

Contents

Acknowledgement	(iii)
About the book.....	(vii)
Introduction.....	1
1. Site Selection and Planning.....	5
Introduction	5
1.1 Site Selection	6
1.1.1 Location.....	6
1.1.2 Basic Amenities	6
1.1.3 Access to Public Transportation	7
1.2 Site Ecology and Surveys.....	8
1.3 Site Planning	8
1.3.1 Site and Climate Analysis.....	8
1.3.2 Sun Path.....	9
1.3.3 Wind Rose	11
1.4 Minimise Disturbances to Site	12
1.5 Topographic Microclimate	19
1.6 Heat Island Effect	22
1.7 Soil Erosion Control	25
1.8 Facilities for Differently Abled	27
References and Sources	28
2. Water Management.....	31
Introduction	31
2.1 Water Balance.....	32
2.2 Specific Water Consumption in Buildings	33
2.3 Approach to Water Efficiency	33
2.3.1 Reduce	33
2.3.2 Recycle	41
2.3.3 Reuse	51
References and Sources	58
3. Energy Efficiency	61
Energy Efficiency in Buildings.....	61
3.1 Energy Efficiency in Buildings Envelope	62
3.2 Heating Ventilation and Air Conditioning System (HVAC)	75

3.3	Energy Efficiency in Lighting Systems.....	89
3.4	Renewable Energy	96
3.5	Energy Standards Codes	103
	References and Sources	107
4.	Sustainable Building Materials.....	109
4.1	Sustainable Materials.....	110
4.1.1	Building Reuse.....	110
4.1.2	Reuse of Salvaged Materials	111
4.1.3	Recycled Content Materials	112
4.1.4	Local Materials	112
4.1.5	Rapidly Renewable and Certified Wood-based Products	113
4.2	Ecolabelling of Products	114
4.3	Waste Management in Buildings.....	117
4.4	Construction Waste	117
4.5	Waste Management in Buildings (Post Occupancy).....	119
	References and Source	129
5.	Indoor Environmental Quality	131
5.1	Indoor Air Quality.....	131
5.2	Indoor Environmental Quality – Thermal Comfort	138
5.3	Indoor Environmental Quality – Acoustical Comfort	142
5.4	Indoor Environmental Quality – Ergonomic Comfort	152
5.5	Indoor Environmental Quality – Visual Comfort	166
	References and Sources	175
Index	179