
Contents

	vi	Foreword to the Second Edition, 2010
	viii	Preface to the Second Edition, 2010
	x	Foreword to the First Edition, 1996
	xii	Preface to the First Edition, 1996
	xiii	Dedication

	xiv	Introduction
--	-----	---------------------

Chapter 1	1	Stone Decay
	1	CHARACTERIZING THE STONE
	2	DESCRIBING DECAY
	3	HOW SERIOUS IS IT? MEASURING THE EXTENT AND SEVERITY OF DECAY
	5	Surface Techniques
	6	Looking Beneath the Surface
	8	All the Information We Need?
	9	CAUSES OF DECAY
	9	Air Pollution
	14	Salts
	20	Biodeterioration
	24	Differential Stress
	25	Intrinsic Problems

Chapter 2	27	Putting It Right: Preventive and Remedial Treatments
	27	PREVENTIVE CONSERVATION
	29	ACTIVE CONSERVATION: CLEANING
	31	Laser Cleaning
	32	Latex Poultice Method
	33	Biological Cleaning
	33	Targeting the Dirt
	33	ACTIVE CONSERVATION: DESALINATION
	35	ACTIVE CONSERVATION: CONSOLIDATION
	36	Lime and Related Treatments
	38	Barium Hydroxide
	38	Organic Polymers
	40	Alkoxysilanes
	41	Epoxyes
	42	Acrylics
	43	Other Materials
	43	Emulsions

	44	SURFACE COATINGS
	44	Water Repellents
	45	Anti-Graffiti Coatings
	46	Emulsions
	46	Crystal Growth Inhibitors
	46	Oxalate Formation
	47	Lime and Biocalcification
	47	Colloidal Silica
	47	Biocides
	48	Biological Attack on Treatments
Chapter 3	49	Do They Work? Assessing the Effectiveness of Treatments
	50	CHARACTERIZING THE TREATED STONE
	50	Properties That Change with Decay
	50	Meeting Objectives
	51	Standard Test Methods
	51	LONG-TERM PERFORMANCE
	53	Documentation of Field Trials
Chapter 4	54	Putting It into Practice: Conservation Policy
	55	RESPONSIBLE USE OF SURFACE COATINGS AND CONSOLIDANTS
	55	RETREATMENT
	56	RECORDING
Chapter 5	58	Heritage in Stone: Rock Art, Quarries, and Replacement Stone
	58	ROCK ART
	59	Rock Art Conservation
	61	Rock Art Treatment
	62	Rock Art Documentation
	63	HISTORIC QUARRIES
	64	REPLACEMENT STONE
Chapter 6	66	Doing Better: Increasing the Effectiveness of Research
	66	WHAT IS WRONG?
	66	Publications
	67	Conferences
	67	Standards
	67	Conduct and Quality of Research
	70	Getting the Message Across
	70	PUTTING IT RIGHT
	70	Quality, Not Quantity
	71	Conferences and Other Models for Advancing the Field
	71	Conference Papers
	71	Selection of Conference Papers
	72	Refereeing
	72	Collaborative Programs
	73	Training
	73	Reviews

Chapter 7	75	What Has Changed? Some Thoughts on the Past Fifteen Years
	80	CONCLUSION
	81	References
	140	Appendix: Resources for Stone Conservation
	152	Index
	159	About the Authors