

The Modern Movement heritage: proto-bioclimatic solutions and building elements

Original

The Modern Movement heritage: proto-bioclimatic solutions and building elements / Franchini, Caterina; Mele, Caterina.
- STAMPA. - (2020), pp. 54-54. (Intervento presentato al convegno 8th Euro-American congress on construction pathology, rehabilitation technology and heritage management tenutosi a Granada (ES) nel March 24th-27th 2020).

Availability:

This version is available at: 11583/2862122 since: 2021-01-16T20:36:08Z

Publisher:

University of Cantabria Civil Engineering School Department of Structural and Mechanical Engineering

Published

DOI:

Terms of use:

This article is made available under terms and conditions as specified in the corresponding bibliographic description in the repository

Publisher copyright

(Article begins on next page)

University of Cantabria / University of Granada

Organizers:



REHABEND 2020

Euro-American Congress

CONSTRUCTION
PATHOLOGY,
REHABILITATION
TECHNOLOGY AND
HERITAGE MANAGEMENT

Granada (Spain) - March 24th-27th, 2020

Sponsor entities:



Patronato de la Alhambra y
Generalife
CONSEJERÍA DE CULTURA Y
PATRIMONIO HISTÓRICO



REHABEND 2020

***CONSTRUCTION PATHOLOGY, REHABILITATION TECHNOLOGY AND
HERITAGE MANAGEMENT***

(8th REHABEND Congress)

Granada (Spain), March 24th-27th, 2020

PERMANENT SECRETARIAT:

UNIVERSITY OF CANTABRIA

Civil Engineering School

Department of Structural and Mechanical Engineering

Building Technology R&D Group (GTED-UC)

Avenue Los Castros s/n 39005 SANTANDER (SPAIN)

Tel: +34 942 201 738 (43)

Fax: +34 942 201 747

E-mail: rehabend@uncan.es

www.rehabend.uncan.es

REHABEND 2020

ORGANIZED BY:



UNIVERSITY OF CANTABRIA (SPAIN)
www.unican.es // www.gted.unican.es



UNIVERSITY OF GRANADA (SPAIN)
www.ugr.es

CO-ORGANIZERS ENTITIES:



CHILE-UNIVERSIDAD AUSTRA
L DE CHILE



ITALY-POLITECNICO DI BARI



MEXICO-UNIV. MICHOACANA DE
SAN NICOLÁS DE HIDALGO



PERU-UNIVERSIDAD NACIONAL
PEDRO RUIZ GALLO



PORTUGAL-UNIVERSIDADE
DE AVEIRO



PORTUGAL-INSTITUTO SUPERIOR
TÉCNICO | UNIV. DE LISBOA



SPAIN-TECNALIA RESEARCH &
INNOVATION



SPAIN-UNIVERSIDAD DEL
PAÍS VASCO



SPAIN-UNIVERSIDAD POLITÉCNICA
DE CATALUÑA



SPAIN-UNIVERSIDAD DE BURGOS



SPAIN-UNIVERSIDAD POLITÉCNICA
DE MADRID



SPAIN-UNIVERSIDAD DE SEVILLA



SPAIN-UNIVERSIDAD EUROPEA
MIGUEL DE CERVANTES



UNITED STATES OF AMERICA-
UNIVERSITY OF MIAMI



URUGUAY-UNIVERSIDAD
DE LA REPÚBLICA

CONGRESS CHAIRMEN:

IGNACIO LOMBILLO
MARIA PAZ SÁEZ

CONGRESS COORDINATORS:

HAYDEE BLANCO
YOSBEL BOFFILL

EDITORS:

IGNACIO LOMBILLO
HAYDEE BLANCO
YOSBEL BOFFILL

INTERNATIONAL SCIENTIFIC ADVISORY COMMITTEE:

HUMBERTO VARUM – UNIVERSITY OF AVEIRO (PORTUGAL)
PERE ROCA – TECHNICAL UNIVERSITY OF CATALONIA (SPAIN)
ANTONIO NANNI – UNIVERSITY OF MIAMI (USA)

The editors does not assume any responsibility for the accuracy, completeness or quality of the information provided by any article published. The information and opinion contained in the publications of are solely those of the individual authors and do not necessarily reflect those of the editors. Therefore, we exclude any claims against the author for the damage caused by use of any kind of the information provided herein, whether incorrect or incomplete.

The appearance of advertisements in this Scientific Publications (Printed Abstracts Proceedings & Digital Book of Articles - REHABEND 2020) is not a warranty, endorsement or approval of any products or services advertised or of their safety. The Editors does not claim any responsibility for any type of injury to persons or property resulting from any ideas or products referred to in the articles or advertisements.

The sole responsibility to obtain the necessary permission to reproduce any copyright material from other sources lies with the authors and the REHABEND 2020 Congress can not be held responsible for any copyright violation by the authors in their article. Any material created and published by REHABEND 2020 Congress is protected by copyright held exclusively by the referred Congress. Any reproduction or utilization of such material and texts in other electronic or printed publications is explicitly subjected to prior approval by REHABEND 2020 Congress.

ISSN: 2386-8198 (printed)

ISBN: 978-84-09-17871-1 (Printed Book of Abstracts)

ISBN: 978-84-09-17873-5 (Digital Book of Articles)

Legal deposit: SA - 132 - 2014

Printed in Spain by Círculo Rojo

CODE 261**THE MODERN MOVEMENT HERITAGE: PROTO-BIOCLIMATIC SOLUTIONS
AND BUILDING ELEMENTS****Franchini, Caterina¹; Mele, Caterina²**

1: Responsible Risk Resilience Centre; Dep. of Structural
Geotechnical and Building Engineering
Politecnico di Torino

e-mail: caterina.franchini@polito.it, web: <http://www.r3c.polito.it>; <http://www.diseg.polito.it/en/>

2: Responsible Risk Resilience Centre; Dep. of Structural, Geotechnical and Building Engineering
Politecnico di Torino

e-mail: caterina.mele@polito.it, web: <http://www.r3c.polito.it>; <http://www.diseg.polito.it/en/>

KEYWORDS: Modern movement heritage; proto-bioclimate; solar shading solutions; sustainable heritage; passive thermal control.

ABSTRACT

Before the publication of the book *Design with climate: a bioclimatic approach to architectural regionalism* (1963), which established its author, V. Olgyay, as an international figure in the bioclimatic design, several works of the Modern Movement (hereafter MoMo) had already revealed a variety of passive thermal solutions/elements.

Le Corbusier's *brise-soleil* has spread throughout the world the concern of merging *arté* and *tekné* in the design of shading elements increasingly adaptable to control changes in light radiation, since the 1920s. Natural ventilation building solutions are integral parts of the iconic architectures designed by F.L. Wright masterfully revealing some paradigms of climatic sustainability into the material heritage of the MoMo. Forward-thinking Italian architects have started testing an impressive combination of new thermo-insulation autarkic materials (e.g. Eraclit, Populit, Faesite) to design performative climate-responsive building envelopes also suitable for colonial buildings.

By considering the 'anatomy' of the building, our study focuses on the identification, analysis, and categorisation of proto-bioclimate building solutions conceived by the architects of the MoMo to achieve both the climate adaptability of building elements and adaptation of the International Style to diverse climatic conditions.

Our critical survey goes beyond a single discipline as it is the result of an integrated process of interpretation of the history of architecture, building design and construction history. This process has assumed a reductionist paradigm to highlight those systems seeking to reduce the negative impact of the building through its passive thermal efficiency.

Looking under the lens of thermal sustainability the building solutions of the MoMo legacy, our study aims to foster further progress in improving the resilience to climate change in design practices devoted to both: the conservation of the MoMo architecture and renovation of the 20th-century building stock.

www.rehabend.unican.es

Coordinator:



Co-Organizers:



**TÉCNICO
LISBOA**

tecnalia

