

# Subject Index

## A

Acoustic emissions, 175  
 Adhesion, glazes, 319  
 Air infiltration, 235  
 Allowable stress design, 186  
 Alteration crusts, cleaning, 376  
 Aluminum  
   cast, terra cotta dome reconstruction, 294  
   windows, 235  
 American Institute of Architects, 100  
 American Society of Civil Engineers, standards,  
   structural condition assessment, and  
   rehabilitation, 126  
 Analysis  
   ancient mortars, 275  
   mortars, 285  
 Anisotropic, 175  
 Architectural conservator, role in architectural  
   preservation firm, 72  
 Architectural preservation firm, architectural  
   conservator role, 72  
 Architecture  
   stained glass, 264  
   twentieth century building materials and  
   systems, 353  
 Art, stained glass, 264  
 Asbestos  
   exposure to, 401  
   identification and remediation, 427

## B

Brick  
   cleaning, 367  
   decking, 201  
   historic structure preservation and  
   rehabilitation, 337  
   salvage, 337  
 Building assessment, systems approach, 137  
 Building failures, 149  
 Building materials  
   hazardous, exposure to, 401  
   twentieth century, historical significance, 353  
 Building systems, twentieth century, historical  
   significance, 353

Building technology  
   ancient mortars, 275  
   architectural conservator role, 72  
   ASCE standards, 126  
   cast iron columns, 186  
   certification for, 100  
   composite floor systems, 201  
   conservation engineer role, 85  
   disaster preparedness, 149  
   earthquake, 168  
   exposure to hazard materials, 401  
   hazardous waste disposal, 418  
   identification and remediation of hazardous  
   materials, 427  
   marble and limestone, 376  
   marble column and beams, 216  
   mechanical and electrical systems in pre-1940  
   structures, 248  
   replacement brick, 337  
   stained glass, 264  
   stone cladding, 367  
   strategic framework, 64  
   systems approach, 137  
   terra cotta, 307  
     dome, 294  
     glazes, 319  
   traditional versus contemporary, 45  
   twentieth century building materials and  
   systems, 353

## C

Cast iron, columns, capacity determination, 186  
 Certification, for preservation and rehabilitation,  
   100  
 Charleston, South Carolina, historic, Hurricane  
   Hugo damage recordation and retrieval,  
   149  
 Chloride test, 119  
 Clay tile decking, 201  
 Cleaning  
   gypsum alteration, 376  
   stone cladding, evaluation, 367  
 Coatings, terra cotta, 319  
 Coefficient of thermal expansion, glazes, 319  
 Columns, cast iron, capacity determination, 186

Composite floor system, 201  
 Computer simulation, 119  
 Concrete  
   decking, 201  
   reinforced, 119  
 Concrete and steel framed floors, 201  
 Condensation resistance factor, 235  
 Condition analysis, stained glass, 264  
 Condition survey, 201  
 Conservation  
   hazardous waste disposal, 418  
   stained glass, 264  
   standards, strategic framework, 64  
   terra cotta, 307  
   training, 72  
   twentieth century building materials and systems, 353  
 Conservation engineer, role, 85  
 Cost estimates, stained glass conservation, 264  
 Cultural resources, 7  
   management, historic structure reports, 109

**D**

Damage survey, Charleston, S.C., 149  
 Database, computer-automated, 149  
 Deflection measurement, 175  
 Design, mechanical and electrical systems in pre-1940 structures, 248  
 Disaster mitigation, 149  
 Disaster preparedness, Charleston, S.C., 149  
 Documentation  
   historic structure reports, 109  
   National Trust for Historic Preservation, 23  
   twentieth century building materials and systems, 353  
 Driard Hotel, 307  
 Dusts, exposure to, 401  
 Dynamic/vibration evaluation, 175

**E**

Earthquake, building technology, 168  
 Easements, 23  
 Educational programs, 100  
 Electrical systems, pre-1940 structures, repairing, retrofitting and maintaining, 248  
 Emergency stabilization, 149  
 Energy analysis, windows, 235  
 Energy model, 137  
 Engineering, conservation, 85  
 Environmental hazards, identification and remediation during preservation or rehabilitation, 427

Epoxy pressure injection, marble column and beam repair, 216  
 Ethical principles, 7  
 Evaluation  
   ancient mortars, 275  
   architectural conservator role, 72  
   ASCE standards, 126  
   cast iron columns, 186  
   certification for, 100  
   composite floor systems, 201  
   conservation engineer role, 85  
   disaster preparedness, 149  
   exposure to hazard materials, 401  
   hazardous waste disposal, 418  
   identification and remediation of hazardous materials, 427  
   marble and limestone, 376  
   marble column and beams, 216  
   mechanical and electrical systems in pre-1940 structures, 248  
   replacement brick, 337  
   stained glass, 264  
   stone cladding, 367  
   strategic framework, 64  
   systems approach, 137  
   terra cotta, 307  
   dome, 294  
   glazes, 319  
   traditional versus contemporary, 45  
   twentieth century building materials and systems, 353  
 Expert qualifications, mechanical and electrical systems in pre-1940 structures, 248

**F**

Facades  
   cleaning, 367  
   restoration, waste disposal, 418  
 Federal buildings, seismic evaluation and rehabilitation standards, 168  
 Finishes, historic, 72  
 Flat clay-tile arch, 201  
 Floor construction, archaic, analysis and testing, 201  
 France, restoration, 45  
 Freeze-thaw cycles, glazes, 319

**G**

Geological evaluation, stone cladding, 367  
 Glass, windows, 235  
 Glazes, terra cotta, 319  
 Glazing, windows, 235  
 Graphics, computer-automated, 149

Ground penetrating radar, 119  
Gypsum, alteration on marble and limestone, 376

## H

Half-cell potential, 119  
Hazardous materials  
  exposure during renovation, 401  
  identification and remediation, 427  
  waste disposal, 418  
Historic properties, standards for treatment of  
  historic properties, 7  
Historic structure report, National Park Service,  
  109  
Hôtel du Breuil St. Germain, 45  
Hurricane Hugo, historic Charleston, damage  
  recording and retrieval, 149

## I

Identification, of hazardous materials, 427  
In situ repair, epoxy pressure injection, 216  
Installation, mechanical and electrical systems in  
  pre-1940 structures, 248  
Interagency Committee on Seismic Safety in  
  Construction, 168  
Investigation, mechanical and electrical systems  
  in pre-1940 structures, 248

## L

Lead  
  exposure to, 401  
  identification and remediation, 427  
Life cycle cost analysis, windows, 235  
Limestone, gypsum alteration, 376  
Load and resistance factor design, 186  
Load-bearing capacity, cast iron columns, 186  
Load test, 201

## M

Maintenance, mechanical and electrical systems in  
  pre-1940 structures, 248  
Marble  
  column and beams, repair by epoxy pressure  
  injection, 216  
  gypsum alteration, 376  
Marché à Reims, 45  
Marks & Spencer Building, 307  
Masonry, 119  
  ancient mortars, 275  
  *see also* Terra cotta  
Massachusetts State House, 216  
Materials, historic, 72

Mechanical properties, determination, 175  
Mechanical systems, pre-1940 structures,  
  repairing, retrofitting and maintaining, 248  
Modern structures, restoration, 45  
Moisture content, 119  
Mold  
  exposure to, 401  
  identification and remediation, 427  
Mortars  
  additives, 285  
  ancient, instrumental analysis, 275  
  testing, 285

## N

National Earthquake Hazards Reduction Program  
  Reauthorization Act, 168  
National Historic Landmarks, 7  
National Park Service, guideline for historic  
  structure reports, revision, 109  
National Register of Historic Places, 7  
National Trust for Historic Preservation,  
  documentation, 23  
Nondestructive evaluation and testing  
  standards for evaluation, 119  
  wood buildings, 175

## O

Orthotropic, 175

## P

Petrography, ancient mortars, 275  
Philosophical principles, 7  
Polychlorinated biphenyls  
  exposure to, 401  
  identification and remediation, 427  
Porosity, ancient mortars, 275  
Preservation, 175  
  ancient mortars, 275  
  architectural conservator role, 72  
  ASCE standards, 126  
  cast iron columns, 186  
  certification for, 100  
  composite floor systems, 201  
  conservation engineer role, 85  
  disaster preparedness, 149  
  education, 100  
  exposure to hazard materials, 401  
  hazardous waste disposal, 418  
  historic structure reports, 109  
  identification and remediation of environmental  
  hazards, 427  
  marble and limestone, 376

Preservation—*continued*  
 marble column and beams, 216  
 mechanical and electrical systems in pre-1940 structures, 248  
 mortars, 285  
 nondestructive testing evaluation standards, 119  
 replacement brick, 337  
 stained glass, 264  
 standards for treatment, 7  
 stone cladding, 367  
 strategic framework, 64  
 systems approach, 137  
 terra cotta, 307  
     dome, 294  
     glazes, 319  
 traditional versus contemporary, 45  
 training, 100  
 twentieth century building materials and systems, 353  
 windows, 235  
 Preservation architect, 72  
 Pretreatment, hazardous waste disposal, 418  
 Private historic properties, 23  
 Public historic house museum properties, 23  
 Public Law 101-614, 168

**R**

Reconstruction, standards for treatment, 7  
 Rehabilitation  
     ancient mortars, 275  
     architectural conservator role, 72  
     ASCE standards, 126  
     cast iron columns, 186  
     certification for, 100  
     composite floor systems, 201  
     conservation engineer role, 85  
     disaster preparedness, 149  
     hazardous material exposure, 401  
     identification and remediation of environmental hazards, 427  
     marble and limestone, 376  
     marble column and beams, 216  
     mechanical and electrical systems in pre-1940 structures, 248  
     replacement brick, 337  
     seismic, 168  
     stained glass, 264  
     standards for treatment, 7  
     stone cladding, 367  
     strategic framework, 64  
     systems approach, 137  
     terra cotta, 307  
         dome, 294  
         glazes, 319

    traditional versus contemporary, 45  
     twentieth century building materials and systems, 353  
     window, 235  
 Remediation, of hazardous materials, 427  
 Renovation  
     cast iron columns, 186  
     hazardous material exposure, 401  
 Repair, terra cotta, 307  
 Restoration  
     cast iron columns, 186  
     facades, waste disposal, 418  
     mortars, 285  
     replacement brick, 337  
     stained glass, 264  
     standards for treatment, 7  
 Reuse, terra cotta, 307  
 Royal Institute of British Architects, 100

**S**

Salvage  
     brick, 337  
     terra cotta, 307  
 Sealants, windows, 235  
 Secretary of the Interior, standards for treatment of historic properties, 7  
 Seismic evaluation, 126  
 Silica, exposure to, 401  
 Spalls, terra cotta, 319  
 Specifications  
     mechanical and electrical systems in pre-1940 structures, 248  
     stained glass, 264  
 Stabilization, conservation engineer role, 85  
 Stained glass, conservation, 264  
 Staining, stone cladding, 367  
 Standards  
     ancient mortars, 275  
     architectural conservator role, 72  
     ASCE, structural condition assessment and rehabilitation, 126  
     composite floor systems, 201  
     conservation strategic framework, 64  
     disaster preparedness, 149  
     exposure to hazard materials, 401  
     hazardous waste disposal, 418  
     identification and remediation of hazardous materials, 427  
     marble and limestone, 376  
     marble column and beams, 216  
     mechanical and electrical systems in pre-1940 structures, 248  
     for nondestructive testing evaluation, 119  
     professional, 100

replacement brick, 337  
 seismic safety, 168  
 stained glass, 264  
 stone cladding, 367  
 terra cotta, 307  
     dome, 294  
     glazes, 319  
 twentieth century building materials and  
     systems, 353  
 Static, 175  
 Steel windows, 235  
 Stone, repair by epoxy pressure injection, 216  
 Stone cladding, cleaning method evaluation, 367  
 Strain measurement, 175  
 Strategic framework, conservation standards, 64  
 Stress wave analysis, 175  
 Structural analysis programs, 175  
 Structural capacity, 201  
 Structural performance, windows, 235  
 Structural stability, 85  
 Surface soil, cleaning, 367

**T**

Terra cotta  
     cleaning, 367  
     dome, replacement material selection, 294  
     glaze repairs, testing and analysis, 319  
     salvage and reuse, 307  
 Test wall, 119  
 Thermal analysis, ancient mortars, 275  
 Thermal performance, windows, 235  
 Tiffany windows, conservation, 264  
 Times Building, 307  
 Treatment decisions  
     historic structure reports, 109  
     standards for treatment of historic properties, 7  
     strategic framework, 64  
     systems approach, 137

**U**

Ultrasonics, 175  
 Ultraviolet light, glazes, 319

**V**

Variances, mechanical and electrical systems in  
     pre-1940 structures, 248  
 Veneer, cleaning, 367  
 Victoria, British Columbia, 307  
 Victoria Eatons project, 307  
 Vinyl windows, 235  
 Visual evaluation, 175  
 Volatile organic compounds  
     exposure to, 401  
     identification and remediation, 427

**W**

Waste disposal, building facade restoration, 418  
 Waste stream, 418  
 Water penetration, 235  
 Water vapor transmission, glazes, 319  
 Weathering  
     accelerated, glazes, 319  
     stone cladding, 367  
 Weatherstripping, windows, 235  
 Westmoreland County Courthouse, 294  
 Winch Building, 307  
 Window systems, repair versus replacement, 235  
 Wood, material properties, 175  
 Wood buildings nondestructive evaluation and  
     testing, 175

**X**

X-ray diffraction, ancient mortars, 275