preservation. Influenced by the dual legal system, conservation is seen as a broader concept that encompasses others. In Singapore, it specifically maintains the cultural significance of zones or areas that closely work with new development, allowing for more flexibility in removing and adding buildings.

Preservation

Preservation is not conservation. Influenced by the dual law system, preservation is seen to be the strictest concept that requires maximum retaining of the building (from elements to use), targeting national monuments.

Restoration

Treated as a subset of conservation, however, restoration has a different mindset and approach when looking at the past. Restoration focuses on returning the visual appearance, from the surface to the structure, to a specific moment by adding and/or removing certain layers of attributes. According to the Singapore conservation guideline - "Maximum retention, sensitive restoration, and careful repair" - restoration is considered a distinct concept from repair.

Repair is under 'conservation'. Repair is mostly related to a smaller scale of returning back to its original appearance or use when it is perceived as losingd its appearance or out of use.

Adaptive Reuse

Adaptive reuse means a degree of change, ranging from a sensitive touch (surface/material) to dramatic demolition (structure/form), including repurposing (use) and/or rebuilding (structure) according to cultural significance narratives. However, a total repurposing and rebuilding of the interior of the building can be defined as façadism, or preserving the façade and adding a new building. In Singapore, adaptive reuse can be seen as the implementation level of conservation.

Rather than being influenced by the language, the definitions and understanding of the concepts are heavily influenced by the local context. In Singapore, 'conservation' and 'preservation' are more than just two different concepts. They are the leading

intervention concepts, heading two distinctive legal systems, management authorities, heritage types, and approach to heritage management. Due to their relation to different laws – the Planning Act and the Preservation of Monuments Act – when interviewees mention these two intervention concepts, they generally associate them with specific types of areas based on ethnicity, scale, and type. On the one hand, "preservation," governed by the Monument Act, is strongly related to monuments, mainly on an architectural scale, targeting mostly built heritage from the British colonial period and religious buildings. On the other hand, "conservation," under the Planning Act, takes into account the urban context, especially the large number of shophouses in the historic city center. This way of thinking also extends to other concepts, such as 'adaptive reuse' related to shophouses and 'restoration' related to religious buildings. Furthermore, while "conservation" is a concept that is more "flexible," "not freezing the city in the historic past," and "practical," "preservation" is like the concept on the other side of the spectrum, which is associated with "less room to redefine it for modernity," "impractical," and "stuck in the past." Generally speaking, "conservation" then has a more active tone than "preservation".

Meanwhile, contradictory opinions on the definitions are influenced by the two legal systems in the Singapore context. Some interviewees pointed out that this approach to addressing the concepts appears to enhance understanding of the definition, especially between 'preservation' and 'conservation'. The positive impact of this phenomenon is, as one non-governmental professional stated, "as a means of distinguishing between types of buildings, we can correctly direct our efforts". The interviewee further explained that as an architect, he does not need to be concerned with preservation because he only deals with cases of 'conservation'. On the other hand, non-governmental professionals who have academic backgrounds or both academic and practical backgrounds are familiar with conservation theory and criticize this categorization for misleading the public in understanding the intervention concepts. This has led to a polarization of the definitions of the two concepts, which may result in extreme actions, such as when a building is not listed as a monument, people may not consider what is significant to "preserve" and instead demolish anything they deem unnecessary, labeling it as "conserved". One non-governmental professional from academia went a step further and suggested that "in my opinion, this hierarchy (of being a monument or non-monument) should be eliminated and only places of significance should be listed."

Another point of discussion regarding this system is the influence of a top-down process on the definition of terms in Singapore. Interviewees, particularly those from non-governmental professions, referred to these definitions as "government language". Several interviewees mentioned that they "apply the guidelines provided

by URA". Although this approach may seem efficient for implementation, an academic from a non-governmental profession mentioned that it leads to a superficial understanding of conservation among professionals and the public. This can result in low-quality conservation projects being awarded and a lack of genuine "care" in their participation in the preservation of the built environment.

Conflicts were found when defining concepts in 'restoration' between academics and practitioners. While the understanding of "conservation" and "preservation" was relatively aligned among the interviewees, there were more contradictory opinions regarding the concept of "restoration." These conflicts arose not only between academics and practitioners but also among architects who were involved in various stages of conservation projects and from different cultural backgrounds. Non-governmental professionals, particularly architects who consistently work "with" conservation projects (e.g., conceptual stage of the competition, building new additions in conservation areas) and "in" conservation projects (e.g., construction stage of the competition, restoration of certain types of heritage), often accuse each other, claiming that one party lacks creativity while the other disregards conservation philosophy and cultural significance. Different definitions regarding whether "restoration" should justify the past were also found between competition participants and non-governmental professionals with conservation knowledge acquired from different cultural backgrounds, such as France and the United Kingdom.

The issues of categorization arise during decision-making and implementation processes. When asked whether they had encountered situations where conflicting concepts were used, only a minority of interviewees (three) agreed and provided examples. These occasions occurred in the communication between the government and local communities, during the assessment process between the government and architects, and between project stages. For instance, one of the competition participants mentioned the difficulties they faced when the interventions concepts or classification was unclear. They stated, "Changing the classification requires a new level of structure... there are many requirements that necessitate the change." While the intervention concepts may be used interchangeably in a verbal setting, in the decision-making and implementation process of a conservation project, it entails altering the project's classification to align with entirely different material and technique requirements. This not only wastes time and resources but also impacts the cultural significance.

Notably, the role of cultural significance in influencing the categories/intervention levels does not remain constant during different stages of the building life cycle. This means that even if cultural significance was once appreciated and preserved,

it can be demolished if it is deemed unnecessary, unsafe, or for other "allowable reasons." In practice, when this occurs in policy documents, it may result in a shift in building design requirements, leading to conflicts. In the case of NGS, the two monuments originally had their own preservation guidelines when they were gazetted, similar to all other monuments in Singapore. However, after a decade, a supplementary guideline was created to give the two monuments a role and facilitate an international competition. This guideline categorized the cultural significance, which was originally outlined in the preservation guideline, into three levels. Perhaps to avoid ambiguity, the three levels were identified as "critical – to retain intact or restore to the original," "important – to retain key and essential qualities but allow modifications," and "contributory – to allow flexibility."

Meanwhile, these categories may still be unclear. Some stakeholders addressed that although the supplementary guidelines were considered well-written and easy to understand by the designers, it is a critical question about how the levels of significance were decided and what their criteria were.

Overall, the conservation approach in Singapore is greatly influenced by the idea of "practicality". As a country with limited land, the preservation of heritage often means sacrificing opportunities for development. In this regard, the definition of conservation goes beyond mere concepts as outlined in official documents. There exists a gap between theory and reality, as evidenced by the fact that, even though the terms are well-defined and understood, they do not always translate effectively into practice. Sometimes, adjustments must be made to align with specific narratives or project goals, particularly when it comes to government initiatives. For instance, one participant in a competition and a member of the construction team commented that conservation is a theoretical concept with a broader meaning. When faced with an actual project, a real building, and tangible surfaces, the extent to which preservation and restoration should be carried out becomes a topic of debate. The participant shared their personal experience during the conservation assessment prior to the construction of City Hall. At that time, an American conservation expert recommended restoring and repairing every piece of the façade in line with conservation principles. However, this suggestion was deemed unrealistic due to the scale of City Hall and the tight construction schedule, which had to be completed before Singapore's 60th National Day anniversary.

Lastly, the findings suggest that there may have been a shift in the mindset regarding conservation in Singapore over the past few decades. Conservation has evolved from solely protecting monuments or areas associated with specific ethnic groups to encompassing environmental sustainability. However, further examination is required to evaluate this shift from multiple perspectives, including values and attributes.

3.1.5 Conclusion

Rather than being influenced by language, the definitions of the concepts are heavily influenced by the local context. In Singapore, the conservation approach is greatly influenced by the idea of "practicality." Due to limited land resources, the Singaporean governmental agencies have been trying to strike a balance between heritage conservation and new development. Under the influence of practicality, the understandings of "conservation" and "preservation" are more than just two different concepts; they also indicate two legal systems, management authorities, and types of heritage. By distinguishing these two terms, some stakeholders assert that this can channel the professionals' efforts well in practice. However, other stakeholders, particularly from academia, mention their concern that instead of taking a simplistic approach to understanding these intervention concepts, dichotomizing "preservation" and "conservation" also ignores other concepts. Such a great contradiction between professionals from academia and practice in understanding "restoration" was identified. Moreover, despite the trendy use of the term "adaptive reuse," its definition and impact still have room for improvement. Nevertheless, this part of the research also points out that even though the stakeholders understand the definitions of the intervention concepts well, their actions are still guided by reality, such as time and financial issues.

Furthermore, during the interviews, this part of the research also identified that the role of cultural significance influencing the categories/intervention levels does not remain constant during different stages of the building life cycle. To understand how cultural significance influences the definition of the intervention concepts in the Singapore context, only discussing the term itself is not enough. Other aspects, such as values and attributes, will need to be included and supported in the definition process. As Singapore is a multi-ethnic society, further research is recommended to focus on different language contexts, such as Malay, Tamil, and Chinese, in order to compare the intervention concepts after translation.

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3.2 Values and Interventions: Dynamic Relationships in NGS

ABSTRACT

Even if there is a wealth of research highlighting the key role of values and cultural significance for heritage management and defining specific interventions on built heritage, the identification of their leading values and hierarchy has seldom been researched, including the local project level. How do values and interventions relate at a local project level? What values trigger the most and least interventions on heritage? How do these values relate to and characterize interventions?
Based on twenty interviews, using semi-structured questions, this research applied a systematic content analysis the stakeholders's replies in the interviews concerning the case study – the international architectural competition of the National Gallery Singapore. The main aim is to reveal and compare the intervention concepts and their definitions in relation to values, particularly at a project level. The intensity of the relationship between intervention concepts and values is determined based on the frequency of mentioned values per intervention.

There are three key findings. First, economic, social and historic values were the most referenced values in international doctrinal documents. Second, while intervention concepts revealed shared common leading values, their secondary values and values hierarchy, e.g. social and political values, are the ones influencing the variation in their definitions. Third, certain values show contradictory roles in the same intervention concepts from the Singapore context; for example, the implementation of "restoration" is given more flexibility when relating to social values.

This chapter explores a novel comparison between different intervention concepts and definitions, and the role of values at a local project level. The results can contribute to supporting further research and practice on clarifying the identified differences.

KEYWORDS

Interventions, Intervention Concepts, Cultural Values, Cultural Significance, Built heritage, National Gallery Singapore, International Architectural Competition, Conservation, Preservation, Restoration, Adaptive Reuse, Interview, Stakeholders

3.2.1 Introduction

3.2.1.1 Problem field and research focus

Cultural significance is deciphered through conveyed values (Pereira Roders, 2007) and attributes (Veldpaus, 2015). Values justify why heritage is listed, and the attributes characterize the resources (tangible and intangible) that convey such values (Pereira Roders, 2013). Together, Cultural heritage values and cultural significance are known to influence the definition and decision-making of intervention concepts (Lin et al., 2023a; Lin et al., 2023b). In the context of doctrines, values and cultural significance are expected to influence the appropriate category/level of intervention (ICOMOS Canada, 1983). Moreover, relative degrees of values and cultural significance may lead to different conservation actions at a place (Burra Charter, 2013).

While there is a wealth of research highlighting the key role of values and cultural significance in the decision-making processes of heritage planning and management (De La Torre, 2002; Mason, 2005; Pultar, 1997; Taher Tolou Del, 2020; Augustiniok, 2020), as well as in defining specific intervention concepts for built heritage such as conservation, restoration, and reconstruction (Henket, 1998; Pereira Roders, 2007; Douglas, 2007), rarely has the relationship to their leading values been researched or compared over time and place. Many academics highlight the range of values that influence the conservation process (Feilden, 1982), where values are expected to be prioritized, integrated, or ranked (Mason, 2005). Sometimes, values are assumed to conflict with each other (Riegl, 1903/1996; ICOMOS, 1994; De La Torre, 2002) because they are influenced by the stakeholders' diverging interests (Mason, 2005). Some researchers focus on one category of intervention with specific values, such as using adaptive reuse to promote social values (e.g., Kenneth and Lucian, 2019) or researching the balance between architectural and monument values in adaptive reuse (e.g., Augustiniok et al., 2020). Even many local scholars have pointed out the importance of cultural values in influencing the conservation practice in Singapore (Lih, 2005; Thiagarajah, 2015; Wei et al., 2024, so far, this definition approach is barely found in local contexts.

3.2.1.2 Concepts in the Singapore context

As introcuced in Chapter 3.1, the Singapore government uses three documents to support the understanding of intervention concepts and definitions among professionals and the public, and promote best conservation practices (URA, 2024a). First, is the "Preservation of Sites and Monument Act" (Singapore Government Law Revision, revised 2020). Second, is the "Planning Act" (Law Revision Commission, 1983; revised 2009). Third, is the "Objectives, Principles and Standards for Preservation and Conservation in Singapore," jointly prepared in 1993 by the Urban Redevelopment Authority (hereinafter URA) and the Preservation Monuments Board (hereinafter PMB). This document provided concepts such as "levels of activity" under "preservation" and "conservation," including (1) Maintaining the essential character, (2) Preservation of deterioration, (3) Consolidation of fabric, (4) Restoration, (5) Rehabilitation, (6) Reproduction, and (7) Reconstruction. This last document references two international doctrinal documents, the Venice Charter (ICOMOS, 1964) and The Burra Charter (Australia ICOMOS, 1988). Additional, it also referenced two national documents and one academic work which are the Historic Buildings and Conservation Areas - Policy and Procedures (Department of Environment, 1987), The Secretary of the Interior's Standards for Rehabilitating Historic Buildings (U.S. Department of the Interior National Park Service, Preservation Assistance Division, Revised 1983) and the Conservation of Historic Buildings (Feilden, 1982). To better disseminate knowledge and best conservation practices within the Singapore context, URA created a slogan for the public to follow in the Conservation Guidelines (2017), which is the 3R principle: "Maximum retention, sensitive restoration, and careful repair" (URA, 2024b).

There is growing attention for the intervention concepts and their definitions, also with professional practices as main focus. Although certain intervention definitions were provided by the international or intre-governmental organization, some scholars argued that those definitions in certain doctrines, such as the Venice Charter (ICOMOS, 1964) were not culturally sensitive to incorporate traditional Asian views (Taylor, 2004; Blackburn et al., 2015) In particular, Kong and Yeoh (1994) conducted a survey to reveal whether there was consensus on the public's and state understanding of "conservation". Back then, both public and state agreed that "conservation" refers to "the improvement and enhancement of buildings and areas through refurbishing and landscaping, as well as preventing the demolition of existing buildings and areas" (Kong & Yeoh, 1994). Recently, a publication defined "adaptive reuse" (DiStefano, 2021: p1) in Singapore and two other international cities in Asia. Accordingly, "There is much to learn from the practice of adaptive reuse in large Asian cities and particularly in such major centers as… Singapore, where adaptive reuse (or its equivalent) has been considered one of the accepted

forms of conservation in the twenty-first century" (DiStefano, 2021: p1). DiStefano explains that "adaptive reuse is understood to mean adapting or changing a place for a new use." She further compares three other terms – "repurposing," "revitalization," and "rehabilitation" – which are often used interchangeably with "adaptive reuse." What was much related to this research, she highlighted that there is an "inverse relationship" (Ibid, p.4) between the level of change and the level of architectural values. when there are high architectural values on the site, the level of change to the building fabric is expected to be carefully controlled; while the architectural values are low, the building receives greater change. Moreover, some debates were mentioned, such as social values were referenced when "similar use" was suggested. The buildings can be rescued and can be activated with economic and social values when dramatic changes are applied, even if there might be a risk of losing their architectural, historical or contextual values. This research emphasized the importance of the informed decision about knowing what and why to build. Additionally, the National Gallery Singapore was chosen as an example of best practices in "adaptive reuse" in Asia.

However, according to the search process of this research, few studies have been found that define specific intervention concepts systematically from the values aspects and their relationships, particularly on a local project scale. Therefore, a case study has been chosen to advance the knowledge of how values and interventions are implemented on a project scale.

3.2.1.3 The case study

The competition of the National Gallery Singapore has been selected as the case study for this research. The main aim of the competition was to convert the two national monuments of Singapore – the former Supreme Court and former City Hall – into the National Gallery Singapore (Hereinafter NGS). For a detailed description of NGS, the selection process, and its related critical documents including cultural values narratives, please refer to the Introduction of this thesis, Chapter 1.1.3.2, and the previous Chapter 3.1.1.3.

3.2.2 Research Methodology

The datasets of this part of the research are scoped on the stakeholders who participated in the competition, focusing on how they define intervention concepts from the cultural values aspect. This chapter draws upon data collected from twenty interviews, which were mostly conducted during a visit to Singapore from January to March 2023. Semi-structured questions and a qualitative analysis approach were used with the stakeholders involved in a selected case study - an international architectural competition of the National Gallery Singapore. The main aim is to reveal and compare the intervention concepts and their definitions in relation to values at a project level. The intensity of the relationship between intervention concepts and values is determined based on the frequency of mentioned values per intervention. For more detailed information on the interview process and the selection of the interviewees, please refer to the Introduction of this thesis (Chapter 1.3.3.4.2). The method included three steps:

First, the author extracted the quotes referencing intervention concepts and values, including contents implying their explanations, interpretations, and definitions from the interviews.

Second, the extracted quotes were structured and classified in pre-coding according to the theoretical framework on cultural values (Pereira Roders, 2007) (see TABLE 3.2 in Chapter 2.2.2.3).

Lastly, analysis and comparison of the structured data to reveal (1) the frequency of mentioning the values within the 20 interviews and (2) a comparison of the relationships between values and the selected intervention concepts from different interviews.

Building upon insights concluded from preceding chapters, which delineated three clusters of concepts – “conservation”, “preservation”, “restoration” and “adaptive reuse” – were set as the preliminary contents for the interview questions. The interviews include the exploration of a series of pre-determined questions :

First Part: On the Definition of Intervention Concepts

(1) What is your definition of “conservation,” “preservation,” “restoration,” and “adaptive reuse”?

Second Part: Intervention Concepts Applied in the Competition

(2) How do you apply these concepts to the case of National Gallery Singapore, especially according to what values, such as historic, aesthetical, social, scientific, economic, ecological, age, or political values? Could you give an example?

(3) Have you ever encountered any difficulties due to the conflict of applying these concepts?

3.2.3 Findings

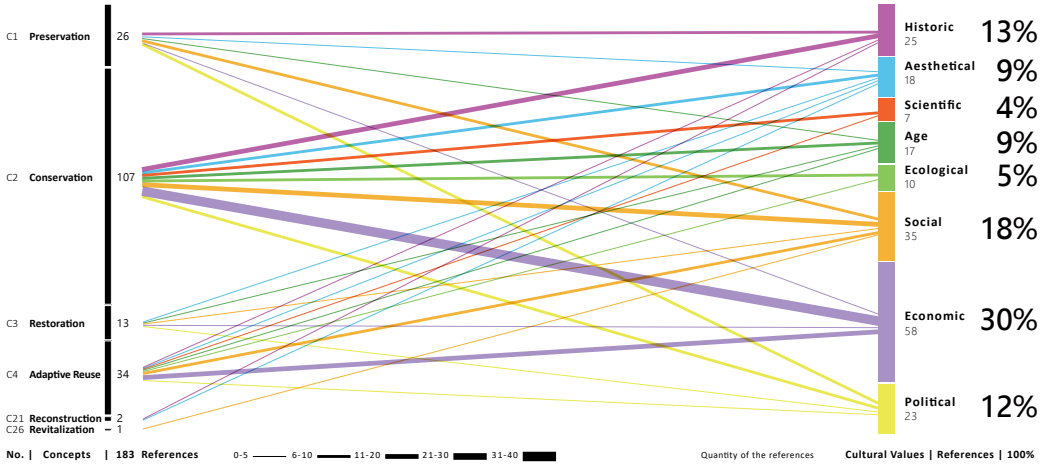

FIG. 3.4 The overall frequency of referencing values in relating to the six concepts: “preservation (C1)”, “conservation (C2)”, “restoration (C3)”, “adaptive reuse (C4)”, “reconstruction (C21)”, and “revitalization” (C26).

TOC

TABLE 3.2 The overall distribution of the eight values referenced by the interviewees in defining six intervention concepts in NGS. Abbreviation of the concepts: C1= Preservation, C2= Conservation, C3= Restoration, C4= Adaptive reuse, C21= Reconstruction and C26.

Interviewee	Governmental/ Non-governmental	Practice/ Academia/ Both	Relation within competition	Historic	Aesthetical	Scientific	Age	Ecological	Social	Economic	Political
P1	Gov	Practice	Direct	**C2**	**C2**	**C2**	**C2**	**C2**	**C2, C4**	**C2**	**C2**
P2	Non	Practice	Direct	**C2**	**0**	**0**	**0**	**0**	**0**	**C2, C4**	**0**
P3	Non	Academia	Indirect	**C4**	**0**	**0**	**0**	**C4**	**C4**	**C2, C4**	**C2, C4**
P4	Non	Both	Indirect	**C1, C2**	**C1, C2, C4**	**C2**	**C2**	**C2**	**C2, C4, C26**	**C2**	**C1, C2**
P5	Non	Practice	Direct	**0**	**0**	**0**	**0**	**0**	**0**	**C4**	**0**
P6	Non	Practice	Direct	**0**	**0**	**0**	**C2**	**0**	**0**	**0**	**0**
P7	Non	Both	Direct	**C21, C22**	**C21, C22**	**0**	**0**	**0**	**0**	**C1, C2, C3, C4**	**0**
P8	Non	Practice	Direct	**C4**	**C3, C4**	**C4**	**C4**	**C4**	**C4**	**C4**	**C4**
P9	Gov	Practice	Direct	**C2**	**C2**	**C2**	**C2, C3**	**C2**	**C2, C3, C4**	**C2, C4**	**C2, C4**
P10	Non	Both	Indirect	**C2**	**C2, C4**	**C2**	**0**	**0**	**C2, C4**	**C2, C4**	**C1, C4**
P11	Gov	Practice	Indirect	**C1, C2**	**C1, C2**	**0**	**C1, C2**	**0**	**C1, C2**	**C2**	**0**
P12	Non	Both	Indirect	**C1, C2**	**0**	**0**	**C3, C4**	**C2**	**C1**	**C2**	**0**
P13	Non	Academia	Indirect	**0**	**0**	**0**	**C3**	**0**	**C3**	**0**	**0**
P14	Non	Both	Indirect	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**C2**
P15	Non	Both	Direct	**0**	**C4**	**0**	**C2, C4**	**0**	**C1, C2, C4**	**C1, C2, C4**	**0**
P16	Gov	Practice	Direct	**0**	**0**	**0**	**0**	**0**	**C1, C2**	**C2, C4**	**C1**
P17	Non	Practice	Direct	**C2**	**0**	**0**	**0**	**C2**	**0**	**C2**	**0**
P18	Non	Practice	Direct	**C2**	**C2**	**0**	**0**	**0**	**0**	**0**	**C2**
P19	Gov	Practice	Direct	**C2**	**C2**	**0**	**0**	**C2**	**C3**	**C2, C4**	**C1, C3**
P20	Non	Academia	Indirect	**C2**	**C2**	**C2**	**C2**	**C2**	**C2**	**C1, C2, C4**	**C1, C2**

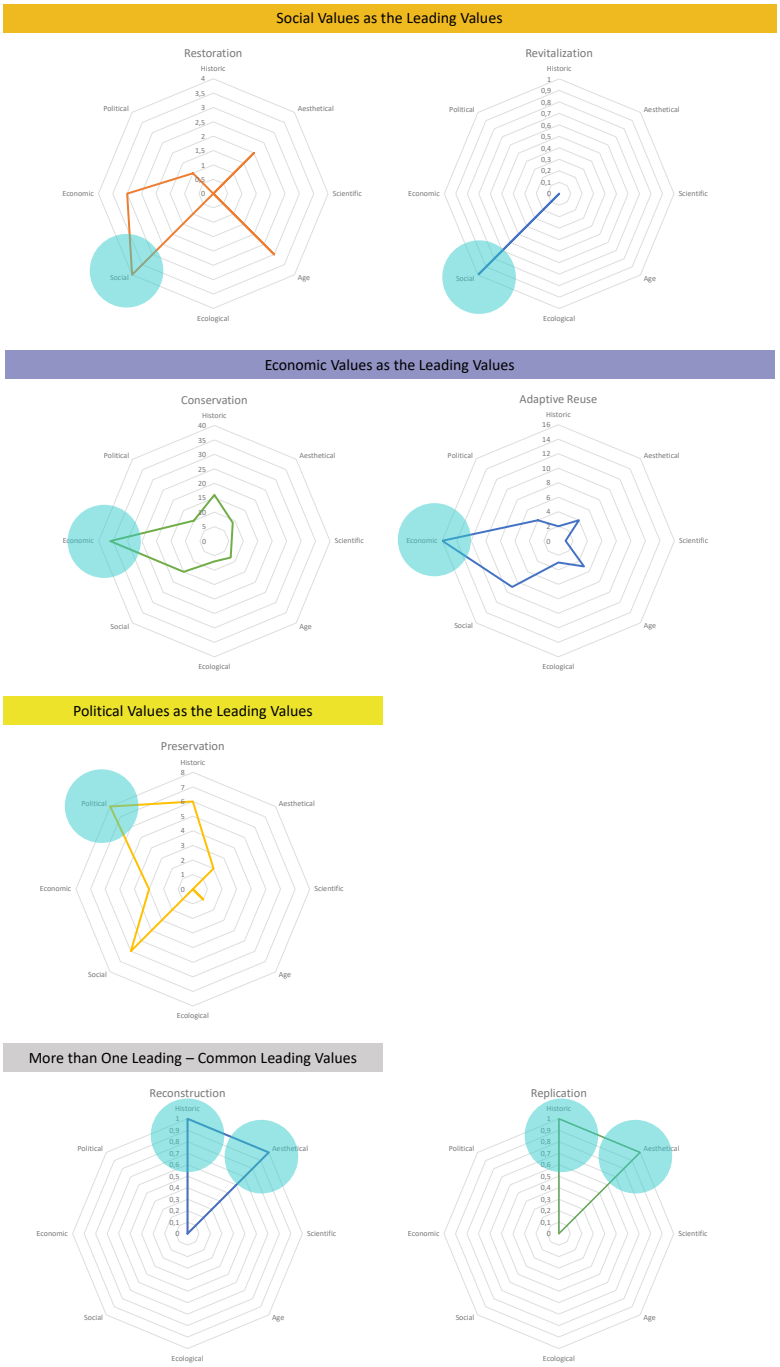

FIG. 3.5 The six concepts and their leading values.

TOC

Overall, economic values are referenced by most of the interviewees (sixteen), especially in defining “conservation (C2)”; also several interviewees (eleven) were found referencing “adaptive reuse (C4)”. Ranked as the second most popular values, social values were referenced by more than half of the interviewees (thirteen), and relate to relatively more concepts, such as “preservation”, “conservation (C2)”, “restoration (C3)”, “adaptive reuse (C4)”, and “revitalization (C26)”. Historic values were ranked as the third most popular values, with more interviewees (fourteen) than those referencing social values. Historic values were identified in relation to “conservation (C2)” and “preservation (C1)” the most, and without “restoration” (See TABLE 3.2).

In contrast, scientific values were referenced by the fewest interviewees (six) and with the fewest amount of references. Also, besides one interviewee (P8) relating scientific values to “adaptive reuse (C4)”, all other interviewees referenced scientific values when defining “conservation (C2)”. Among all the intervention concepts, “conservation” and “adaptive reuse” were the concepts that were identified in relation to all the values. With relatively fewer values being referenced, “restoration” was found without referencing historic, scientific, and ecological values.

With little value-related information identified, “reconstruction (C21)” was identified with two values, historic and aesthetic values. More dramatically, “revitalization (C26)” was found to be only associated with one value, social values. In order to further discuss which values play stronger roles in defining specific intervention concepts, Chapters 3.2.3.1 to 3.2.3.4 are created.

3.2.3.1 Social values as the leading values: Restoration(C3) and Revitalization(C26)

“Restoration (C3)”

Overall, in the process of defining ‘restoration’, only seven (35%) interviewees were identified as having value-related content. Although over half of them (four out of seven) were directly involved in the competition, interviewees used other cases, particularly religious buildings, to define the approach. In defining “restoration”, social values were ranked first, followed by economic and age values, while historic, scientific, and ecological values were never identified.

In considering social and economic values, requirements for the users of the gallery, such as one of the professionals from the government (P9), mentioned restoration was “neither to recreate something new nor to bring it back to the way it originally

looked." It is about "rebuilding bits that have fallen off" and "restoring to a point where it was stable and adequately function well for the next 30 years." Particularly, in reference to social values, one of the non-governmental professionals (P13), using religious heritage as an example, emphasizes the importance of "continuity" in material and craftsmanship for cultures that believe in the cycle of life and death and spirits. Other descriptions such as "fire regulations" and "universal accessibility" were also identified with social values relating to "restoration."

However, when social values are identified with certain values, such as political values, they influence the way "restoration" is carried out and call into question conservation principles. One of the government professionals (P19) mentioned an example when dealing with religious buildings. Due to the policy of promoting "racial harmony," the philosophy of 'restoration' is not the top priority unless a reason is provided. Some flexibility is allowed based on the decisions of the "leadership of the temple" along with "feng shui" considerations. Under these circumstances, as long as it "doesn't compromise the fundamental aspects of the monument" and the treatment is "reversible," the building is permitted to "evolve." Therefore, "restoration" is never a static concept.

When referencing economic values in defining "restoration," interviewees mentioned material resources as another critical aspect of "restoration" in Singapore. A non-governmental professional from academia (P20) emphasized a slogan of "no money, no honey" in conservation, derived from the lack of resources within such a small country. He then took limestone, for example, in "restoration." When asking to use the original material, he stated, "it's expensive to bring in lime just to restore the authentic facade of a building."

Speaking of age values, two interviewees relate "restoration" with the deterioration and bad situations of buildings. One of the non-governmental professionals (P12) with both academic and practical backgrounds mentioned "restoration" as a generic term among other concepts. He further addressed that there is no need to associate it only with heritage, but also when buildings are old and the environment has been deteriorating. Although age values were also referenced when defining "restoration", a non-governmental professional from academia (P13) provided a contradictory answer regarding "restoration". He thought that buildings could never be recovered when age values were demolished. In particular, as he gained a background in conservation from the UK, "restoration" for him was a concept that would never be used. He emphasized, "We can never take it back to its original condition. No matter if we have the craftsmen, we have the materials, so we can never get that date or age back. Even if I am using the same lime (stone), I can never ever restore."

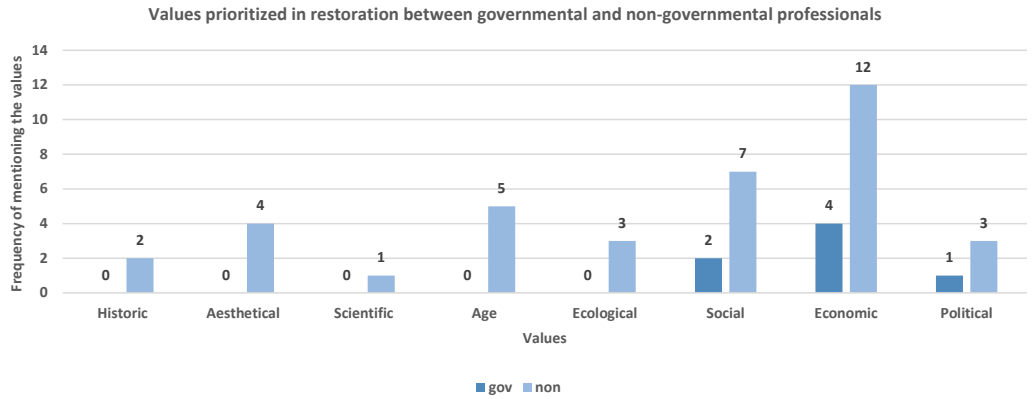

FIG. 3.6 Values prioritized in restoration between governmental and non-governmental professionals

From the stakeholders' perspective, in defining "restoration", both the professionals from the governmental and non-governmental agencies highlighted the importance of the role of economic values. However, while the government professionals concentrated on the three specific values – economic, social, and political values, the non-governmental professionals referenced all the values, highlighting social, age and aesthetical values (see FIG. 3.6).

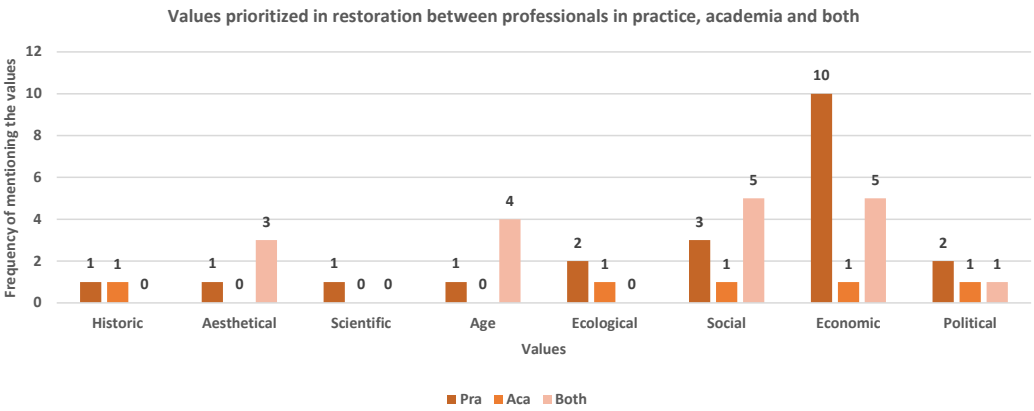

FIG. 3.7 Values prioritized in restoration between professionals in practice, academia and both.

In defining “restoration,” with all the referenced values, professionals in practice particularly highlight the role of economic values. With similar preferences for economic values as in practice, professionals from both backgrounds also ranked social values as the first, followed by age and aesthetic values. In contrast, professionals in academia referenced multiple values more evenly, without mentioning aesthetic, scientific, and age values (see FIG. 3.7).

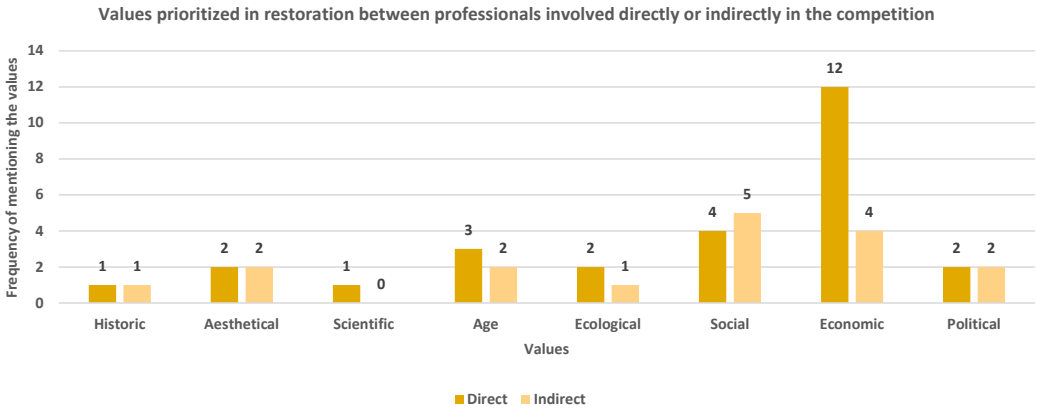

FIG. 3.8 Values prioritized in restoration between those involved directly or indirectly in the competition.

The results show that the professionals who were directly involved in the competition highly prioritized economic values when defining “restoration”. They also considered other values, such as social and age values, but to a lesser extent. On the other hand, professionals with indirect relationships to the competition referenced social values as the primary priority and economic values as secondary. Interestingly, social values were the only values that the professionals directly involved in the competition referenced less frequently than the indirect ones (see FIG. 3.8).

“Revitalization (C26)”

With limited information identified, “revitalization” was only mentioned in relation to social values in one of the non-governmental professional’s interviews. He defined it as “returning the building to vitality” with the purpose of adding a “social dimension”. In a sense, social values were a critical aspect of distinguishing “revitalization” from other concepts, such as “adaptive reuse”, “rehabilitation”, and “retrofitting”.

TOC

3.2.3.2 Economic values as the leading values: Conservation (C2) and Adaptive Reuse (C4)

"Conservation (C2)"

When defining "conservation," the majority of the interviewees (seventeen) referenced multiple values. Particularly, four interviews (20%) addressed "conservation" in relation to all values, stating that it is a broader concept encompassing others. When defining "conservation," the role of economic, historic, and social values were prioritized, while scientific, ecological, and age values were mentioned less frequently.

Economic value was the most commonly referenced value in defining "conservation" and was mentioned by the majority of the interviewees (fourteen). Many interviewees emphasized the influence of land scarcity on thinking "economically" in conservation. One interviewee, a non-governmental professional (P10), further explained that this issue has caused land in Singapore to become highly costly, as it is nationally reserved. He stated, "For every plot that cannot be built up to its full potential, that means the conserved building, the state loses financially. Therefore, conservation in Singapore is very much governed by financial and commercial factors, including how buildings are decided to be kept."

Additionally, several interviewees mentioned that the public had a general fear that when buildings were listed under conservation, they would no longer have the freedom to change the functions or physical aspects of the buildings. To address this, the government implemented a policy to encourage the public to conserve their buildings. Under this policy, when buildings are listed as conserved buildings, the owners receive additional Ground Floor Area (GFA) as compensation. As a result, when the public hears the term "conservation," their first impression is that more Ground Floor Area (GFA) will be added to their plot. One non-government professional (P20), who referenced economic values most frequently (twelve times), explained, "URA sees conservation of heritage not only as an asset but also as an opportunity to support economic growth. That's why conservation is considered less strict, because it allows additional GFA (Ground Floor Area) on the conserved building."

Ranked as the second most referenced value in defining "conservation," the historic values were referenced more evenly among several interviewees (eleven). Notably, one of the interviewees, a non-governmental professional (P10), addressed again the influence of land scarcity; anything that has been deemed to have historic values and is to be kept must possess a "singular distinction." When discussing the case

of NGS, many non-governmental professionals, primarily competition participants, mentioned the "historic interior space" and "historical events" that occurred in these two monuments, specifically those related to their former prime minister, Lee Kuan Yew, who led the country to independence. The non-governmental professionals and participants (P2 and P17) also emphasized the historical significance of the interior spaces, such as the courtrooms, the judges, and the library. The Surrender Chamber, where "historic events" - referring to Lee Kuan Yew's surrender - took place, was particularly highlighted.

Ranked as the third most popular value in defining "conservation," the role of social values is emphasized by both government and non-government professionals. One non-governmental professional (P10) mentioned that "conservation is about managing change" and that "change is inevitable for the long-term sustenance of historic buildings and landscapes," especially for them to remain "socially relevant" and "culturally engaging." In alignment with this, other government professionals (P9 and P16) also addressed the importance of conserving the "social significance" of buildings, even if they were not architectural gems but instead "served a cultural purpose that was so big that it doesn't matter if it's a tiny little building." Furthermore, they stated that "The conservation of the physical is like the stage for the social to happen."

However, few interviewees addressed the evolution of the values. Specifically, they emphasized that the role of social values was not established in the initial stages of the development of conservation history in Singapore. One government professional (P19) indicated that at the inception of the conservation theory, which took shape in the 1980s, it was primarily driven by "architectural, art-historical, and urbanistic values" focused on monuments in the city center from an urban perspective. From around 2003 onwards, the focus shifted to buildings such as "ensembles in the suburbs" that fulfilled the "social and cultural aspirations of the citizens" and contributed to the "identity of the community". Therefore, he pointed out that there has been a shift in values, with conservation in Singapore "moving away from high-level national cultural or historical values to consider social values."

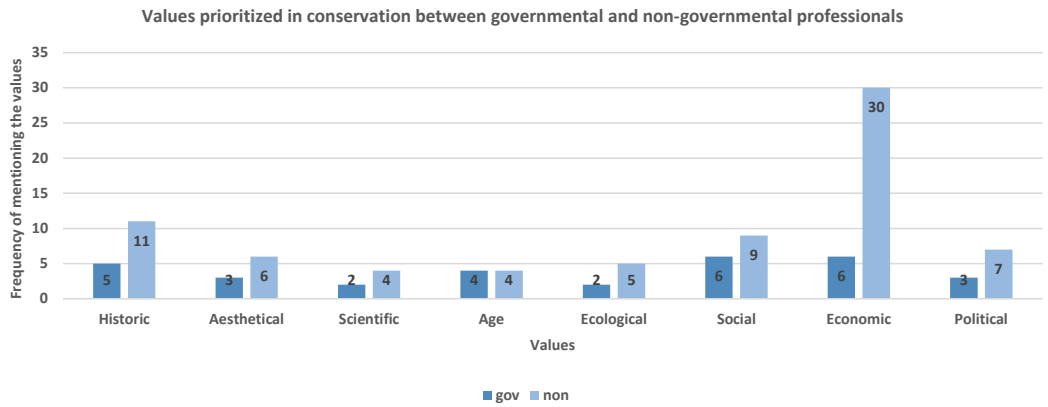

FIG. 3.9 Values prioritized in conservation between governmental and non-governmental professionals

From the stakeholders' perspective, in defining "conservation," both the governmental and non-governmental professionals prioritized the influential role of economic values. Notably, when compared to the high concentration on referencing economic values from the non-governmental professionals, governmental professionals referenced multiple values more evenly, ranking social and economic values as common leading values. This shows that even though the governmental professionals mentioned a shift towards social values, the non-governmental professionals considered economic values to be decisively influential in conservation (see FIG. 3.9).

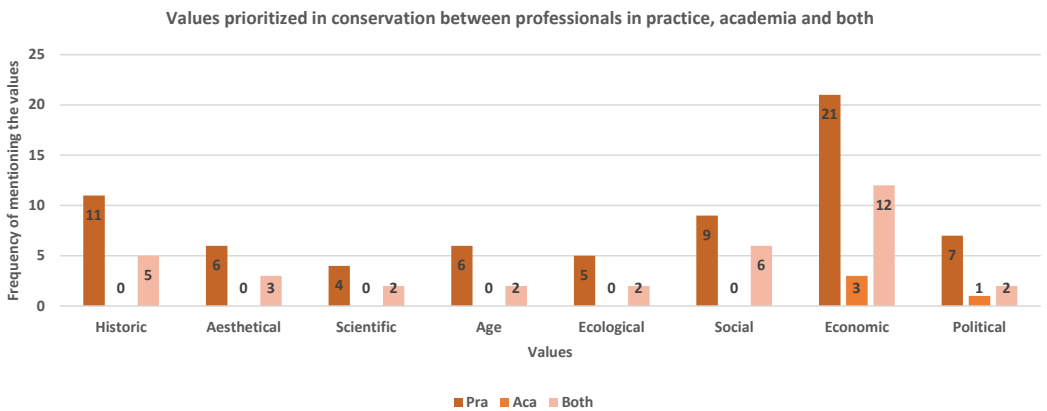

FIG. 3.10 Values prioritized in conservation between professionals in practice, academia and both.

TOC

When defining “conservation” among professionals from practice, academia, and both, the results showed that professionals from practice and both backgrounds referenced all the values, while professionals from academia only referenced economic and political values. It is worth noting that all stakeholders highlighted the role of economic values in defining “conservation.” However, there was a discrepancy in the hierarchy of values referenced by different stakeholders. Among the professionals in practice, historic values are ranked higher than social values, while professionals from both backgrounds ranked social as the second and historic as the third. Additionally, aesthetic and age values were given relatively higher rankings by professionals from both backgrounds (see FIG. 3.10).

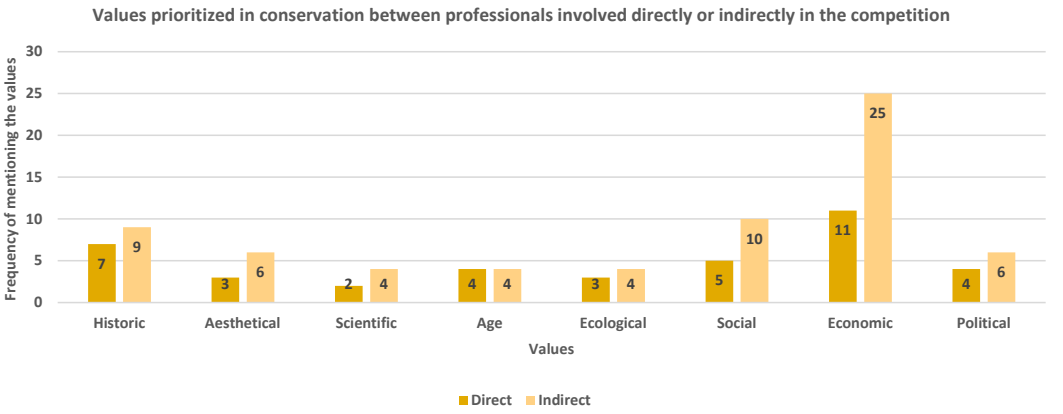

FIG. 3.11 Values prioritized in conservation between those involved directly or indirectly in the competition.

From the stakeholders’ perspective, both professionals involved directly or indirectly in the competition prioritize the influential role of economic values in defining “conservation”. It is worth noting that professionals with indirect relationships tend to reference economic, social, and historic values more frequently compared to those with direct relationships. Only when referencing age values do both the direct and indirect professionals agree on its importance in defining “conservation” (see FIG. 3.11).

TOC

“Adaptive Reuse (C4)”

Overall, all the interviewees referenced various values when defining “adaptive reuse”. Among these, economic values were ranked as the most important, followed by social values, and then age.

Over half (eleven) of the interviewees emphasized the significance of economic values in defining ‘adaptive reuse’, noting that Singaporean society has a pragmatic approach towards business. The interviewees described economic values from multiple perspectives, addressing issues such as material selection in response to resource scarcity and the strategic planning of museum programs to generate more income in the future. A non-governmental professional and participant (P2) mentioned that economic values were given high consideration during the competition stage based on the requests from the organizer, such as reimagining seemingly useless corridors for rental purposes and ensuring quality spaces for retail. In alignment with this practical approach, one non-governmental professional with both academic and practical experience, who is involved in the competition as an organizer (P7), provided an example of economic values being prioritized over aesthetic values. An example was given regarding the selection of lighting sources in a Chinese temple, where fiber optics were deemed aesthetically superior but too expensive. Therefore LEDs were chosen instead.

Several (five) interviewees were identified as referencing social values, such as “being appreciated or beloved by the neighbors or communities”, “serving educational purposes”, and “addressing daily needs.” In the case of the National Gallery Singapore’s “adaptive reuse,” a governmental professional and organizer (P9) emphasized that NGS is different from other adaptive reuse projects because it takes social considerations into account. She clarified that it is not simply about “putting an economic value” on the project, like cathedrals and churches that are simply refurbished for continued use. Instead, NGS focuses on “presenting the building’s history to the public before construction,” “cultivating the next generation of art lovers,” and “educating people not to discard buildings and objects.” In contrast, interviewees acknowledged the existence of social values but commented that “adaptive reuse” projects in Singapore often neglect these considerations. Specifically, a non-governmental professional from academia (P4) highlighted the absence of social aspects in the definition of “adaptive reuse”, with more emphasis placed on economic and aesthetic values. He mentioned that many designers view “adaptive reuse” as merely making things visually pleasing and evoking nostalgia, but they fail to consider the surrounding context and address the everyday needs of the community. This lack of emphasis on social aspects can lead to challenges such as gentrification or a loss of the sense of place. Furthermore, there is a need to further define the concept of social value within the Singaporean context, potentially including considerations of accessibility.

Besides the economic and social values, age values were also emphasized among the interviewees in defining “adaptive reuse.” The majority of the interviewees agreed that adaptive reuse usually focuses on non-exceptional buildings that do not hold significant historical value, unlike national monuments. However, with some ages. Many interviewees stated that “adaptive reuse” is often associated with old shophouses or old schools which were built in the past and were no longer used for their original functions, now used as cafes or as studios. Notably, one non-governmental professional and participant (P15) explained using an example in Japan. However, even though the age values are emphasized, such as the “old values of the existing facades,” it is treated while adaptive-reused, as they made it “cleaned and made nicer.”

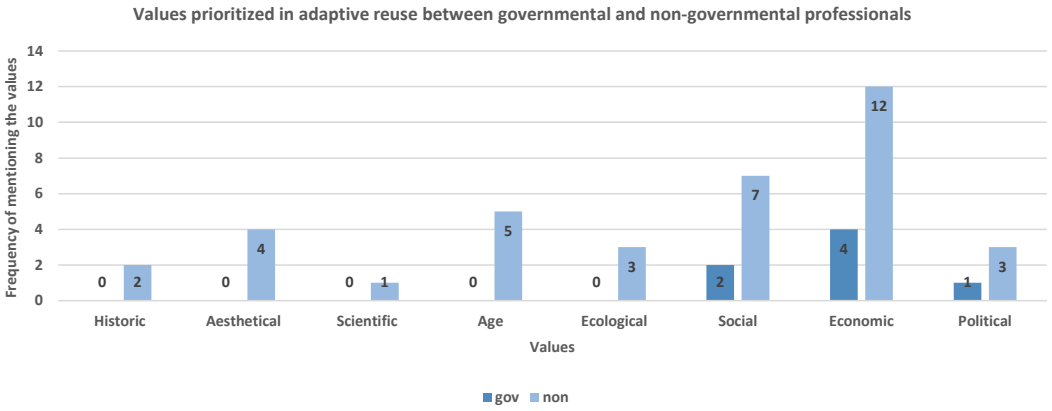

FIG. 3.12 Values prioritized in adaptive reuse between governmental and non-governmental professionals

From the perspective of stakeholders, while non-governmental professionals referenced all cultural values, governmental professionals mentioned only three values: economic, social, and political. Both stakeholders agreed on the role of economic and social values as leading values in defining “adaptive reuse”. However, governmental professionals were also identified as prioritizing political values, while non-governmental professionals focused on age and aesthetical values (see FIG. 3.12).

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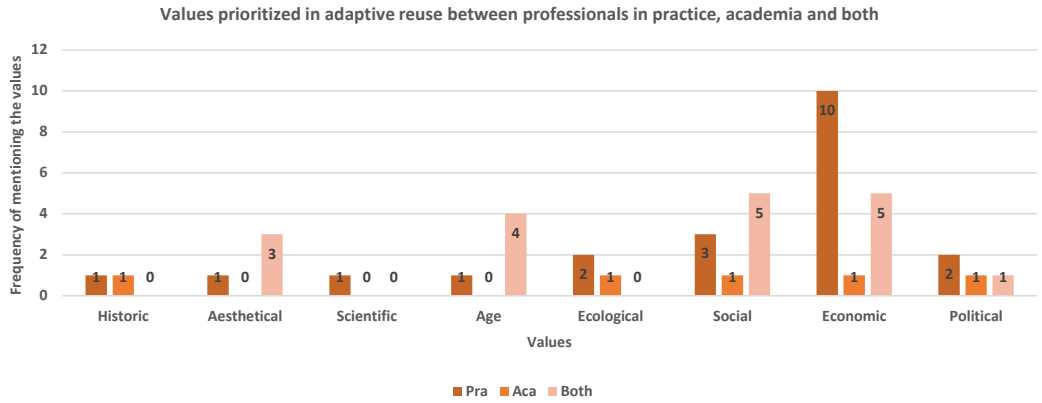

FIG. 3.13 Values prioritized in adaptive reuse between professionals in practice, academia and both.

When comparing the prioritized values of professionals from practice, academia, or both, economic values were identified as the primary values among all stakeholders, especially those from the practice. Notably, only stakeholders from the practice mentioned all of the values. Stakeholders from academia and both fields mentioned five values simultaneously; however, scientific values were omitted and only mentioned by stakeholders in practice. In addition to economic values, stakeholders from academia and both backgrounds also highlighted the significance of social values (see FIG. 3.13).

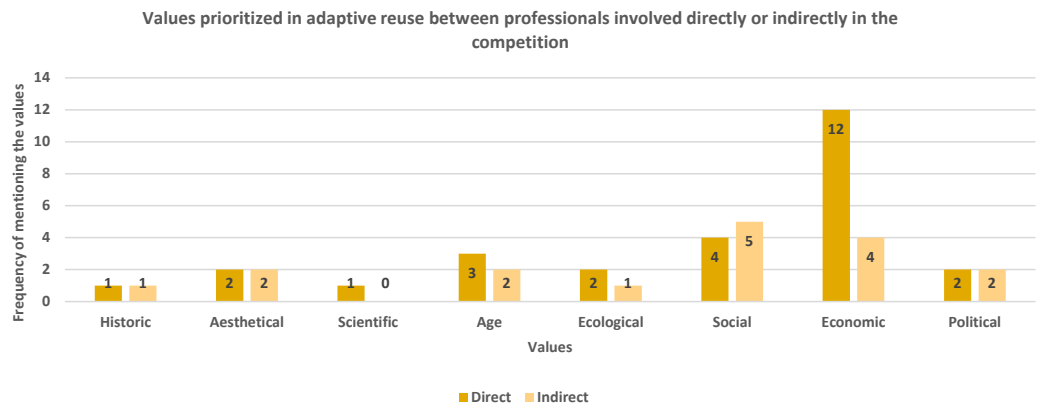

FIG. 3.14 Values prioritized in adaptive reuse between those involved directly or indirectly in the competition.

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When comparing the stakeholders who had direct or indirect relationships with the competition, the direct stakeholders placed a high priority on economic values, followed by social and age values. Meanwhile, the indirect stakeholders emphasized social values as their top priority, followed by economic, aesthetical, age, and political values. It is worth noting that all of these values were mentioned by the stakeholders with direct relationships (see FIG. 3.14).

3.2.3.3 Political values as the leading values: Preservation

"Preservation (C1)"

When discussing the concept of 'preservation', all values, except scientific and ecological values, were referenced. The interviewees referenced political values the most, followed by historic and social values as the second, and economic values as the third.

During the interviews, nine out of twenty interviewees were identified with values-related content in defining "preservation". As five out of nine interviewees mentioned, political values were frequently mentioned in explaining "preservation". However, political values were often identified with other values, such as historic and social values. Take one of the interviews with governmental professionals (P19) as an example. When mentioning the "preservation" of the two monuments of NGS, contents such as "national symbolic values" were included. These values encompassed the historical year of "1959 when the Legislative assemblies celebrated their first triumph in the move towards an independent Singapore", as well as "milestone events that took place and were witnessed by people", and "significant space related to the former prime minister Lee Kuan Yew".

Another example was the interview with a government professional (P16), which also mentioned political values the most, along with social values. This was because she explained the definition in two aspects. Firstly, due to the law, which has been discussed in the previous sections, "preservation" is linked to national monuments, and therefore, those values were connected to national identity and significance. Secondly, it relates to local identity. She mentioned that the agency was initially called the Preservation of Monument Board (PMB), which was formed by a specific group of individuals who were considered political or social representatives. These representatives came from "different races" and were involved in the selection of the buildings. Thus, the building list also represented the various races. However, since Singapore has become more "cosmopolitan" and has seen an increase in

migrants, the government recognized the importance of forming a local identity. Consequently, the process and composition of the committees responsible for listing the preserved monuments have changed from elites to community leaders with diverse cultural backgrounds.

Although mentioning multiple aforementioned values, a few interviewees had slightly different opinions on their rankings. They considered "preservation" as more often influenced by economic values and ignored social values. One of the non-governmental professionals (P20), for example, further mentioned that the criteria for listing the monument for preservation are important to follow the so-called "Singapore stories narratives" and to support it, the government needed "tangible illustrations". Especially, due to the land scarcity, no matter the private developer or the government all wanted to yield "maximum return and profit" from the land. But they don't really look into the "social preservation of conservation."

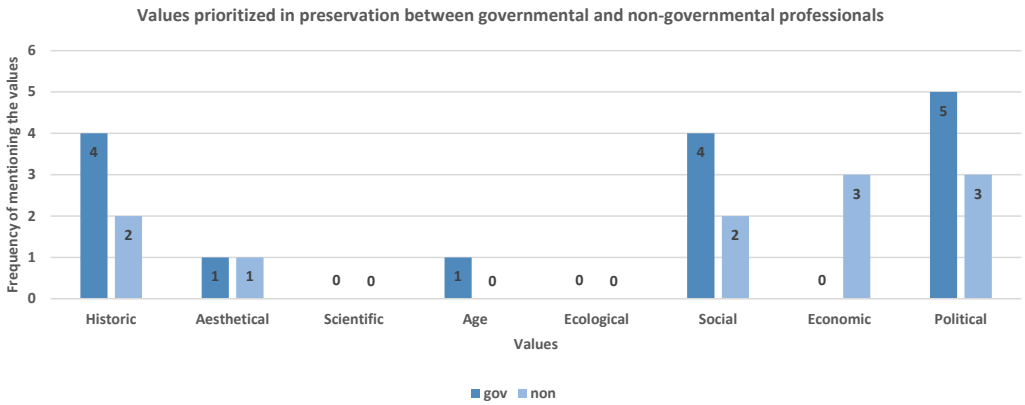

FIG. 3.15 Values prioritized in preservation between governmental and non-governmental professionals.

Overall, when comparing the perspectives of stakeholders in defining "preservation", there were differences in the ranking and value hierarchies between governmental and non-governmental professionals. While governmental professionals emphasized political, social, and historic values as the common leading values, non-governmental professionals ranked economic and political values as the first common-leading values, and historic and social values as the second common-leading values. From the non-governmental professionals' perspectives, economic values were seen as commonly important as political values; however, they were not referenced by governmental professionals. Notably, neither group of stakeholders mentioned both scientific and ecological values. (see FIG. 3.15).

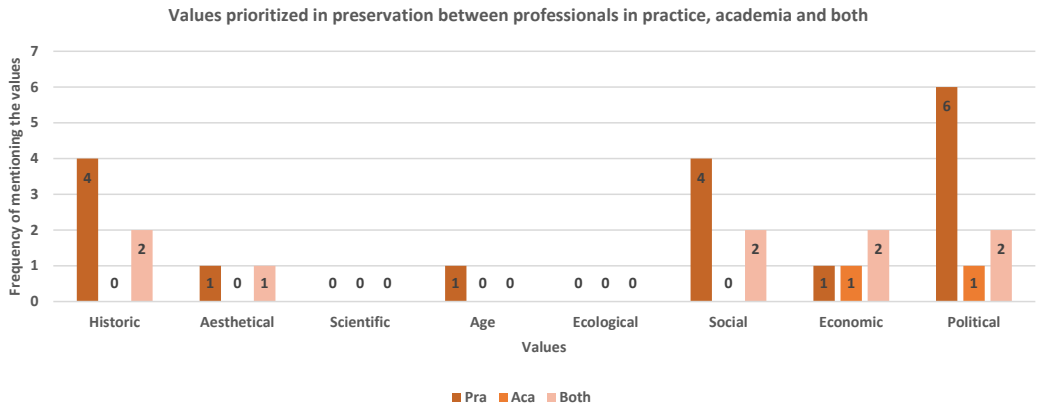

FIG. 3.16 Values prioritized in preservation between professionals in practice, academia and both.

With more fluctuated frequencies in ranking values, professionals in practice prioritized political values as the first, followed by social and historic values as the second, and aesthetical, age, and economic values as the third. While more well-distributed values preferences were identified in professionals from both fields, with historic, social, economic and political values ranked as the first common-leading values. Meanwhile, professionals from academia were identified with the least values referencing and only with economic and political values (see FIG. 3.16).

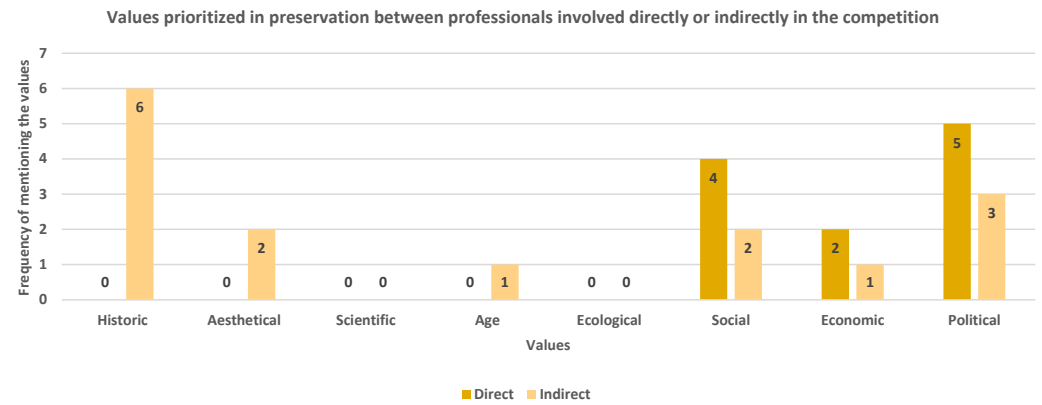

FIG. 3.17 Values prioritized in preservation between those involved directly or indirectly in the competition.

TOC

Different preferences for referencing the values were identified among professionals with direct and indirect relationships with the competition. With more concentration on specific values, direct stakeholders ranked political values as first, followed by social values in second place, and economic values in third. On the contrary, professionals who were indirectly involved in the competition had more diversity in referencing the values, and highlighted the role of history as the most influential, followed by political, social, and aesthetic values (see FIG. 3.17).

3.2.3.4 Common leading values as the leading values: Reconstruction

"Reconstruction" was only identified in a conversation with one of the non-governmental professionals (P7) who was involved in the competition. In this conversation, he addressed the absence of the role of historic and aesthetic values in defining this concept, while relating it to concepts like "replication". Contents such as "historical" and "architectural significant" relating to "Corinthian columns or footings", "geometry", and "physical memory" were mentioned.

3.2.4 Discussion

This part of the research findings can be used as a basis for discussion. The points can be listed as follows:
Different values are prioritized when distinguishing between concepts. When it comes to the project scale, interviewees tend to define the concepts by associating values with specific attributes of the building and environment. Most of the interviewees assign values to the entire project rather than the intervention concepts. The results indicate that, in the context of Singapore, political, historic, and social values are prioritized in "preservation", while scientific and ecological values are not considered. This is likely because interviewees tend to associate this concept with national monuments. Although this is partly influenced by the dual law system mentioned in previous chapters, the results also demonstrate a close relationship between the values and the heritage itself. Specifically, when defining values, the concept of "preservation" is related to the events and historical figures associated with the establishment of the nation. It is worth noting that historic values, which are typically referenced in traditional narratives in the conservation field, are only prioritized in the context of "preservation". In some instances, interviewees seem to reference very few values. For example, when defining "conservation", they see it as a concept that does not specifically target a few values, but rather encompasses

all values depending on the context. A minority of interviewees did not mention any value-related content, as they focused on other aspects, such as actions and attributes, during the definition process.

A broader mindset of economic values – the economically sustainable approach – occupies a higher hierarchy that influences the definition of concepts in Singapore. According to the findings, most interviewees highlighted the role of economic values in "conservation" and "adaptive reuse," noting that Singaporean society is driven by business and has a practical attitude. As the sound slogan "no money, no honey" in the conservation field implies, economic values are required and implemented at different levels in order to make things work. Interviewees described economic values from various perspectives and scales, including material selection due to resource scarcity and the approach to economic sustainability in development. In more detail, this economic sustainability approach is implemented on three levels: national reserved land, developer approach, and financial viability design. In other words, the conservation approach in Singapore is largely driven by practicality. As a country with limited land resources, the definition of these concepts goes beyond mere terminology. When heritage becomes a "problem" that hinders land development, economic values are at risk of being lost. Different opinions among interviewees also explain that economic values act as a double-sided coin. The results confirmed that the majority of the interviewees aligned with this perspective, while some of them criticized that the overriding of economic values is ruining the heritage.

A possible shift in values is influencing the definition of the concepts. In the example of "preservation", some interviewees pointed out that "preservation" is still driven by political and economic factors, lacking social perspectives, and can only focus on physical or tangible preservation. However, a governmental professional mentioned that there might be a change in the balance between political and social values. This would be followed by a reformation of the administrative system and the approach to heritage listing, as well as a shift from relying on the opinions of elites or experts to involving collective efforts from the general public and local communities. Some interviewees claimed that there is indeed a shift in values, especially demonstrated by the successful project of the National Gallery Singapore. In this case, society has shifted its focus from solely political or economic values to include social and ecological values. However, a minority of the interviewees argued that as long as the land-development system remains unchanged, the economic approach will still be prioritized in Singapore, regardless of whether it is seen as positive or negative.

Certain cultural values have been identified as having controversial roles, particularly social values. Conflicts of values have also been found during the "restoration" process, including age values and social values. Although age seems to play a critical role in relation to "restoration," social values often take precedence. Social value has become a controversial factor in defining "restoration" and even contradicts its principles. In practice, during the restoration process, age values struggle to survive due to the requirements of combustible materials, which are influenced by social value. When some interviewees mention that "buildings have to evolve," we can interpret it in a positive way: in Singapore, continuity is considered more important than authenticity. However, in a negative interpretation, these statements could be seen as mere excuses and could ultimately lead to the demolition of other heritage values.

Moreover, as one of the questions raised by the interviewee, is "what are the social values in Singapore?" This shows that there is a need to define the values within the local context. According to the findings of this part of the research, in Singapore, social and political values are closely intertwined, as the government plays a role in deciding the conservation area or the preservation of religious heritage in order to maintain ethnic balance and a stable society in terms of politics and economics. This further emphasizes the importance of considering and evaluating value judgments within their respective cultural contexts, as stated in the Nara Document (ICOMOS, 1994). Therefore, even though the theoretical frameworks of cultural values (Pereira Roders, 2007) were deemed more comprehensive in terms of providing categories and definitions compared to others, their validity may need to be justified. Nevertheless, these frameworks can serve as a common foundation to assist local contexts in adapting and developing their own values and attributes framework.

Last but not least, from a methodological perspective, initially, the main goal was to gather a wider range of international experiences and perspectives from professionals with diverse cultural backgrounds and from different countries, all working on the same project. However, due to the low response rate to the survey, the research had to modify its methodology and instead conduct interviews with targeted stakeholders who had participated in the NGS competition. While in Singapore, some interviewees were referred by local stakeholders through a snowball process. As a result, the participating stakeholders had a more localized focus but were still closely connected to the project itself.

3.2.5 Conclusion

Multiple value preferences were identified in “conservation”, “preservation”, “restoration” and “adaptive reuse”. In general, a broader mindset of economic values – the economically sustainable approach – occupies a higher hierarchy that influences the definition of concepts, particularly in “conservation” and “adaptive reuse”. However, this approach has raised a debate about whether Singapore’s conservation approach is based on practicality or sometimes compromises too much and questions the “best conservation practice”. Certain values were also found to have more specific roles when attached to the building scale, such as social values, acting in contradictory roles to others.

Nevertheless, values are fluid and change over time and in different contexts. Learning from this case study, this research identified a possible shift in values influencing the definition of the concepts. Certain concepts such as “preservation”, and its relationship with values, in this case, are shifting from solely political or economic values to include social and ecological values. According to the interviews, this was followed by a reformation of the administrative system and the approach to heritage listing, as well as a shift from relying on the opinions of elites or experts to involving collective efforts from the general public and local communities.

This part of the research has found the possibility of supporting the definition process from a value aspect. Future research is suggested to further reveal the different notions of value categorization within a specific context that evolves over time, such as exploring social values in Singapore. As English is only one of the four official languages of Singapore, other languages such as Chinese, Tamil, and Malay are suggested for research from the perspective of values in different language contexts, targeting their relationships with cultural values of diverse heritage types.

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3.3 The Role of Attributes Defining Interventions in NGS

ABSTRACT Attributes and cultural significance play a crucial role in defining and decision-making regarding intervention concepts on built heritage. Interventions aim to prolong the lifespan of the built heritage while ensuring that its attributes can be continually maintained by future generations. However, the relationship between these aspects has seldom been discussed, from a theoretical to project level. This part of the research analyzed a dataset by conducting semi-structured interviews with 20 professionals who were directly or indirectly involved in the international architectural competition of the National Gallery Singapore (hereinafter NGS). In order to understand how the role of attributes played in defining the concepts in the selected project, a series of questions were asked during the interviews: What are the attributes in defining the intervention concepts, such as 'conservation', 'preservation', 'restoration', and 'adaptive reuse'? And how are these intervention concepts used and implemented in the competition of the National Gallery Singapore (NGS)?

Three main findings are presented in this chapter. First, tangible attributes are highlighted in reference to "conservation" and "restoration", whereas intangible attributes are emphasized in reference to "preservation" and "adaptive reuse". Particularly, the attribute category - "use and functions" has been mentioned in all the selected concepts, from multiple perspectives and scales. In the Singapore context, while "preservation" and "restoration" are referenced to "events", "activities", and "functions" within the building scales, in "conservation" and "adaptive reuse", "use and functions" are related to a broader "tropical mindset" that relates to multiple physical attributes in hierarchical manners, from "setting" and "form" to interior 'fixture and fittings'. Second, attributes were found to have contradictory roles in defining the interventions. For example, "surface" relating to "restoration"; "previous use", "new use" and "safe use" posed challenges to the implementation of "adaptive reuse". Third, the role of attributes shifts in influencing the intervention concepts either during different building life-span stages or across disciplines. In the case of NGS, the attributes and recognition of cultural significance changed between two specific guidelines, from "preserving all" in the Preservation Guideline to "preserving the necessary" in the Supplementary Guideline of the competition.

KEYWORDS Interventions, Intervention Concepts, Cultural Attributes, Cultural Significance, Built heritage, National Gallery Singapore, International Architectural Competition, Conservation, Preservation, Restoration, Adaptive Reuse, Interview, Stakeholders

3.3.1 Introduction

3.3.1.1 Problem field and research focus

To ensure that the cultural significance conveyed by society to built heritage will be continued by future generations, architectural interventions play a pivotal role in decision-making on the management of built heritage. They serve to extend the lifespan of these listed buildings. In supporting the management of built heritage worldwide, since the Venice Charter, international organizations and institutions such as UNESCO and ICOMOS have adopted doctrinal documents that stimulate best practices. These documents play a crucial role by providing statements, principles, and guidelines for the conservation and management of places of cultural significance, thereby establishing a professional ethics role in guiding the conduct of heritage conservation practice (Taylor, 2004; Lin et al., 2023a). Over the past few decades, these international doctrinal documents have defined intervention concepts with different levels, scales, and activities (ICOMOS Canada, 1983). Moreover, relative degrees of values and cultural significance may lead to different conservation actions in a place (Burra Charter, 2013). However, the definitions and categories of intervention concepts often vary between documents and organizations, causing misalignment and omissions (Lin et al., 2023). And the relationship between cultural significance and the intervention concepts has seldom been discussed thoroughly together from theory to a project level.

In the context of this research, cultural significance is decoded through the conveyed values (Pereira Roders, 2007) and attributes (Veldpaus, 2015). Values justify why heritage is listed, and the attributes characterize the resources (tangible and intangible) that convey such values (Veldpaus & Roders, 2013). Unlike values, attributes follow “a more hierarchical pattern of inclusion and overlap, while the values exist in parallel to each other, although they are usually ranked in importance when compared to each other, to support decision-making” (Veldpaus, 2015). Growing research has highlighted the key role of attributes of cultural significance in the processes of decision-making in heritage planning and management (De la Torre, 2002; Throsby, 2002; Worthing & Bond, 2008; Junyong et al., 2008; Teutonico, 2019; Avrami et al., 2019; Havinga et al., 2020; Olimpio et al., 2021;

西和彦 et al., 2021; Spoormans, L. 2023), theorizing the relation between intervention concepts on built heritage, e.g. conservation, restoration, reconstruction, adaptation (Henket, 1998; Pereira Roders, 2007; Douglas, 2006; Shahi, et al., 2020).

Recently, the influence of attributes in defining intervention concepts between international doctrinal documents has been systematically researched, focusing on international doctrinal documents over time and place (Lin et al., 2023b). This finding has been discussed in Chapter 3.2. The results confirmed and emphasized the tangible-centric nature of intervention concepts (Ruggles & Silverman, 2009) within international doctrinal documents concerning built heritage, highlighting the need for increased attention to intangible attributes. While the role of values brings a dynamic relationship, the role of attributes triggers intervention concepts in hierarchical patterns (Lin et al., 2023b). This implies that a single intervention concept would impact multiple building layers, from the setting to the fixtures and fittings of the interior, and from the relation to use.

Based on the theoretical level results obtained from the previous chapter, this chapter delves into the discussion on how the intervention concepts are translated from theory and implemented in a project, particularly through the lens of cultural attributes. What are the cultural significance interventions prioritized at the local project level within the Singapore context? What trends emerge in comprehending best practices concerning interventions through the lens of cultural significance and attributes at the local project level?

3.3.1.2 Concepts in the Singapore context

As the intervention concepts and their referenced documents have been introduced in Singapore, this part of the research will focus on the attributes' perspectives in influencing the definition process in the Singaporean context. According to the literature review, scholars who have worked on Singaporean research have been actively working to define various concepts. For instance, a survey was conducted to gain insights into how Singapore citizens perceive the concept of "conservation" (Kong and Yeoh, 1994). This research referred to the definitions from scholars such as Fowler (1987) and Lowenthal (1985). The former addressed that "conservation" was conceived as "wide-ranging," "positive," and "dynamic," in contrast to "preservation," which was seen as "transcending the old" and having a "narrower" meaning. The latter mentioned that "conservation is part of the process of change," involving "reshaping, improving, modernizing, and fabricating the past according to

present-day expectations" (Kong and Yeoh, 1994: p.7). Specifically, in the context of Singapore, Burke (1976) pointed out that the distinction between "preservation" and "conservation" has sometimes been used to describe individual buildings and areas as holistic entities. Although this survey did not target the relationships between attributes and intervention concepts, certain attributes were highlighted in defining "conservation," such as conserved "buildings and areas" and "ethnic areas," aspects of "material form," "intangible traditions," "collective memory," "physical and community fabrics," "alternative uses," "modern lifestyles," and "activities." Additionally, "conservation" also implies "improvement" and "enhancement"; however, in the survey, the overriding commercial intent has been addressed.

Moreover, another piece of research discusses the recently emerged concept of "adaptive reuse" in Singapore and two other international cities in Asia (DiStefano, 2021: p.1). In this research, "adaptive reuse" is compared with "repurposing," "revitalization," and "rehabilitation" in terms of attributes such as "new use," "continuous use," "similar use," "original use," and "the most recent use." DiStefano explains that "adaptive reuse is understood to mean adapting or changing a place for a new use" (*Ibid*, p.3). It is also defined as a concept that implies both a change of use and a change to the fabric of a place. Additionally, this research highlights an "inverse relationship" (*Ibid*, p.4) between the level of change and the level of architectural values. When there are high architectural values on the site, the level of change to the building fabric is expected to be carefully controlled, while when the architectural values are low, the building can undergo greater change. Moreover, the research mentions some debates, such as the reference to social values when suggesting a "similar use". Buildings can be preserved and activated with economic and social values even if there is a risk of losing their architectural, historical, or contextual values. Furthermore, this research emphasizes the importance of making informed decisions about what and why to build. Additionally, the National Gallery Singapore is chosen as an example of best practices in "adaptive reuse" in Asia.

Besides the literature mentioned above, there is a lack of research that systematically defines specific intervention concepts based on attributes and their relationships, particularly on a local project scale. Therefore, a case study has been selected to enhance our understanding of how attributes and interventions are implemented within the context of a project.

3.3.1.3 The case study

The competition of the National Gallery Singapore has been selected as the case study for this research. The main aim of the competition was to convert the two national monuments of Singapore – the former Supreme Court and former City Hall – into the National Gallery Singapore (hereinafter NGS). For a detailed description of NGS, the selection process, and its related critical documents, including cultural attributes narratives, please refer to the Introduction of this thesis, Chapter 1.1.3.2, and the previous Chapter 3.1.1.3.

3.3.2 Research Methodology

The datasets of this part of the research focus on the stakeholders who participated in the competition, specifically on how they define intervention concepts from a cultural attributes aspect. This chapter includes data collected from twenty interviews, which were mostly conducted during a visit to Singapore between January and March 2023. The interviews used semi-structured questions and a qualitative analysis approach with the stakeholders involved in a selected case study – the International Architectural Competition of the National Gallery Singapore. The main objective is to reveal and compare the intervention concepts and their definitions in relation to attributes at a project level. The intensity of the relationship between intervention concepts and attributes is determined based on the frequency of mentioned attributes per intervention. For more detailed information on the interview process and the selection of the interviewees, please refer to the Introduction of this thesis (Chapter 1.3.3.5). The method included three steps:

First, the author extracted the quotes that referenced intervention concepts and attributes, including contents that implied their explanations, interpretations, and definitions from the interviews.

Second, the extracted quotes were structured and classified in pre-coding according to the theoretical framework on attributes of built heritage (see TABLE 1.4. and TABLE 1.5. in Chapter 1.3.3.2.).

Third, the analysis and comparison of the structured data aim to reveal (1) the frequency of mentioning the attributes within the 20 interviews and (2) the relationships between attributes and the selected intervention concepts from different interviews.

Building upon insights from preceding chapters, which delineated three clusters of concepts – 'conservation', 'preservation', 'restoration' and 'adaptive reuse' – these were set as the preliminary contents for the interview questions. The interviews include the exploration of a series of pre-determined questions :

First Part: On the Definition of Intervention Concepts

(1) What is your definition of "conservation," "preservation," "restoration," and "adaptive Reuse"?

Second Part: Intervention Concepts Applied in the Competition

(2) How do you apply these concepts to the case of National Gallery Singapore, especially relating to which attributes or significant building parts of the NGS such as settings, location, form, style, surface, structure, material, fixture and fitting, use and function, craftsmanship and technology, design, management, process or relation? Could you give an example?

(3) Have you ever encountered any difficulties due to the conflict of applying these concepts?

3.3.3 Findings

TABLE 3.3 The overall distribution of the tangible and intangible attributes referenced by the interviewees when defining each concept. The abbreviation of the concepts: C1= Preservation, C2= Conservation, C3= Restoration, C4= Adaptive reuse, C21= Reconstruction.

Interviewee	Governmental/ Non-governmental	Practice/ Academia/ Both	Relation within competition	Tangible Attributes								Intangible Attributes					
				Setting	Location	Form	Style	Surface	Structure	Material	Fix & Fit	Use & Fun	Craf & Tech	Design	Manage	Process	Relation
P1	Gov	Pra	Direct	C2	C1	0	0	0	C2, C4	C4	C1	C1, C2, C4	0	0	C4	0	0
P2	Non	Pra	Direct	0	0	C1, C4	0	C1	C1, C4	C1	C3	C3, C4	C1, C3	0	C4	0	0
P3	Non	Aca	Indirect	C2	C2	0	0	C2	0	C2	0	C2, C4	0	C2	C2	0	C2

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TOC

TABLE 3.3 The overall distribution of the tangible and intangible attributes referenced by the interviewees when defining each concept. The abbreviation of the concepts: C1= Preservation, C2= Conservation, C3= Restoration, C4= Adaptive reuse, C21= Reconstruction.

Interviewee	Governmental/ Non-governmental	Practice/ Academia/ Both	Relation within competition	Tangible Attributes								Intangible Attributes					
				Setting	Location	Form	Style	Surface	Structure	Material	Fix & Fit	Use & Fun	Craf & Tech	Design	Manage	Process	Relation
P4	Non	Both	Indirect	C2	0	C2	0	C2	0	0	C2	C2, C4, C26	C4	0	C2	0	0
P5	Non	Pra	Direct	0	0	C2	C2	C2	0	C2	C2, C4	C1, C4	C4	0	C2	0	C4
P6	Non	Pra	Direct	0	0	C4	0	0	C4	C2, C4	C2	C4	0	C2, C4	0	0	0
P7	Non	Both	Direct	C4	C4	C2, C4	C4	0	C2	C4, C21	C3, 4	C4	C4	C4	C1, C2, C4	C4	C4
P8	Non	Pra	Direct	0	0	C2, C3	C3	C2	0	C1, 3	C4	C1, C2, C4	C3, 4	C3, 4	C1, C2	C4	C4
P9	Gov	Pra	Direct	0	0	0	0	0	0	0	0	C3, 4	0	0	0	0	0
P10	Non	Both	Indirect	C2, 4	C2	0	0	C2, C3, C4	C1, C4	C2, C3, C4	C2, 3, 4	C1, C2, C4	C1, C2, 4	C2	C2, C4	0	0
P11	Gov	Pra	Indirect	C4	C2	0	0	0	0	C1	0	C1, C2, C4	0	0	C4	0	0
P12	Non	Both	Indirect	0	0	0	0	0	C2	0	0	C1, C2, C4	0	C2	0	0	C1, C2, C4
P13	Non	Aca	Indirect	0	0	C4	0	C3	0	C3	0	C2, C4	C3	0	0	0	0
P14	Non	Both	Indirect	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P15	Non	Both	Direct	C1	C2	0	C1, 2, C3, 4	C1, C3	C1	C1, C2, C3	C1, C2, C3	C1, C4	0	C1, 2	0	0	C1
P16	Gov	Pra	Direct	0	0	0	0	C4	C1, C4	C4	0	C1, C2, C4	C4	0	C2	0	C2
P17	Non	Pra	Direct	0	C2	0	0	0	0	C2, C3	0	0	0	C3	C1, C2	0	0
P18	Non	Pra	Direct	0	0	C4	0	0	C4	0	C4	C4	0	0	0	0	0

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TABLE 3.3 The overall distribution of the tangible and intangible attributes referenced by the interviewees when defining each concept. The abbreviation of the concepts: C1= Preservation, C2= Conservation, C3= Restoration, C4= Adaptive reuse, C21= Reconstruction.

Interviewee	Governmental/ Non-governmental	Practice/ Academia/ Both	Relation within competition	Tangible Attributes								Intangible Attributes					
				Setting	Location	Form	Style	Surface	Structure	Material	Fix & Fit	Use & Fun	Craf & Tech	Design	Manage	Process	Relation
P19	Gov	Pra	Direct	C1, 2	0	C2	0	C4	C2	C1, C2	0	C1, C2, C4	C2, 3	C2	C1, C2, C3, C4	0	0
P20	Non	Pra	Indirect	C2	0	C4	0	C2	0	C3	C2	C1, C2, C3, C4	C2	C2	C2, C3	0	0

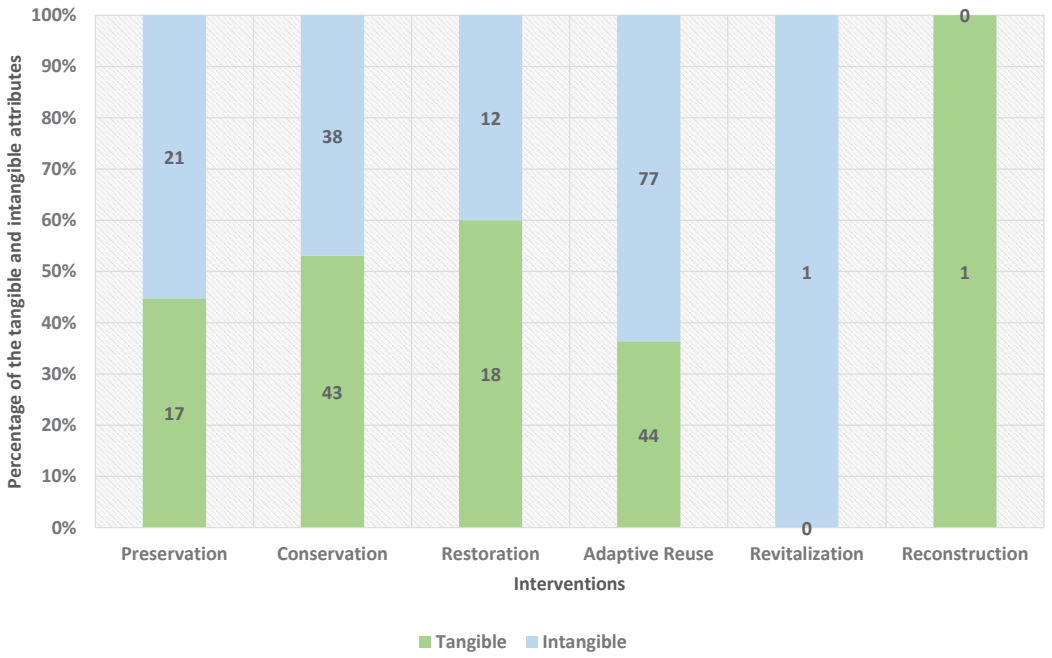

FIG. 3.18 The percentage of tangible and intangible attributes in each intervention.

TOC

Concerning the focus ranging between the tangible and intangible attributes, the results (see FIG. 3.18) revealed that “preservation” and “adaptive reuse” exhibited a predominant focus on intangible attributes. In particular, in “adaptive reuse”, the proportion of the intangible is twice as much as the tangible. This is due to the majority of the interviewees mentioning that the aim of “adaptive reuse” is not only to reuse the space but also to adapt to the changes in “use and functions”. Interestingly, “use and functions” is also emphasized when referencing ‘preservation’, because the interviewees defined ‘preservation’ as the strictest concept that preserves everything intact, including “use and functions”. Especially in the case of NGS, multiple interviewees highlighted that these two monuments were crucial national events that took place in relation to the Japanese surrender and Singapore’s independence.

Conversely, “conservation” (53%) and “restoration” (60%) primarily emphasize tangible attributes. “Craftsmanship and techniques” are highlighted when defining “restoration”, especially in relation to the “restoration” of the Shanghai Plaster on the façade of the two monuments.

“Restoration” refers to relatively fewer categories, such as “location”, “setting”, and “structure”, compared to the other three intervention concepts, which share a broader array of categories. However, “preservation” is mentioned without referring to “setting” during the definition process. This is due to the influence of the Preservation Monument Act, which particularly focuses on the scale of the monument building. Following the same logic, due to the conservation zone in the Planning Act, “conservation” includes references to “setting” and almost all other categories from both tangible and intangible perspectives. To provide a more comprehensive discussion on which attributes were prioritized in each intervention concept and by whom, sections from 3.3.3.1 to 3.3.3.6 were created to further support the discussions.

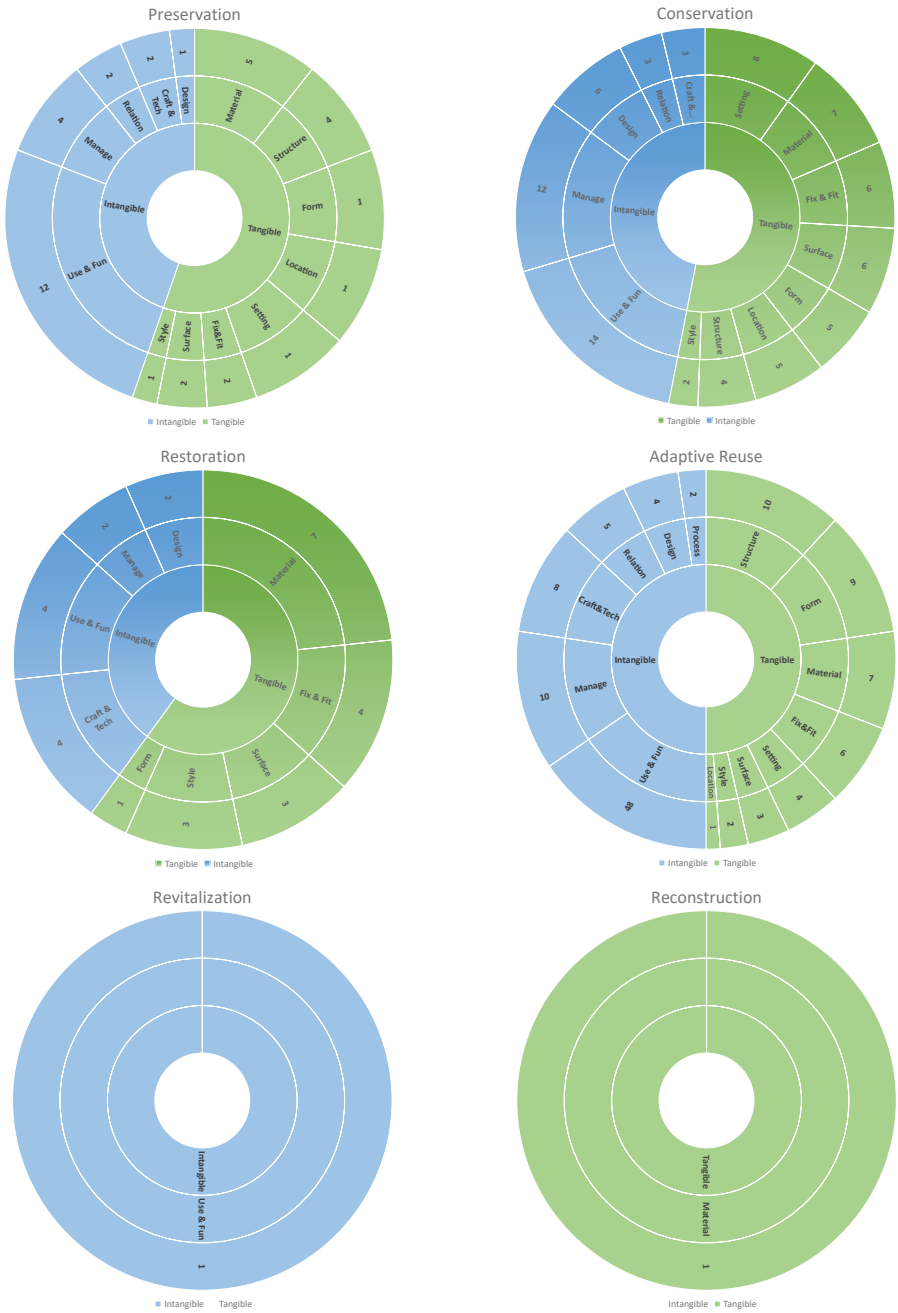

FIG. 3.19 The Six intervention concepts and their proportional references to the fourteen sub-categories(tangible and intangible). From the top left to right and to the bottom left to right: Preservation, Conservation, Restoration, Adaptive Reuse, Revitalization and Reconstruction.

TOC

3.3.3.1 Preservation

Although almost all of the interviewees mentioned “preservation” as the most restrained concept in retaining physical attributes, few went into detail about it. Nevertheless, when speaking of “preservation”, most of the interviewees highlighted the significant places in NGS, such as the “library”, “dome” in the former Supreme Court; the “façade”, “front steps”, and the “Surrender Chamber” in the former City Hall.

Looking at the tangible attributes, a minority (four) of the interviewees addressed the importance of maintaining physical attributes, such as “material” and “structure”, in “preservation”. According to the analysis, on the one hand, the “material” mentioned by the interviewees came from diverse backgrounds, including both non-governmental and governmental professionals in architecture and urban planning. On the other hand, “structure” was the second most mentioned attribute by the stakeholders, who were mostly non-governmental professionals in the architecture and conservation fields and were involved from the design to construction stages. Detailed aspects such as the “cast iron structure” were also identified in interviews with one of the participants (P2) when the preservation of the “large dome” of the former Supreme Court was mentioned.

However, in order to preserve the most significant space, the Surrender Chamber, one of the participants, a non-governmental professional, addressed (P15) the difficulties in reaching the aim of preserving its “location” and “material”, due to the costly construction. Although there were simpler solutions, for example, to “keep material in storage and recover” on the same site; however, as “preserving the significant meaning of the Surrender Chamber” was put as the first priority, the government decided to keep the whole room as it was by hanging it in the air and laying it on a temporary structure, during the construction of the NGS.

“Setting” was only mentioned by two interviewees who were directly involved in the competition as organizers and participants (P19) and (P15). Meanwhile, multiple tangible and intangible attributes were identified to form the “setting”. The organizer, who is also a governmental staff member of PSM (P19), mentioned the importance of the huge “public open space – the Padang”, associated with the “façade” of the two monuments, including the “steps in front” of the former City Hall. They were related to important “events” and “activities”, such as the “first triumph in the move toward an independent Singapore”, “first locally born head of state”, and “transitioning from a colonial to a sovereign state”. Therefore, these architectural elements were seen as the “national symbol” of Singapore. Meanwhile, another participant (P15) used a Japanese case study to describe heritage preservation. Interestingly, this case

included a preserved school building, which was later used for the community, and a new hotel building behind it. The new hotel design intentionally used the identical architectural style, color, and materials to create a “continuity of design element” and “visual connection” with the school building.

Rather than solely focusing on tangible attributes, more interviewees addressed the importance of intangible aspects when defining “preservation”. Half (ten) of the interviewees highlighted the role of “use and function” in defining “preservation”, with frequent mentions of “historic events”, “activities”, and “ceremonies”. Specifically, interviewees (P7 and P19) related “preservation” to national monuments, whose uses must be concerned with “national significance to Singapore’s history”, such as “the surrender of the Japanese”.

Besides “use,” other intangible attributes such as “management” and “relation” were mentioned. “Management” was mentioned because a minority of interviewees (five) referenced the Preservation Monument Act while defining “preservation”. As for detailed contents associated with “relation,” the “original spirit” was found attached especially to the preservation of religious buildings. This signals a distinction between “preservation” and “conservation” from the interviewees’ perspectives. One of the non-governmental professionals from the architecture field, involved both in practice and academia (P12) related “preservation” to religious buildings, highlighting the “sacred”, and “spirit of the place”. Therefore the stakeholders thought it is inappropriate to change their use.

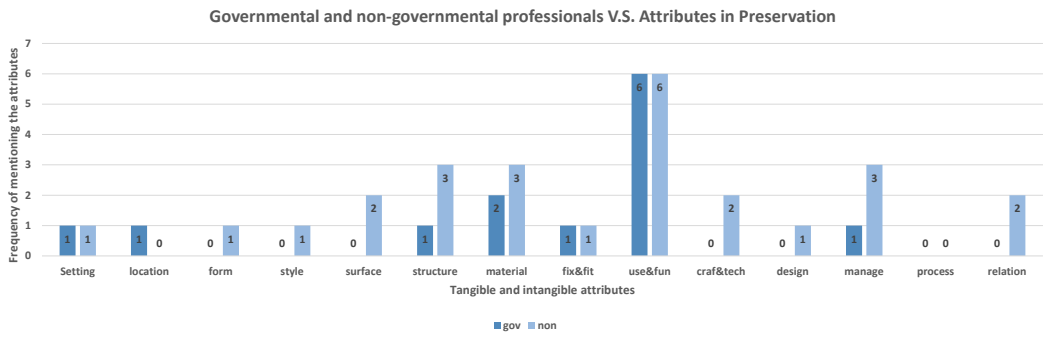

FIG. 3.20 The comparison of attributes referenced in relation to “preservation” between interviewees of governmental and non-governmental professionals.

TOC

The results show that both governmental and non-governmental professionals prioritize “use and functions”, “material”, “structure”, and “management” when defining “preservation”. However, the results also indicate that the non-governmental professional mentioned more diverse categories of attributes, both tangible and intangible, such as “form”, “style”, “surface”, “craftsmanship and technology”, “design” and “relation” which the government al professionals didn’t mention (see FIG. 3.20).

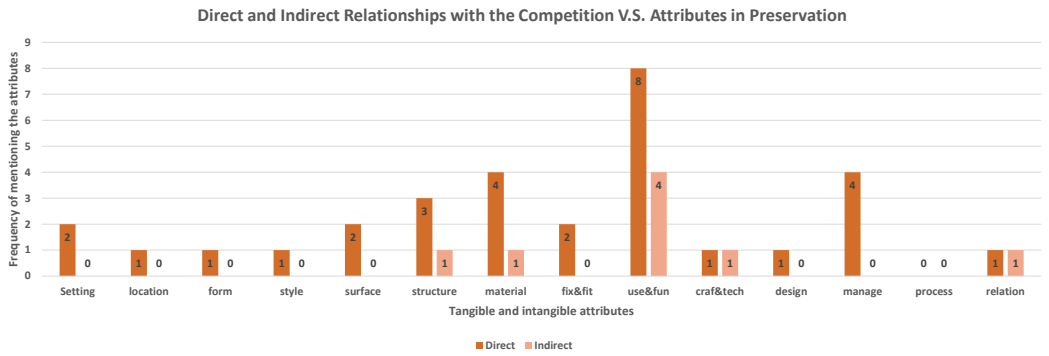

FIG. 3.21 The comparison of attributes referenced in relation to “preservation” between interviewees involved directly and indirectly in the competition.

The results show that interviewees who were directly involved in the competition mentioned a more diverse range of categories of attributes. Specifically, they prioritized “use and functions,” “material,” and “management” when defining “preservation.” While the interviewees who had an indirect relationship with the competition also emphasized the role of “use and functions,” there was little information found in certain categories of attributes, such as “structure,” “material,” “craftsmanship and technology,” and “relation” (see FIG. 3.21).

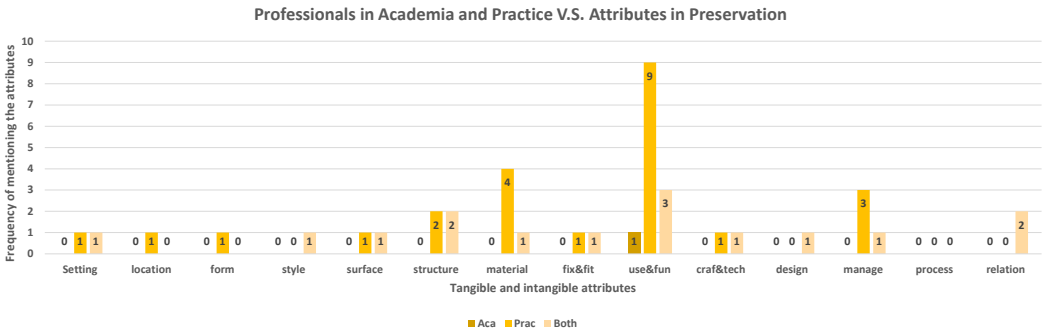

FIG. 3.22 The comparison of attributes referenced in relation to “preservation” between interviewees in academia, practice or both.

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The results show that “use and functions” is highly referenced by professionals in practice, followed by other attribute categories such as “material” and “management”. Attributes such as “location” and “form” were solely mentioned by the professionals in practice. With limited information, professionals with both backgrounds also refer to “use and functions” as the first, but they focus more on the “structure” and “relation”, meanwhile mentioning “style” and “design” which other groups didn’t mention. It is worth noting that “use and functions” is only identified in one stakeholder’s interview from academia. (See FIG. 3.22).

3.3.3.2 Conservation

In defining “conservation”, all of the tangible attribute categories were identified during the interviews. Particularly, “setting” was ranked as the first with eight references by six interviewees who were non-governmental professionals, including those from the architecture and planning fields, both from academia and practice. The detailed contents include “visual axis,” “visual connections” with the “Padang,” “skyline,” “eyesight,” “visual integrity,” “landscape surroundings,” and “open space.” One of the non-governmental professionals in the planning field from academia (P3) highlighted the importance of the “setting” of the NGS relating to the “historic morphology” in a broader sense. This includes the “hill” and “river” which are connected to the “Padang” forming the “axis” where the former Supreme Court and City Hall are located.

Referenced to as the second-ranking, “material” was mentioned with seven references by one-third of the interviewees (seven), and most of them were identified as having direct relationships with the competition, both from government and non-governmental organizations. However, most of the contents didn’t go into detail; only a few interviewees (P17 and P20) mentioned the “material pattern” and “colour”; more specifically, the “tinted glass” was mentioned to avoid the heat coming into the building and improve building efficiency in “conservation”.

Looking at the intangible perspectives, the highest ranking of the intangible attributes are “use and functions” and “management”. The majority of the interviewees (twelve) referenced “use and function” in relation to “conservation”. Interestingly, several interviewees mentioned “use and function” from different perspectives, not only focusing on human activities at the building scale, but also considering a broader “tropical mindset” related to the historic environment and other tangible attributes.

In relation to “use and function” and the “tropical mindset,” specific building elements and attributes were identified by governmental and non-governmental professionals (P10 and P19). They used shophouses as examples and mentioned that the owners of the shophouses only maintain the facade but do not respect other attributes enough from this perspective. Certain building elements and attributes were pointed out to show the relation between their roles in maintaining a comfortable environment under the “tropical mindset.” However, during the change of use, these elements become a dilemma, such as the “partition wall”, “deep and long building layout”, “narrow front” and “patterns of air and moisture movement”. In order to fit with the “modern use,” the stakeholders “reconfigure” the building, change the “programme” of the shophouse, and maintain the “façade”. Consequently, conserved properties have faced some criticism for being about “facadism”.

Closely related to the attributes of “use and functions,” half of the interviewees (ten) also emphasized the importance of “management” in their definition of ‘conservation’. Specifically, this encompassed aspects such as the “Planning Act,” “regulations,” and “codes” pertaining to energy efficiency and carbon credits. One of the non-governmental professionals (P10) mentioned the importance of integrating the “historic building environment intent and function” into the contemporary management system and law. For example, maintaining the “openness of five-foot ways and courtyards”, the “passive cooling of modern tropically designed atriums”, or integrating restored “historic downpipes” into the new “rainwater drainage design”.

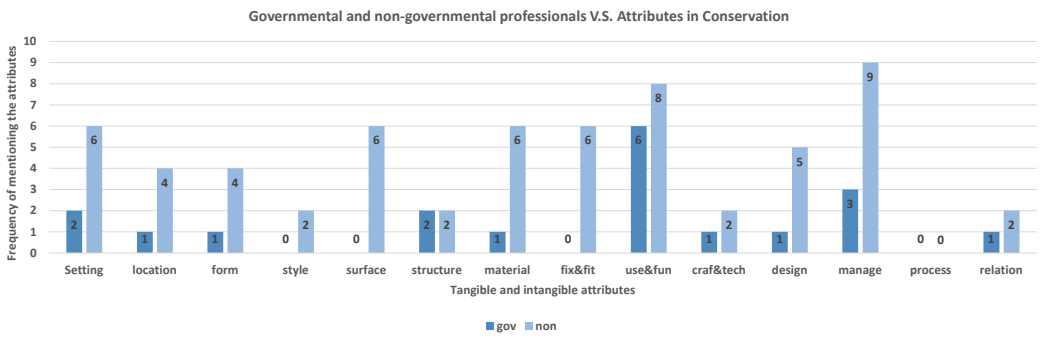

FIG. 3.23 The comparison of attributes referenced in relation to “conservation” between interviewees of governmental and non-governmental professionals.

TOC

The results show that non-governmental professionals reference more categories of attributes than governmental professionals, particularly highlighting “management,” “use and functions,” “surface,” “setting,” and others. While governmental professionals also highlight the role of “use and function” in defining “conservation,” the ranking hierarchies are different, with “management” as the second, and “setting” and “structure” as the third. Only specific categories, such as “style,” “surface,” and “fixture and fitting,” are referenced only by non-governmental professionals (see FIG. 3.23).

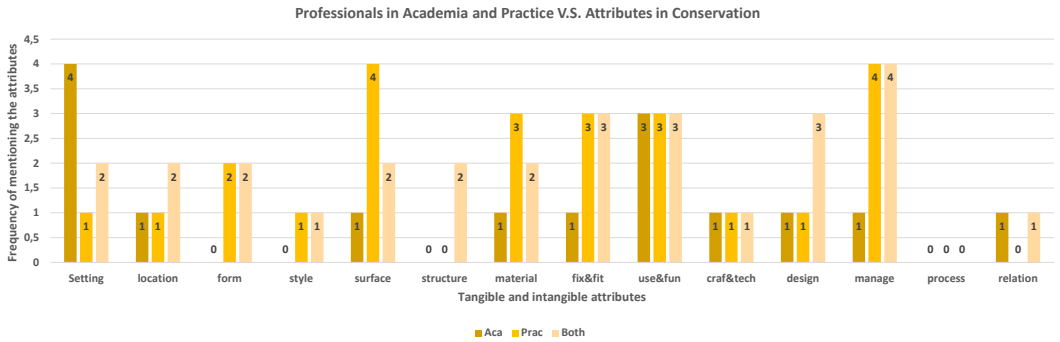

FIG. 3.24 The comparison of attributes referenced in relation to “conservation” between interviewees involved directly and indirectly in the competition.

In comparison with interviewees who have direct and indirect relationships with the competition, the results show that both stakeholders prioritize “use and functions” when defining “conservation”. Nevertheless, “management” is also ranked as the first by the direct group. Furthermore, diverse rankings were identified, with the direct group prioritizing “manage”, “material”, and “form”, and the indirect group focused on “setting”, “management”, and “location”. It is worth mentioning that “style” was the only tangible attribute mentioned by the direct group (see FIG. 3.24).

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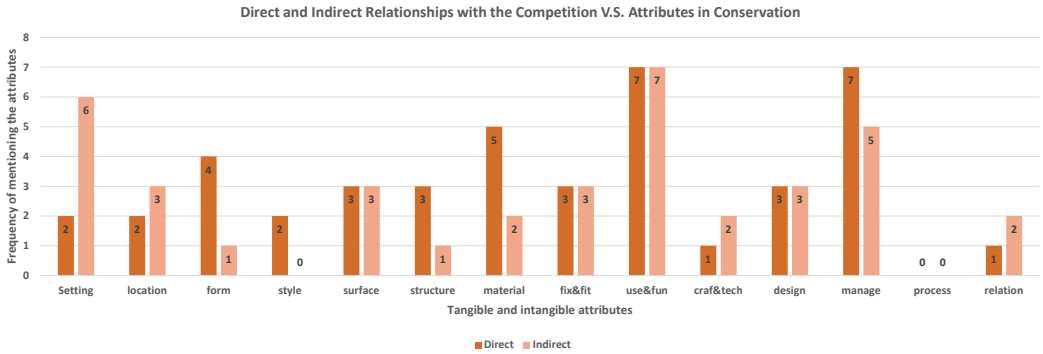

FIG. 3.25 The comparison of attributes referenced in relation to "conservation" between interviewees in academia, practice or both.

The results show that there is diversity in referencing the attributes from different backgrounds. While "setting" and "use and functions" were prioritized by interviewees in academia, interviewees in practice highlighted "surface" and "management". Interviewees from both fields emphasized "fixture and fitting", "use and function", and "design". Besides, nine attributes categories were highlighted by all the groups. However, "process" and "structure" were the least referenced attributes (see FIG. 3.25).

3.3.3.3 Restoration

From a tangible perspective, "material" is identified as the most referenced attribute by several (five) interviewees when defining "restoration". Take the interview with one of the former organizers (P6), for example; detailed aspects were identified, such as whether to maintain the same or change the "colour" of the "paint" in the Surrender Chamber. This interviewee further explained the reasons for insisting on restoring the red colour in the Surrender Chamber but not giving it a contemporary look. This is due to the attributed colour giving a certain "weightiness" and "dignified, quiet, and reflective spatial quality" relating to the "historical events" of the "swear of the first national leadership". However, this decision, which the interviewee wanted to be "original", was made according to a painting. It was the only evidence depicting what happened on that day due to the time the nation was at a specific "moment of fragility". Therefore, no photographers were allowed in, only a painter.

TOC

Besides “material”, other tangible aspects, such as “fixtures and fittings,” which included various interior elements, were mentioned by several (four) interviewees, such as “furniture,” “decorations,” and “lighting.” With detailed contents identified by one of the non-governmental participants in the competition (P2), for example, the “wood panel” and “interesting 18th-century furniture”, in the “judge’s chamber” of the former Supreme Court.

Looking at the perspectives of intangible attributes, such as “use and function,” was referenced during the definition process. Interestingly, there are differing opinions about whether the “use and function” should remain the same or not in the definition of “restoration”. Further discussion also revealed the challenges when a new use, especially as a museum, is introduced to a heritage building, such as interior climate and curatorial aspects. Contradictory definitions were identified in the three non-governmental professionals who have direct or indirect relationships with the competition (P2, P13, and P10). One used the “cupola (the large dome)” as an example, stating that “restoration” provides a chance to be accessed again by the public, providing a new function, such as for retail use. In contrast, the other interviewee emphasized that if decided to restore, “restoration” should not only bring back the use or functions but also bring back the users, such as in the same Chinese Family of Baba House. Therefore, in his opinion, without having exactly the same contexts, it is impossible to do “restoration”. And the “restoration” in Singapore is more like “speculative repairs” from his personal view.

With a more specific insight into the technical details, the third interviewee commented that the “restoration” in NGS strikes a balance between heritage conservation and curatorial aspects. Besides commenting on the quality of the “restoration” as “a little bit clinical” from his perspective as a restorationist, he further emphasized the challenges in “restoration” when the “use and functions” of heritage buildings change into museum buildings. As a museum, “the building requirement is the highest because the interior environment needs to be very strictly controlled for the display of objects constantly and condition. A lot of these buildings, when they are built, were not even designed for making cold and dry interiors.” Therefore, the change of use is equal to the change of “interior climate”, which can negatively influence the “building envelope” and the “interior finishes”.

Besides referencing the “use and functions,” interviewees also mentioned in detail the “craft and techniques” related to “restoration” such as the “source of the skills” and “design knowledge.” One of the former organizers, who is now a non-governmental professional (P7), introduced the example of the green glass window in NGS, commonly known as “Mao-steel windows,” including its “original source of the skills” and the “local manufacturers” who replicated the “design.”

While patterns were identified in relating the tangible attributes to define "restoration," no clear pattern of mentioning the intangible attributes from stakeholders was identified.

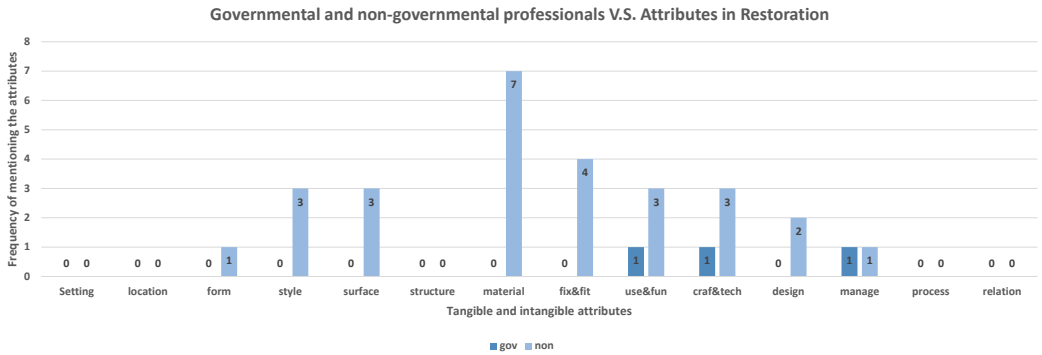

FIG. 3.26 The comparison of attributes referenced in relation to "restoration" between interviewees of governmental and non-governmental professionals.

The result shows that non-governmental professionals referenced more categories of attributes than the governmental professionals, especially highlighting "material" and "fixtures and fittings". Interestingly, the governmental professionals were only identified with attributes from the intangible perspective, with one reference in each of the three attribute categories – "use and function", "craftsmanship and technology" and "management". These three categories of intangible attributes are referenced by both stakeholders, showing alignment when defining "restoration" (see FIG. 3.26).

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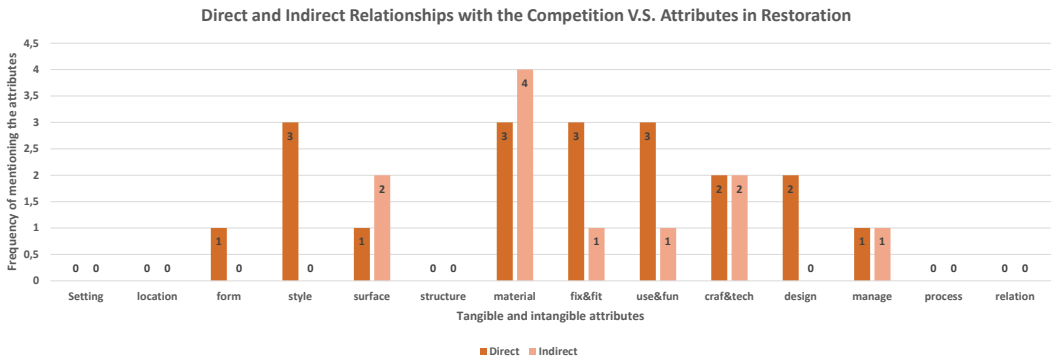

FIG. 3.27 The comparison of attributes referenced in relation to “restoration” between interviewees involved directly and indirectly in the competition.

The result shows that two groups have quite different preferences when referencing attributes in defining “restoration”. Interviewees who have been directly involved in the competition referenced more categories of attributes, particularly in “style,” “material,” “fixtures and fittings,” and “use and functions”. Meanwhile, the indirect group highlighted “material”, “surface”, and “craftsmanship and techniques”. Interestingly, the indirect group tended to mention more intangible attributes than the direct one (see FIG. 3.27).

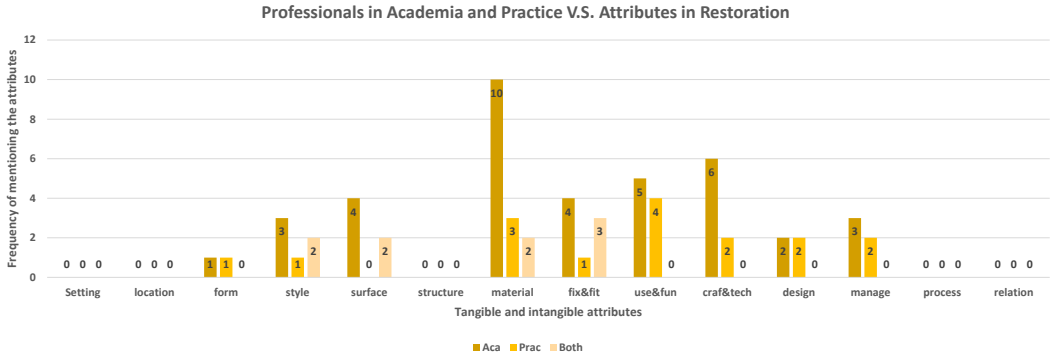

FIG. 3.28 The comparison of attributes referenced in relation to “restoration” between interviewees in academia, practice or both.

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This result shows that the three groups have different preferences for referencing the attributes. Academic interviewees, in addition to mentioning most of the categories of attributes, highly prioritize “material”, “craftsmanship and techniques”, and “use and function” in “restoration”. Interviewees in practice prioritize “use and functions” and “material”, while interviewees from both fields mention the fewest categories and emphasize “fixture and fitting”, “material”, “surface”, and “style”. Among all the categories, only “style”, “material”, and “fixture and fitting” are referenced by all stakeholders from different backgrounds (see FIG. 3.28).

3.3.3.4 Adaptive Reuse

From a tangible perspective, the interviewees ranked “structure” as the first, followed by “form” as the second and “material” as the third. In relation to these attributes categories, detailed contents such as “modern structure”, “reinforced concrete buildings”, “massiveness” of the structure, “modular”, and “height” of the ceiling were mentioned.

Several interviewees further discussed the different considerations of building types, including “scales” and “style” when it comes to ‘adaptive reuse,’ especially reinforced concrete buildings and modern structures. These attributes were discussed due to the fact that although the two monuments have a classical architectural appearance, they were built in reinforced concrete during the 1930s.

Specifically, a former organizer (P7) and a participant (P6) mentioned that compared to traditional buildings, modern buildings were difficult to be “adaptively reused” due to their relatively less flexibility in terms of “scale,” “style,” and “material.” As an example given by the participant, traditional buildings from the 17th to 19th century are often designed in a “modular” way, with “over-dimensional” scales, allowing for interventions with minimal demolition, such as removing “one or two beams” only. Additionally, modern buildings often have “specific functions” which make them difficult to be reused, and certain structures need to be dismantled.

Almost all (eighteen) interviewees referenced “use and functions” while defining ‘adaptive reuse’. Besides “use” and “functions”, interviewees also mentioned “service”, “purpose”, and “programme” in these categories. Particularly, half of the interviewees (ten) defined that the “use and function” is different from the previous ones when defining ‘adaptive reuse’. Two non-governmental professionals in both academia and practice, (P7) and (P10), highlighted the change of use, due to certain programmes no longer existing or fitting the contemporary needs and needing to be adaptive.

Nevertheless, interviewees also highlighted the varying levels of change in 'adaptive reuse', ranging from the same use but with partial functional change to "substantial programmatic change." These changes can create different tensions between the "original use" of heritage and the "future use." The alterations in physical attributes are often intertwined with intangible perspectives, leading to tensions most of the time.

Relating to "adaptive reuse," tensions were identified in the intervention of a variety of new "uses and functions," including adding loading facilities, "universal accessibility," and "new experiences"; removing or adding "services," such as "air conditioning," "fire safety," "security," and "lighting." One of the former organizers from the field of museology (P18) mentioned that the low height of the ceiling and the spaces with "centrality" forced them to carefully consider the design of the exhibition, their "light fixtures," as well as the relationship between the narrative of the exhibition. Some interviewees mentioned that besides bringing new uses and creating "new experiences" such as "visual level," "adaptive reuse" can also solve practical issues. An example was given by a former organizer (P7) at the rear part of the former Supreme Court, which was full of air conditioners and used to be an uninhabitable space in the past. After the adaptive reuse of this area, a new platform was created at this level, providing visitors with a new experience to appreciate the library dome.

Notably, one specific attribute mentioned by minor interviewees is the "spatial layout" of courthouse design. This attribute is connected to the hierarchies of the entering sequence in the office of the Chief Justice in the former Supreme Court. The "spatial layout" is identified as related to "use and function," "management," and "design," and is also associated with other tangible perspectives such as "orientation," "location," and "interior." This discussion arose when one of the new interior bridges (the lower one) was added, leading to differing opinions between interviewees from conservation and museum fields regarding the original design philosophy of courthouse design and user experience. One interviewee mentioned that, from a user perspective, the bridges helped visitors orient themselves between the two enormous buildings. However, he further pointed out that the decision-makers' choice of where to place and create the link was inappropriate. This position was once the window of one of the most important spaces of the former Supreme Court – the office of the Chief Justice. It encompassed the most critical part of the courthouse design, including its spatial hierarchy from the layers of gatekeepers, the secretary's space, and the passage from the office to the courthouse door. By adding the lower bridge, this spatial hierarchy was demolished.

With slightly different opinions, two other non-governmental professionals in architecture and museology, (P25) and (P26), explained their views on the curatorial process and the challenges involved in making decisions. According to them, the first priority in making the gallery successful was to consider its position as the largest in Southeast Asia. Additionally, since the courthouse was no longer there, they believed that there was no need to keep everything exactly as it was, including the previous ways of access. Instead, they suggested reaching a compromise and creating a new way of access that would enhance the visiting experience. They also proposed adding explanation boards and providing guided tours to help visitors understand the history and spatial hierarchy of the office of the Chief Justice.

Another intangible attribute, 'management', was ranked as the second most important by the interviewees. This is because when new "use and functions" related to "universal accessibility", "air conditioning", "fire protection", "safety", "security", and "lighting" are introduced, they must comply with certain "codes", "requirements", and "regulations" in the context of Singapore. Particularly, one non-governmental professional (P7) emphasized the "service" concerning "air conditioning" related to "comfort level", which was a crucial criterion in tropical Singapore. Interviewees such as competition participants (P1 and P2) spoke about the challenges they have faced in their own projects. In particular, the interviewee (P1) used his own case of "adaptive reuse" in Australia to further explain the conflict between "new use" and "safe use". What was most emphasized was that applying incorrect categories has an impact on the entire design process and heritage. More than just complying with the "classification" of the building codes, the entire "level of structure" relating to "combustibility" was forced to change.

Overall, most of them commonly mentioned that "adaptive reuse" allows for more flexibility in terms of change, which is conducive to its use and also makes the design process more adventurous. However, in the case of NGS, some of the identified attributes became limitations that posed challenges to the "adaptive reuse" of the heritage building into a gallery.

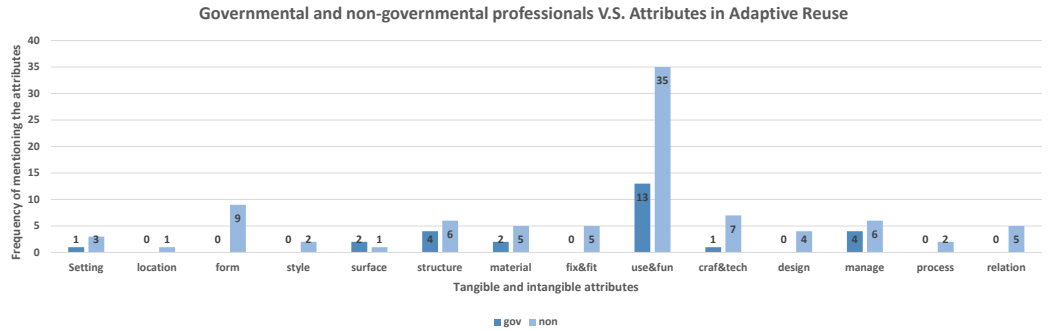

FIG. 3.29 The comparison of attributes referenced in relation to "adaptive reuse" between interviewees of governmental and non-governmental professionals.

The result shows that non-governmental professionals referenced all the attribute categories, particularly highlighting "use and functions," as the first, followed by "form," "craftsmanship and technology," and "structure," when defining "adaptive reuse." With fewer diverse categories mentioned, governmental professionals prioritized similar top-ranking attributes as the other stakeholders, such as "use and function," "structure," and "management" (see FIG. 3.29).

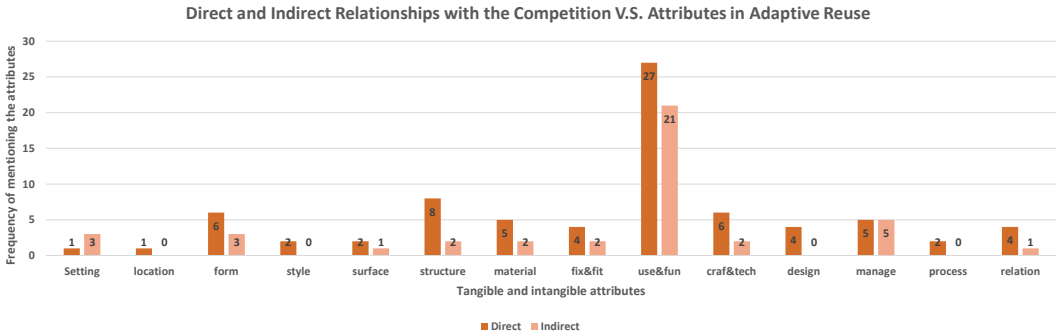

FIG. 3.30 The comparison of attributes referenced in relation to "adaptive reuse" between interviewees involved directly and indirectly in the competition.

In comparing the interviewees who have direct or indirect relationships with the competition in defining "adaptive reuse", the results show that both stakeholders prioritize "use and functions". However, there are differences in prioritization between the groups. The interviewees who have direct relationships with the competition referenced all the categories and prioritized "structure", "form", and "craftsmanship and technology"; while the indirect group referred more to "management", "setting", and "form" (see FIG. 3.30).

TOC

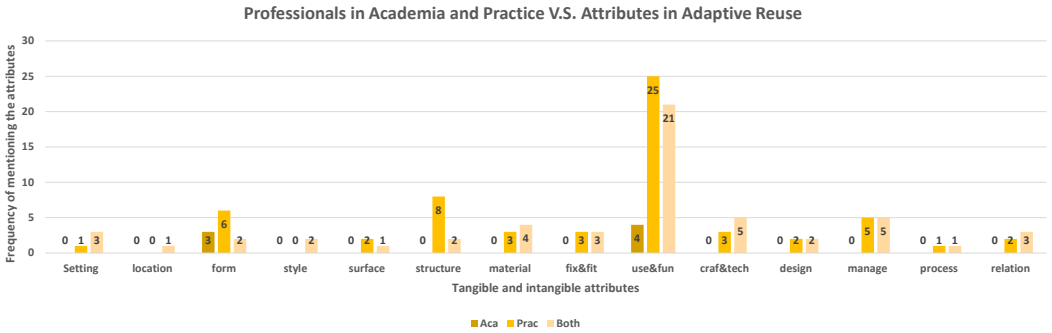

FIG. 3.31 The comparison of attributes referenced in relation to "adaptive reuse" between interviewees in academia, practice or both.

The results show that professionals from both fields mentioned most (all) of the categories, followed by professionals from practice (twelve) and the least (two) referenced by professionals from academia. While all stakeholders highlighted the role of "use and function" in influencing the definition of "adaptive reuse", they presented different hierarchies of referencing the attributes. Specifically, professionals from practice emphasized "structure" and "form"; professionals from academia referenced "form", and professionals from both fields referenced "management" and "material", "fixture and fitting", and "craftsmanship and technology" (see FIG. 3.31).

3.3.3.5 Revitalization

With the limited information identified, "revitalization" was only mentioned in relation to "use and functions" and value-related contents. One of the non-governmental professionals (P4) explained its definition in comparison to other concepts, such as "adaptive reuse," "rehabilitation," and "retrofitting."

3.3.3.6 Reconstruction

With limited information from the interviewees, the term "reconstruction" was linked to concepts such as "new material," "interior balustrades," and "memory," which were connected to other concepts like "demolition" and "replication." One of the previous organizers (P7) provided an explanation using the example of the two courtyards of the former City Hall. They stated that if the government intended to reconstruct these areas, they should adhere to the principle of utilizing "new material" and a "contemporary approach" in the design.

TOC

3.3.4 Discussion

While attributes bring differentiation in concepts at the doctrinal document level (Lin et al., 2023b), at the project level, it is not easy to identify. Take one of the conversations in defining 'preservation', for example; it reveals that intervention concepts can be easily used interchangeably during a verbal conversation. Sometimes, this is not because the interviewee did not understand the definition but because the interviewee tends to prioritize what they want.

Results have shown that the "use and functions" of various concepts play vital roles. However, in order to maintain them, drastic decisions were made. In the case of NGS, the Surrender Chamber was deemed highly significant. It was so crucial that even when the two courtyards were demolished for safety reasons, the Surrender Chamber was preserved. It was lifted and hung temporarily until the construction of the new gallery interior and foundation was completed. From one perspective, this important Surrender Chamber and its "use" have been perfectly conserved. However, from another perspective, this preservation method has completely separated the chamber from the building's structural elements. Additionally, apart from preserving the "use" associated with national events, the other main "use" of this building, when it served as the city hall and an extension of the Supreme Court, was completely disregarded. This preservation approach aligns with the contents of the Burra Charter (2013), which states that the relative degrees of values and cultural significance can result in different actions being taken at a place.

In the name of maintaining the intangible but replacing the existing tangible attributes, let's take the Surrender Chamber as an example. One of the interviewees mentioned the "spirit" of the national events based on certain memories or documentary records. However, the tangible attributes no longer exist. We tend to forget that when we say "preserving," we mean keeping what already exists, not bringing or adding it back. So, when the red paint was reapplied to the Surrender Chamber to symbolize the national event, this action was actually a "restoration."

Certain important attributes were found to be absent, such as the "setting" in relation to "preservation". While most of the interviewees from Singapore associate "preservation" with monuments and focus on specific building parts, one interviewee mentioned that heritage preservation should not only prioritize integrity but also include the creation of a harmonious "setting" that complements the preserved building. In this case, the setting of NGS, which is connected to the historical axis with the hill (Fort Canning), water (Singapore River) and the Padang, according to a few interviewees, may have been lost. At this moment, some high-rises have disrupted the skyline and visual connection between Fort Canning and the Padang.

The absence of this attribute - "setting" - in defining "preservation" in Singapore may have led to a disconnection in the decision-making process, which has impacted the physical built environment.

In defining "conservation", compared to "preservation", the attributes identified were more evenly distributed in each category. However, in the case of NGS, as a gallery, it has different requirements for the interior climate. Several interviewees mentioned crucial attributes in Singapore "conservation" – "the tropical mindset", which have been forgotten during the decision-making process. In principle, "conservation" areas, such as shophouses, were kept as a group of buildings and certain flexibility was given for change. Nevertheless, while the tropical climate in Singapore is considered one of the most crucial factors in forming a built environment, the so-called "tropical aspect", which includes the orientation of the house in relation to the sea, was disrupted by the sudden high-rise buildings just outside of the conservation zone. This aspect used to be important to introduce sea wind and direct fresh air flow following the layout of the traditional streets and then entering the shophouses from their openings and through the interior partitions. This serious approach formed natural ventilation for cooling down the interior in tropical climates. The conservation zone, on one hand, protects the shophouses in the designated area; on the other hand, it creates a discontinuity in the Singapore context. This kind of discontinuation not only happened at the planning level but also reflected in the building facilities – air-conditioning, challenging the implementation of 'restoration', 'adaptive reuse', and so on. From this perspective, the "tropical mindset" should be given a higher priority in the Singapore context and influence the decision-making of intervention concepts at either a theoretical or practical level.

Besides, the roles of attributes were found to be contradictory in some situations. In the context of a gallery project, different requirements for controlling the interior climate, public safety, and viewing experiences, among others, have created a contradiction between the previous use, new use, and safe use. In relation to the concept of 'adaptive reuse', the new use received criticism from some of the interviewees because it jeopardized the previous use – the hierarchies of the entering sequence of the former Chief Justice's office. The replacement of the physical function of the space not only means introducing a different user experience but also shows the loss of the spatial design and the meaning of the spatial hierarchies of the Supreme Court. Nevertheless, the gallery provides a tour to partially explain the "hierarchies of entering sequence" to the visitors on a daily basis.

However, in addition to the different precedence in referencing attributes in intervention concepts, dilemmas in recognizing the role of attributes when used were found in different fields. In the case of NGS, this was particularly evident in the fields

of museology and heritage building. When the interior has high cultural significance, its function as a museum display becomes very weak. From both museological and curatorial perspectives, this dilemma arises from both tangible aspects, such as interior climate, logistic circulation, safety and fire facilities, and intangible aspects, such as interpretation of meaning and dialogue between heritage and artwork. In summary, it is crucial to involve more disciplines from the beginning of the competition, including attributes recognition, possible interventions, and future use, in heritage management.

Changes in building use also lead to changes in the recognition of attributes. Initially, in the Preservation Guidelines for the two monuments, almost all physical components were deemed to have the same cultural significance. Therefore, the entire buildings should be preserved. However, during the competition period, a new Supplementary Guideline was introduced. This was done to allow participants to envision new possibilities for the sites, resulting in the cultural significance being re-categorized into three hierarchies. According to the research, apart from the most significant spaces, others were demolished. During the interview phase, the author attempted to uncover the reasons behind these categorizations, but no answer was found. However, one thing was clear: the supplementary guideline successfully facilitated the competition, as acknowledged by the participants and other professionals.

In the discussion from the stakeholders' perspectives, different levels of alignment exist between them – government and non-government, as well as direct and indirect involvement – when defining intervention concepts from the attributes aspect. Alignments were found between government and non-governmental professionals. Although common attributes were identified among stakeholders, non-governmental professionals often have more diverse categories of attributes referenced. This is probably because they are more familiar with the construction process and architectural details. The most alignments were found in "conservation" and "preservation". On the contrary, with fewer common attributes in tangible perspectives, "restoration" and "adaptive reuse" were identified with more alignment in defining from intangible perspectives.

With a lower level of alignment, in the comparison between interviewees who had direct or indirect involvement with the competition, the former were found to refer to more attribute categories, especially from tangible perspectives and architectural scales, while the latter were identified as highlighting more intangible attributes in urban scales. This may be because the interviewees who were directly involved in the competition focused on the two monuments, whereas the others who had an indirect relationship focused on the meaning of the whole site towards Singapore's

historic center, including the important open space in front of the two monuments – the Padang. With some exceptions, such as one of the interviewees who was not directly involved in this project but used the two monuments as his case study, he was able to point out accurate attributes during the definition process. Nevertheless, whether the interviewees had a direct or indirect relationship with the project, they often mentioned other projects to support their statements during the definition process. Unless specific attributes in this project, such as the dome, bronze surface, and Corinthian-style column, were mentioned, it is difficult to determine the assured relation between the attributes and concepts.

The most significant misalignment of definitions was found between professionals in practice and academia. Professionals from different conservation backgrounds have divergent opinions on the definitions, particularly in regard to "restoration". A minority of professionals from academia view "restoration" as a concept that requires deep philosophical knowledge and is prone to mistakes, especially in terms of removing attributes. Specifically, an academic with a British conservation background considers the use of "restoration" to be almost forbidden. In his opinion, 'restoring' a project means not only bringing back the same "use" but also the original users. Moreover, most professionals in practice tend to define it in diverse ways, sometimes from intangible perspectives, especially when dealing with religious buildings in Singapore. Sometimes, it even refers to restoring a certain level of the relationship between users and the space. Some interviewees took a middle path, concerning themselves more with social inclusiveness than the definitions themselves. This indicates that the definition of intervention concepts and the selection of attributes prioritize values rather than strictly adhering to the definition itself. From this perspective, it is sometimes difficult to determine if these definitions are tailored to the local context or if they are simply excuses for not respecting conservation principles.

3.3.5 Conclusion

Attributes were found to have different roles in influencing the definition and decision-making of intervention concepts. Certain attributes occupy a higher hierarchy and fundamentally influence Singapore's built environment, from planning to architectural and even interior scale. On one hand, the dual law system continues to influence the way professionals define intervention concepts and manage attributes. While the definition makes a clear distinction between 'preservation' and 'conservation', when implemented, it creates a discontinuity in land management. On the other hand, the "tropical mindset" is specifically crucial in shaping the built environment in Singapore's tropical climate. When land management is separated into preservation for individual monuments, conservation for groups of buildings and zones, and new development outside of these two categories, attention needs to be given to how the "tropical mindset" can be preserved and continue to influence Singapore's historic landscape. A certain level of overlap in intervention concepts during the implementation stage is necessary.

Learning from the case of the National Gallery Singapore, it was also found that the role of attributes shifts in influencing the definitions of intervention concepts, either during the change of building use or as defined by different disciplines. Learning from the case of NGS, more disciplines should be included in the preparation stage of the competition, especially the construction team. This discussion should include the recognition of attributes, their possible interventions, and future use, which could mitigate the impact of the heritage building and reduce communication costs.

Future research is suggested to further reveal the different notions of attributes categorization within a specific context that evolves over time, such as exploring specific attributes relating to the "tropical mindset" in Singapore. As English is only one of the four official languages of Singapore, other languages such as Chinese, Tamil, and Malay are suggested for research from the perspective of attributes of cultural significance in different language contexts with diverse heritage types. Other research can also compare other factors that influence definitions from a heritage management perspective, such as the top-down or bottom-up approach, in influencing the implementation of intervention concepts in conservation.

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TOC

4 Comparative Study

Parts of this chapter were presented at the international conference marking the 60th anniversary of the Venice Charter, "Venice Charter [Re]framed," held in Lisbon May 27-30., 2024. This part of the research presented, titled "Beyond the Venice Charter: A Comparative Study on the Definition of Intervention Concepts of Built Heritage through the Lens of Attributes of Cultural Significance", is currently under consideration for publication in the Conference Proceedings.

ABSTRACT

Since decades ago, international organizations, such as UNESCO and ICOMOS, have adopted doctrinal documents, stimulating best practices in built heritage management worldwide over time. While cultural significance, values and attributes are expected to influence the appropriate level of intervention and decision-making, even if doctrines are often referenced, the relationship between them has scarcely been researched, from theory to practice. Do the intervention concepts used in local practices match those defined in international doctrines? What values and attributes are given priority when defining interventions between doctrines and local practice? This chapter compares the results through a systematic content analysis of two datasets: first, a selection of forty-one international doctrinal documents; second, twenty interviewees from a local redesign project in Singapore. The intensity of the relationship between intervention concepts and attributes is determined based on the frequency of the mentioned attributes per intervention. The results showed that in the definition process, the values, attributes and cultural significance strengthened the substantial distinctions between intervention concepts in theory and practice. Also, the roles of values and attributes were found to be very different between international and local levels, resulting in divergent definitions.

This chapter explores and discusses the results of a comparative analysis between different intervention concepts and definitions, focusing on the attributes at both the international and local levels. The results can support further research and practice, by clarifying the identified differences and similarities.

KEYWORDS

Interventions, Cultural Significance, Cultural Values and Attributes, International Doctrines, Practices, Comparative Study

4.1 Introduction

To ensure that the cultural significance conveyed by society to built heritage will be continued by future generations, architectural interventions play a pivotal role in decision-making on the management of built heritage, as they serve to extend the lifespan of these listed buildings. Meanwhile, cultural significance is expected to influence the appropriate category/level of intervention. However, their relationship has scarcely been discussed thoroughly, from theory to practice. Since the Venice Charter, international organizations and institutions, such as UNESCO and ICOMOS, have adopted doctrinal documents, stimulating best practices in built heritage management worldwide over time. These documents play a pivotal role by providing statements or principles and guidelines for the conservation and management of places of cultural significance, thereby establishing a professional ethics role in guiding the conduct of heritage conservation practice (Taylor,2004; Lin et al.,2023a).

These documents, however, are not meant to be perfect or tailored to a specific context, given they are a result of consensus achieved between all countries, cultures and priorities (from the various experts) involved in their drafting. Consequently, the concepts and policies guiding built heritage interventions are subject to continuous evolution over time (Jokilehto, 2007). In supporting the definition of intervention concepts, during the last decades, although international doctrinal documents have defined intervention concepts with different levels, scales, and activities (ICOMOS Canada,1983), their definitions and categories are often non-aligned and omitted between documents and organizations (Lin, et al, 2023).

Moreover, cultural significance is expected to influence the selected category/ level of intervention on built heritage (ICOMOS Canada,1983). Cultural significance is decoded by the conveyed values (Pereira Roders, 2007) and attributes (Veldpaus, 2015). Values justify why heritage is listed, and the attributes characterize the resources (tangible and intangible) that convey such values (Veldpaus &Roders,2013). Unlike values, attributes follow “a more hierarchical pattern of including and overlapping each other, while the values exist in parallel to each other, although they are usually ranked in importance, whenever set concerning each other, to support decision-making” (Veldpaus, 2015).

Specifically, from the values aspect, many academics highlight the range of values influence, such as during the conservation process (Feilden,1982), where values are expected to be prioritized integrated, or ranked (Mason,2005). Sometimes, values

are assumed to conflict with each other (Rieigl,1903/1996; ICOMOS, 1994; De La Torre,2002), because they are influenced by the stakeholders' diverging interests (Mason,2005). Some researchers focus on one category of intervention with specific values, as when using adaptive reuse to promote social values (e.g. Kenneth and Lucian,2019) or when researching the balance between architectural and monument values in adaptive reuse (e.g. Augustiniok et al.,2020).

Meanwhile, from the attributes aspect, even if research highlighting the key role of attributes of cultural significance in the processes of decision-making in heritage planning and management is growing (De la Torre, 2002; Junyong et al., 2008; Worthing & Bond, 2008;Throsby, 2002; Teutonico, 2019; Avrami et al., 2019; Havinga et al., 2020; Olimpio et al., 2021; 西和彦 et al., 2021). However, theorizing the relation between intervention concepts on built heritage, such as conservation, restoration, reconstruction, adaptation (Henket, 1998; Pereira Roders, 2007; Douglas, 2006; Shahi et al., 2020), and their attributes has been seldom researched, nor compared over time and place systematically.

Furthermore, as the range of attribute categories expanded (Sullivan, 2004; Jokilehto, 2006; Landorf, 2009; Vecco, 2010; Araoz, 2011; Labadi, 2013; Veldpaus, 2015), the heritage paradigm shifted from tangible to intangible aspects in recent decades (Ruggles & Silverman, 2009; Vecco, 2010; Silva, 2020). Scholars have highlighted that the object of preservation remains in a tangible and physical approach (Ruggles & Silverman, 2009). Ongoing debates also focus on whether certain intervention concepts are in favor of tangible or intangible attributes, such as restoration, renewal, or reconstruction, especially in different cultural contexts (Mastero, 2006; Mansfield, 2008; Kwanda, 2009; Park, 2014; Okahashi, 2018; Sharma, 2019). This underscores the idea that the meanings of significance and attributes change between cultures (ICOMOS, 1994) and over time (ICOMOS Australia, revised 2013; De la Torre, 2002; Worthing & Bond, 2008). Our intervention will impact how future generations perceive conserved heritage and engage with new interventions, including the use of new digital technologies and artificial intelligence (Ceccarelli, 2017). In this dynamic context, the focus should not be on preventing change, but on finding alternative ways to enact change without compromising significance (Worthing & Bond, 2008: p.162).
Therefore, understanding the relationship between interventions, as well as values and attributes, and further contributing to the definition process of intervention concepts at both theoretical and practice levels becomes essential. The main research questions of this chapter will be tackled: Do the intervention concepts used in local practices match those defined by international doctrines? What values and attributes are given priority when defining interventions between doctrines and local practice?

4.2 Methodology

This chapter is a comparative study, using systematic content analysis from two primary sources.

4.2.1 Data Sources 1: International Doctrinal Documents

First, international doctrinal documents. A larger sample of 519 international doctrinal documents was selected due to their reference to cultural heritage. They were examined by searching the keywords “intervention”, and “intervention concepts” – “conservation”, “preservation”, “restoration”, “adaptation”, “reconstruction”, “rehabilitation”, “relocation”, “renew” and “attributes” as well as attribute-related contents in the glossary and terminology sections. If those sections were unavailable, the definitions of the intervention concepts were deduced by the content analysis of the integral documents. After the examination, this research selected and analyzed nearly seventy international doctrinal documents, adopted during 1877-2021, revealing a broad geographical spread by their origin, ranging from Europe to Asia and the Pan-Pacific. Out of these, sixty-nine documents have been identified with the relationships between interventions and values (see the list of documents in the References of Chapter 2.2). Another forty-one documents have been identified with relationships between intervention concepts and attributes. – mainly adopted by the Council of Europe, UNESCO and ICOMOS (see TABLE 2.4 of Chapter 2.3.2.). This part of the result has already been published as papers on the relationship between interventions and values (Lin et al., 2023b) and attributes (Lin et al., 2023b). For checking the full list of the selected international documents, please refer to TABLE 1.6 in Chapter 1.3.3.3 of this thesis.

4.2.2 Data Sources 2: Interviews of International Architectural Competition of National Gallery Singapore (NGS)

Second, the interviews included the input of 20 stakeholders who participated in a case study conducted in Singapore. This case study focused on the international architectural competition of the National Gallery Singapore. The stakeholders involved in the interviews were professionals from the fields of architecture, conservation, and museum work. They held positions in government, institutions,

and private architectural firms. Despite the large pool of potential interviewees, which consisted of 111 participants as mentioned in Chapter 1.3.3.4.2 of this thesis, the selection process for interviewees faced some challenges.

The interview was composed of two parts. The first part was about the general understanding of the definition of intervention concepts in Singapore. The second part discussed how the intervention concepts were applied in the case study and their relations to specific cultural significance. Building upon insights concluded from a preceding paper (Lin et al., 2024), which delineated three clusters of concepts – 'conservation', 'preservation', 'restoration' and 'adaptive reuse' – were set as the preliminary contents for the interview questions. The interviews include the exploration of a series of pre-determined questions:

(1) What is your definition of "conservation", "preservation", and "restoration"?

(2) What values and attributes are related to these concepts from your understanding of this project?

The main aim is to reveal and compare the concepts used to reference interventions at the international and local levels. Furthermore, utilize the definitions to discuss the relationships between intervention concepts and cultural significance. The trends of using the interventions were determined based on the frequency of mentions per intervention term in the selected documents and contents from interviews.

4.2.3 Data Analysis

This chapter applies the theoretical framework formed in the published paper on the relationship between interventions and values (Lin et al., 2023a) and attributes (Lin et al., 2023b) to facilitate the analysis of the two resources mentioned in 4.2.1 and 4.2.3. For further information on the selection process of the resources, and the applied theoretical frameworks of cultural values and attributes of this thesis, please check Chapter 1.3.3. Overall Methodology.

The data analyzing process included three steps:

First, the author extracted the sentences which involved the terminology of intervention concepts and attributes, including contents implying their explanations, interpretations, and definitions from the interviews.

Second, the extracted contents were structured and classified in pre-coding according to the theoretical framework on values and attributes of built heritage.

Third, analysis and comparison of the structured data to reveal (1) the frequency of mentioning the values and attributes within the two selected datasets (4.2.1 and 4.2.2) and (2) Comparing the relationships between attributes and the selected intervention concepts from different interviews.

4.3 Findings

4.3.1 Comparison of Intervention Concepts

In comparison, the percentage of the concepts defined and undefined at the international level is 62: 58, while at the local level is 36: 64. At the international level, with the support of glossary and definition parts in the documents, a higher rate of defined concepts is identified, whereas, at the local project level, besides the concepts inquired for definition, seldom were others defined.

What is common between the two levels is that when defining concepts, both sources can identify other concepts to support the definition process. However, there are nuances between the terminologies used at both levels. Besides 80% of them overlapping, unique terminologies were identified, such as “anastylosis,” “non-intervention,” “interpretation,” “reintroducing,” “monitoring,” and “enhancement” at the international level; and “revamp,” “repurpose,” “remodeling,” “reprogram,” and “reconfiguration” at the local project level.

Another commonality between the two levels is that when mentioning concepts at the international level, especially those documents originating from the local context, tend to use examples to support the definition. Examples include the New Zealand Charter, Burra Charter, and China Principle. At the local level, professionals often use their past experiences to explain the concepts. Since the concepts are more often related to specific heritage types or cases, professionals tend to mention more attributes that convey the cultural significance of built heritage in explaining where interventions have been applied as actions. However, the action of “removal” is

generally mentioned less frequently, followed by “adding” and “keeping”. As for the values, they are often assumed or accepted due to the type of built heritage, but they are primarily absent during the intervention concepts defining process at both levels.

TABLE 4.1 The comparison of intervention definitions between international and local project levels.

Definition	Interventions in doctrines	Interventions implemented in NGS
Conservation	Conservation is a broader concept that includes all intervention concepts (as an umbrella concept), ranging from non-intervention, maintenance, preservation, restoration, adaptation, and reconstruction, including retaining, reintroducing, and changing the original uses. Conservation manages change and pursues a continuous balance between the cultural significance conveyed by past, present and future stakeholders, a layering of values and attributes.	Conservation is different than preservation. Influenced by the dual law system, conservation is seen as a broader concept that overarches the others but seems to exclude preservation. In Singapore, it specifically targets a zone or area (more than one building) that is closely working with new development, in which there is more flexibility in removing and adding attributes of the buildings. Conservation is also related closely to adaptive reuse, which has been treated as one of the “practical forms of conservation when implemented”.
Preservation	Preservation is a concept that aims to maintain all attributes conveying cultural significance, aiming to maintain maximum integrity. It is different from and sometimes beyond maintenance; including other interventions, such as repair and restoration, in order to keep the cultural significance.	Preservation is different than conservation. Influenced by the dual law system, preservation is considered as the strictest concept for requiring maximum retaining of the building (from elements to use), particularly targeting national monuments. In a way, preservation in Singapore can be defined as building conservation with maximum retention.
Restoration	Restoration happens when the attributes conveying cultural significance are damaged, but still recognizable. Restoration means to bring the attributes back to a previous known stage of condition, using the same material and form. Restoration is not about pursuing unity in style, but about ensuring the integrity of the conveyed cultural significance and valued attributes. Restoration also reveals ‘preferred’ values, through the removal of earlier additions, which are considered dissonant to the cultural significance. It could also be seen as a partial Reconstruction.	Treated as a subset of conservation, however, restoration has a different mindset and approach to looking at the past. Restoration is about bring attributes back (from surface to structure) to a certain moment in time, through the addition and/or removal of certain layers of attributes. Restoration is also often used as a tool for maintaining social harmony; therefore, a certain flexibility is given, such as materials and colours.

What is different is that while “restoration” is a very sensitive concept with many explanations provided at the international level, at the local level, it received more attention from academics and less from professionals in practice, such as government professionals and architects. Particularly, from the government professionals’ point of view, “restoration” also seemed to be a tool for maintaining harmony in society and is “allowed” to have more flexibility than the conservation principle defined at the international level.

Furthermore, at the international level, “conservation” is often mentioned in relation to other concepts such as “preservation,” “restoration,” and limited references to “adaptation” and other “use-related” concepts. However, at the local level, “conservation” is more commonly associated with “adaptive reuse.” In Singapore, “adaptive reuse” has been viewed as a practical form of “conservation” when implemented. This mindset is driven by the city-state’s limited land resources. By adopting “adaptive reuse,” property owners can maximize their gross floor area (GFA) and receive incentives from the government.

In general, the definition of concepts is aligned with how the international level is defined. However, as one of the interviewees pointed out, the definitions in Singapore have their own approach and are a variant that evolved from the international level. The concepts at the local level merged with the local law system and channelled two terminologies into two management systems, indicating the conservation or preservation of different heritage types and levels of significance.

4.3.2 Comparison of Cultural Values

The reference to values when defining intervention concepts was as diverse at the international level as at the local project level. However, they vary in priority. Both historic and social values are among the most prioritized values at both international and local levels. However, at the local level, Singapore also prioritized economic values, which not only treated it as capital but “make use of” built heritage. This idea is already embedded in the Venice Charter, first supported by social values (ICOMOS, 1964) and now by economic values, derived from the idea of limited land resources in Singapore and the historical development of cultural tourism, which calls for “economic sustainability” in the conservation field in Singapore. In the comparison of the overall least referenced values, while age (6.4%) and political values (6.6%) are rarely identified at the international level, scientific (3.5%) and ecological values (5.1%) are less identifiable at the local project level (see FIG. 4.1).

In comparing the concepts that reference all eight values, what is common is that “conservation” is identified with all the values in both levels. At the international level, “conservation” has become a broader concept that encompasses other concepts and is used not only for single monuments but also for historic urban landscapes. At the local level, although “conservation” was also identified with all the values, it seemed to have a broader definition, similar to the doctrines. However, its definition was influenced by the Singapore dual legal system, governing not only single monuments but also conservation zones and areas.

As for the comparison of the leading values and common leading values, significant differences are found in the popularity of traditional values at the international and local levels. For example, historic and aesthetic values, which have been popular at the international level, were not as popular in influencing the concept definitions at the local level. Specifically, when defining "preservation," at the international level, it is often related to historic, aesthetic, and social values, whereas at the local level, political, historic, and social values take priority. There are dramatic contradictions when comparing the definition of "restoration." While historic value is highly referenced and other values are relatively evenly referenced at the international level, at the local level, historic value is absent, and instead, social, age, and economic values are highlighted.

Nevertheless, what is in common between the two levels, attentions were never put on ecological values when defining concepts (see FIG. 4.1). At the international level, minority information was identified when referencing the values in historic gardens, military heritage and historic urban landscape; at the local level, as the NGS, has its own indoor climate requirement for gallery and museum use, ecological values were only identified when mentioning the materials of the openings, such as windows and glazing rooftop with water surface.

In comparing the role of values influencing the definition of intervention concepts, what is common is that contradictory values existed at both levels. For example, age values at the international level and social values in defining "restoration" at the local level. Particularly, in the case of Singapore, it aligns with the idea hinted at in the Burra Charter (ICOMOS Australia, revised 2013) (although not focusing on specific concepts) that social values are sometimes related to "cultural responsibilities" for continuing the association between the local communities and places of significance through "restoration." This idea was identified from the government's point of view when discussing the case of religious buildings' "restoration," rather than emphasizing the international principle of "restoration" and respecting the local voices. In a way, "restoration" became a strategy for maintaining the harmony of society and the stability of the economy.

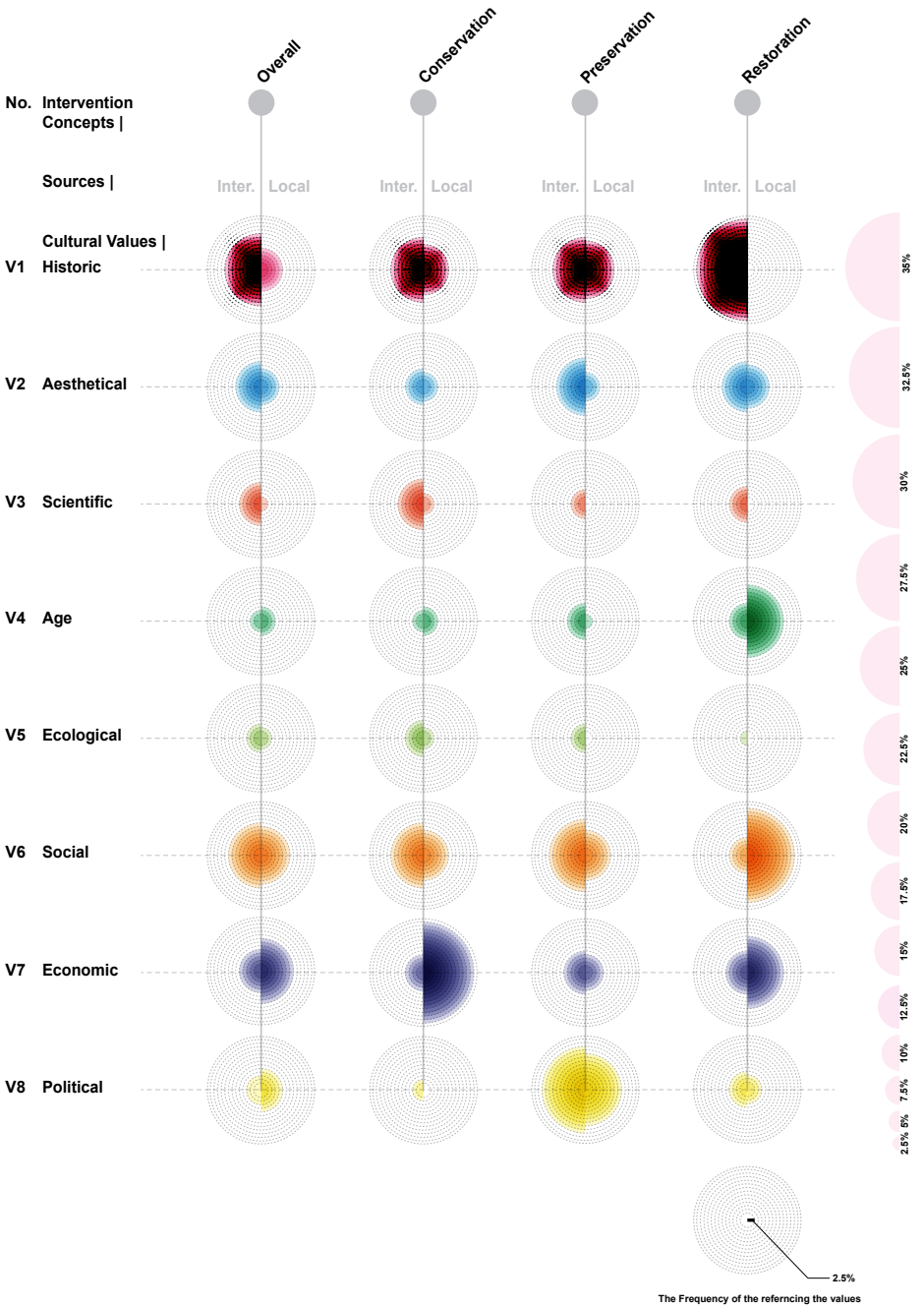

FIG. 4.1 The comparison of the overall frequency of values conveyed, and in each concept between international (doctrinal documents) and local project (NGS) level.

TOC

4.3.3 Comparison of Attributes

When comparing the role of attributes in the definition process from a tangible perspective, the commonality is that “material” is prioritized at both international and local levels overall. Most of the tangible attributes show higher frequencies at the international level, including “setting,” “location,” “structure,” and “form.” At the local level, “surface” and “fixture and fittings” are highly prioritized. In contrast, from an intangible perspective, half of the categories show that local levels emphasize specific intangible categories more than at the international level, primarily “use and functions,” “management system,” and “design.” However, “process” and “relation” are the two intangible categories commonly referenced less at both international and local levels, especially in “preservation” and “restoration.”
Further discussions on whether tangible or intangible attributes dominate in defining specific concepts at the international and local levels can specify many similarities in defining “conservation” and “restoration.”

When defining “conservation”, while at the international level, “conservation” was identified as the only concept referencing all categories of attributes, the Singapore context, also regarded a relatively diverse category of attributes, when compared to other concepts. Apart from the fact that both levels prioritized the same attributes categories, as “setting” in tangible and “use and functions” in intangible, the nuance of preferred attributes are identified at smaller architectural scales of tangible attributes categories. Such as while “location” and “material” and “structure” are highlighted at the international level, “form”, “fixture and fittings” and “surface” was referenced more at the local level. From intangible attributes perspectives, whereas “craftsmanship and technologies” are focused at the international level, “management system” are more emphasized at the local level. Moreover, at the international level, “conservation” has become a broad concept that umbrellas other concepts such as “preservation” and “restoration” in multiple international doctrines. While in Singapore, the international doctrines and their definitions of the intervention concepts were told to be used as reference for the local practices, yet, the definitions are far more influenced by the dual law system. “Conservation” is specifically associated with “conservation zone” and closely worked with new developments managed by the Urban Redevelopment Authority (URA). Therefore, specific attributes, such as “setting”, “use and functions”, and “management system”, were widely emphasized during the interviews.

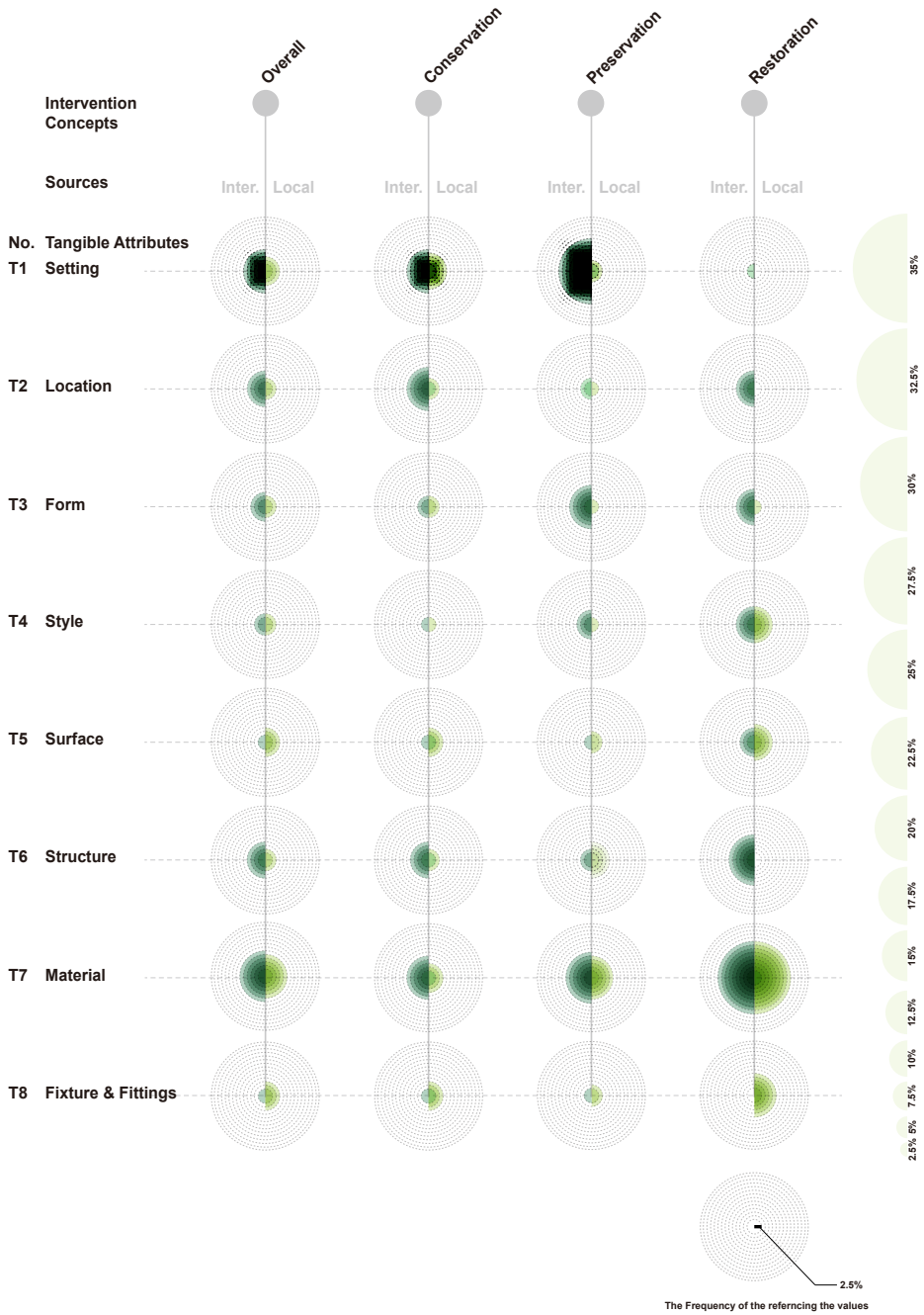

FIG. 4.2 The comparison of the overall frequency of valued tangible and intangible attributes, and in each concept between international (doctrinal documents) and local project (NGS) level.

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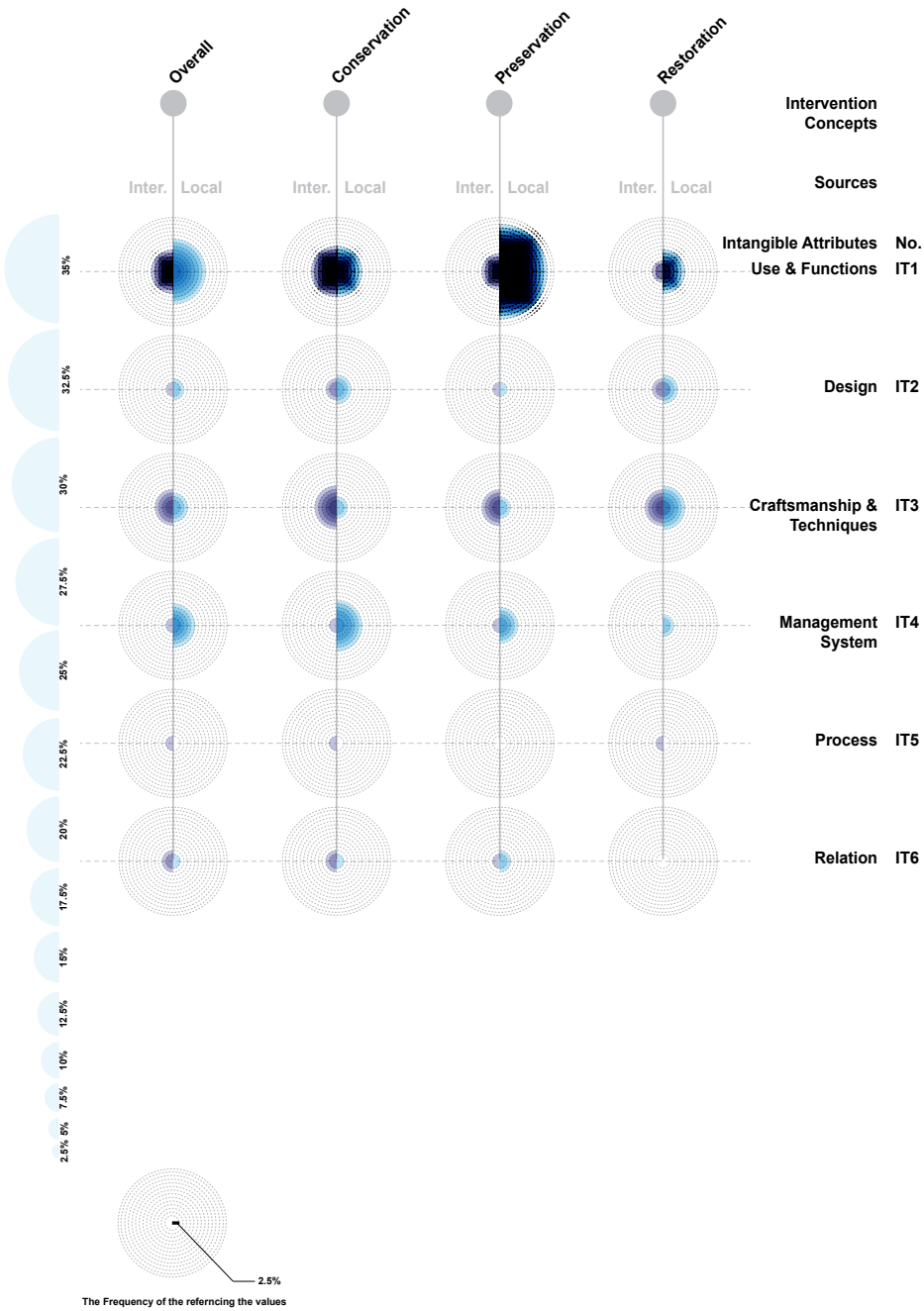
Overall
Conservation
Preservation
Restoration
Intervention Concepts
Inter. Local
Inter. Local
Inter. Local
Inter. Local
Sources
Intangible Attributes No.
Use & Functions IT1
Design IT2
Craftsmanship & Techniques IT3
Management System IT4
Process IT5
Relation IT6
35%
32.5%
30%
27.5%
25%
22.5%
20%
17.5%
15%
12.5%
10%
7.5%
5%
2.5%
2.5%
The Frequency of the refernсing the values

TOC

“Restoration” is another intervention concept identified with alignment in referencing attributes at both levels, particularly the “material” and “style” of the tangible attributes category and the “craftsmanship and techniques” of the intangible attributes category. However, subtle differences were also identified in specific categories. For example, at the local level, from the tangible perspective, more interior perspectives, such as “fixtures and fittings”, including furniture and decorations in the gallery space, were emphasized, whereas “structure”, “location”, and “setting” were emphasized. From the intangible perspective, while “use and functions” received the same amount of attention as “craftsmanship and technologies” at the local level, specific categories, such as “management system” and “process”, are emphasized only in either one of the two sources.

On the contrary, with fewer alignments, “preservation” is defined differently from the perspective of attributes at international and local levels. At the international level, tangible attributes such as “setting” and “material” are highlighted, whereas at the local level, “structure,” “surface,” and “fixture and fittings” have received relatively more attention compared to the international level. This is because in the case of Singapore, only main “structures” such as staircases, columns, and walls, as well as “fixture and fittings” such as wooden furniture and lighting fixtures, were kept. Nevertheless, at the local level, the intangible attributes played a more dominant role, particularly “use and functions” and “management system.” This was due to the dual law system in Singapore; when mentioning ‘preservation,’ interviewees associated it with the national monument law, emphasizing the strictness of keeping the whole building intact, including its “use and functions.”

4.4 Discussion

To contribute to theorizing the definitions of intervention concepts, the present research draws from a comparative study between the international and local project levels, using international doctrinal documents and a selective case study in Asia, specifically Singapore's National Gallery Singapore (NGS).
On a general level, a trend was identified: learning from international experiences, the definitions of the intervention concepts are aligned with the doctrines. For example, "conservation" is a broader concept that encompasses other concepts, including the differences between "conservation" and "preservation," as well as conservation principles that respect heritage. However, one of the local interviewees mentioned that Singapore has its own approach, which is a variant that learns and evolves from international experiences in defining and understanding the concepts. This approach is also known as "governmental language," which facilitates policy implementation. Indeed, during interviews with local professionals, several interviewees, especially those from the practice, agreed that by following the governmental language, their efforts can be channeled effectively into real projects. Arguably, some other interviewees, particularly academics, disagreed with this approach to defining and understanding the concepts. For example, they believed that the approach to restoration has put Singapore's heritage at risk.

Even though the definitions of the concepts seemed to be aligned at both levels, different prioritization of the role of cultural significance, values, and attributes in influencing the definitions has been identified. This research has also proven that, besides the values and attributes attached to the selected case study influencing the definition process, the bigger mindsets are also influencing the way the interviewees define the concepts. Mainly, due to limited land resources, a tropical climate, and a multi-ethnic society in Singapore, influences such as values aspects, economic and social values are emphasized. From the attributes aspects, materials and colors are allowed to replace. In a way, instead of pursuing the authenticity of the materiality, the mindset of how to conserve the built environment is derived from Singapore's pragmatism.

Furthermore, by seeing the commonality of lacking ecological values at both levels, rather than establishing new criteria, the old wisdom, such as the tropical mindset in building the Singapore shophouse, the policy of conserving the built heritage needs to integrate with contemporary planning and regulation. How to bridge the identified cultural significance and contemporary needs, as they should always be considered as a whole and not compromise on one side, is a more critical issue while defining the interventions.

4.5 Conclusion

Decoding intervention concepts through the lens of cultural significance, values, and attributes is possible. Besides distinguishing the concepts defined by different cultures, this research also revealed that the issue of different definitions is beyond linguistic issues. The dynamic role of values and attributes, conveying cultural significance, brings diversity to the intervention concepts. This part of the research concludes that even though, in general, the definition of intervention concepts follows the international trend, they vary in the Singapore context. Besides the values and attributes attached to the selected case study influencing the definition process, the broader mindsets also influence how the interviewees define the concepts. Mainly, due to limited land resources, a tropical climate, and a multi-ethnic society in Singapore, economic and social values are emphasized from a values perspective, and materials and colors are allowed to replace from an attributes perspective. In a way, instead of pursuing the authenticity of the materiality, the mindset of how to conserve the built environment is derived from Singapore's pragmatism.

Further research is suggested to compare multiple cases within a single cultural context, combining behavioral studies and artificial intelligence to examine how cultural significance influences the implementation of intervention concepts. Additionally, it is recommended to develop different frameworks for defining intervention concepts in other cultural and language contexts.

Last but not least, we cannot forget that concepts evolve between policy documents, across time and space. Integrating old wisdom identified from the cultural significance into the new criteria in bridging contemporary needs should be considered as a way to develop compatible intervention concepts within a specific context. This research emphasizes that rather than judging the intervention concepts upfront, one can understand the why (values) and what (attributes) that ones try to intervene in and then assess how (actions) the ones implement in forming their built environment.

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5 Conclusions and Recommendations

This chapter concludes the dissertation. It summarizes the main outcomes of this research, addresses the research questions, examines the scientific and societal relevance of this research, and provides its limitations and recommendations for future research.

5.1 Research Statement

The aim of this research was to explore and compare the different concepts and definitions used to describe interventions in built heritage through the lens of cultural significance, within the scope of international doctrines. Additionally, it aimed to research how these interventions are implemented at the project level in a local context. In order to fulfill the aim of this research, cultural significance was broken down into two variables: the cultural values (why) and attributes (what) of cultural significance. This way, it would complement the traditional definition approach - using one term to describe the other or explaining from linguistic origins – with a contribution to theory by revealing the diversity in the decision-making of interventions, bridging academia and practice. A recap of the main and sub-research questions asked and key results obtained is presented below.

The main research question was:

— **What are the trends of intervention definitions, under the influence of values and attributes of cultural significance, between theory and practice?**

Three other sub-questions were developed to answer this question.

Sub-question one:

— **What are the concepts and their definitions in international doctrines and at the local project level?**

In addressing this question, this research utilized two chapters to explore the issues of definitions in theory (Chapter 2.1) and practice (Chapter 3.1).

Sub-question two:

— **What roles do values and attributes of cultural significance play in defining interventions scoping international doctrines and at a local project level?**

In answering this question, using a similar analysis approach and the same data resources, this research used two chapters to address the issues of the role of cultural significance, specifically values (Chapter 2.2 and Chapter 3.2) and attributes (Chapter 2.3 and 3.3), in defining the intervention concepts.

Sub-question three:

— **How are these interventions defined in comparison with international doctrines and at the local project level, including stakeholders' perspectives?**

In order to answer the first part of this question, a comparative study was conducted in Chapter 4 to compare the results concluded in Chapters 2 and 3. Particularly, answering the latter part of this question, which relates to stakeholders and the local context, was designed to be addressed in Chapter 3. Since this perspective cannot be obtained in Chapter 2, Chapter 3 utilized semi-structured interviews to test the theory researched in Chapter 2.

In recapturing the main results, Chapter 2 identified more than 30 concepts in the nine international documents, which were selected from Europe, Asia, Pan-Pacific, and North America, spanning from the 1960s to the 2010s. Particularly, Chapter 2.1 pointed out that although these documents were frequently referenced in theory and practice, gaps in defining interventions existed between them, and these definitions evolved from different versions of the same documents over time. Three main findings were presented in this chapter. First, "conservation" has been presented as a concept umbrella for other interventions, and it has been identified differently compared to "preservation," as "preservation" has become a more stringent concept in maintaining the highest level of integrity of the built heritage. Consequently, "conservation" has been the most popular concept ever since the first version (1992) of the New Zealand Charter was published. This result resonates with Ashworth's theory (2011) of the incomplete paradigm shift between heritage discourses, and the two terms should not be treated as synonyms. Second, "repair" was found to play a

paradoxical role between “restoration” and “reconstruction,” which created divergent opinions between documents. From this point of view, Ganguly’s statement (2023) about the definition of the intervention concept should be considered “much more than Latin.” Third, the notion of “use” has expanded from the functions of the monument (ICOMOS, 1964) to the “associations of places” (ICOMOS Australia, 1999; ICOMOS Australia, revised 2013), which included activities, traditional habits, accessibility, and so on. The complexity of mentioning different forms of “use” has later become the reason why some (re)interventions were put into a grey area and used interchangeably.

With such diverse definitions identified, in order to support the definition process and its relations with cultural significance, Chapter 2.2 reveals the dynamic role of values in influencing the definition of intervention concepts. This chapter also reviews a larger pool of literature, analyzing sixty-nine documents that have been seen as doctrines spanning the past century. Three key findings are highlighted. First, historic, social, and aesthetic values were the most referenced values in influencing the interventions scoping the doctrines. As more communities adopt a multi-stakeholder perspective in the heritage management process, the influence of social values has grown. This aligns with theories that emphasize the important role of social values in “maintenance” (Sample, 2016) and “repair” (Berger et al., 2023). Second, while intervention concepts share similar definitions and leading values, their secondary values and values hierarchy, such as aesthetical to “restoration” or social values to “conservation”, influence the variation in their definitions. Third, certain values play contradictory roles in the same intervention concepts from different documents, such as age values in “restoration”.

Working closely with cultural significance, attributes are another aspect that plays a pivotal role in influencing the definition process. In Chapter 2.3, different patterns of how the roles of attributes influence the definitions were discussed using eight selected intervention concepts, mainly in three key findings. First, although the attention to intangible attributes has increased in the last few decades, the relationship between interventions and tangible attributes remains stronger. The highest frequency of referencing tangible attributes was identified in “relocation” and “preservation,” while the lowest was in “rehabilitation.” Second, certain attributes play contradictory roles, such as “material” in tangible perspectives as well as “use” and “process” in intangible perspectives, which creates inconsistent definitions between documents. Third, although often found attached to value descriptions, the way attributes influence the definition is different. Notably, this chapter concludes that instead of having a more dynamic and fluent essence, attributes are often identified with one another in building layers, and therefore they trigger the intervention concepts in hierarchical patterns. This resonates with the theory of Veldpaus (2015) on how attributes support decision-making differently than values.

Based on the results of the international trends discussed within the scope of international doctrines in Chapter 2, Chapter 3 presents a case study in an Asian local context, specifically Singapore, to validate how the interventions were defined and implemented in a real project. This validation was carried out through semi-structured interviews with the stakeholders involved.

In Chapter 3.1, despite drawing on international experiences in conservation, it is revealed that Singapore has developed its own approach to defining and implementing interventions. During the interviews, the four selected intervention concepts - "conservation," "preservation," "restoration," and "adaptive reuse" - were used as a basis for interview discussion. Furthermore, more than forty intervention concepts were identified during the definition processes. However, most of them were not defined and were used interchangeably with one another. Only when asked as a request for the relations between the concepts or value-related and attributes-related contents could be identified. The results show that, rather than being affected by the language, the definitions of these concepts are heavily influenced by the local context, particularly the dual law systems governing the built environment. In Singapore, 'conservation' and 'preservation' not only refer to different concepts but also indicate two distinct law systems, management authorities, and heritage types. While some interviewees believed that this system helps guide professionals in their practice, it also creates a dichotomy between "preservation" and "conservation", thereby neglecting other concepts such as "restoration". Nevertheless, when it comes to the concept of "adaptive reuse", some interviewees expressed that there is still room for improvement in understanding its definition and controlling its impact in the field of conservation.

In order to further discuss the roles of values in influencing intervention definitions in the Singapore context, Chapter 3.2 presents the economic, social, and political value preferences in defining "conservation," "preservation," "restoration," and "adaptive reuse." In the context of Singapore, while there were shifts in values identified in certain interviews, such as social values gaining more focus in "conservation" and "restoration," most interviewees agreed that definitions in conservation and their approaches are deeply influenced by the mentality of "pragmatism" (Cheung et al., 2021) in pursuing economic sustainability. This does not necessarily mean that all interventions were driven by economic values but rather confirms their influence on conservation decision-making processes. On one hand, due to Singapore being a small nation with limited resources, every decision made in conservation must ensure that it does not create waste and can be sustained by future generations. On the other hand, from the Singapore government's perspective as a multi-ethnic society, avoiding conflicts between different cultures provides political stability to the nation and further contributes to the economy.

Interventions in the conservation field then became a tool to leverage the relationship between Singapore's conservation departments and local communities, going beyond the definitions suggested in international doctrinal documents. In particular, social values have played a critical role in influencing the implementation of "restoration". According to the aforementioned reasons, some interviewees expressed concerns that this approach sometimes raises questions about what might or may not be perceived as a good practice in conservation.

In the implementation of a local project, Chapter 3.3 identifies the different roles that attributes play in influencing the definition and decision-making process of intervention concepts. Certain attributes, such as the dual law system and tropical mindset, have a significant impact on Singapore's built environment. When defining intervention concepts, the interviewees are influenced by the dual law system, particularly in relation to "preservation" and its connection to monuments. This includes a focus on the structure and materials. In contrast, "conservation" is related to non-monuments, other types of heritage, and areas, with emphasis placed on façade, use, and settings. The category of "adaptive reuse" is associated with attributes that consider various perspectives on use, including functions, the sequence of experiences, and historic events. The "tropical mindset" is also crucial in shaping the built environment in Singapore's tropical climate. However, there is a potential discontinuity in space management from planning to architectural and interior scales when implementing the clear distinction between "preservation" and "conservation". Therefore, it is important to explore how the "tropical mindset" can be sustained and integrated with the dual legislative system in the redesign of Singapore's historic landscape. Additionally, the role of attributes in influencing intervention concepts may shift during different stages of the building's lifespan or across disciplines. Based on the case of NGS, it is recommended that more disciplines be involved, particularly from the construction perspective, starting from the preparation stage of the competition. This discussion should cover the recognition of attributes, their potential interventions, and future use. By doing so, the impact of heritage buildings can be mitigated, and communication costs can be reduced.

Additionally, from a stakeholder perspective, It was discovered that these intervention concepts were defined differently based on the **professional backgrounds and roles of the stakeholders** who took part in different stages of the NGS competition. During the interviews, the definitions of intervention concepts were seldom provided, unless specifically requested by the author. Furthermore, when definitions were provided, most interviewees used different terminology interchangeably, using one term to describe another. Notably, several interviewees, particularly professionals with academic backgrounds, provided more in-depth

explanations, discussing certain concepts' philosophical and ethical perspectives. On the other hand, professionals from the practical field tended to define concepts by emphasizing the aspect of "actions" during the definition process. In a sense, the third sub-research question was not fully answered, as the implementation of the intervention concepts went beyond mere definitions. The findings showed that some stakeholders mentioned that even if the intervention concepts were well-understood, unforeseen circumstances and the complexity of the construction allowed for certain activities and proportions to be carried out under the guise of the defined interventions, such as the amount of demolition in "conservation". By posing this question, the research revealed that the implementation of the interventions depended heavily on the decision-maker and the importance of a conservation management plan based on the existing situation rather than solely on earlier documentation.

Taking the results from the international and local levels, Chapter 4 presents the two levels through a comparative approach. In general, a trend was identified: learning from international experiences, the definitions of the intervention concepts at the local level are mostly aligned with the doctrines. However, as one of the local interviewees mentioned, Singapore has its own approach, which is, as a variant, learning and evolving from international experiences in defining and understanding the concepts. This approach is also famous for being called "governmental language," which facilitates policy implementation. Three concepts were discussed in this chapter: "conservation," "preservation," and "restoration." At the international level, "conservation" has been seen as a broad concept including "preservation," "restoration," "adaptation," and other concepts; at the local level, "conservation" is different from "preservation." Influenced by the dual law system, "conservation" is seen as a broader concept that encompasses the others but seems to exclude preservation. At the local level, it specifically targets a zone or area (more than one building) that is closely working with new development, in which there is more flexibility in removing and adding attributes of the buildings. Conservation is also closely related to "adaptive reuse," which has been treated as one of the "practical forms of conservation when implemented." Particularly, from the values perspective, while at the international level, historical, scientific, and social values are emphasized, economic values are prioritized at the local level.

"Preservation," at the international level, is a concept that aims to maintain all attributes conveying cultural significance, aiming to preserve maximum integrity. At the local level, due to the influence of the dual law system, "preservation" is considered the strictest concept, requiring maximum retention of the building (from elements to use), particularly targeting national monuments. In a way, preservation in Singapore can be defined as building conservation with maximum retention.

“Restoration,” at the international level, means bringing the attributes back to a previously known stage of condition, using the same material and form. “Restoration” also reveals ‘preferred’ values, such as historic and aesthetic values, through the removal of earlier additions that are considered dissonant to the cultural significance. It could also be seen as a partial “reconstruction.” Meanwhile, at the local level, “restoration” is treated as a subset of conservation but has a different mindset and approach to looking at the past. “Restoration” is about returning the visual appearance (from surface to structure) to a certain moment in time, through the addition and/or removal of certain layers of attributes. Moreover, “restoration” is also often used as a tool for maintaining social harmony; therefore, a certain flexibility is given, such as in materials and colours. This part of the research has also proven that besides the values and attributes influencing the definition process, the bigger mindsets also influence the way the interviewees define the concepts. Mainly, due to limited land resources, a tropical climate, and a multi-ethnic society in Singapore, influences such as economic and social values are emphasized, as are the materials and colours allowed or to be replaced. In a way, instead of pursuing the authenticity of materiality, the mindset on how to conserve the built environment is strongly influenced by Singapore’s pragmatism.

The definition of the intervention concepts cannot remain random, as revealed in this research. Greater consistency in the concepts and definitions used can only help experts build common ground and cooperate among academics and practitioners. From a broader perspective, greater consistency also promotes cross-disciplinary cooperation. Although “renovation” may not be emphasized in heritage-protection documents, there is an ongoing wave of “renovation” in energy-driven policies targeting built heritage in Europe. Essentially, while heritage-protection documents may not prioritize “renovation,” energy-driven policies increasingly promote “renovation” initiatives as part of efforts to conserve built heritage. The misalignment in language usage and related criteria can create challenges, as it may lead to conflicting priorities and jeopardize the conservation of built heritage.

Understanding and further applying definitions does not mean being rigid or less creative in the redesign process; instead, “without maintaining the consistency of the definition in a redesign project, creativity can never be more than speculation, and relevance can never extend beyond a particular moment in time” (Rosenau, 1968, p.176). Nevertheless, this does not mean searching for a unified definition but understanding the ‘uncommon’. This helps us, on the one hand, respect the diversity between cultural contexts; on the other hand, revealing discrepancies as well as avoiding misunderstandings and misleading in the future decision-making process.

This research proved that decoding intervention concepts through the lens of cultural significance, values, and attributes is possible. Besides distinguishing the concepts defined by different cultures, this research also revealed that the issue of different definitions is beyond linguistic issues, especially beyond the Latin-based defining approach. It is the dynamic role of values and attributes, conveying cultural significance, that brings about the diversity of the intervention concepts.

5.2 Research Relevance

This research not only focuses on terminology and definitions but also emphasizes the need for action in raising awareness about the great diversity of intervention definitions. Additionally, it provides a possible solution for supporting existing definitions and the decision-making process.

The research has wide-ranging benefits for a diverse group of stakeholders, both scientifically and socially. For academic researchers, it serves as a foundation for understanding the variations and disparities in intervention definitions across international and local levels, as well as between theories and practices, and across different times and places. Moreover, this research offers a comprehensive reference for educational redesign programs in the fields of interior design, architecture, landscape design, urban planning and building law.

Apart from its scientific significance, the appropriate use of terminology holds practical importance. It enables the application of correct categories, appropriate materials and techniques, winning competitions, obtaining incentives, securing research funding, and avoiding incorrect statements that may lead to international conflicts. For architects and spatial designers in practice, this research promotes awareness in improving the efficiency and accuracy of decision-making in the heritage management process. It also helps them position and assess their design approaches by comparing intentions and outcomes. Local governments can benefit from this research by receiving support in establishing and revising redesign principles and guidelines, thus integrating the cultural significance of their local context.

Lastly, this research can be further disseminated through publications, exhibitions, and public presentations to educate residents, communities, and the general public about the importance of intervention definitions and the diverse values and

attributes associated with built heritage. This will establish a common understanding among stakeholders, facilitate cooperation, promote communication, sustain dialogue, and engage various parties in collecting more values. By doing so, it aims to avoid the culture of judgmental interpretations of interventions and guide our interventions towards correctness. As heritage is a collective creation of our culture, it is crucial that we work together to conserve our built environment. Understanding the definition of interventions is the first step towards fostering cooperation.

5.3 Research Limitations

Following the development of the research, five main limitations have been identified. These limitations include the language barrier, the recognition of cultural significance, and the limited time period for data collection. They will be discussed in the following paragraphs.

Firstly, the limitation of language. When starting this research, the author was already aware of and tried to avoid the language limitations caused by translation and interpretation when collecting and selecting data exclusively in English. English may be one of the official languages, but Singapore is a multi-ethnic society. This means that Singaporean English is mixed with other languages that connote different meanings, such as Malay, Tamil, and Chinese, which might differ from other English-speaking contexts worldwide. Furthermore, from the perspective of interpretation and translation, in the scope of international doctrinal documents, many of them were originally written in another non-English language, such as the Venice Charter – originally written in French. While the documents are translated, the terminology and meaning may be interpreted differently by the translator across language and space. The understanding of its original terminology used and meaning is inadequate.

Secondly, there is a limitation in the recognition of cultural significance. This limitation can be viewed from various perspectives. Methodologically, there is a limitation in the selection and application of case studies. While the NGS case was proven to be one of the most representative cases in Asia and Singapore, considering its level of significance, the scale of the heritage, cultural diversity of participants, and the intervention concepts used, these factors were deemed sufficient for generating fruitful discussions. However, it should be noted that NGS is just one type of heritage, specifically a national monument, in Singapore. Limiting the identification

of values and attributes to only one type of heritage may overlook the potential for discovering other roles of values, attributes, and cultural significance in influencing the definition of intervention concepts. Furthermore, it is important to acknowledge that a single case study in Asia and in the context of Singapore cannot fully represent the entire region or culture. Each case possesses its own uniqueness, and conclusions cannot be generalized. This also relates to the limitation of perspectives from certain stakeholders involved in this case study. The research primarily focused on professionals in the fields of conservation, architecture, and art, specifically from certain institutions and private agencies. As terminology and definitions contribute to establishing a common ground for communication, the range of stakeholders in this research may be perceived as a discussion among elites. From a cultural perspective, the recognition and interpretation of cultural significance vary across space and time, and its meaning can change and be reconstructed (ICOMOS Australia, revised 2013; Zancheti et al., 2009). Interpretations of cultural significance also differ between cultures (西和彦 et al.,2021), and sometimes even within the same culture (ICOMOS, 1994), as it should not always be treated as dichotomous, such as values and attributes, tangible and intangible. Further research could further address the linguistic and anthropological perspectives on how different cultures recognise cultural significance, values and attributes, as at the local level, the recognition of values can significantly differ among individuals, communities, and ethnic groups.

Thirdly, from a methodological perspective, a reflection on the case study is presented – an international competition. Initially, the main goal was to gather a wider range of international experiences and perspectives from professionals with diverse cultural backgrounds and from different countries, all working on the same project. However, due to the low response rate to the survey, the research had to modify its methodology and instead conduct interviews with targeted stakeholders who had participated in the NGS competition. While in Singapore, some interviewees were referred by local stakeholders through a snowball process. As a result, the participating stakeholders had a more localized focus but were still closely connected to the project itself.

Fourthly, even though a new defining approach and definitions have been developed from stakeholders' perspectives, there are limitations in terms of temporality and influence due to varying paces of implementation among stakeholders. For instance, when these definitions are adopted as local policies, the legislative procedure often hinders swift implementation, while community actions may change more rapidly. Although this research did not explicitly identify the aforementioned situation, as the stakeholders involved were professionals and government staff rather than the general population or specific communities, the author implied in Chapter 4 that the changing roles of stakeholders could influence the recognition and utilization of the definition and other perspectives on conservation policies. Particularly, since

this competition has been more than fifteen years, the notion of the concepts used or descriptions of values might change because of the change of professional roles of stakeholders, such as from governmental assigned professionals to independent scholars or architects, from locally based architects to internationally based.

Fifthly, from the perspective of collecting datasets, the time period was different than planned. Since this research began in the year 2020, the data collected from online platforms, which facilitated the analysis of international documents in Chapter 2, was only updated until the year 2021. Additionally, the literature referenced in the papers published in 2023 was only updated until 2022. Moreover, due to the pandemic, the plan for collecting data through physical visits in Singapore has been postponed until the beginning of 2023. With limited financial resources and the time constraints of the doctoral education schedule, only two months were planned and dedicated to data collection in Singapore.

5.4 Future Research Recommendations

According to the limitations mentioned in the previous section (chapter 5.3), future research recommendations are suggested as follows:

When considering language, it is suggested to conduct research on international doctrinal documents in languages other than English. This is especially important when implementing recommendations from these documents, as the process may involve translations and adoption by local communities over time and space. For instance, the UNESCO Convention on World Heritage and the Recommendation on the Historic Urban Landscape. To illustrate this, the case of Singapore, situated in a multi-ethnic country, it is recommended to further investigate the intervention concepts by comparing translations of these international doctrinal documents into different official languages like Malay, Tamil, and Mandarin.

The defining process of interventions is insufficient to address only values and attributes. Other aspects, such as actions, time and other objectives, should be considered in the next steps. Since this research primarily focuses on urban and architectural scales, future research could expand its scope to include natural and rural scales. Additionally, instead of comparing only one data resource at each level, future research could compare documents from various international and local

governments, institutions, and agencies. It could also examine terminologies used by different professionals in practice, such as architects and restorationists, and compare multiple cases within a regional or cultural context. From the stakeholders' perspective, it is suggested to conduct comparative research between professionals and specific communities or the general public. This future research can examine the gap between multiple stakeholders' understanding of the definitions and further enhance their alignment in order to establish better communication and cooperation.

Particularly, future research that aims to explore the process of defining interventions from a cultural perspective is recommended. On a theoretical level, future research should focus on examining how the understanding of these definitions changes before and after the intervention by means of an impact assessment. On a practical level, it is suggested that future research investigates the various ways in which values are categorized within specific contexts, such as the social values in Singapore or other similar contexts. In terms of attributes, further research could concentrate on analyzing the application of different concepts to specific building materials and technologies, such as wooden, steel, and concrete structures. Within a local context, future research could also compare other factors that influence the definitions, particularly from the perspective of heritage management, such as the top-down or bottom-up approach, and how they impact the implementation of intervention concepts in conservation. Additionally, a discussion on the impact assessment of how the roles of attributes shift after changes in the use of heritage buildings could be conducted. In terms of methodologies, it is recommended to combine behavioural studies and artificial intelligence to determine how cultural significance affects the actions taken to implement intervention concepts.

Last but not least, this research confirms that intervention concepts and definitions evolve over time and space, but also within the same document. Integrating old wisdom identified from the cultural significance into the new criteria in bridging contemporary needs should be considered as a way to develop compatible intervention concepts within a specific context. Greater transparency and consistency in defining and applying intervention concepts, even if changing over time and space, could help further develop disciplines as architecture and urban planning.

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TOC

Appendix

Overview of the Case Study

1 The Competition of the National Gallery Singapore

The international architectural competition for the National Gallery Singapore was called the Architectural Design Competition of the National Art Gallery Singapore and took place in 2007. The competition was organized by the Ministry of Communication and the Arts (MICA) in collaboration with the Singapore Institute of Architects (SIA). The objective of the competition was to give a new look to the two most important national monuments in Singapore, namely the former Supreme Court and City Hall, and convert them into the National Gallery Singapore (hereafter referred to as NGS). This gallery was envisioned to be the largest public institution for visual arts in Southeast Asia (Wee et al., 2016).

This competition was processed in three stages from February 2007 to May 2008 (see FIG.APP. 1.1):

TOC

Transformation of the two Singapore national monuments-former Supreme court and City Hall. Front Façade and the interior of NGS. Source: National Gallery Singapore

The Process of the competition of National Gallery Singapore (NGS)

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FIG. APP. 1.1. The timeline of the competition of the National Gallery Singapore.

First stage: Through an anonymous submission and judging process, there were 111 entries from 29 countries (Ang, 2015). The participation list was considered internationally diverse, ranging from North America, Europe, Asia, and the Pan-Pacific region (*ibid*). This anonymous judging process was considered ahead of its time compared to other international architectural competitions around the world. The entries were identified only by a computer-generated identification number. Details, including the competitors' past experience and track record, were revealed to the jury only after the shortlist had been agreed upon (MICA, 2007). The result of this process was later considered a surprise because none of the internationally renowned architecture firms were listed at that time, according to some former organizers.

Second stage: Five design schemes with different cultural backgrounds were short-listed at this stage. They were Studio Milou Architects (France), DP Architects (Singapore), Ho+Hou Studio Architects (Taiwan), Chan Sau Yan Associates in collaboration with Lekker Design (Singapore) and Smart Studio (Australia). After the list for the second stage was announced, each of the firms was invited to present in Singapore to the organizer to explain the design concepts of their designs.

Third stage: After the presentations from the second stage, three teams – Studio Milou Architects, Ho+Hou Studio Architects and Chan Sau Yan Associates + Lekker Design – were selected by the committees. During this final stage of the selection, the three teams were invited to discuss the possibility of realizing of the project with experts from structural, engineering, conservation, and museum perspectives. Meanwhile, public opinions were involved and collected through an architectural design exhibition at the City Hall, showcasing the three schemes.

Eventually, Studio Milou were selected as the winning team. Later on, together with CPG Consultants, they were appointed as Pincipal Consaltants to design and build during the construction stage (Ang, 2015). Due to the complexity of the challenging soil and building structural conditions, Takenaka- Singapore Piling Joint Venture (TCSP) was chosen to become the main contractor in 2011 because of its positive track record in engineering and construction experiences in Japan and Singapore (Ang, 2015). The Gallery was initially expected to be opened in 2012 (MICA, 2007). Due to the complexity of the project, after a ten-year period of closure and five years of restoration, the museum was finally reopened to the public in 2015, meanwhile celebrating Singapore's 50th Anniversary of Independence (Wee et al., 2016).

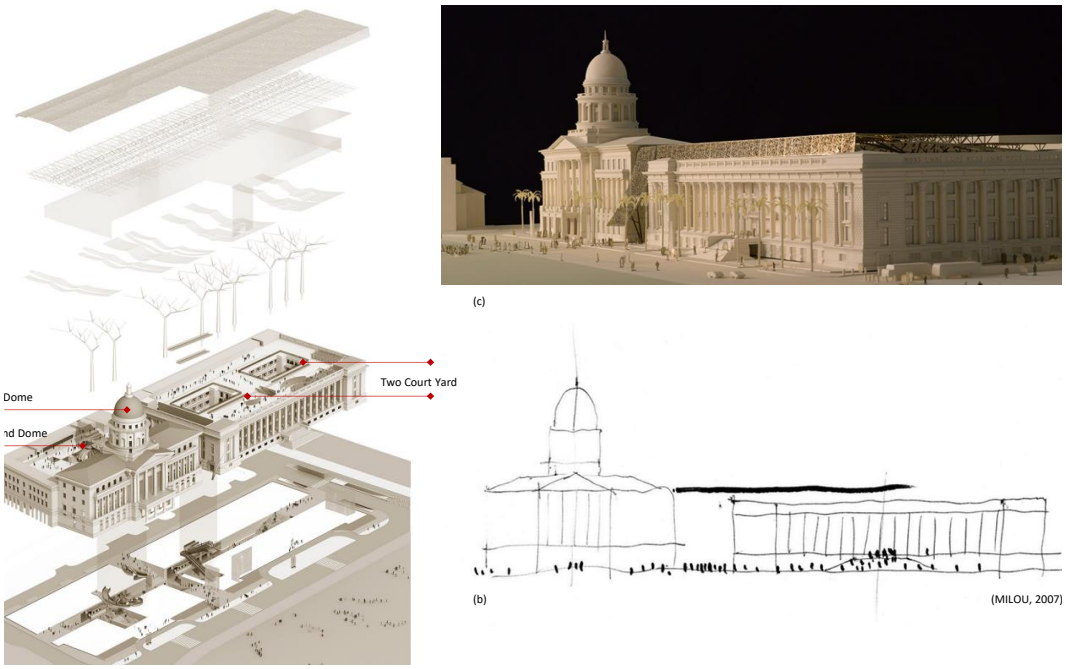

FIG. APP. 1.2. The design of the National Gallery Singapore winning scheme by StudioMILOU.

TOC

The design scheme of SudioMILOU (see FIG. 1.2) was considered to be a simple and elegant gesture by using a linear golden roof canopy to integrate while also respecting the two national monuments (Ang, 2015). According to the Jury's comments on its winning scheme: "The design scheme by StudioMilou Architecture elegantly integrates the two buildings at the roof level, with the use of a linear draped canopy, supported by tree-like columns, while respecting the fabric of the existing monuments. The scheme respects the existing entrances and introduces new ones to make the building porous at street level. A strong street concept runs through the buildings at basement level two, bringing visitors down to this level via large staircases and lifts. The visitors orientate themselves here before making their way up into the higher levels of the art gallery. Internal, dramatic new spaces are created via an extension of existing staircases and the introduction of new ones. Organization of spaces takes into detailed consideration how museums and galleries work. Of Studio Milou Architecture's design, the Jury's comments were that the scheme had the most delightful design and appeal. The extension of a staircase which leads from the basement to the rotunda acts as a strong architectural solution that at once links the basement and upper levels, which guides the visitor to the very heart of the former Supreme Court. The internal circulation route overall is well-planned in relation to public spaces. The designer has provided a good analysis of the curatorial function and requirement within the building" (MICA,2007, p.2).

2 A Brief of the Result of the National Gallery Singapore

As this thesis does not aim to present an impact assessment research on the two national monuments of Singapore, an introduction to the construction result is briefly provided using the three actions – KEEP, REMOVE, and ADD – developed as an "action" theoretical framework (Pereira Roders, 2007). These actions refer to the architectural parts that were kept, removed, and added during the transformation (see FIG. 2.1 and FIG. 2.2).

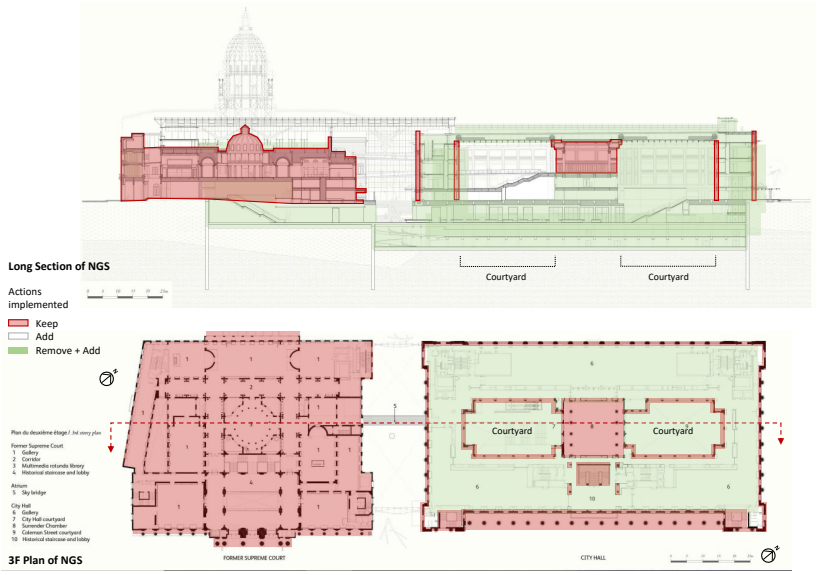

FIG. APP. 2.1. Long Section of NGS (top). 3rd floor Plan of NGS (down). The former Supreme Court (left) and the former City Hall are connected with two newly added flying bridges, a continuous roof and an underground passage.

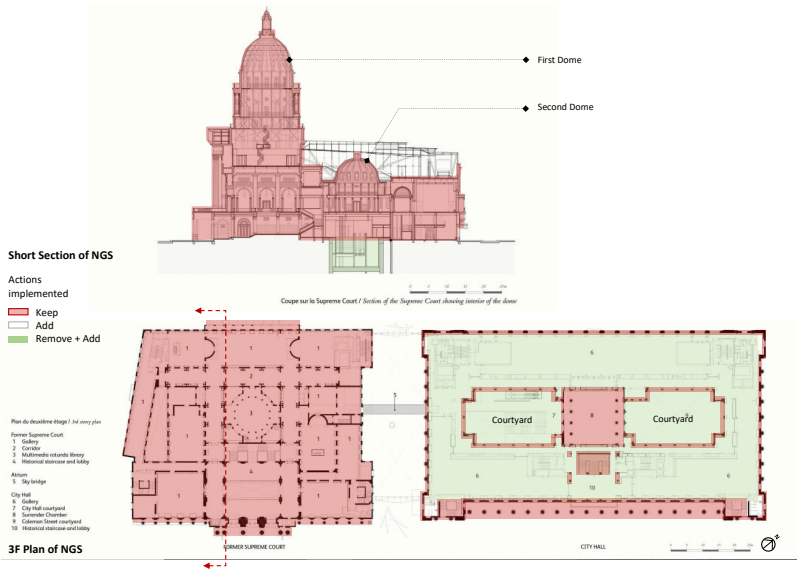

FIG. APP. 2.2. Short Section of NGS (top) and 3rd floor Plan of NGS (down). The short section (top) shows the relationship between the newly added roof and the “first dome”(high dome), and the “second dome”(library).

TOC

KEEP: In order to fulfil the initial concept of this scheme, the main facade of the two monuments has been retained. On the former Supreme Court side, most of the significant spaces have been preserved, including the two domes – the first dome (high dome) and the second dome (library) – and the interior of the courts. On the side of the former City Hall, the classical architectural style of its facade, the front steps of the former City Hall, a main staircase, and one of the most significant spaces, the Surrender Chamber, were kept.

REMOVE: While the interior of the Former Supreme Court side has been almost kept intact, the interior of the City Hall side has been largely removed, with only the inner facades of the two courtyards. This was due to the tilting of the building on the west-side corner; for structural safety reasons, the decision was made to demolish the interior corridors and slabs of the four levels Notably, in order to keep the Surrender Chamber, which is situated in the center of the two courtyards, a specific construction process was launched. The whole space of the Surrender Chamber was separated and detached from the City Hall building structure and then hung in the air until the new structure was ready. Furthermore, due to the instability of the "pile foundation" on the side of the City Hall building, as well as the misalignment of the building dynamics and height between two different structure systems, in order to create the "strong street concept" that runs the basement level, a huge basement was created, meanwhile, the original pile foundation of the City Hall side was removed. The new thick wall of the basement also creates greater structural support for the City Hall side.

ADD: At the ground floor level, between two monuments, a "golden veil" structure has been added to hint at the entrance of the National Gallery Singapore. This "golden veil" is connected with a continuous roof structure, supported by four "tree-like" structures. With this main gesture, the original exterior spaces were turned into interior spaces, adding new uses such as the passage between the two monuments, the two courtyards on the former City Hall side, and the back side of the space at the Former Supreme Court. Besides the connections of the ground and underground levels, two new bridges fly over the passage of the two monuments, connecting the second and third levels. A new basement has been added under both sides of the monument to support the new accessibility of the gallery, helping visitors' orientation, and also providing supporting services such as storage for artworks and parking lots. Meanwhile, a new layer of event space was added surrounding the rotunda. This has solved the problem of the back side space, which had air-conditioning and piping occupying it for years. On the former City Hall side, a new interior exhibition space has been constructed after the demolition of the floor slabs to host the temporary exhibitions.

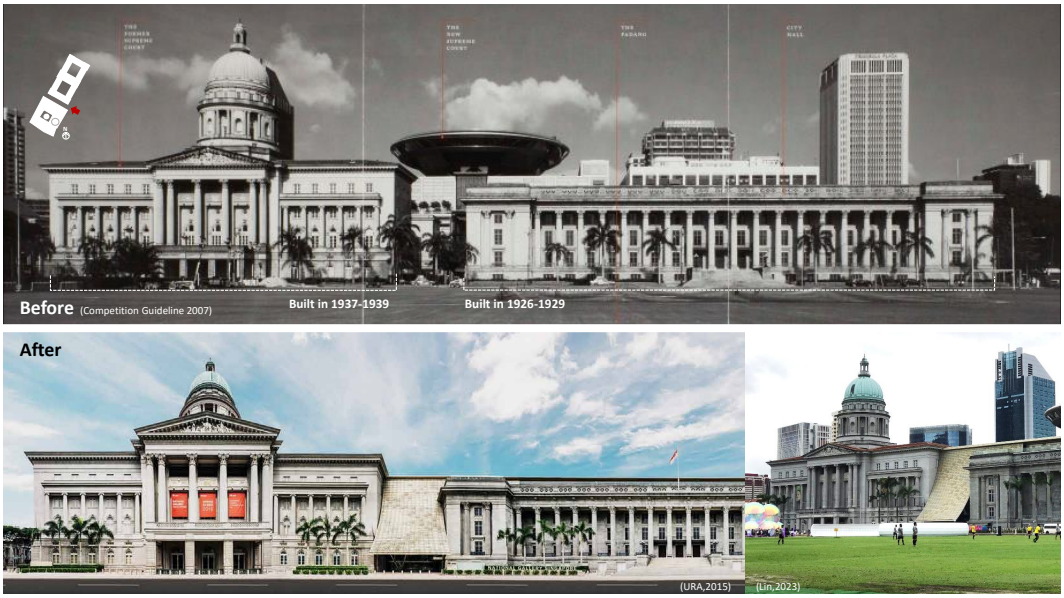

FIG. APP. 2.3. Looking at the façade of NGS from Padang(the open area in front of the site). Before the competition (top). After the new entrance - the "golden veil" (down).

FIG. APP. 2.4. A former exterior car passage between two buildings. After (right): The new entrance for entering the NGS.

TOC

FIG. APP. 2.5. Before (left): A former exterior car passage between two buildings. After (right): The new interior gathering area at the ground and underground level to help people orient to the entrances.

FIG. APP. 2.6. The entrance for the Chief Justice at the former Supreme Court. The Chief Justice used to take a private elevator and arrive directly at his office above. After (left): After the intervention, the entrance is closed and replaced by two side doors to access the exhibition spaces. A new bridge was added to the new gate by enlarging the original window opening. This intervention was considered controversial due to the interruption of the original spatial experiences of the Chief Justice.

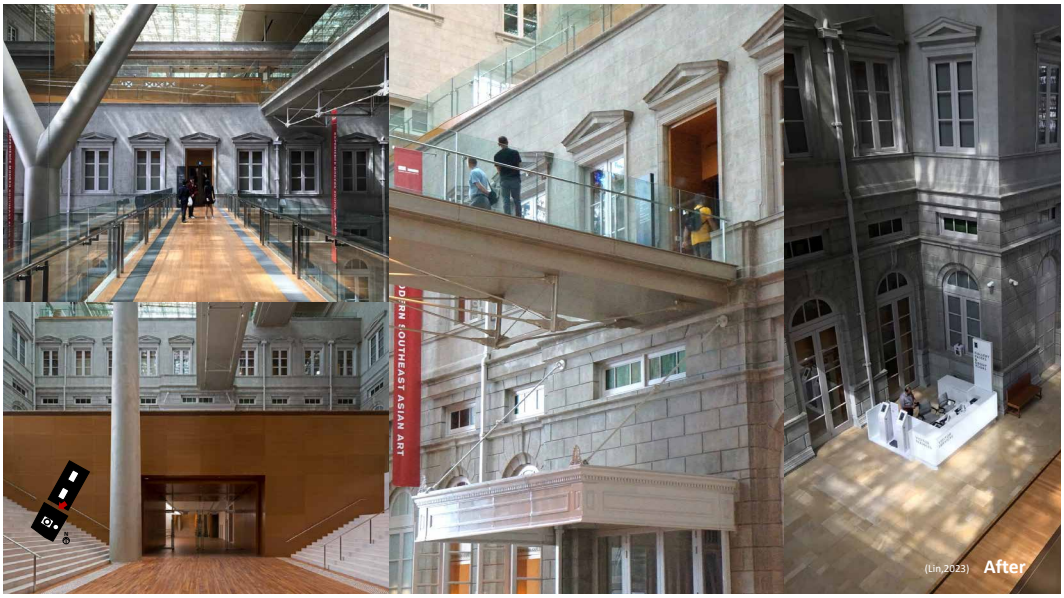

FIG. APP. 2.7. The new ways of approaching and experiencing the former Supreme Court.

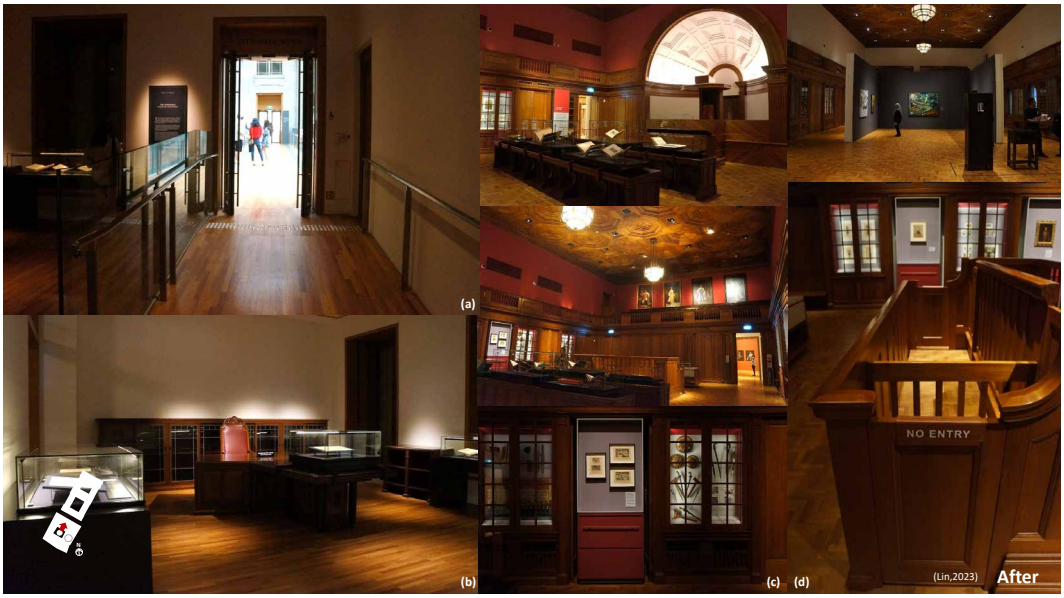

FIG. APP. 2.8. (a) The newly added bridge directly arrived at the office of Chief Justice. (b) The office of Chief Justice. (c) The layout of the main court has been kept and used for exhibition use. (d) The facility for the suspect to stand and be questioned by the Chief Justice.

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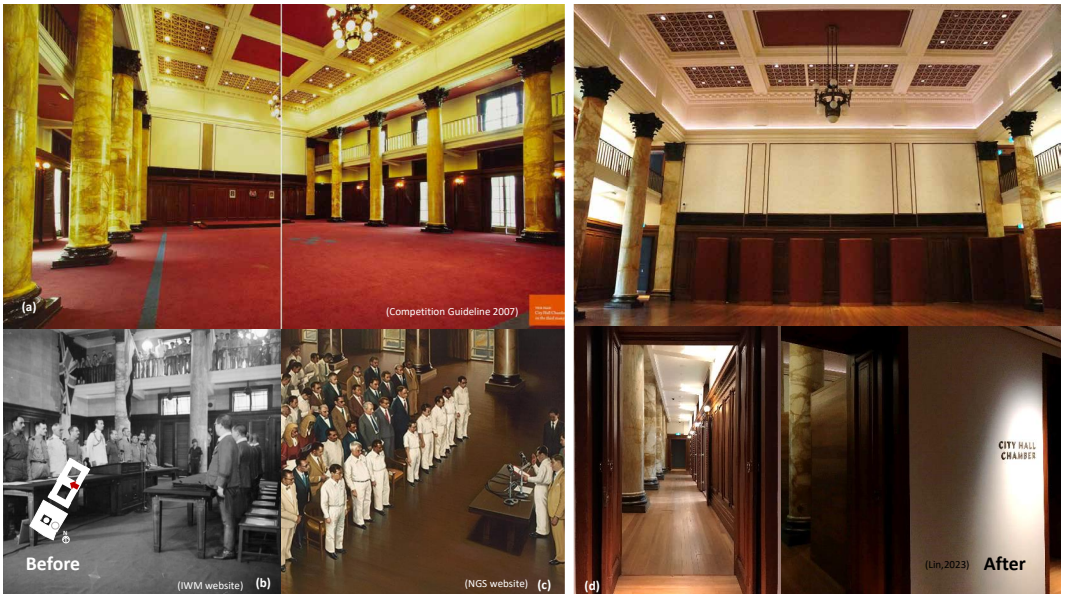

FIG. APP. 2.9. (a) The City Hall Chamber (Surrender Hall) before the intervention. This space has been held for important events, such as (b) the Japanese Surrender (1945), and (c) the swearing-in of Lee Kwong Yiu as Prime Minister (1959). (d) After the restoration of the space and now open for exhibition use.

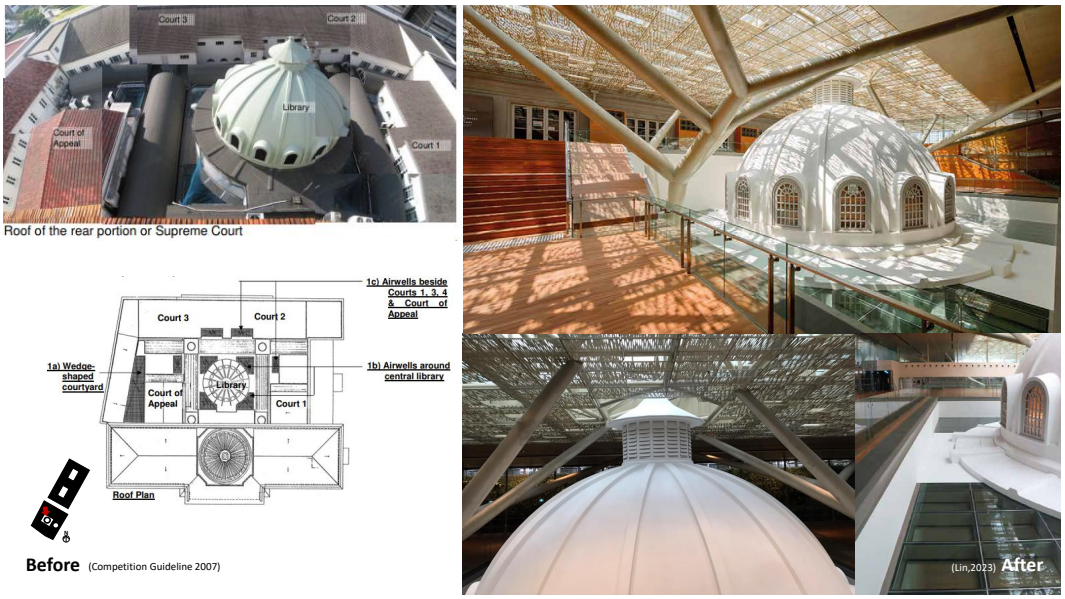

FIG. APP. 2.10. Before the intervention (left), the roof of the rear side of the former Supreme Court was filled with complicated junctions and ventilation facilities and not accessible to people. After (right) adding a new layer of platform and the roof, this area will become a new space for museum use.

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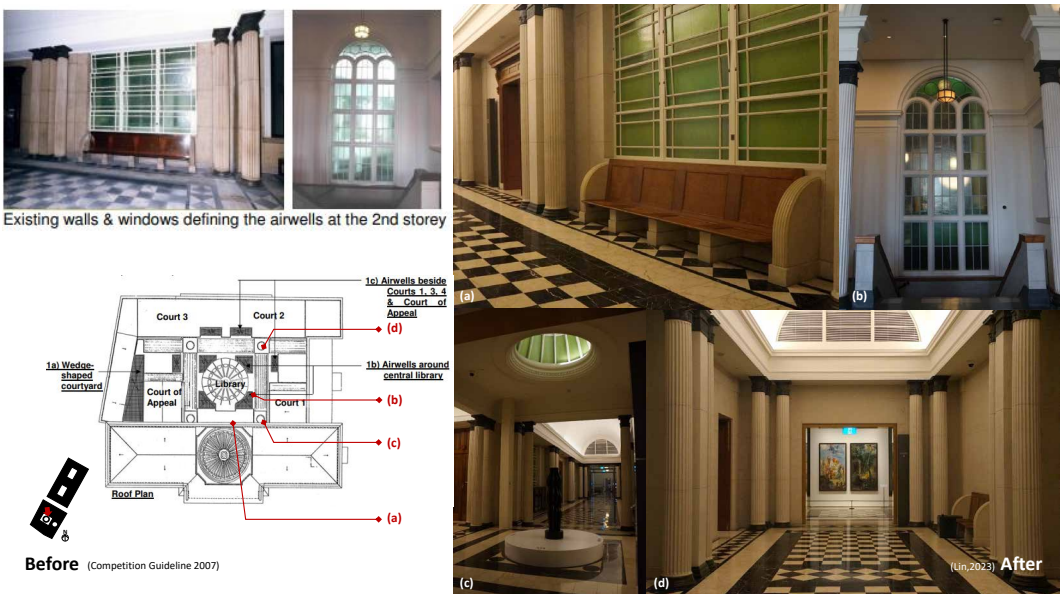

FIG. APP. 2.11. Before the intervention (left), the corridor areas around the library. After substituting the plastic tiles with stone pavements with the same pattern, the interior is restored and changed to gallery use.

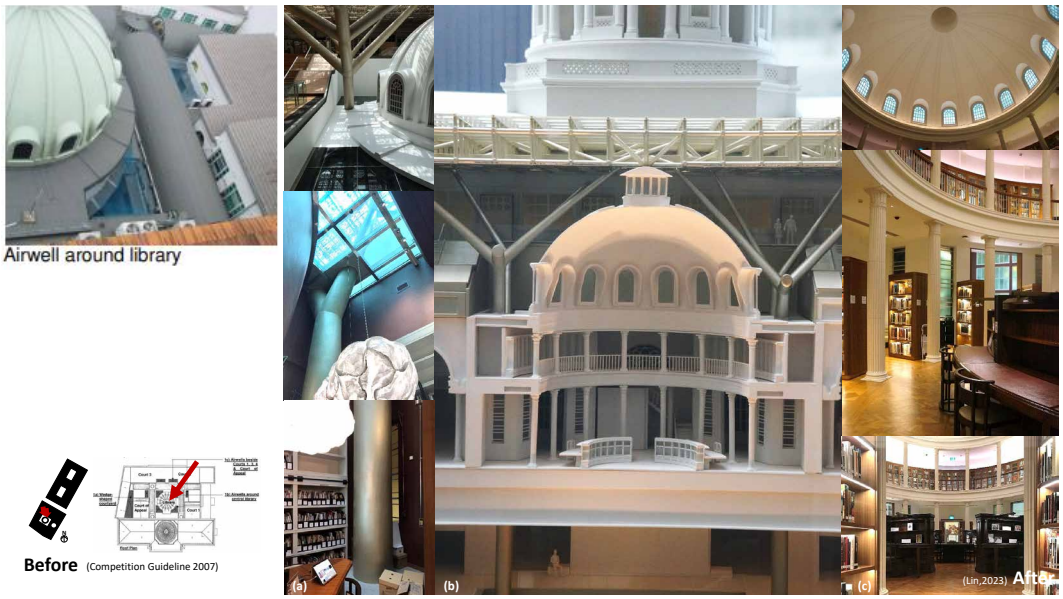

FIG. APP. 2.12. A close look at the interventions in the library under the “second dome”. (a) new tree-like columns were added to support the new roof. The interior of the library, including the wooden furniture, has been restored. This space is now open for visitors, especially for checking and reading law-related publications.

TOC

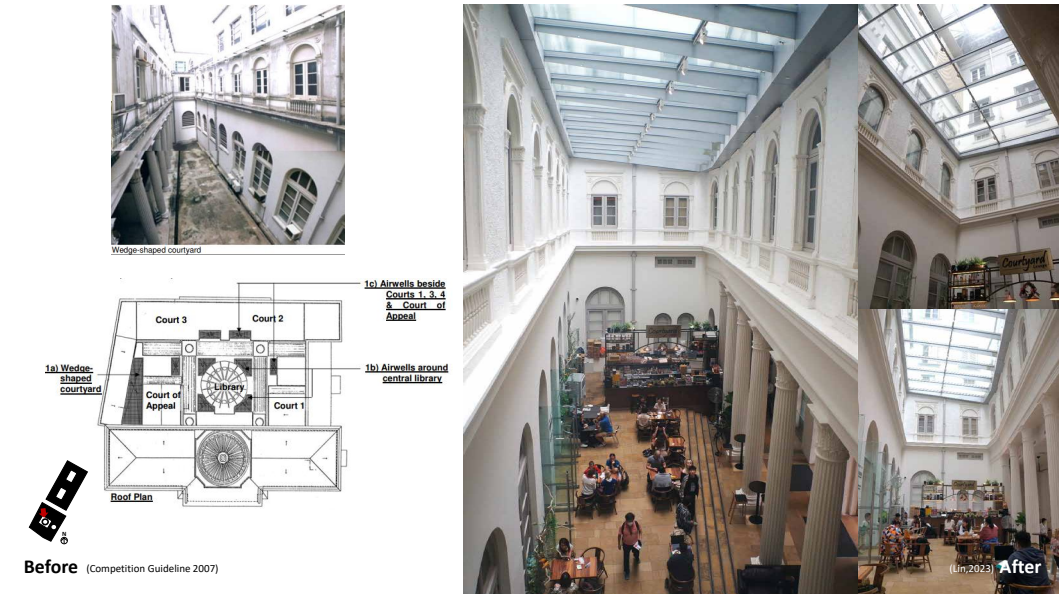

FIG. APP. 2.13. The abandoned rear area has turned into a new restaurant bar with bright interior space.

FIG. APP. 2.14. The "first dome" was opened up from the bottom for viewing from the exhibition space (a)(c) and can be experienced through an AR display (b).

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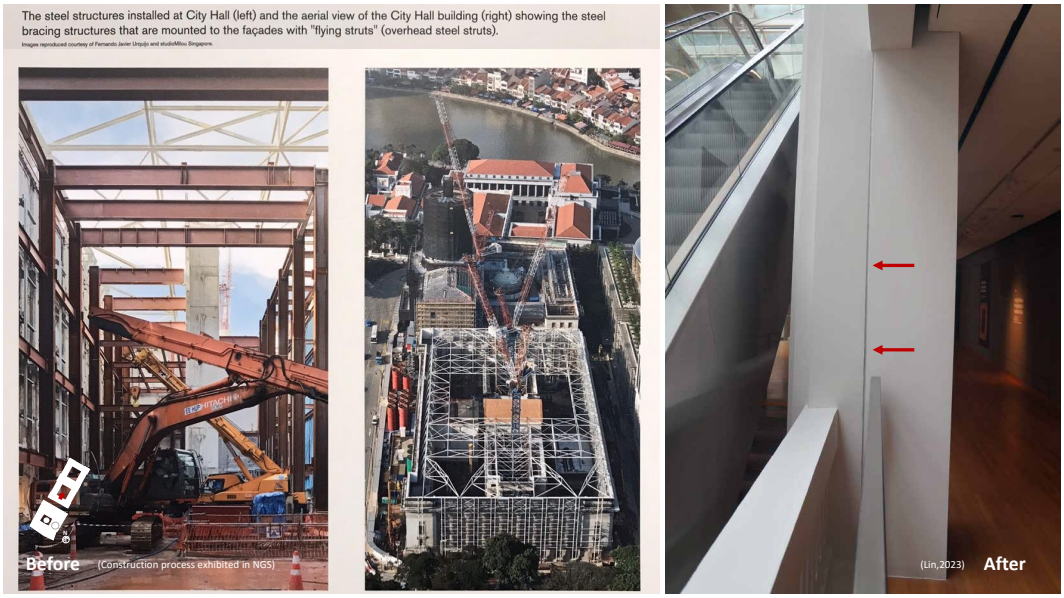

FIG. APP. 2.15. On the former City Hall side. Dramatic interventions, including demolition of the levels of the slabs, while keeping the City Hall Chamber (Surrender Hall) and the walls of the two inner courtyards.

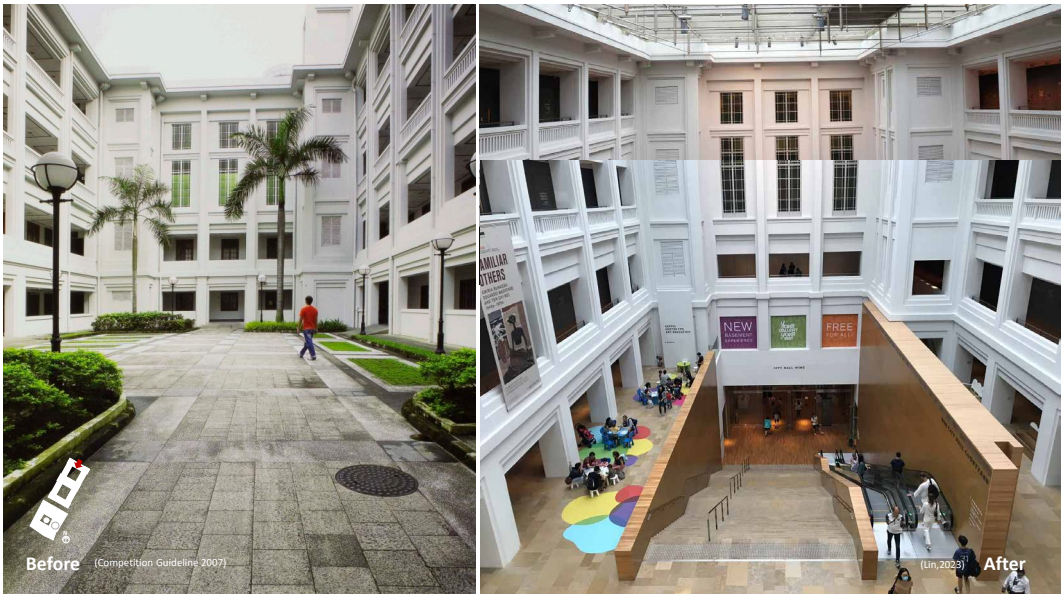

FIG. APP. 2.16. Before the intervention of one of the inner courtyards (left). After the intervention (right), it was changed into an entrance and lobby area where visitors could visit the exhibitions on the former City Hall side.

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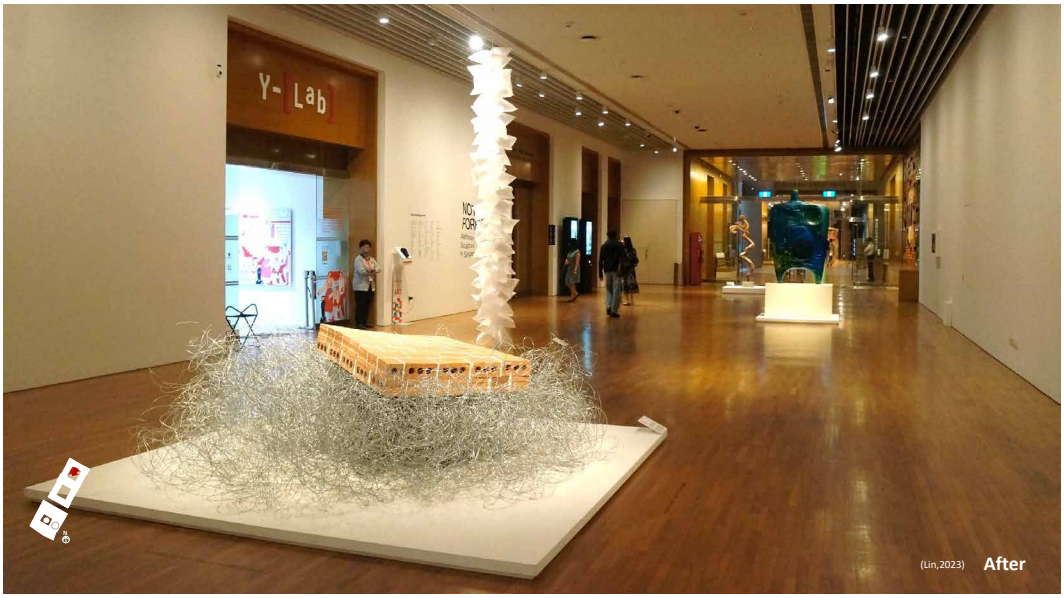

FIG. APP. 2.17. The newly added underground passage for gallery use and connection to the former Supreme Court side.

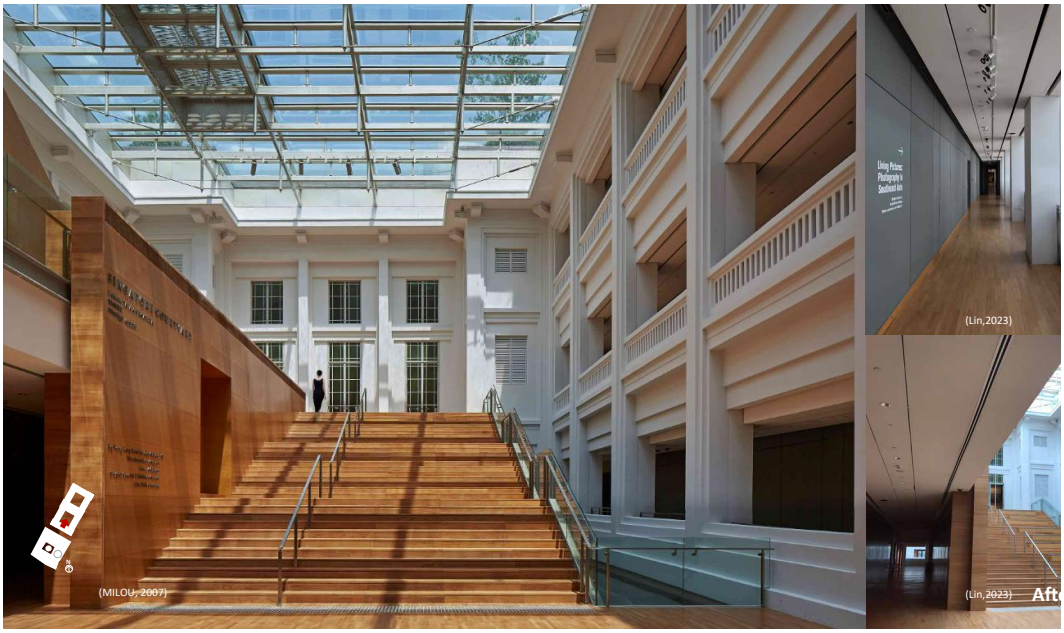

FIG. APP. 2.18. The newly added staircase platform on the other courtyard.

TOC

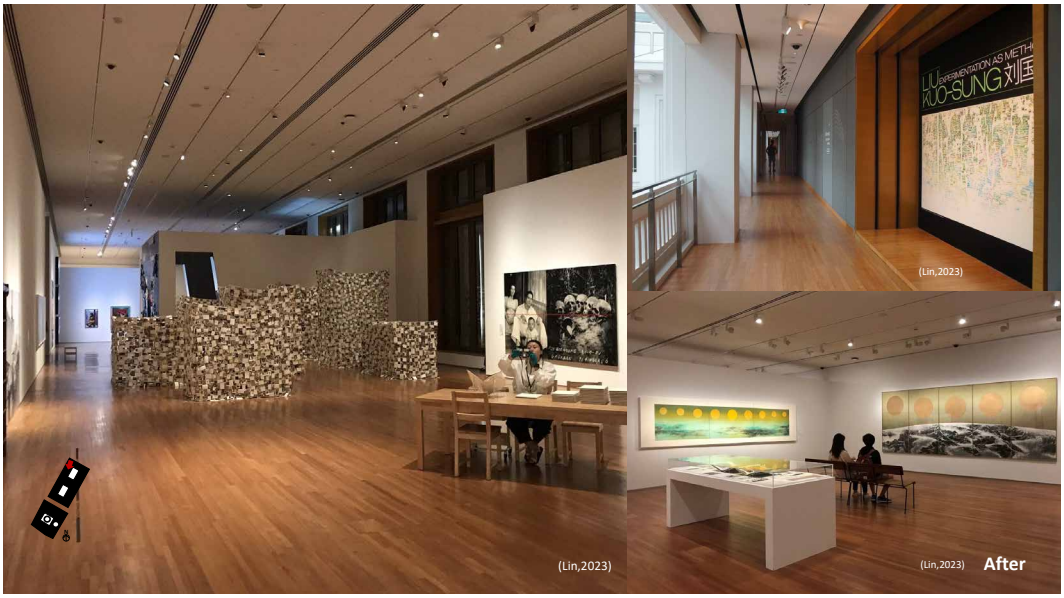

FIG. APP. 2.19. The exhibition spaces of the side of the former City Hall. High ceiling levels have been added after the demolition of the original low-ceiling offices.

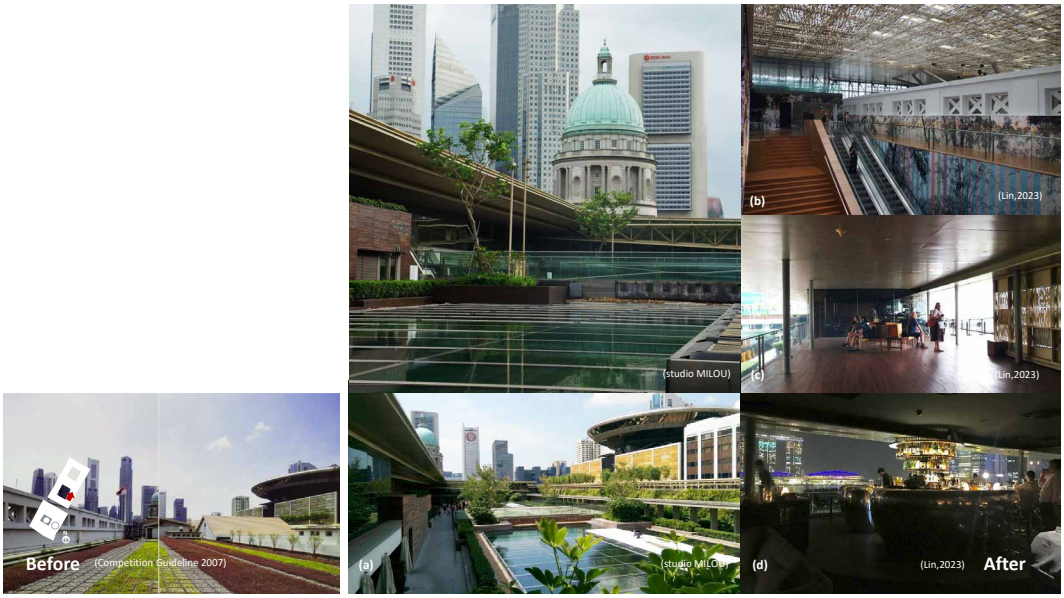

FIG. APP. 2.20. The new intervention on the rooftop provided a new water landscape, viewing terrace and restaurant bar for visitors to enjoy with new experiences.

TOC

FIG. APP. 2.21. Original lighting figures (a), and wooden furniture with ventilation design (red arrows) have been restored (b) These ventilation system were designed for helping the judges to endure the high temperature causing by heavy costumes in tropical climate.

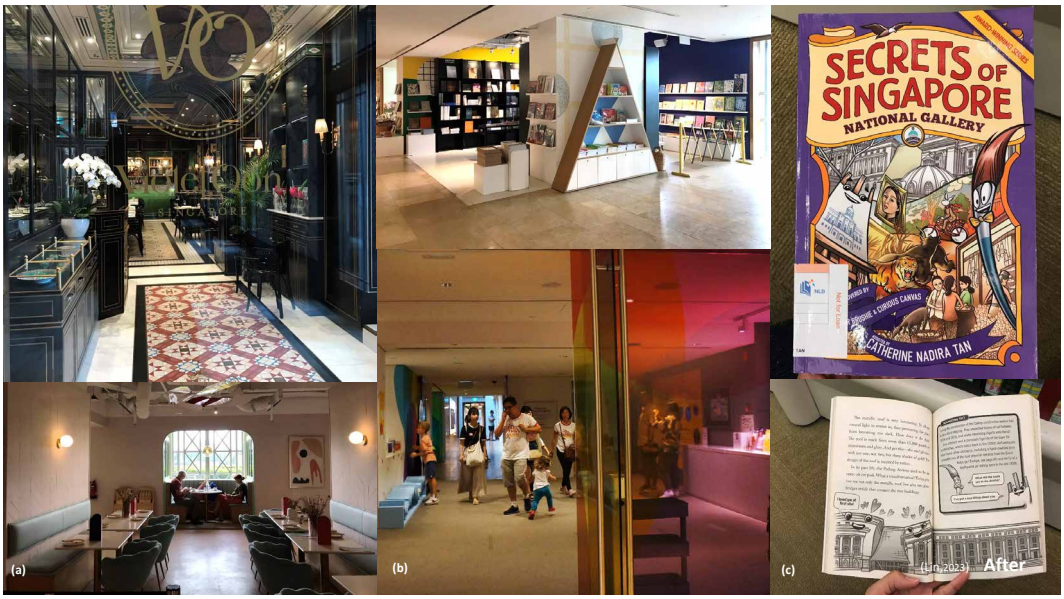

FIG. APP. 2.22. New functions such as restaurants, museum shops and children's areas were added to the gallery. A publication for children to understand the transformation process of NGS.

TOC

FIG. APP. 2.23. The Touring programme's design depends on the suspects' experience and the judging process in the former Supreme Court space.

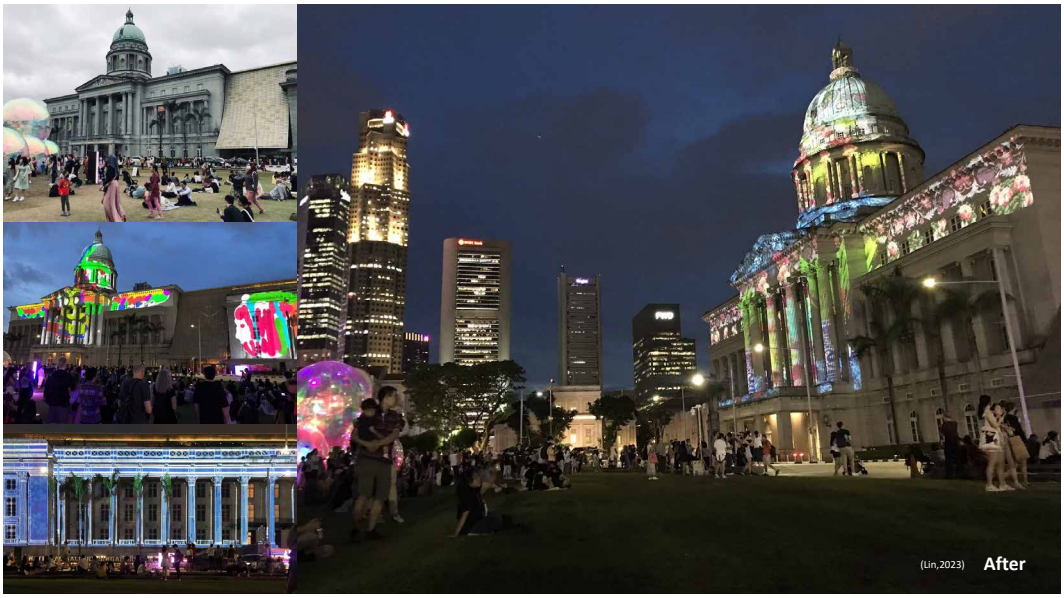

FIG. APP. 2.24. Besides the physical interventions, the National Gallery Singapore also carried out many urban functions, such as the backdrop of the projection during the Lighting Festival every January.

TOC

3 Critical Documents of the Competition

The documents related to the development of NGS, published by the government

FIG. APP. 3.1. The documents published by the Singapore government which related to the architectural development of NGS.

Along with the competition, critical documents (see FIG. APP. 3.1.) were identified as influential in the design decision-making process before (gazetted and preparation periods), during, and after the competition. Specifically, two sets of critical documents were identified in addressing the cultural significance, values, and attributes of the two monuments in relation to the architectural development of the National Gallery. One set was the Preservation Guidelines of each of the monuments published in 1994 by the Urban Redevelopment Authority (URA) and the Preservation of Monuments Board (now named the Preservation of Sites and Monuments, PSM).

The other set was the Architectural Design Competition Guideline, which is also called the Supplementary Guideline specifically prepared for the participants during the competition period. In fact, besides these two sets of documents, there was another document prepared in 2006, The Conservation Report of NGS. However, due to practical issues, e.g. construction schedule, most of the principles were not followed during the construction stage. According to experts from Takenaka, this document was displayed as a periodic result in the exhibition hall of NGS and was not available for reference during the research period. Therefore, in the following paragraph, a brief introduction to the two sets of documents is provided.

TOC

The first set of documents is the Preservation Guidelines for each of the two monuments. Preservation Guidelines are the documents prepared for every national monument when they are gazetted in Singapore. Two buildings were built in different years - City Hall was built from 1926 to 1929, and the Supreme Court was built from 1937 to 1939 - and they were gazetted on the same day, 14 February 1992. Later on, the Supreme Court guideline was prepared in March 1993, and the City Hall was established in January 1994. Both guidelines were prepared by the Urban Redevelopment Authority for the Preservation of Monument Board.

In the Foreword of both guidelines, they addressed, “Since its inception in 1972, the Preservation of Monument Board has been identifying buildings of historic, traditional, archaeological, architectural or artistic interest; and recommending buildings for preservation and as National Monuments.” Also, it mentioned, “It is one of the civic institutions under the Preservation Order and it reflects the European roots of the social and cultural development of the country and its multi-faceted heritage.” Furthermore, “To retain their historic and architectural fabric, guidelines for their preservation have been drawn up” and “Specific guidelines are, therefore, vital to their preservation and restoration as befitting of National Monuments”. Interestingly, although the two monuments have two guidelines, the content of their Foreword page, including value descriptions, is identical.

The second set of documents, the Supplementary Guideline, is the document of the competition Guide – appendix 8, in the competition Guide package prepared by the Urban Redevelopment Authority for the competition participants to understand their tasks. This document is composed of two parts: (A) the classification of the architectural elements and spaces (see TABLE.APP. 3.1), and (B) the possible options for new additions and extensions. These three categories were later located on the plan of the former City Hall and the former Supreme Court in three different colours: Critical (orange), Important (yellow) and Contributary (white).

TABLE.APP. 3.1 The three categories of architectural elements and spaces (redraw from the original document).

Significance	Approach
Critical	Retain intact or restore to original
Important	Allow modifications but to retain key and essential quality
Contributory	Allow flexibility

Part (A) categorized the key elements, layout, and spaces of both monuments into three categories, based on their architectural and historical significance and how critical they are to the character and integrity of the monument. The degree of changes was determined by the type of categorization. When looking at the document, on the City Hall side, value-related contents were only identified in the paragraph when addressing the "critical elements". It mentioned that the City Hall includes the front and side facades, as well as the Surrender Chamber, main foyer, and grand stairs. These spaces are architecturally and historically valuable and need to be kept intact and restored to their original state.

As for the categories of "important" and "contributory", no value-related contents was found for the City Hall. Only specific elements have been identified, such as the "rear facades", "courtyards", and the "internal verandas surrounding the courtyards" in the "important" category, and the "existing offices", "courtrooms", and "chambers" that have been modified over the years in the "contributory" category.

Similarly, for the Supreme Court, only the elements categorized as "critical" were assigned values. In the category of "critical elements," it includes the "external facades and roof form with two domes," as well as the most architecturally and historically significant interior spaces such as the main foyer, grand stairs, library, the four original courtrooms, the Chief Justice Chambers, and interior finishes. These elements were emphasized as needing to be retained and restored to their original state in order to maintain the link to the history and development of the Singapore judiciary. In the "important" category, elements such as "courtyards," "lock-up cells," and the "prisoner's tunnel" were mentioned. Lastly, in the "contributory" category, elements such as "other courtrooms," "lift lobbies," "garage," and other administrative offices are mentioned.

After a preliminary comparison of the two sets of documents – the Preservation Guideline and the Supplementary Guideline, it is evident that the cultural significance of the two monuments has been treated differently. While the Preservation guidelines emphasized the importance of fully preserving the significance, the Supplementary Guideline classified the cultural significance into three categories, allowing for the possibility of removal. Notably, this table in the Supplementary Guideline lacked an explanation from a values assessment perspective. It can be inferred that the Preservation Guidelines were not intended for conversion into other uses, but rather solely for preservation, as they were gazetted as national monuments at that time. On the other hand, the Supplementary Guideline raised questions regarding who made the decision, what parameters were used, and how the significance was categorized into the three categories. Although these questions were asked during the interviews, they remained unanswered. Since these questions are beyond the scope of this thesis, further discussion will not be pursued.

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Wee J., Foo M. L., StudioMilou Singapore (2016). Connections. History and Architecture, City Hall and Supreme Court. Preservation of Sites and Monuments Division, National Heritage Board. Singapore.

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Publications

Journal Articles

Lin M., Pereira Roders A., Nevzgodin I., de Jonge W. (2024) "Mind the Diversity: Defining Intervention Concepts in International Doctrinal Documents", *Journal of Built Heritage* | Oct. 2023 Submitted | July 2024 **Published.**
https://link.springer.com/article/10.1186/s43238-024-00139-y

Lin M., Pereira Roders A., Nevzgodin I., de Jonge W. (2023) "The Role of Attributes Defining Intervention Concepts in International Doctrinal Documents on Built Heritage", *Special issue, Journal of Cultural Heritage Management and Sustainable Development* | Sep. 2023 Submitted, Oct. 2023 **Published.**
https://www.emerald.com/insight/content/doi/10.1108/JCHMSD-06-2023-0095/full/html

Lin M., Nevzgodin I., Pereira Roders A., de Jonge W. (2023) "Values and Interventions: Dynamic Relationships in International Doctrines", *Journal of Cultural Heritage Management and Sustainable Development* | Oct. 2022 Submitted, May 2023 **Published.**
https://www.emerald.com/insight/content/doi/10.1108/jchmsd-10-2022-0178/full/html

Conference Papers

Lin M., Pereira Roders A., Nevzgodin I., de Jonge W. (2024) "Beyond the Venice Charter: A Comparative Study on the Definition of Intervention Concepts of Built Heritage through the Lens of Attributes of Cultural Significance", *Conference Paper*| Nov. 2023 Abstract Accepted | May 2024 Presented in Lisbon | Submitted for publication in the proceedings by the *CONSERVAR PATRIMÓNIO* (Portuguese Journal) in Special Issue.

Lin M., Pereira Roders A., Nevzgodin I., de Jonge W. (2024) "The Dilemma in Implementing the Venice Charter: Defining Interventions through Cultural Significance – A Singapore Case Study", *Conference Paper* | Jan. 2024 Abstract Accepted.

TOC

Curriculum Vitae

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30 May 1988 Born in Hualien, R.O.C. Taiwan

Education

2011-2012 MSc of Architectural and Urban Design
University of Edinburgh, Edinburgh, United Kingdom

2010-2011 1St - year program of Architectural Conservation in MSc. Architecture
National Cheng Kung University, Tainan, Taiwan

2006-2010 Bachelor of Arts in Interior Design
Chung Yuan Christian University, Taoyuan, Taiwan

Academic experience

2024 Post-doctoral Researcher
Delft University of Technology and National Library of the Netherlands (KB)
ReVerDi project | Real Versus Digital: Sustainability optimization for cultural heritage preservation in national libraries.

2020-2023 Guest Lecturer
Delft University of Technology
Intervention in Built Environment: Intervention Levels and Cases from the Netherlands and Taiwan. TUDelft, AR3AH105 Graduation Studio Modern Mall (2022/23) | 16 May 2023
Intervention in Built Heritage: Intervention Levels and Cases from the Netherlands and Taiwan. TUDelft, AR3AH105 Graduation Studio Adapting 20th Century Heritage (2021/22)| 23 Sep 2023
Redesign Strategies: Concepts and Definitions of Built Heritage. Cases from the Netherlands and Taiwan. TUDelft, AR108 Mastermind (2024) | 11 March 2024 (Post | LinkedIn)

TOC

Redesign Strategies: Concepts and Definitions in Architectural Redesign. Organized by MBE, a lecture in the workshop with Pharos University in Alexandria of Egypt | 18 April 2024 (Post | Feed | LinkedIn)

2023 Visiting PhD Researcher
National University of Singapore, Singapore
Fieldwork including interviews, Data collection, Seminar Presentation and Course Participation | January – March 2023

2020-2023 Teaching Assistant
Delft University of Technology
Organizing group discussions and preparing materials
AR106 Form Follows Values
AR0108 Mastermind: CRASH (2021/22): Architecture and Conservation Domain.

2017-2019 Lecturer (Full-time)
Department of Interior Design, Chung Yuan Christian University (CYID), Taiwan

Course Design and Teaching

Adaptive Reuse in Interior Architecture (3rd year)
Interior & Architectural Drawing (2nd year)
Fundamental Course (1rd year): The Principles of Interior Design
Fundamental Course (All-years): The Design Ethics

Education Coordinator

Coordinator of the 3rd-year interior design studio, CYID

Supervisor of Design projects

“Measuring the Tide: Tidal Architecture”. Hsu Ying-Ying (CYID). Received the Golden Award of the 2018 Taiwan Student Interior Design Competition (TSID).
“Discover Sumba”. Yeh Yue Huey (CYID). Received the Design Distinction Award of the 2018 Taiwan Student Interior Design Competition (TSID).

Conference and Workshop Organizer

Coordinator the International Symposium of the 13th CYID (2018) - Glocalization of the public sphere, CYID
Design Scholarship with Hong Kong (2018)

Design Scholarship with SLA (2017)

2016-2017 Lecturer (Part-time)
Department of Interior Design, Chung Yuan Christian University, Taiwan
1st and 3rd-year interior design studio.

Practice Experiences

2015-2017 Architect and Urban Planner
Taipei Urban Regeneration Center, Taipei, Taiwan
Project Manager of 2016 Taipei Public Housing Exhibition: Living Justice in Progress
Planner of Regeneration projects in Taipei Urban Area: Social Housing and cultural spaces, including Taipei Beer Factory Adaptive Reuse Plan, Former Air Force Headquarters Restoration and Revitalization Plan.

2012-2015 Architectural and Urban Designer
TURENSCAPE, Beijing, China
Project Manager of Singapore Rail Corridor Design-concept development stage
Project Manager of international competitions including Redevelopment of the Moscow Sokolniki Park, Moscow River Regeneration Plan, and Korea Busan Port Revitalization.

Awards

2016 Government Funds of Students Studying Abroad of the Taiwan Ministry of Education

2010 Cum Laude of the Department of Interior Design

2010 Membership of The Phi Tau Phi Scholastic Honor Society of the R.O.C. Taiwan

Public Talks

2024 "Beyond the Venice Charter: A Comparative Study on the Definition of Intervention Concepts of Built Heritage through the Lens of Attributes of Cultural Significance". at the Conference of Venice Re [Frame], 60th Anniversary of the Venice Charter, Lisbon, Portugal | 27 May 2024 PROG | 27 May | Auditorium III | Venice Reframed

2023 “The Dynamic Relationship between Values and Interventions from the International Doctrines and Notes from the Singapore Fieldwork.” at the National University of Singapore (NUS), Singapore. | 17 March 2023 NGS | LinkedIn

2023 “Redesign Strategies. The Dynamic Relationship between Values and Interventions from the International Doctrines and the Singapore Fieldwork.” at Departmental research meeting, AE+T Bites, Delft University of Technology, Delft, The Netherlands. | 22 June 2023

Other Expertise

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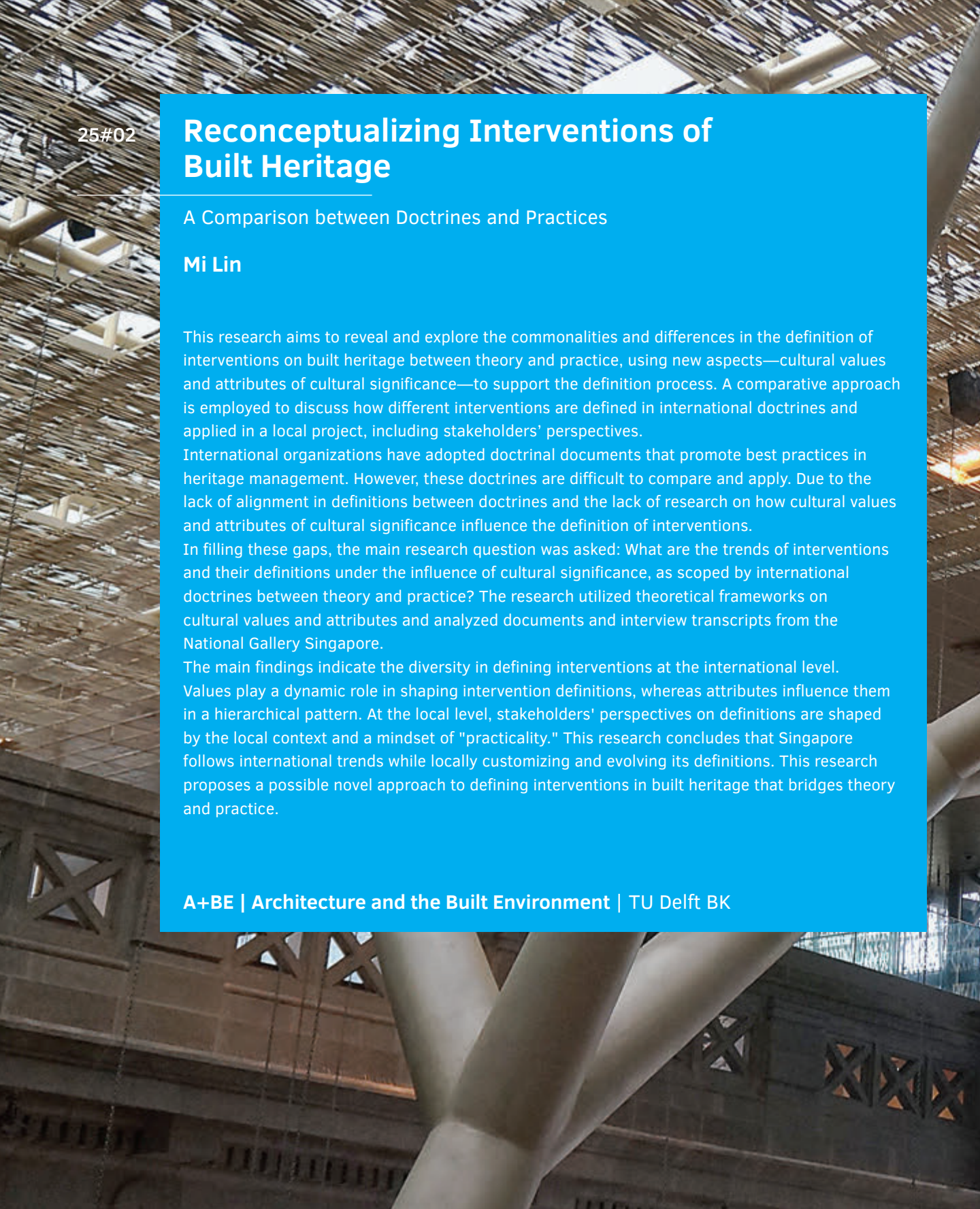
English (Proficient)
Taiwanese Hokkien (Proficient)
Dutch (A1)



25#02

Reconceptualizing Interventions of Built Heritage

A Comparison between Doctrines and Practices

Mi Lin

This research aims to reveal and explore the commonalities and differences in the definition of interventions on built heritage between theory and practice, using new aspects—cultural values and attributes of cultural significance—to support the definition process. A comparative approach is employed to discuss how different interventions are defined in international doctrines and applied in a local project, including stakeholders' perspectives.

International organizations have adopted doctrinal documents that promote best practices in heritage management. However, these doctrines are difficult to compare and apply. Due to the lack of alignment in definitions between doctrines and the lack of research on how cultural values and attributes of cultural significance influence the definition of interventions.

In filling these gaps, the main research question was asked: What are the trends of interventions and their definitions under the influence of cultural significance, as scoped by international doctrines between theory and practice? The research utilized theoretical frameworks on cultural values and attributes and analyzed documents and interview transcripts from the National Gallery Singapore.

The main findings indicate the diversity in defining interventions at the international level. Values play a dynamic role in shaping intervention definitions, whereas attributes influence them in a hierarchical pattern. At the local level, stakeholders' perspectives on definitions are shaped by the local context and a mindset of "practicality." This research concludes that Singapore follows international trends while locally customizing and evolving its definitions. This research proposes a possible novel approach to defining interventions in built heritage that bridges theory and practice.

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