

# Contents

<b>Preface</b>	ix
<b>Acknowledgements</b>	x
<b>1 Introduction</b>	1
1.1 Scope of guidelines	1
1.2 What is rammed earth?	2
1.3 Brief history and development	3
1.4 Advantages and limitations of rammed earth	10
1.5 Structure of the guidelines	16
<b>2 Preliminary design considerations</b>	17
2.1 Applications	17
2.2 Influence of rammed earth on other construction activities	22
2.3 Building control	24
2.4 Contractual considerations	27
<b>3 Materials for rammed earth construction</b>	29
3.1 Raw materials	29
3.2 Soil characteristics	31
3.3 Soil compaction	33
3.4 Additives	34
3.5 Soil selection	35
3.6 Physical characteristics	38
<b>4 Construction of rammed earth walls</b>	45
4.1 Preparation	45
4.2 Building	51

(continued)

<b>5</b>	<b>Details for rammed earth construction</b>	61
5.1	General	61
5.2	Footings and base details	61
5.3	Openings and supports	65
5.4	Protection given by roofs	69
5.5	Protective coatings	70
5.6	Services	74
5.7	Fixings	75
5.8	Thermal insulation	75
5.9	Acoustic separation	75
5.10	Construction tolerances	78
<b>6</b>	<b>Engineering design of rammed earth walls</b>	79
6.1	Design requirements	79
6.2	Properties of rammed earth for design	79
6.3	Simplified design for structural adequacy	81
6.4	Deformation	84
<b>7</b>	<b>Maintenance and repair of rammed earth</b>	85
7.1	Weathering and deterioration	85
7.2	Maintenance of rammed earth walls	88
7.3	Defects in new construction	89
7.4	Repairs to rammed earth	93
<b>8</b>	<b>Future of rammed earth</b>	95
<b>Appendices</b>		
<b>A</b>	<b>Physical properties of rammed earth</b>	99
<b>B</b>	<b>Specification for rammed earth works</b>	111
<b>C</b>	<b>Structural wall design</b>	119
<b>D</b>	<b>Stabilised rammed earth</b>	125
<b>Contact addresses</b>		131
<b>Glossary</b>		133
<b>References</b>		137
<b>Bibliography</b>		139
<b>Index</b>		143