



TABLE OF CONTENTS

OVERVIEW 01

PART I: ADAPTIV HOME MARKET 09

Chapter 1 — Homeowners in Canada 11

- 1.1 Canadian Demographics 12
- 1.2 Statistics 13
 - 1.2.1 Baby Boomer Generation Statistics 13
 - 1.2.2 Disability Statistics 14
 - 1.2.3 Canadian Rural Population Growth Statistics 15
 - 1.2.4 Healthcare Statistics 16
 - 1.2.5 Falls Statistics 16
- 1.3 Dwellings in Canada 17
 - 1.3.1 Types of Home Modifications 18
- 1.4 Key Findings on Homeowners 18
- 1.5 Achieving Home Modification Goals 20
 - 1.5.1 Thinking About the Home 20
- 1.6 Caregivers 21
 - 1.6.1 Assistance for Caregiving Duties 22
 - 1.6.2 Unmet Needs of Caregivers 22
- 1.7 Client Needs 22
 - 1.7.1 Clients without Urgent Needs 23
 - 1.7.2 Clients with Progressive Condition Needs 24
 - 1.7.3 Clients with Traumatic Change Needs 24
- 1.8 Health Conditions 24
 - 1.8.1 Mobility Conditions 25
 - 1.8.2 Sensory Conditions 25
 - 1.8.3 Cognitive Conditions 25
- 1.9 Education and Training 26

Chapter 2 — Client Communication 27

- 2.1 The Sales Process 28
 - 2.1.1 Establishing Credibility 28
 - 2.1.2 Customer Needs 28
 - 2.1.3 Guiding Informed Decision-Making 28

- 2.2 Scheduling an Interview 29
 - 2.2.1 Identify the Decision-Maker 29
 - 2.2.2 Be an Active Listener 31
- 2.3 Communication Practices 32
 - 2.3.1 General Communication Tips 33
 - 2.3.2 Generational Etiquette 33
 - 2.3.3 Cultural Etiquette 34
 - 2.3.4 Clients with Mobility Impairments 34
 - 2.3.5 Clients with Sensory Impairments 35
 - 2.3.6 Clients with Cognitive Impairments 36
- 2.4 House Surveys 37
- 2.5 Project Proposals 38
- 2.6 Presentations 39
- 2.7 Next Steps 40

Chapter 3 — Empathy 41

- 3.1 Developing Empathy 42
 - 3.1.1 Generalizations 42
 - 3.1.2 Attitude 42
 - 3.1.3 Different Types of Ageism 42
 - 3.1.4 Open Mindedness 42
 - 3.1.5 Condition 43
 - 3.1.6 Uniqueness 43
 - 3.1.7 Patience 43
 - 3.1.8 Abilities 43
- 3.2 Unexpected Changes in Mobility 44
- 3.3 The Ecological Model 45
- 3.4 Walk a Mile in Their Shoes 47
 - 3.4.1 Smell 47
 - 3.4.2 Hearing 47
 - 3.4.3 Mobility 47
 - 3.4.4 Vision 47
 - 3.4.5 Touch 47

Chapter 4 — Professional Partnerships ... 49

4.1	The Home Modification Team Approach	50
4.1.1	The Client	50
4.1.2	Family Members and Caregivers	50
4.2	Building the Professional Team	50
4.2.1	Renovator or Building Professional	51
4.2.2	Occupational Therapist	51
4.2.3	Personal Support Worker	54
4.2.4	Interior Designer, Decorator, or Architect	56
4.2.5	Home Medical Equipment Specialist	56
4.2.6	Home Automation Specialist	57
4.2.7	Other Healthcare Professionals	58
4.2.8	Project Funders	58
4.2.9	Real Estate Agent	59
4.3	Costs	59
4.4	Professional Associations	60
4.5	Common Terminology	62

Chapter 5 — Marketing 67

5.1	Marketing Strategies versus Marketing Plans	68
5.1.1	The Marketing Strategy	68
5.1.2	Marketing Strategies	70
5.1.3	The Marketing Plan	71
5.2	Marketing Objectives	73
5.3	Writing a Marketing Plan	74
5.3.1	The Market Situation	74
5.3.2	Threats and Opportunities	75
5.3.3	Marketing Goals	77
5.3.4	Budgets and Controls	79
5.3.5	Tracking Effectiveness	79
5.4	Areas for Improvement	82
5.4.1	Website	82
5.4.2	Educating Team Members	83
5.4.3	Ambassadors	83
5.5	Online Reputation	83
5.5.1	Marketing Material	83
5.5.2	Social Media	83
5.5.3	Google AdWords	84
5.5.4	Advertising	84

Chapter 6 — Privacy, Insurance, and Legal Considerations 85

6.1	Protecting Client Information	85
6.1.1	Personal and Health Information	86
6.1.2	Principles	86
6.2	Legal Considerations	88
6.3	Insurance Coverage	89
6.3.1	Damage to the Site	89
6.3.2	Workers' Safety	89
6.3.3	Damage to the Client's Property or the Property of Others	90
6.3.4	Public Safety and Personal Injury	90
6.3.5	Damage to the Business' Equipment	90
6.3.6	Vehicle Accidents	90
6.3.7	Defective Products, Equipment, or Installation	90
6.3.8	Negligence	90
6.3.9	Other Legal Liabilities	91
6.4	Risks to Insure	92
6.4.1	Contractors' Equipment Floater	92
6.4.2	Builders' Risk Insurance	92
6.4.3	Extensions to Builders' Risk Policies	93
6.4.4	Errors and Omissions and Professional Liability Insurance	94
6.4.5	Wrap-Up Insurance	94
6.4.6	Renovation Warranty Programs	94
6.4.7	Workers' Compensation	95
6.4.8	Long-Term Disability Insurance	95

Chapter 7 — Contracts 97

7.1	Developing a Contract	97
7.1.1	Essential Contract Information	98
7.1.2	Work by Others	99
7.1.3	Detailed Plan	99
7.1.4	Materials and Products	99
7.1.5	Permits and Inspections	99
7.2	Types of Contracts	100
7.2.1	Fixed-Price Contract	100
7.2.2	Cost-Plus Contract	100
7.2.3	Design-Build Contract	100
7.2.4	Unit Price Contract	100
7.2.5	Time Limitation	101

7.3	Budget	101	7.5.4	Payment for Fixed-Price Contracts	106
7.3.1	Estimate	101	7.5.5	Payment for Cost-Plus Contracts	106
7.3.2	Detailed Budget	101	7.5.6	Payment Terms	106
7.3.3	Pricing Method	102	7.6	Managing Changes	107
7.3.4	Taxes	102	7.6.1	Extras and Deletions	107
7.3.5	Additional Costs	102	7.6.2	Design Changes	107
7.3.6	Latent Defects	103	7.7	Special Accommodations	107
7.4	Schedule	103	7.7.1	Utilities and Facilities	108
7.4.1	Timetable	103	7.7.2	Storage, Parking, and Other Logistics	108
7.4.2	Start and Completion Dates	104	7.8	Communication	109
7.4.3	Substantial and Full Completion	104	7.8.1	Status Updates	109
7.4.4	Delays	104	7.9	Financing	109
7.5	Payment	105	7.9.1	Grants, Rebates, and Incentives	109
7.5.1	Payment Schedule	105	7.9.2	Programs and Associations	110
7.5.2	Deposits	105	7.9.3	Financing Options	114
7.5.3	Payment Recipients	105			

PART II: DESIGN CONSIDERATIONS 117

Chapter 8 — Design Solutions 119

8.1	Introduction: Accessible Design	120
8.2	Types of Home Design Guides	121
8.2.1	Universal Design (UD)	121
8.2.2	Lifetime Homes	122
8.2.3	Adaptable Housing	123
8.2.4	Visitable Homes	123
8.2.5	Lifespan Homes	124
8.2.6	Safe and Well at Home	125
8.3	Ergonomics	125
8.4	Product Knowledge	127

Chapter 9 — Accessibility Approaches 129

9.1	Planning	129
9.2	Mobility Aids Dimensions	130
9.2.1	Walker/Rollator	130
9.2.2	Manual Wheelchair	131
9.2.3	Power Wheelchair	132
9.2.4	Mobility Scooter	133

9.3	Clearances and Ranges	134
9.3.1	Basic Space Clearances	134
9.3.2	Basic Reach Ranges	136
9.4	Doors	138
9.4.1	Door Approach	139
9.4.2	Door Hardware	140
9.5	Hallways Inside the Home	140
9.6	Garage Clearance	141
9.7	Electrical	141
9.7.1	Electrical Panel	141
9.7.2	Height of Switches and Outlets	141
9.7.3	Quality of Power Supply	142
9.7.4	Power Backup	142

PART III: BUILDING KNOWLEDGE 145

Chapter 10 — Ramps..... 147

10.1	General Ramp Configuration	148
10.1.1	Ramp Width	148
10.1.2	Slope Specifications	149
10.1.3	Length.....	150
10.1.4	Landing Spaces and Resting Areas	150
10.1.5	Handrails and Edge Protection.....	150
10.2	Codes and Permits.....	152
10.3	Types of Ramps	152
10.3.1	Landscape Approach	152
10.3.2	Structural Approach	154
10.4	Other Considerations	157
10.4.1	Location	157
10.4.2	Weather Elements	157
10.4.3	Weight Capacity	157
10.4.4	Materials.....	158
10.4.5	Environmentally-Friendly Choices.....	158
10.4.6	Lighting.....	158
10.5	Prefabricated Ramp Systems.....	158
10.6	Other Ramp Designs	159

Chapter 11 — Home Entrances..... 161

11.1	Steps.....	162
11.2	Zero-Step Thresholds.....	163
11.2.1	Doors in Exterior Walls	166
11.2.2	Getting the Client to the Door.....	168
11.3	Keys, Remotes, Door Viewers, and Doorbells.....	172
11.4	Entryway Shelving and Seating.....	173
11.5	Lighting.....	173
11.6	Sidewalks and Pathways	173
11.6.1	Flooring Surfaces	173
11.7	Ramps and Lifts.....	173

Chapter 12 — Kitchens..... 175

12.1	Kitchen Layouts.....	176
12.2	Kitchen Design Steps.....	179
12.2.1	The Work Triangle.....	184
12.3	Cabinets	185
12.3.1	Wall Cabinets.....	185
12.3.2	Base Cabinets	186
12.3.3	Corner Cabinets.....	186
12.3.4	Cabinet Hardware.....	187
12.4	Appliances.....	188
12.4.1	Refrigerators.....	188
12.4.2	Ovens.....	188
12.4.3	Microwaves.....	189
12.4.4	Dishwashers.....	190
12.4.5	Cooktops and Ranges.....	190
12.5	Technology	191
12.6	Pantries and Storage	191
12.7	Countertops	192
12.7.1	Countertop Height	192
12.7.2	Countertop Colour	193
12.7.3	Countertop Materials.....	193
12.7.4	Countertop Corners.....	193
12.8	Sinks and Faucets.....	194
12.8.1	Sinks.....	194
12.8.2	Faucets.....	194
12.9	Flooring.....	195
12.9.1	Types of Flooring and Transitions	195
12.10	Seating.....	196
12.10.1	Seating Height.....	196
12.11	Ventilation	198

Chapter 13 — Bathrooms	199	Chapter 15 — Windows and Doors	231
13.1 Components.....	200	15.1 Windows.....	232
13.1.1 Guidelines.....	202	15.1.1 Egress Windows or Doors for Bedrooms.....	232
13.1.2 Toilets and Personal Hygiene Seats.....	203	15.1.2 Hardware.....	235
13.2 Support Tools.....	203	15.1.3 Automatic Window Openers.....	235
13.2.1 Grab Bars.....	204	15.2 Doors and Doorways.....	236
13.2.2 Installation.....	205	15.2.1 Width.....	236
13.2.3 Stanchions.....	208	15.2.2 Swing.....	237
13.3 Curbless Showers.....	209	15.2.3 Hardware.....	237
13.3.1 Safety.....	210	15.2.4 Pocket Doors.....	237
13.3.2 Hygiene and Durability.....	210	15.2.5 Widening a Doorway.....	237
13.3.3 Controls.....	211		
13.3.4 Installation.....	211	Chapter 16 — Stairs	239
13.3.5 Drainage.....	211	16.1 Reasons People Fall.....	240
13.3.6 Lowering the Floor.....	212	16.2 Reducing Risks.....	241
13.3.7 Water Dams.....	217	16.3 Stairway Specifications.....	244
13.4 Walk-In Tubs.....	217	16.3.1 Handrails.....	247
13.5 Flooring.....	221	16.3.2 Lighting.....	247
13.5.1 Transitions.....	221		
13.6 Accessories.....	222	Chapter 17 — Flooring	249
13.7 Storage.....	222	17.1 Types of Flooring.....	249
13.8 Ventilation and Moisture Management.....	223	17.1.1 Benefits and Drawbacks.....	250
13.8.1 Features.....	224	17.2 Floor Transitions.....	255
13.8.2 Noise Level.....	224	17.2.1 Transition Moldings.....	257
Chapter 14 — Bedrooms and Closets	225	Chapter 18 — Lifting Systems	259
14.1 Flooring.....	226	18.1 Considerations for Stairs.....	260
14.1.1 Carpet.....	226	18.2 Lifts.....	261
14.1.2 Hardwood or Laminate.....	227	18.2.1 Vertical Platform Lifts.....	261
14.1.3 Luxury Vinyl Plank.....	227	18.2.2 Inclined Platform Lifts.....	262
14.2 Lighting Design.....	227	18.2.3 Stairlifts and Chairlifts.....	263
14.3 Technology and Connectivity.....	228	18.3 Residential Elevators.....	264
14.4 Closets.....	228	18.3.1 Access Route.....	265
14.5 Window Coverings.....	229	18.3.2 Platform Size.....	266
14.6 Air Quality.....	229	18.3.3 Safety.....	266
14.7 Access.....	230	18.3.4 Frequently Asked Questions.....	267
		18.4 Hoists and Ceiling Lifts.....	269
		18.4.1 Wheeled Hoists.....	269
		18.4.2 Stationary Hoists.....	270
		18.4.3 Ceiling Lifts.....	270

PART IV: SPECIALIZED KNOWLEDGE 277

Chapter 19 — Indoor Air Quality and Wellness 279

19.1	Indoor Air Quality.....	281
19.2	Frequently Asked Questions about IAQ.....	286
19.3	Key Areas of Concern.....	288
19.3.1	Kitchens.....	288
19.3.2	Bathrooms.....	288
19.3.3	Basements.....	288
19.3.4	Bedrooms and Sleeping Areas.....	288
19.4	Wellness.....	289
19.4.1	Water.....	289
19.4.2	Thermal Comfort.....	290
19.4.3	Acoustics.....	290
19.4.4	Lighting.....	290
19.5	Air Filtration.....	291
19.5.1	MERV (Minimum Efficiency Reporting Value) Filters.....	291
19.5.2	HEPA (High Efficiency Particulate Air) Filters.....	291
19.5.3	Activated Carbon Filters.....	291
19.5.4	UVGI (Ultraviolet Germicidal Irradiation).....	292
19.5.5	Ionizer Air Purifiers.....	292
19.5.6	Ozone Purifiers.....	292

Chapter 20 — Lighting 293

20.1	Definitions.....	294
20.2	Circadian Rhythm.....	296
20.2.1	Circadian Lighting.....	297
20.3	Glare.....	298
20.4	Light Reflectance Values.....	299
20.5	Lighting Calculation.....	301
20.6	Natural Light.....	302
20.7	Light Measurements.....	303
20.8	Light Sensitivities.....	303
20.9	Lighting Specifications.....	304
20.9.1	Kitchens.....	304
20.9.2	Bathrooms.....	308
20.10	Specialty Lighting.....	311

Chapter 21 — Fire Safety 315

21.1	Warning Devices.....	317
21.1.1	Low Vision or Blindness.....	318
21.1.2	Mobility Limitations.....	318
21.1.3	Deafness or Hearing Loss.....	318
21.1.4	Cognitive Limitations.....	318
21.2	Kitchen Safety.....	318
21.3	Home Heating Safety.....	319
21.4	Electrical Safety.....	319
21.5	Evacuation Route.....	320
21.6	Fire Rated Materials for Renovations.....	320
21.7	Outdoor Spaces.....	321
21.7.1	Landscaping.....	321

Chapter 22 — Home Automation..... 323

22.1	Technology.....	324
22.2	Home Automation.....	325
22.2.1	App Automation.....	325
22.2.2	Lighting.....	326
22.2.3	Security.....	326
22.2.4	Heating and Cooling.....	327
22.2.5	Telephones.....	327
22.3	Automated Fixtures and Fittings.....	328
22.3.1	Appliances.....	328
22.3.2	Doors.....	328
22.3.3	Windows.....	328
22.3.4	Blinds and Curtains.....	328
22.3.5	Water.....	328
22.4	Fire and Other Safety Emergencies.....	329
22.5	Other Considerations.....	330
22.6	Renovations.....	330
22.7	System Requirements.....	330
22.7.1	Location of Control Centres.....	330
22.8	Home Automation and Healthcare.....	331

PART V: RESOURCES **333****Chapter 23 — Conditions and Disease
Fact Sheets** **335**

23.1 Amyotrophic Lateral Sclerosis (ALS — Lou Gehrig’s Disease)	337
23.2 Alzheimer’s Disease and Dementia	339
23.3 Arthritis	341
23.4 Autism	343
23.5 Cancer	345
23.6 Cerebral Palsy	347
23.7 Chronic Obstructive Pulmonary Disease (COPD)	349
23.8 Cystic Fibrosis	351
23.9 Diabetes	353
23.10 Epilepsy	355
23.11 Heart Disease	357
23.12 HIV/AIDS	359
23.13 Mental Illnesses	361
23.14 Migraines	363
23.15 Multiple Sclerosis	365
23.16 Muscular Dystrophy	367
23.17 Obesity	369
23.18 Parkinson’s Disease	371
23.19 Sleep Apnea	373

23.20 Spina bifida	375
23.21 Spinal Cord Injury	377
23.22 Stroke	379
23.23 Traumatic Brain Injury	381
23.24 Vertigo	383
23.25 Vision Impairment	385

Chapter 24 — The Renovator’s Checklist ... **391**

24.1 The Building Envelope	392
24.2 The House as a System	392
24.3 Checklist: Basement/Foundation	393
24.4 Mechanical Systems and Services	394
24.4.1 Homeowner Concerns with Mechanical Systems	395
24.4.2 Equipment Issues	396
24.5 Checklist: Main Floor	398
24.5.1 Kitchens and Bathrooms	399
24.5.2 Windows, Doors, and Interior Finishes	400
24.6 Checklist: Attic/Ceiling Space	402
24.7 Checklist: Exterior Inspection	404
24.8 Checklist: Services	405
24.9 Checklist: Homeowner Interview	406

GLOSSARY OF TERMS **407****INDEX** **414**