

TEHNICA DE RESTAURARE

BIBLIOGRAFIE SUPLIMENTARA

(nu va speriați, nu e obligatorie...)

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"Stone Decay and Conservation: Atmospheric Pollution - Cleaning - Consolidation and Protection," by Giovanni G. Amoroso and Vasco Fassina. Published with assistance of the National Scientific Research Fund, Switzerland. Copiously illustrated book gives a thorough, detailed exposition of the current state of knowledge in the field of conservation and restoration of stone in buildings and monuments. It describes stone conservation techniques and scientific investigations to test their efficiency and longevity, and details the chemical and physical properties of the various polymeric substances that are available for stone treatment. Much emphasis is given to the study of environmental aspects and their reaction with building materials. The book includes a thorough bibliography and a number of case histories which describe specific projects and the type of treatment carried out. Available from Elsevier Scientific Publishing Company, Inc., P. O. Box 1663, Grand Central Station, New York, NY 10163, for \$97.75.

ISBN : 0444421467

Dewey : 691/.2 19

LCCN : TA427 .A56 1983

Volume Details:

(U.S.) : fl 200 (Netherlands : est.) xix, 453 p. : ill. ; 25 cm.

Title:

Stone decay and conservation : atmospheric pollution, cleaning, consolidation, and protection / Giovanni G. Amoroso and Vasco Fassina ; foreword by S.Z. Lewin.

Amoroso, Giovanni G. (Giovanni Giuseppe), 1943-

Materials science monographs ; 11

"Published with assistance of the National Scientific Research Fund, Switzerland."

Includes bibliographical references and index.



GUIDA DELLO STUDENTE a.a. 2000-2001
Insegnamenti dei Corsi di laurea

Facoltà di lettere e
filosofia

Orario lezioni

Esami

TEORIA E TECNICHE DEL RESTAURO DEI MANUFATTI **(semestrale)**

Docente Vasco Fassina

Dipartimento di Storia e critica delle arti "G. Mazzariol"

I semestre

orario di ricevimento: lunedì 16.30-18.00, a Palazzo Querini

Titolo del corso: istituzionale

Vasco Fassina si è laureato a Padova in Chimica industriale nel 1971. Nel 1972 inizia a lavorare con l'Unesco sul problema del degrado dei monumenti di Venezia in relazione all'inquinamento atmosferico. Dal 1975 entra a far parte della Soprintendenza ai beni artistici e storici di Venezia come esperto chimico. Dal 1980 al 1987 è Direttore del laboratorio chimico e dal 1987 è Direttore dei Laboratori scientifici della Soprintendenza ai beni artistici e storici di Venezia. Coordinatore (dal 1989) e docente (dal 1976) del Corso internazionale unesco-iccrom sulla Conservazione della pietra. Coordinatore (dal 1989) e docente (dal 1976) del Corso di restauro e conservazione dei materiali lapidei dell'Università internazionale dell'arte (uia) di Venezia. Dal 1993 è Co-direttore del Corso internazionale unesco-iccrom sulla Conservazione della pietra. Dal 1996 è Direttore dell'uia di Venezia. Dal 1997 è docente del corso di conservazione dei materiali nell'edilizia storica presso il Corso di laurea in architettura all'iuav. Ha svolto attività di ricerca: sull'influenza dell'inquinamento atmosferico sui processi di degrado della pietra e del marmo, sul degrado delle sculture all'interno e/o sui dipinti murali in relazione ai fattori ambientali (studio del microclima all'interno delle chiese),

sulle proprietà dei materiali macromolecolari applicati quali consolidanti e protettivi sui marmi e pietre in relazione alla durabilità e all'efficacia. Ha maturato un'esperienza professionale nella conoscenza dei processi di degrado sui monumenti, dei metodi di pulitura, consolidamento e protezione dei monumenti e nella pianificazione delle indagini preliminari che devono essere condotte per realizzare un corretto intervento di restauro. Ha condotto indagini preliminari al restauro sui principali monumenti veneziani. ha svolto la direzione scientifica di cantieri di restauro con i corsi dell'ua e nel restauro della Ca' d'Oro. È invitato a conferenze e seminari a livello internazionale. È autore del libro in lingua inglese "Stone Decay and Conservation". È autore di oltre 150 pubblicazioni scientifiche su riviste internazionali e congressi. Amoroso G. G., Fassina V., *Stone Decay and Conservation - Atmospheric pollution, cleaning, consolidation and protection*, Elsevier, Amsterdam, 1983; Fassina V., *The influence of atmospheric pollution and past treatments on stone weathering mechanisms of Venetian monuments*, European Cultural Heritage Newsletter on Research, 1994, vol. 8, n. 2, 23-35; Fassina V., *New findings on past treatments carried out on stone and marble monuments surfaces*, in "The deterioration of Monuments", The Science of the Total Environment, 167 (1995) 185-203; Fassina V., Rossetti. M., *Weathering of marble in relation to natural and anthropogenic agents on the Ca' d'Oro facade (Venice)*, Proc. of the 3rd Int. Symp. on the Conservation of Monuments in the Mediterranean Basin, Venice 22-25 June 1994, eds. V. Fassina, H. Ott and F. Zezza, pp. 825-834; Fassina V., *A survey on air pollution and deterioration of stonework in Venice*, Atmospheric Environment 12, 1978, pp. 2205-2211.

L'insegnamento della materia tende a fornire le nozioni fondamentali relative ai principali materiali utilizzati nei manufatti artistici.

I materiali principalmente trattati sono i dipinti e i materiali lapidei. Per quanto riguarda i dipinti sono trattati i vari tipi di pittura su tela, tavola e murali.

Viene descritta l'evoluzione della pittura murale fin dalla preistoria per poi trattare in maniera approfondita le caratteristiche tecniche della pittura murale. Vengono illustrati i processi di degrado dei dipinti murali e le metodiche di intervento relative alla pulitura e consolidamento. Per i materiali lapidei sono descritte le più importanti proprietà fisico-meccaniche e la composizione chimico-mineralogico-petrografica. Sono sviluppate in maniera particolare le problematiche legate ai processi di alterazione ponendo in risalto i processi alterativi legati all'interazione con l'ambiente, con particolare riferimento al ruolo dei vari inquinanti atmosferici.

Sono illustrati i criteri generali per la conservazione e il restauro dei manufatti. Sono illustrate e approfondite le operazioni di *pulitura, consolidamento e protezione*.

A compimento del programma lo studente sarà in grado di comprendere le cause di natura fisica, chimica e biologica della loro alterazione e di conoscere i rimedi più opportuni a rimuoverle o a neutralizzarne gli effetti.

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Amoroso Giovanni G., Fassina Vasco, *Stone Decay and Conservation - Atmospheric pollution, cleaning, consolidation and protection*, Elsevier, Amsterdam, 1983
Fassina Vasco, *Teoria e tecniche del restauro dei manufatti*, dispense presso Copy Express, Venezia
Fassina Vasco, *Conservazione dei materiali nell'edilizia storica*, dispense presso Copy Express, Venezia

Seminari

La dott.ssa Monica Favaro eseguirà una serie di lezioni sulle indagini diagnostiche effettuate sui dipinti su tela, tavola e murali.

Iterazione dell'esame

È possibile effettuare un'iterazione dell'esame approfondendo un argomento riguardante le classi di Beni culturali trattate nella parte generale del corso. Questa parte dovrà essere concordata col docente.

Author: Lazzarini, Lorenzo

Title Article/Chapter: "Morfologia del degrado dei materiali lapidei a venezia"

Title Translated English: "Deterioration morphology of stone materials in venice"

Title of Source: Les maladies des pierres de nos monuments

Title Source Translated: The disorders of stones of our monuments

Author: Sneyers, Rene V.

Author: Rossetti, V.A.; Tabasso-Laurenzi, M.

Title Article/Chapter: "Distribuzione degli ossalati di calcio $\text{CaC}_2\text{O}_4 \cdot \text{H}_2\text{O}$ e $\text{CaC}_2\text{O}_4 \cdot 2.25\text{H}_2\text{O}$ nelle alterazioni delle pietre di monumenti esposti all' aperto"

Title Translated English: "Distribution of calcium oxalates $\text{CaC}_2\text{O}_4 \cdot \text{H}_2\text{O}$ and $\text{CaC}_2\text{O}_4 \cdot 2.25\text{H}_2\text{O}$ on external deteriorated surfaces of stones in monuments"

Author: Anon

Title of Source: Conservation of natural stones, sedimentary lime and sandstone

Author: Mamillan, Marc

Title of Source: Cours de pathologie des materiaux de construction, premiere partie: pierre

Title Source Translated: Course on the pathology of construction materials: part one: stone

Author: Jan, Gembal

Title of Source: The probe of estimation of compressive strength when the stone is reinforced with epoxy resin

Author: Chapman, William

Title of Source: The preservation and repair of stone bearing walls

Author: Pochon, J.; Jaton, C.

Title of Source: Problemes microbiologiques poses par l'alteration des pierres et des bois

Title Source Translated: Microbiological problems posed by the deterioration of stone and wood

Author: Bullock, Orin M., Jr.

Title Article/Chapter: "Preservation and Conservation Principles and Practices: Materials and Techniques II: Masonry and Masonry Products: Brick, Adobe, Stone and Architectural Ceramics"

Author: Torraca, Giorgio

Title Article/Chapter: "Masonry and Masonry Materials: Brick, Adobe, Stone and Architectural Ceramics: Deterioration Processes and Conservation Practices"

Author: Pochetti, F.; Santarelli, M.L.; Torraca, G.

Title Article/Chapter: "Uso dell' analisi termica nello studio dei monumenti in pietra."

Title Translated English: "Using thermal analysis for studying stone monuments."

Author: Brimblecombe, Peter; Bowler, Catherine

Title of Source: Pollution history of York and Beverley: contract extension including historical evidence for rates of stone decay to the exterior of York Minster

Author: Gauri, K. Lal

Title Article/Chapter: "Conservation of Stone: a literature review"

Author: Lewin, Seymour Z.

Title of Source: The preservation of natural stone, 1839-1965 : an annotated bibliography

Author: Marconi, Bohdan L.

Title Article/Chapter: "Technical and aesthetic problems of conervation of poly-chrome medieval structures"

Author: Smith, Bernard. J., ed.; Turkington, Alice V., ed.

Title of Source: Stone decay : its causes and controls

Author: Wang, Li-qin; Dang, Gao-chao; Liang, Guo-zheng

Title Article/Chapter: "Studies on efflorescence and consolidation of historic stones"

Author: Schaffer, Robert John

Title of Source: The weathering of natural building stones / R. J. Schaffer

Author: Dai, Shibing

Title Article/Chapter: "Introduction to new chemicals and techniques for stone preservation"

Editor: Wood, Chris

Title of Source: Stone roofing : conserving the materials and practice of traditional stone slate roofing in England

Editor: Townsend, Joyce H.; Eremin, Katherine; Adriaens, Annemie

Title of Source: Conservation science 2002 : papers from the conference held in Edinburgh, Scotland, 22-24 May 2002

Author: Vergès-Belmin, Véronique

Title of Source: Journal of cultural heritage : proceedings of the International Conference, Lasers in the Conservation of Artworks IV, LACONA IV, September 11-14 2001, Paris, France

Author: Fiora, Laura

Title Article/Chapter: "Degrado della pietra: cause e forme = Deterioration of stone: causes and forms"

Author: Moropoulou, Antonia; Haralampopoulos, G.; Tsiourva, Th.; Auger, Fernand; Birginie, J.M.

Title Article/Chapter: "Artificial weathering and non-destructive tests for the performance evaluation of consolidation materials applied on porous stones"

Interdisciplinary Studies on Ancient Stone; Asmosia 5

Edited by John J. Herrmann, Jr., Norman Herz and Richard Newman

The Study of Marble and Other Stones Used in Antiquity

Yannis Maniatis, Norman Herz, Yannis Basiakos

-Norman Brommelle, Garry Thomson, and Perry Smith (eds.), Conservation Within Historic Buildings (1980);

-Norman Brommelle and Garry Thomson (eds.), Science and Technology in the Service of Conservation: Preprints of the Contributions to the Washington Congress, 3-9 September 1982 (1982);

-Norman Brommelle et al. (eds.), Adhesives and Consolidants: Preprints of the Contributions to the Paris Congress, 2-8 September 1984 (1984)

-John Ashurst and Francis G. Dimes (eds.), Conservation of Building and Decorative Stone, 2 vol. (1990, reissued 2 vol. in 1, 1998);

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-edited by Vasco Fassina

-Venice June 19-24/2000

-Le forme del degrado : note per una lettura morfologica delle superfici in architettura / Sergio Rinaldi.

-Rinaldi, Sergio, 1953-

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Notes

1. In recent times the term "stone preservatives" has been used to identify water repellent and/or shallow penetrating coatings.
2. Saturation coefficient is defined as the ratio between the natural capacity of a stone to absorb water and its absolute porosity [35].

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