TABLE OF CONTENTS VOLUME 2

Theme 5 – In situ evaluation of damage

The effects of the strong use of cements in restoration: the case of Barga Duomo (Northern Tuscany)
   Baccaro M. L. P., Balzi S., Del Chiaro L., Vannucci S.
   3
A simple technique for rapid field assessment of stone decay on buildings
   Ball J., Young M. E.
   13
‘La Fenice’ Theatre – Foyer and Apollinee rooms – Consolidation of fire-damaged stucco and marmorino decorations by means of combined applications of ion-exchange resins and barium hydroxide
   Berlucchi N., Ginanni Corradini R., Bonomi R., Bemporad E., Tisato M.
   23
A petrographic atlas as a decision-tool in replacement and substitution of ornamental stone in historical buildings and monuments
   Dingelstadt C., Dreesen R., Thorez J., Lorenzi G., Bossiroy D.,
   Antenucci D., Banier J.
   33
Study on the deterioration and conservation of the stone monument in ‘Dell’Aquila’ Square, Ravenna (Italy)
   Macchiarola M., Fiori C., Belacchi S.
   43
Deterioration of rock monuments in Petra/Jordan
   Heinrichs K., Fitzner B.
   53
The risk map and the blackening index: a new recording apparatus
   Giovagnoli A., Marabelli M., Canegallo P., Ivone A.
   63
A four-year survey of the water contents and movements within a masonry core after a restoration campaign: a case study in Notre-Dame la Grande (Poitiers, France)
   Godin J., Pithon M., Vergès Belmin V.
   73
Conservation of stone flooring, ancient and modern
   Hunt B. J., Grossi C. M.
   83
The restoration of the Ursino Castle (century XIII) in Catania
   Barone G., Ioppolo S., Majolino D., Migliardo P., Muscarà A., Neri N. F.
   91
Decay mapping of polishable limestone
   Martin B., Mason D., Bryan P.
   101
Conservation of the pigmented plaster in “Red Temple” at Monte D’Accoddi (North Sardinia)
   Massidda L., Meloni P., Piras M. G., Sanna U.
   111
Innovative strategies for the preservation of historic cities by ND monitoring techniques and GIS management of data regarding environmental impact on historic materials and structures
   Moropoulou A., Kou M., Avdelidis N. P.
   119
Deterioration features in the apse of Orvieto Cathedral (Terni, Italy): a mechanical model
   Moroni B., Poli G.

Ultrasonic measurements on weathering alpine marble. A study on field exposed samples and on the medieval marble. Portals of Schloss Tirol/South Tyrol-Italy
   Recheis A., Bidner T., Mirwald P.

Deterioration characteristics of columns from the Marmorpalais Potsdam (Germany), by ultrasonic-tomography
   Siegesmund S., Pretzschner C., Ruedrich J., Lindner H., Weiss T., Richter I., Richter D., Woyde M.

Damages in monuments produced by the corrosion of metallic junctions. The Acropolis case
   Skoulikidis T., Vassiliou P.

Durability of consolidants on a French altered limestone after eighteen years of natural ageing
   Vallet J.M., Simon S., Mertz J. D., Martinet G.

Deterioration and conservation of monuments of Latvia
   Lūsis R., Vitnia I., Igaune S.

Quantification of the long-term effects of stone-cleaning on decay of building sandstones
   Young M. E., Ball J., Laing R. A.

The Coltea Church in Bucharest
   Zbirnea I.M., Bonafede L.

Color and weight evolution of limestones protected by water repellents after three-year ageing period in urban conditions
   Boutin F., Leroux L.

Theme 6 – The conservation of stone: treatment methods and products

An integrated approach to design fluoro substituted ‘smart’ polymers for protection of monumental buildings
   Aglietto M., Castelvetro V., Ciardelli F., Matteoli U., Botteghi C., Chiantore O., Lazzari M., Alessandri G., Peruzzi R., Toniolo L., Fassina V.

Effect of fluorinated groups on the photooxidative stability of polymeric protectives applied on calcareous stone
   Chiantore O., Poli T., Aglietto M., Castelvetro V., Peruzzi R., Colombo C., Toniolo L.

Effects of combined application of biocides and protectives on marble
   Malagodi M., Nugari M. P., Altieri A., Lonati G.
A comparative study of the efficiency of siloxanes, methacrylates and microwaxes-based treatments applied to the stone materials of the Royal Palace of Madrid, Spain

Fort Gonzáles R., López de Azcona M. C., Mingarro Martin F., Alvarez de Buergo Ballester M., Rodríguez Blanco J.

Study of porosity and specific area evolutions on porous material depending on hydrophobic treatments

Naizot S, Barbary P., Mark S.

Performance testing of transparent protective coatings on Globigerina Limestone

Cassar J., Tonna G., Torpiano A., Zammit G.

Evaluations of the effectiveness of innovative perfluoropolyurethanes polymers as consolidants for porous materials

Croveri P., Chiavarini M.

Assessment of durability of water repellents by means of exposure tests

Ferreira Pinto A. P., Delgado Rodrigues J.

Déconsolidation par absorption d’eau de grès traités avec le silicate d’élthyle. Mesures non destructives de E, G et v.

Félix C., Ferrari P., Queisser A.

Injectable slurries for the in situ conservation of pavement mosaics

Flatt R. J., Girardet F. J.

Silica bound mortars for the repairing of outdoors granite sculptures

Rolland O., Floc’h P., Martinet G., Vergès Belmin V.

Ultrasonic testing method for the characterization of Pietra d’Istria structural elements

Almesberger D., Geometrante R., Rizzo A., Šuran P.

Ionexchange resins for historic marble desulfatation and restoration

Guidetti V., Uminski M.

Development of lime mortars with improved resistance to sodium chloride crystallization

Henriques F. M. A., Charola A. E.

Slaked lime mortar: comparison between two samples supposed to be alike

Jornet A., Romer A.

A comparative study of mortars containing barium hydroxide (Ba(OH)₂). Application on monument’s conservation

Lambropoulos V. N., Ghiossi S., Karatasios I.

Measuring the penetration depth of consolidating products: comparison of six methods


Preliminary study on the set up of mortars displaying biocidal activity

Ferone C., Pansini M., Mascolo M. C., Vitale A.
Durability of tufaceous stones treated with protection and consolidation products
   Dell’Aglì G., Ferone C., Mascolo G., Marino O., Vitale A.  
   Mineral inorganic treatments for the conservation of calcareous artefacts
   Lanterna G., Mairani A., Matteini M., Rizzi M., Scuto S., Vincenzi F., Zannini P.
   Change in properties of the stone treated with historical or modern conservation agents
   Maxová I.
   Criteria and methodology for restoration mortars compatible to the historic materials and structures
   Moropoulou A., Bakolas A., Moundoulas P.
   The role of consolidants in the conservation of Sydney sandstone buildings
   O’Connor J.
   Chemistry for conservation of cultural heritage: application of in situ polymerisation for the consolidation and protection
   Vicini S., Parodi V., Simonetta M., Moggi G., Pedemonte E.
   Study of the colourings of the St. Peter Façade (Vatican)
   Previde Massara E., Perego G.
   A new white cement resistant to sea-water. Development of a white repairing mortar
   Puertas F., Blanco-Varela M. T., Palomo A., Vázquez T.
   Hydrophobic materials – how effective are they?
   Puterman M.
   Physical properties of fine grained marble before and after conservation
   Rohatsch A., Nimmrichter J., Chalupar I.
   Compatible consolidants from particle-modified gels
   Escalante M. R., Valenza J., Scherer G. W.
   Performance evaluation of preservative coatings on stone surface of heritage buildings having hygric state
   Sharma R. K., Saxena V. K., Saxena K., Tewari S. K.
   Dispersed hydrated lime for the preservation and conservation of stone monuments
   Strotmann R., Maryniak-Piasczynski E.
   Ceramic additions in the restoration of stone sculpture and ceramics
   Tcheremkhine V. I.
   Effectiveness of surface treatments for sedimentary limestone in Greece
   Theoulakis P., Tzamalis A.
   Assessment of the performance of silane treatments applied to Egyptian limestone sculptures displayed in a museum environment
   Thickett D., Lee N. J., Bradley S. M.
<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientific investigation and large scale sandstone treatments: the Washington State Legislative Building</td>
<td>Twilley J., Leavengood D.</td>
<td>513</td>
</tr>
<tr>
<td>The conservation of the sculpture work of the National Monument in Amsterdam</td>
<td>Van Hees R. P. J., Larbi J. A.</td>
<td>523</td>
</tr>
<tr>
<td>Evaluation of alkoxysilane coupling agents in the consolidation of limestone</td>
<td>Wheeler G., Méndez-Vivar J., Goins E. S., Fleming S. A., Brinker C. J.</td>
<td>541</td>
</tr>
<tr>
<td>Regularities of conservation of porous material-ancient terracotta of Prichernomorye by acrylic polymer solutions</td>
<td>Levko L. V., Yemelyanov D. N.</td>
<td>547</td>
</tr>
<tr>
<td>Impregnation and strengthening of porous stone by acrylic polymer solutions</td>
<td>Yemelyanov D. N., Volkova N. V., Pavlovskaya M. V.</td>
<td>553</td>
</tr>
<tr>
<td>New proposals for the conservation-consolidation of stones and plasters: analytical characterization and trial applications of Ba aluminates</td>
<td>Messori M., Zannini P., Mairani A., Matteini M.</td>
<td>561</td>
</tr>
<tr>
<td>Integration of laser with conventional techniques in marble restoration</td>
<td>Siano S., Pini R., Salimbeni R., Gianello M., Scala A., Fabiani F., Bianchini P.</td>
<td>569</td>
</tr>
<tr>
<td>In field tests and operative applications of improved laser techniques for stone cleaning</td>
<td>Pini R., Siano S., Salimbeni R.</td>
<td>577</td>
</tr>
<tr>
<td>Results of Laser cleaning on encrusted oolithic limestone of angel sculptures from the Cologne Cathedral</td>
<td>Siedel H., Hubrich K., Kusch H. G., Wiedemann G., Neumeister K., Sobott R.</td>
<td>583</td>
</tr>
</tbody>
</table>

**Theme 7 – Case studies of conservation of Cultural Heritage**

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study of stone deterioration in the Palacio do Freixo in Oporto</td>
<td>Begonha A., Teles M.</td>
<td>593</td>
</tr>
<tr>
<td>Polychromy traces and stone decay in the church of S. Maria dei Miracoli in Venice</td>
<td>Fassina V.</td>
<td>603</td>
</tr>
<tr>
<td>Survey on the polychromy and stone materials of funeral monuments dedicated to Jacopo and Ubertino da Carrara in Eremitani Church in Padua</td>
<td>Favaro M., Portieri R., Crivellari F., Naccari A., Spiazzi A., Fassina V.</td>
<td>613</td>
</tr>
<tr>
<td>New findings on past treatment's effects on the Lunette of San Giovanni Evangelista in Venice</td>
<td>Favaro M., Naccari A., Crivellari F., Magris D., Pigo M., Burtet B., Fumo G., Fassina V.</td>
<td>623</td>
</tr>
</tbody>
</table>
La pierre du portail peint de la Cathédrale de Lausanne: nature, état de conservation, et consolidation
Furlan V., Félix C., Queisser A.

The Roman aqueduct of Carthage: a minerochemical study on water conduit mortars and deposited crusts
Figueiredo M. O., Veiga J. P., Pereira Da Silva T., Alvarez A., Torrens F., Khosrof S., Ferchiou N.

CastelManiace, Syracuse (Sicily): the deterioration of the marble of the monumental portal and window
Alberti S. A., Antonelli F., Cancelliere S., Lazzarini L., Mannuccia F., Santalucia F.

The South Portal of Sint Martinusbasiliek in Halle, Brabant: technical study and conservation
de Henau P., Leirens I.

Documentary and analytical analogies in the study of patinas of the ‘Quattro santi coronati’ by Nanni di Banco
Giusti A. M., Lalli C., Lanterna G., Matteini M., Rizzi M.

The case of the ‘Portale of S.Maria a Mare’ in Giulianova: results of physico-chemical inquires
Amorosi E., Di Marco F., Rosignoli R., Quaresima R., Scoccia G., Volpe R.

Study of stone deterioration in the cloister of the Mosteiro de Grijó, Portugal
Begonha A., Sequeira Braga M. A.

Study of weathering factors and evaluation of treatments for the stones of ‘Santa Maria de la Encarnación’ Church, Constantina (Sevilla, Spain)
Villegas Sanchez R., Espinosa-Gaitan J., Alcalde Moreno M.

The Aragonese Portals in eastern Sicily: relationship between form, materials, decay and the environment
Salemi A., Sanfilippo G.

The Columbus monument at Huelva (sw Spain): preliminary survey on stone decay
Galán E., Carretero M.I., Bernabe J.M., Fernandez-Caliani J.C., Requena A.

Conservation problems of the statue of Saint Michael by Raffaello da Montelupo, Castel Sant’Angelo, Rome
Fiori C., Lorusso S., Casalicchio G., Pentrella R., Prestileo F.

Painted sandstone as protection and as an architectural and historical concept
Andersson T., Von Haslingen B.

Detaching methodology for fresco paintings. The case study of a renaissance cycle
Casadio F., Colombo C., Toniolo L.

Weathering of painted marly limestones in the Temple ruin of Merenptah, Qurna/Luxor, (Egypt)
Zehnder K., Arnold A., Kung A.
Ossuccio (CO): a case study to assess the causes of degradation in some terracotta statues
Valentini M.

Old Khmer styled sandstone monuments in Thailand. Aspects of weathering and development of conservation concept
Wendler E., Prasartset C.

Ethical issues in the restoration of stone sculpture in the State Tretiakov Gallery. Moscow: evolution of methods and elaboration of new polymer materials
Vassilieva O. A.

The deterioration of Nubian sandstone blocks in the Ptolemaic temples in upper Egypt
Abd El-Hady M. M.

Conservation and safeguard of stone rural buildings: an example in a mountain area
Agostini S., Calvi G.

A historiography of recent past interventions at the ancient theatre of Ephesos
Aktüre Z.

The implication of stone cleaning for planned building maintenance
Laing R. A., Ball J., Scott J., Young M. E.

Campo dei Greci in Venice: the case of conservation of San Giorgio of the Greeks
Ioannidou N.

Masonry of Abruzzo historical buildings
D’Anselmo M.

The rupestral monument of Basarabi-Murfatlar. Conservation of the decoration incised in the chalk walls
Niculescu G., Vlad A. M.

Investigations on technology of joint mortars in brick walls
Domaslawski W.

The knowledge of the plasters typical of the buildings of Ortigia (Siracuse, Italy). Part 1 – Finishing layers

The knowledge of the plasters typical of the buildings of Ortigia (Siracuse, Italy). Part 2 – The mortar and mortar/finishing layer combination

Preliminary studies about the ancient mortars of the church of Santa Maria de Irache Monastery (Navarra, Spain)
Alvarez J.I., Montoya C., Navarro I., Martin A.
Study of the lime renderings decay from Plaza de la Corredera, Cordoba, Spain
   González Limón T., Alvarez De Buergo Ballester M. 881
Problems and solutions in practical restoration of freshwater limestone-tufa
   Sidraba I., Krage L., Graudums I. 889
Technical aspects of stone conservation in Jerusalem
   Lobovikov-Katz A. 897
Sacrificial layers for conservation of calcareous stone in Austria-theory, practice and evaluation
   Nimmrichter J., Koller M., Paschinger H., Richard H. 903
An example of a practical ‘cleaning’ of the architectural facades of Jubilee Rome
   Pecoraro I. 913
Investigation of damage in old stone structures caused by the latest strong earthquake in Northern Greece
   Stavrakakis E. J., Karaveziroglou-Weber M. K., Mavrikakis S. P. 921

Author index 929

TABLE OF CONTENTS VOLUME 1

Theme 1 – Weathering of natural stone: causes, mechanism and measurement of stone damage 1

Restoration of the historical brick masonry
   Bajare D., Svinka V. 3
Comparative study of different methods for gap filling applications and use of adhesives on the biocalcarenite surfaces of the ‘Tempio della Concordia’ in Agrigento
   Bennardo C., Meli P., Biscontin G., Berlucchi N., Ginanni Corradini R., Mattolin F. 13
Grödener sandstone, a historical building material in south Tyrol/Italy – The problem of large variability of stone properties for monument conservation
   Franzen C., Mirwald P. 25
Evaluation of materials used in the replacement of sculptures in historical monuments
   Boutin F., Bromblet P. 31
White granites used in lombard architecture
   Bugini R., Pavese A., Borroni S., Folli L. 41
A research into intrinsic parameters material to the durability of highly porous building stones
   Calia A., Mecchi A. M., Quarta G. 49