Service Life of Rehabilitated Buildings and Other Structures

Kelley/Marshall Editors

ASTM STP 1098
Service Life of Rehabilitated Buildings and Other Structures

Stephen J. Kelley and Philip C. Marshall, editors
Foreword

The symposium on Service Life of Rehabilitated Buildings and Other Structures was presented at Cincinnati, OH, on 27 April 1987. The ASTM Committee E-6 on Performance of Building Constructions, the Association of Preservation Technology, the National Institute of Standards and Technology, and the National Park Service sponsored the symposium. David G. Battle, National Park Service, Philip C. Marshall, Southeastern Massachusetts University, and Wayne Ellis, Consultant, served as co-chairmen of the symposium. Stephen J. Kelley, Wiss, Janney, Elstner Associates, Inc., and Philip C. Marshall are editors of the resulting publication.
Contents

Overview 1

Part I—Maintenance Management Bases and Service Life

Introduction 5

Asset Management Information System (AMIS) for Environment Canada—Parks—SUSAN C. HUM-HARTLEY, J. C. RICHARD, AND JOHN W. McBAIN 7

A Maintenance Specifications Database for the National Park Service—DAVID G. BATTLE 18

A Condition Assessment Process Developed for Use in the Private Sector—PATRICE AUDET-LAPOINTE 25

Part II—Extrinsic Factors and Service Life

Introduction 39

Service Life Prediction and Life-Cycle Costing for Materials Damage as a Result of Acid Deposition—RICHARD A. LIVINGSTON 40


Part III—Case Studies: Building Materials and Service Life

Introduction 67

Life Expectancy for the Statue of Liberty—E. BLAINE CLIVER AND ROBERT BABOIAN 68

The Next 120 Years: Service Life Issues in the Preservation of Cape Hatteras Lighthouse—DEBORAH SLATON 73
An Analysis of the Performance and Service Life of the Concrete Structure of
Unity Temple, Oak Park, Illinois—HARRY J. HUNDERMAN AND THOMAS L.
REWERTS

Problems Affecting the Service Life of Exterior Sandstone: Case Study, the
Burlington, Iowa Free Library—DAVID ARBOGAST

PART IV—CASE STUDIES: BUILDING SYSTEMS AND SERVICE LIFE

Introduction

Assessment of Building Facades in Masonry and Stone—SVEN E. THOMASEN AND
CAROLYN L. SEARLS

The Montague Building and Watauga Hall: A Comparison of Predicted Service
Life Based on Building Materials—DAVID C. FISCHETTI