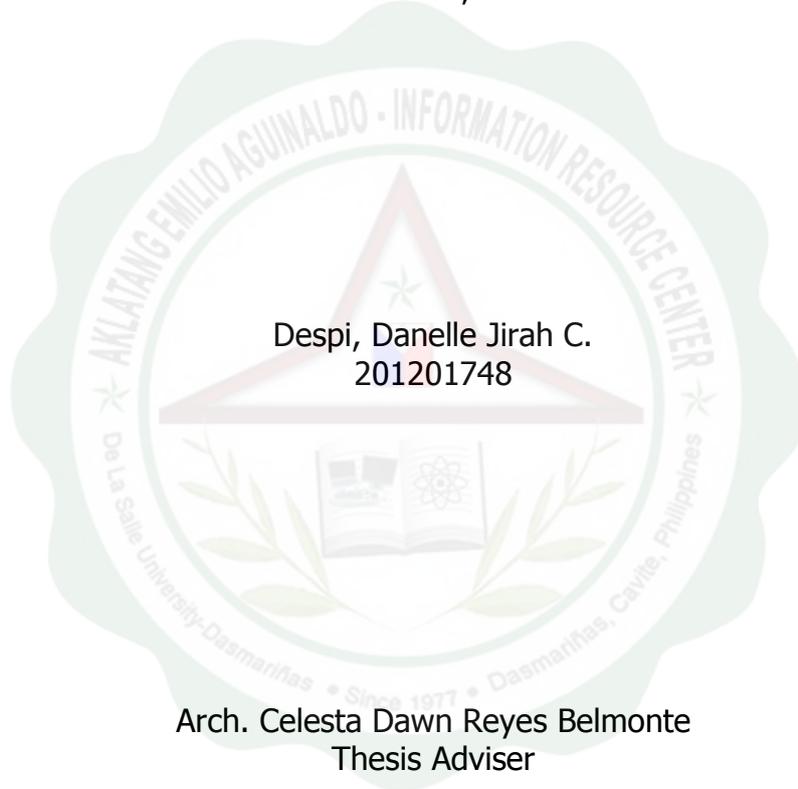


**PROPOSED GREEN BUILDING-DESIGNED GOOGLE PHILIPPINES
HEADQUARTERS & TRAINING CENTER**

A Thesis Presented to the Faculty of Architecture
College of Engineering, Architecture and Technology
De La Salle University- Dasmariñas
Dasmariñas, Cavite



May 2017

ABSTRACT

The study, "Proposed Green Building-Designed Google Philippines Headquarters & Training Center" is conceptualized in relation to inadequacy of ICT services in the Philippines. Hence, the study will serve as a solution to the growing demands and needs of Google Philippines. The study focuses on providing architectural rejoinders and spaces for Google Philippines through scientific data and methodologies using factual statistics and records.

The study emphasizes the use of green technologies as a rejoinder for planning and designing office spaces specifically for Google Philippines. Furthermore, the study will solely focus on the architectural approaches in planning and conceptualizing Google offices. Comparative analysis of the related projects, quantitative and qualitative methodologies were used in identifying significant data. However, the study is limited to architectural programming and planning, thus, structural and utility systems, specified estimates and specifications will be limited.

The expected output of the study are architectural sustainable design and green building façade with the use of certified green building materials. Thus, the "Proposed Green Building-Designed Google Philippines Headquarters & Training Center" provides sustainable working environment, recreation and commercial services in order to uplift the value of green buildings.

TABLE OF CONTENTS

Title Page.....	i
Certificate of Originality.....	ii
Approval Sheet.....	iii
Abstract.....	iv
Acknowledgement.....	v
Table of Contents.....	vi
List of Tables.....	xiii
List of Figures.....	xiv
List of Appendices.....	xx
CHAPTER 1. THE PROBLEM AND ITS SETTING.....	1
1.1 Introduction.....	2
1.1.1 Rationale of the Project.....	3
1.1.2 Background of the Project.....	3
1.1.3 Project Goals and Objectives.....	9
1.1.4 Significance and the Expected Output.....	10
1.1.5 Scope and Delimitation.....	11
1.1.6 Assumptions.....	11
1.1.7 Operational Definition of Terms.....	12
1.1.8 Acronyms and Abbreviations.....	13
CHAPTER 2. THEORETICAL FRAMEWORK.....	14
2.1 Review of Related Literature.....	15
2.1.1 Related Literature.....	15
2.1.1.1 Published Literature.....	15
2.1.1.2 Sustainable Design Architecture: An Overview.....	16
2.1.1.3 Green Architecture.....	16
2.1.1.4 Green Building Code of the Philippines.....	17
2.1.1.5 Philippine Green Building Council.....	17
2.1.1.6 U.S. Green Building Council.....	18
2.1.1.7 Google Green.....	19
2.1.1.8 Literary Prose.....	19
2.1.1.9 Building Laws.....	20
2.1.2 Related Projects.....	21

Local Projects	21
2.1.2.1 Zuellig Building.....	21
2.1.2.2 The Mind Museum.....	22
2.1.2.3 Net Lima	23
2.1.2.4 Ore Central	24
International Projects	25
2.1.2.5 Dublin Office.....	25
2.1.2.6 Sydney Office.....	27
2.1.2.7 London Office	28
2.1.2.8 Zurich Office	29
2.1.2.9 Pittsburgh Office	30
2.1.2.10 New York Office	32
2.1.2.11 Mountain View Office.....	32
2.1.2.12 Kirkland Office.....	34
2.1.2.13 Tel Aviv Office.....	35
2.1.2.14 West Loop Office.....	37
2.1.2.15 San Francisco Office	38
2.2 Review of Related Concepts.....	48
2.2.1 Green Building Standards.....	48
LEED (US) Leadership in Energy and Environmental Design.....	48
BERDE (PH) Building for Ecologically Responsive Design Excellence	48
2.2.2 Green Technology and Methods	50
2.2.2.1. Rain Garden.....	50
2.2.2.2.. Bioswales.....	51
2.2.2.3. Green Roofs.....	52
2.2.2.4. Active Solar Architecture.....	53
2.3 Conceptual Framework/ Paradigm	54
2.4 Research Methodology.....	55
2.4.1 Methods and Techniques	57
2.4.1.1. Historical Method	57
2.4.1.2. Descriptive Method.....	57
2.4.1.3. Interview Method	57
2.4.2 Methods of Data Gathering	57
2.4.2.1. Sources of Data.....	57
2.4.2.1.1. Key Source Personnel	57

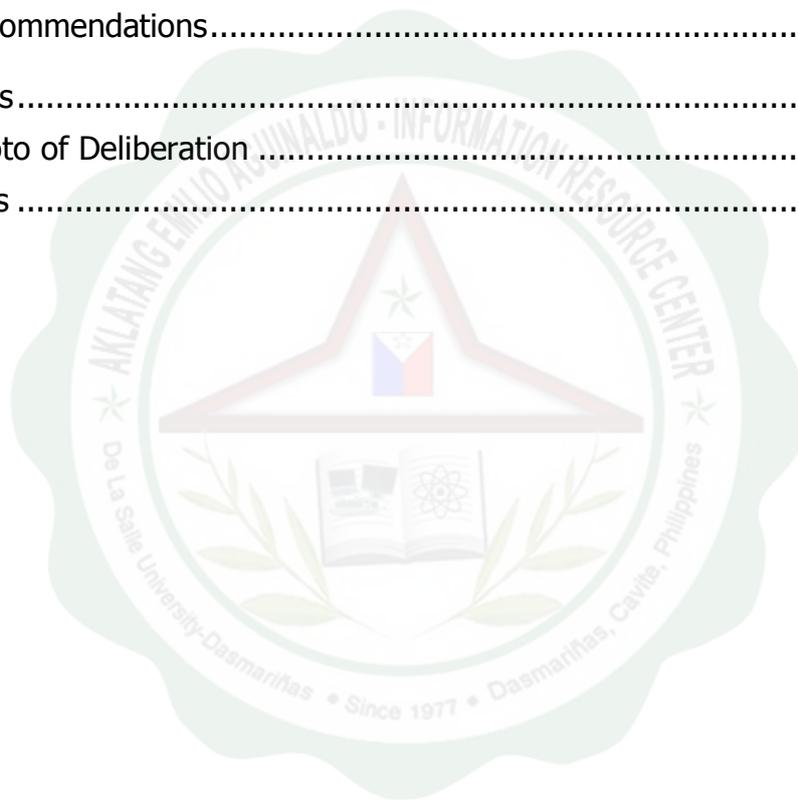
2.4.2.1.2. Source of Data	58
2.4.2.1.2.1. World Wide Web	58
2.4.2.1.2.2. Architectural Books	58
2.4.2.1.2.3. Libraries.....	58
2.4.2.1.3. Site Identification	59
2.4.2.1.3.1. Pre-Qualification	59
2.4.2.1.3.2. Site Criteria	59
2.4.2.1.3.3. Site Selection Process	59
2.4.2.1.4. Data Analysis	59
2.4.2.1.4.1. Behavioral Analysis.....	59
2.4.2.1.4.2. Form Characterization.....	59
2.4.2.1.4.3. Graphical Method	60
2.4.2.1.4.4. SWOT Analysis	60
2.4.2.1.4.5. McLaughlin Overlay Method	60
2.4.2.1.4.6. Modular Space Method	60
2.4.3. Data Synthesis and Evaluation	60
CHAPTER 3. SITE JUSTIFICATION	62
3.1 Pre-Qualification Criteria Derivation Philosophy	63
3.1.1 Identification of Qualified Cities.....	63
3.1.1.1. Identification of IT Centers based on PEZA	63
3.1.1.2. Identification of Eco-Cities in the Philippines	63
3.1.1.2.1. Baguio City	64
3.1.1.2.2. Clark, Pampanga	64
3.1.1.2.3. Lipa, Batangas	65
3.1.1.2.4. Makati City.....	65
3.1.1.2.5. Mandaue City	66
3.1.1.2.6. Olongapo City	66
3.1.1.2.7. Pasig City.....	67
3.1.1.2.8. Puerto Princesa City	67
3.1.1.2.9. Quezon City	68
3.1.1.2.10. Taguig City	68
3.1.1.3. Pre-Identification Process	68
3.1.1.3.1. Macro Analysis	69
3.1.1.3.1.1. International Setting: Asia & Southeast Asia.....	69
3.1.1.3.1.2. National Setting: Philippines.....	70

3.1.2 Pre-Qualification Criteria	75
3.1.3 Pre-Qualification Weight Assignment	77
3.1.4 Macro Site Selection Process	78
3.1.4.1. Macro Setting.....	78
3.1.4.1.1. Metro Cebu	78
3.1.4.1.2. Quezon City	83
3.1.4.1.3. Makati City.....	84
3.1.4.1.4. Pasig City.....	86
3.1.4.1.5. Taguig City	88
3.2 General Site Criteria Derivation Philosophy.....	90
3.3 Site Selection Process	92
3.3.1 Bonifacio Global City, Taguig.....	94
3.3.2 Site 1 (Block 56, Bonifacio Global City, Taguig)	95
3.3.3 Site 2 (Block 58, Bonifacio Global City, Taguig)	97
3.3.4 Site 3 (Fort Bonifacio, Taguig).....	99
3.3.4 Tabulation of Site Criteria	101
3.4 The Project Site.....	104
3.4.1 Local Setting: Bonifacio Global City, Taguig.....	104
3.4.2 Micro Analysis	114
3.4.2.1. Site Profile	114
3.4.2.2. Site Analysis.....	116
3.4.2.2.1. Micro Climate Analysis	118
3.4.2.2.2. Accessibility and Adjacency Analysis	119
3.4.2.2.3. Movement and Sensory Analysis.....	122
3.4.2.2.4. Vegetation and Existing Structure Analysis.....	124
3.4.2.2.5. McLaughlin Overlay Method	126
CHAPTER 4. ARCHITECTURAL DESIGN DEVELOPMENT & ARCHITECTURAL ENGINEERING.....	128
4.1 Research Focus.....	129
4.1.1 Principles and Relevance to the Project.....	129
4.1.2 Application to the Project.....	129
4.2 Presentation of Data.....	130
4.2.1 Needs Analysis.....	130
4.2.2 Qualitative Analysis	131
4.2.2.1. Qualitative Data Analysis of Function	132

4.2.2.2. Qualitative Data Analysis of Form	133
4.2.2.3. Qualitative Data Analysis of Time	135
4.2.2.4. Qualitative Data Analysis of User	134
4.3 Site Planning and Programming.....	137
4.3.1 Site Measurement Analysis.....	137
4.3.2 Site Maximum Allowable Spaces.....	139
4.3.3 Floor Area Ratio	140
4.4 Design Program	142
4.4.1 Derivation of Architectural Spaces	142
4.4.2 Building Space Program	143
4.4.2.1. Organizational Chart.....	143
4.4.2.2. User Analysis	149
4.4.2.2.1. General Public.....	149
4.4.2.2.1.1. Visitors	149
4.4.2.2.1.2. Trainees, Aspirants, Applicants.....	149
4.4.2.2.2. Administrative Personnel.....	149
4.4.2.2.2.1. Head Office.....	149
4.4.2.2.2.2. Sales, Service & Support Department Heads	149
4.4.2.2.2.3. Marketing & Communications Department Heads	150
4.4.2.2.2.4. Office Staff	150
4.4.2.2.2.5. Receptionist/ Secretaries.....	150
4.4.2.2.2.6. Training Instructors.....	150
4.4.2.3. Behavioral Analysis.....	150
4.4.2.4. Spatial Analysis	153
4.4.2.5. Interrelationship Analysis.....	156
4.4.2.5.1. Interrelationship of Main Areas.....	156
4.4.2.5.2. Interrelationship of Sub-Areas.....	157
4.4.2.5.2.1. Interrelationship of Corporate and Administrative Offices.....	157
4.4.2.5.2.2. Interrelationship of Workshop & Training Center	157
4.4.2.5.3. Interrelationship of Recreational & Wellness Center.....	158
4.4.2.5.4. Interrelationship of Safety, Security & Central Services..	158
4.4.2.6. Circulatory Analysis	159
4.4.2.6.1. Site Circulatory Analysis.....	159
4.4.3 Quantitative Space Analysis	160
4.4.3.1. Quantification of Spaces	160
4.4.3.2. Sizing of Major Spaces.....	165

4.5 Concept Development.....	181
4.5.1 General Form.....	181
4.5.2 Architectural Concept	181
4.5.3 Sustainability Concept	181
4.5.3.1. Thermal Mass	182
4.5.3.2. Solar Shading Devices	182
4.5.3.3. Material Concept	183
4.5.4 Structural Concept.....	183
4.5.5 Utility Concept	184
4.5.6 Landscape Concept	185
4.6 Project Technical Requirements.....	185
4.6.1 Schindler Elevator	185
4.6.2 Kinetex Flooring	186
CHAPTER 5. ARCHITECTURAL DESIGN TRANSLATION	188
5.1. Project Title	189
5.2. Design Philosophy	189
5.3. Design Theories and Paradigm	190
5.3.1. Theory on Building Approach	190
5.3.2. Theory on Arranging Spaces	190
5.4. Design Conceptualization	190
5.4.1. Structural Concept	190
5.4.2. Material Concept	190
5.4.3. Building Plan Concept.....	191
5.4.4. Utility Concept	192
5.5. Space and Form Evolution	192
5.5.1. Space Evolution.....	192
5.5.2. Form Evolution.....	193
5.6. Design Objectives.....	193
5.7. Design Considerations	194
5.7.1. Mobility	194
5.7.2. Orientation	194
5.7.4. Building Envelope.....	194
5.7.5. Passive Cooling	194
5.7.6. Natural Ventilation	194
5.7.7. Safety.....	195
5.7.8. Logical Location	195

5.7.9. Comfort.....	195
5.7.10. Convenience	195
5.7.11. LEED Guidelines	195
5.7.12. New Big Delta	196
CHAPTER 6. DESIGN TRANSLATION	197
6.1. Site Development Plan.....	198
6.2. Corporate Office.....	201
6.3. Commercial Buildings	219
6.4. Dome	226
6.5. Conclusion	230
6.6. Recommendations.....	230
Appendices.....	
Actual Photo of Deliberation	
References	



LIST OF TABLES

Table 2.1: Tabulated Comparative Analysis of Google Offices	39
Table 2.2: Tabulated Comparative Analysis of User in Countries with Google Offices .	44
Table 2.3: Green Building Checklist	49
Table 3.1: Prime Candidate Cities for Site Selection.....	72
Table 3.2: Pre-Qualification Criteria.....	75
Table 3.3: Pre-Qualification Weight Assignment	76
Table 3.4: Pre-Qualification Checklist	78
Table 3.5: Pre-Qualification Criteria Evaluation.....	90
Table 3.6: General Site Criteria Derivation	89
Table 3.7: General Site Criteria Checklist	91
Table 3.8: Site 1 Description.....	96
Table 3.9: Site 1 SWOT Analysis	96
Table 3.10: Site 2 Description	98
Table 3.11: Site 2 SWOT Analysis	98
Table 3.12: Site 3 Description	100
Table 3.13: Site 3 SWOT Analysis	100
Table 3.14: Site Evaluation	102
Table 3.15: Site Technical Description.....	115
Table 3.16: Distance of Bus Stops.....	103
Table 4.1: Needs Analysis.....	121
Table 4.2: Qualitative Data Analysis of Function.....	132
Table 4.3: Qualitative Data Analysis of Form.....	134
Table 4.4: Qualitative Data Analysis of Time	135
Table 4.5: Qualitative Data Analysis of User.....	136
Table 4.6: Site Computation	139
Table 4.7: Floor Area Ratio	141
Table 4.8: Issue-Rejoinder Analysis.....	142
Table 4.9: Spatial Analysis of Major Spaces	153
Table 4.10: Quantification of Spaces	162
Table 4.11: Sizing of Spaces for Corporate and Administrative Office	166
Table 4.12: Sizing of Spaces for Workshop and Training Center	172
Table 4.13: Sizing of Spaces for Recreational and Wellness Center.....	174
Table 4.14: Sizing of Spaces for Safety, Security and Central Services.....	177
Table 4.15: Sizing of Spaces for Parking Facilities	179

LIST OF FIGURES

Figure 1.1: Graphical representation of internet users in the Philippines	5
Figure 1.2: Annual growth rate of internet users in the Philippines	5
Figure 1.3: Distribution of search engine market shares in the Philippines	6
Figure 2.1: Zuellig Building	22
Figure 2.2: The Mind Museum	23
Figure 2.3: Net Lima	24
Figure 2.4: Ore Central	24
Figure 2.5: Google Dublin office workspace for employees	26
Figure 2.6: Google Dublin office relaxation lounge	26
Figure 2.7: Google Dublin office music studio	26
Figure 2.8: Google Sydney "Maker space".....	27
Figure 2.9: Google Sydney game room	27
Figure 2.10: Google Sydney Lego room	27
Figure 2.11: Google Sydney rock climbing	27
Figure 2.12: Google London curvy stairs	28
Figure 2.13: Google London curvy stairs	28
Figure 2.14: Google London roof terraces	28
Figure 2.15: Google Zurich steel slide	29
Figure 2.16: Google Zurich egg-shaped conference room	29
Figure 2.17: Google Zurich Arctic domes	30
Figure 2.18: Google Zurich library	30
Figure 2.19: Google Zurich relaxing rooms with aquariums	30
Figure 2.20: Google Pittsburgh hanging cargo net hammock	31
Figure 2.21: Google Pittsburgh raised catwalk path	31
Figure 2.22: Google Pittsburgh indoor bamboo garden	31
Figure 2.23: Google New York digital library	32
Figure 2.24: Google New York lounge workspaces	32
Figure 2.25: Google Mountain View sand volleyball court	33
Figure 2.26: Google Mountain View statue garden	33
Figure 2.27: Google Mountain View electric car charging station	34
Figure 2.28: Google Mountain View fitness gym	34
Figure 2.29: Google Kirkland living roof garden	35
Figure 2.30: Google Kirkland crepe-making room	35
Figure 2.31: Google Kirkland informal meeting room	35

Figure 2.32: Google Tel Aviv slide	36
Figure 2.33: Google Tel Aviv lounge	36
Figure 2.34: Google Tel Aviv workspace lounge	37
Figure 2.35: Google West Loop lobby	37
Figure 2.36: Google West Loop coffee kitchen	38
Figure 2.37: Google West Loop arcade room	38
Figure 2.38: Google San Francisco lounge	38
Figure 2.39: Google San Francisco slide	38
Figure 2.40: Typical layout rain garden section	51
Figure 2.41: Typical bump-out rain garden section	51
Figure 2.42: Typical parkway rain garden section	51
Figure 2.43: Bioswale detail section	52
Figure 2.44: Typical bioswale cross section	52
Figure 2.45: Typical bioswale long section	52
Figure 2.46: Waterproofing membrane for roof section	53
Figure 2.47: Waterproofing membrane for roof section	53
Figure 2.48: Solar panel diagram	54
Figure 2.49: Graphical representation of Conceptual Paradigm	55
Figure 2.50: Simplified graphical representation of Research Methodology	56
Figure 3.1: Mapping of Google Offices in Asia Pacific	69
Figure 3.2: Mapping of Google Offices in South East Asia	69
Figure 3.3: Mapping of Google Offices in the Philippines	70
Figure 3.4: Mapping of Google Offices in Bonifacio Global City	71
Figure 3.5: Google Office in Makati City	71
Figure 3.6: Google Office in Makati City	72
Figure 3.7: Graphical representation of comparative analysis of IT Centers per region	74
Figure 3.8: Mapping of 5 Cities	79
Figure 3.9: 25 Year Flood Hazard Map of Cebu City	81
Figure 3.10: 25 Year Flood Hazard Map of Cebu City	81
Figure 3.11: Mapping of Flood Prone Areas in Metro Cebu	82
Figure 3.12: Landslide Hazard Map of Cebu City and Mandaue City	82
Figure 3.13: Mapping of Key Establishments in Quezon City	84
Figure 3.14: Flood Map of Makati (Pasong Tamo, EDSA)	85
Figure 3.15: Flood Map of Makati (Chino Roces corner Arnaiz)	85
Figure 3.16: Mapping of Key Establishments in Makati	86
Figure 3.17: Flood Map of Pasig City	87

Figure 3.18: Flood Map of Pasig City	87
Figure 3.19: Flood Map of Taguig City	88
Figure 3.20: Bonifacio Global City Development Map	95
Figure 3.21: Site 1 Vicinity Map	96
Figure 3.22: Site 2 Vicinity Map	98
Figure 3.23: Site 3 Vicinity Map	100
Figure 3.24: Taguig City Location Map	105
Figure 3.25: Taguig City Zoning Map	105
Figure 3.26: BGC Land Use Plan	106
Figure 3.27: Taguig City Flood Hazard Map	107
Figure 3.28: Taguig City Earthquake Fault line Map	108
Figure 3.29: Taguig City Geomorphology Map	109
Figure 3.30: Taguig City Slope Map	110
Figure 3.31: BGC Developments	111
Figure 3.32: BGC Developments	112
Figure 3.33: BGC Developments	113
Figure 3.34: The Site	114
Figure 3.35: Site Street View	115
Figure 3.36: Site Diagram and its Connectivity to Elements	116
Figure 3.37: The Site and its relation to the community	116
Figure 3.38: Site Ocular Documentation	117
Figure 3.39: Sun path Analysis (December)	118
Figure 3.40: Sun path Analysis (April)	118
Figure 3.41: Accessibility and Adjacency Analysis	120
Figure 3.42: BGC Bus- Lower West Route	121
Figure 3.43: BGC Bus- Lower Night Route	121
Figure 3.44: BGC Bus- West Route	121
Figure 3.45: Movement and Sensory Analysis	123
Figure 3.46: Vegetation and Existing Structure Analysis	125
Figure 3.47: McLaughlin Overlay Method	127
Figure 3.48: Contextual Development Diagram using Overlay Method	127
Figure 4.1: Site Dimension.....	138
Figure 4.2: Site Linear Measurement	138
Figure 4.3: Site Computation	140
Figure 4.4: Development Density Map	141
Figure 4.5: Google Philippines Organizational Chart	144

Figure 4.6: Technical Services Consumer Operations Organizational Chart	144
Figure 4.7: Account Management Organizational Chart	145
Figure 4.8: Business Partnerships Organizational Chart	145
Figure 4.9: Analyst Organizational Chart	145
Figure 4.10: New Business Sales Organizational Chart	146
Figure 4.11: Program Management Organizational Chart	146
Figure 4.12: Solutions Consultant Organizational Chart	146
Figure 4.13: Strategy & Operations Organizational Chart	147
Figure 4.14 Technical Solutions Organizational Chart	147
Figure 4.15: Communications Organizational Chart	147
Figure 4.16: Marketing Analyst Organizational Chart	148
Figure 4.17: Marketing Organizational Chart	148
Figure 4.18: Merchandising Organizational Chart	148
Figure 4.19: Public Relations Organizational Chart	149
Figure 4.20: Behavioral Analysis of Visitors	150
Figure 4.21: Behavioral Analysis of Trainees	151
Figure 4.22: Behavioral Analysis of Head Officers.....	151
Figure 4.23: Behavioral Analysis of Sales, Service and Support Department Heads & Staff	151
Figure 4.24: Behavioral Analysis of Marketing & Communications Department Heads & Staff	152
Figure 4.25: Behavioral Analysis of Receptionists/ Secretaries	152
Figure 4.26: Behavioral Analysis of Training Instructors	152
Figure 4.27: Interrelationship Analysis of Main Areas	156
Figure 4.28: Interrelationship Analysis of Corporate and Administrative Offices	157
Figure 4.29: Interrelationship Analysis of Workshop and Training Facilities	158
Figure 4.30: Interrelationship Analysis of Wellness and Recreational Facilities	158
Figure 4.31: Interrelationship Analysis of Safety, Security and Central Services	159
Figure 4.32: Site Zoning Circulatory Diagram 1	160
Figure 4.33: Site Zoning Circulatory Diagram 2	160
Figure 4.34: Loggia	182
Figure 4.35: UCSF Mission Bay Garagealuminum louver system	183
Figure 4.36: Double Skin Façade: Buffer System	184
Figure 4.37: Schindler elevator system	185
Figure 4.38: Kinetex sectional perspective	187
Figure 4.39: Sample Swatches	187
Figure 4.40: Sample Swatches	187
Figure 5.1: Design Philosophy	189

Figure 5.2: Kinetex sectional perspective	191
Figure 5.3: Google Android icon	191
Figure 5.4: Raised floor system	192
Figure 5.5: Space Evolution	192
Figure 5.6: Form Evolution	193
Figure 5.7: Mobility Symbol	194
Figure 5.8: Orientation Symbol	194
Figure 5.9: Building Envelope Symbol.....	194
Figure 5.10: Passive Cooling Symbol	194
Figure 5.11: Natural Ventilation Symbol.....	194
Figure 5.12: Safety Symbol.....	195
Figure 5.13: Logical Location Symbol	195
Figure 5.14: Comfort Symbol	195
Figure 5.15: Convenience Symbol	195
Figure 5.16: USGBC Logo	195
Figure 5.17: BGC Logo	196
Figure 6.1: Site Development Plan	199
Figure 6.2: Aerial Perspective	200
Figure 6.3: Upper Ground Floor Plan (Corporate Office).....	202
Figure 6.4: Second Floor Plan (Corporate Office).....	203
Figure 6.5: Typical Floor Plan- 3 rd to 5 th (Corporate Office).....	204
Figure 6.6: 6 th Floor Plan (Corporate Office)	205
Figure 6.7: Typical Floor Plan- 7 th to 8 th (Corporate Office).....	206
Figure 6.8: Roof Deck Floor Plan.....	207
Figure 6.9: Lower Ground Floor Plan- Parking (Corporate Office)	208
Figure 6.10: Typical Mezzanine Floor Plan	209
Figure 6.11: 6 th Floor Mezzanine Floor Plan.....	209
Figure 6.12: Corporate Office Front Elevation	210
Figure 6.13: Corporate Office Left Side Elevation	211
Figure 6.14: Corporate Office Right Side Elevation	212
Figure 6.15: Corporate Office Rear Elevation	213
Figure 6.16: Corporate Building Cross Section.....	214
Figure 6.17: Corporate Building Longitudinal Section.....	215
Figure 6.18: Corporate Office Exterior Perspective	216
Figure 6.19: Corporate Building Interior Perspective.....	216
Figure 6.20: Corporate Building Interior Perspective.....	216

Figure 6.21: Corporate Building Interior Perspective.....	216
Figure 6.22: Rainwater Collector Detail.....	217
Figure 6.23: Roof Deck Spot Perspective	217
Figure 6.24: Roof Deck Spot Perspective	217
Figure 6.25: Roof Deck Spot Perspective	217
Figure 6.26: Roof Deck Aerial Spot Perspective	218
Figure 6.27: Roof Deck Aerial Spot Perspective	218
Figure 6.28: Commercial Building 1 Ground Floor Plan	220
Figure 6.29: Commercial Building 1 Second Floor Plan.....	220
Figure 6.30: Commercial Building 1 Front Elevation.....	221
Figure 6.31: Commercial Building 1 Left Elevation	221
Figure 6.32: Commercial Building 1 Right Elevation	221
Figure 6.33: Commercial Building 1 Rear Elevation.....	221
Figure 6.34: Commercial Building 1 Cross Section	222
Figure 6.35: Commercial Building 1 Longitudinal Section	222
Figure 6.36: Commercial Building 1 Interior Perspective	222
Figure 6.37: Commercial Building 1 Interior Perspective	222
Figure 6.38: Commercial Building 1 Exterior Perspective.....	223
Figure 6.39: Commercial Building 1 Interior Perspective	223
Figure 6.40: Commercial Building 1 Interior Perspective	223
Figure 6.41: Commercial Building 2 Floor Plan	224
Figure 6.42: Commercial Building 2 Front Elevation.....	224
Figure 6.43: Commercial Building 2 Right Elevation.....	224
Figure 6.44: Commercial Building 2 Rear Elevation.....	224
Figure 6.45: Commercial Building 2 Left Elevation	225
Figure 6.46: Commercial Building 2 Cross Section	225
Figure 6.47: Commercial Building 2 Longitudinal Section	224
Figure 6.48: Commercial Building 2 Exterior Perspective.....	225
Figure 6.49: Commercial Building 2 Interior Perspective	225
Figure 6.50: Commercial Building 2 Interior Perspective	225
Figure 6.51: Dome Floor Plan	227
Figure 6.52: Dome Front Elevation.....	227
Figure 6.53: Dome Rear Elevation.....	227
Figure 6.54: Dome Right Side Elevation.....	227
Figure 6.55: Dome Left Side Elevation.....	228
Figure 6.56: Dome Longitudinal Section	228

Figure 6.57: Dome Cross Section	228
Figure 6.58: Dome Interior Perspective	228
Figure 6.59: Dome Interior Perspective	228
Figure 6.60: Dome Exterior Perspective	229

LIST OF APPENDICES

- Appendix A: Design Standards
- Appendix B: Ecological Footprint Raw Data and Computation
- Appendix C: Breakdown of IT Centers in the Philippines
- Appendix D: Elevator Computation & Material Technical Description
- Appendix E: Related Letter & Documents
- References

