

EXHIBITION CATALOG

INTERNATIONAL ITINERANT EXHIBITION "RESEARCH IN BUILDING ENGINEERING EXCO'22"

INTERNATIONAL ITINERANT EXHIBITION EXCO 2022
ETS DE INGENIERÍA DE EDIFICACIÓN
UNIVERSITAT POLITÈCNICA DE VALÈNCIA
Camino de Vera S/N, 46022 Valencia – Spain

Location:

POLITECNICO DI MILANO

*Scuola di Architettura Urbanistica Ingegneria delle
Costruzioni AUIC (ITALY)*

On December from 1st to 9th, 2022
Via Giuseppe Ponzio 31, 20133 Milano MI, Italia

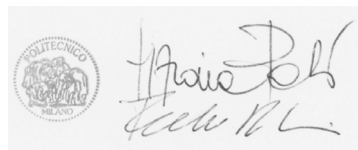

Curators of Exhibition:

Tiziana POLI, Ph.D (Local Curator)
Fulvio RE CECCONI, Ph.D (Local Curator)
José Ramón ALBIOL IBÁÑEZ, Ph.D (International Curator)

Exhibition

XXXVI INTERNATIONAL SHOWROOM OF CONSTRUCTION TECHNOLOGIES - EXCO 2022 ©


INTERNATIONAL ITINERANT EXHIBITION "Research in Building Engineering - EXCO'22"




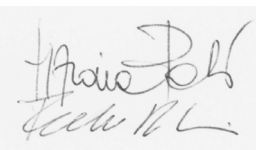
CATALOG OF THE INTERNATIONAL ITINERANT EXHIBITION "RESEARCH IN BUILDING ENGINEERING EXCO'22"

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PROLOGUE MILAN**EXCO and Politecnico di Milano By Tiziana Poli* and Fulvio Re Cecconi****** Politecnico di Milano – Department ABC – AUIC School**

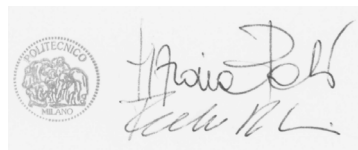

The Politecnico di Milano has been participating in EXCO since 2017 with the Bachelor program in "Building and Construction Engineering". This project has influenced the course of study's internationalization process, which has gained a considerable boost for growth from this initiative.

The EXCO travelling exhibition is certainly the main point of discussion and knowledge exchange among professors, researchers and students on the main topics of innovation in the construction industry for research and education. This strong interchange facilitated by EXCO is undoubtedly an added value for the definition of shared and/or complementary educational paths, for the integration of expertise on a global scale and for providing the basis for high-profile research.

The topics and research areas currently being explored in the Bachelor program in "Building and Construction Engineering" are mainly oriented to:

- *project engineering, concerning technological aspects (envelope, structures, mechanical systems, electrical systems, ...), performances (modelling and validation of performances including the reduction of energy consumption, comfort, safety, ...), operational and construction aspects;*
- *the engineering of the building process which, starting from the design, develops through tendering, construction, commissioning, operation and maintenance, and dismantling;*
- *the digital management of information flows in the building process (BIM-based);*
- *the design of innovative building materials and components and the related control of the production process;*
- *the support for architectural design and the management of technical-administrative processes.*

The different approaches to the research activity that EXCO's participating institutions have shown highlight the richness and innovation that characterise the construction sector today. And it is a privilege for the Bachelor program in Building and Construction Engineering of the Polytechnic of Milan to be part of this initiative conceived by UPV and coordinated by Prof. José Ramón Albiol Ibáñez.

Prof. Tiziana Poli, PhD**Prof. Fulvio Re Cecconi, PhD**

PROLOGUE DIRECTOR EXCO'22

The Faculty of Building Engineering of the UNIVERSITAT POLITÈCNICA DE VALÈNCIA - SPAIN, organized on June 13th to 17th, 2022, "The XXXVI Construction Technology Exhibition" EXCO'22 and the International Itinerant Exhibition "Research in Building Engineering" along year.

Conferences are scheduled in UNIVERSITAT POLITÈCNICA DE VALÈNCIA - SPAIN, the speakers are national and international of recognized prestige from Europe, Asia and America. These conferences are aimed at professionals and students of the UPV to broaden their knowledge and experiences.

EXCO'22 promotes the entrepreneurship of the young UPV generations, participation in conferences.

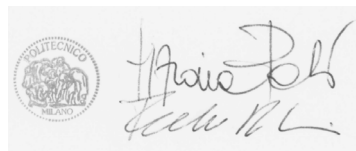
The International Itinerant Research Exhibition EXCO'22 has the collaboration of 63 Universities from America, Europe, Africa, Asia and Oceania. Promoting collaboration between institutions and professors at the international level.

It fosters interdisciplinary collaboration of the professor staff within the UPV with 63 International Universities; It has the participation of 9 departments and 8 research institutes of the UPV in EXCO'22.

The participating entities are:

Universities:

1. *Universitat Politècnica de València, España.*
2. *Politecnico di Milano, Italia.*
3. *Mimar Sinan Fines Arts University, Istanbul, Turkey.*
4. *Nottingham Business School, England.*
5. *Vilnius Gediminas Technical University, Vilnius, Lithuania.*
6. *Universidad de Costa Rica*
7. *Università degli Studi di Basilicata, Matera, Italia.*
8. *Universidad Tecnológica de La Habana José Antonio Echeverría, Cuba.*
9. *Università degli Studi Firenze, Italia*
10. *Università di Pavia, Italia.*
11. *Odessa State Academy of Civil Engineering & Architecture, Odessa, Ukraine*
12. *Università di Salerno, Italia.*
13. *Silesian University of Technology, Politechnika Śląska, Gliwice, Poland.*
14. *University of British Columbia, Vancouver, Canada.*
15. *Universidad de Alcalá de Henares, Madrid, España.*
16. *Florida A&M University, Florida, USA.*
17. *Universidad Mayor de San Andrés, La Paz, Bolivia.*
18. *Universidad de la República (UdelaR) de Uruguay.*
19. *Universidad John F. Kennedy, Argentina.*
20. *Universidad de Castilla-La Mancha, España.*
21. *Universidad de Granada, España.*
22. *Università degli Studi della Campania "Luigi Vanvitelli", Napoli.*
23. *Politecnico di Bari, Italia.*
24. *Università degli Studi di Roma "Tor Vergata", Italia.*
25. *Hanze University of Applied Sciences, Groningen. Nederland.*
26. *Jade Hochschule Wilhelmshaven/Oldenburg, Germany.*



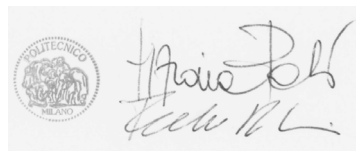
CATALOG OF THE INTERNATIONAL ITINERANT EXHIBITION "RESEARCH IN BUILDING ENGINEERING EXCO'22"

27. *New York University, Tandon School of Engineering. USA.*
28. *McGill University, Canada*
29. *Nanyang Technological University, Singapore.*
30. *University of New South Wales, Sydney, Australia.*
31. *Università di Pisa, Italia.*
32. *Universidad de Ibagué, Colombia.*
33. *Beijing Yong Shan Media Co., Ltd. Pekin*
34. *Università degli Studi dell'Aquila, Italia.*
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38. *University North, Varaždin, Croacia*
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40. *Kharkiv National University of Civil Engineering and Architecture, Ukraine.*
41. *Universitat de València, Spain.*
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43. *University of Cape Town, South Africa.*
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60. *Universidad Jesuita de Guadalajara, ITESO, México*
61. *Tecnológico de Monterrey. México.*
62. *MIT Massachusetts Institute of Technology. USA.*
63. *Gdańsk University of Technology, Poland.*

*Thank you all for making EXCO possible.
Best Regards.*

Dr. José R. Albiol-Ibáñez

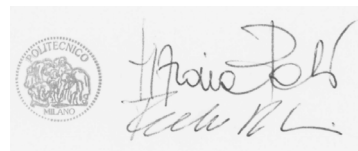
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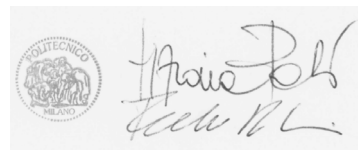
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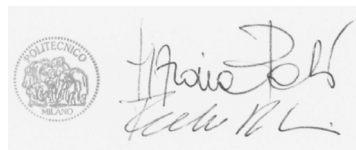

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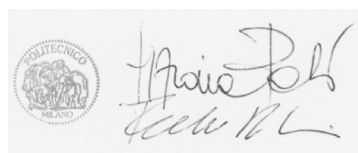
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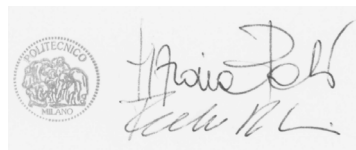

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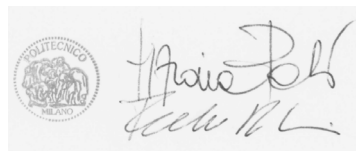

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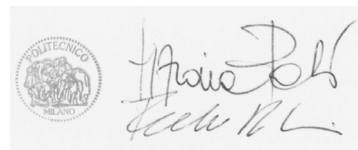
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Tecnológico de Monterrey



CHAPTER 1 ECONOMY

1.1.- ACCESS TO HOUSING. A COMPARISON BETWEEN OWNERSHIP AND COHOUSING

Alejandro Campillo Almajano / Alicia Llorca-Ponce / Andrés José Cózar Lizandra

1.2.- CADASTRAL VALUATION OF REAL ESTATE IN SPAIN

Pedro Gerardo Salinas Martínez

1.3.- METHODOLOGY FOR DESIGNING AN ENERGY COMMUNITY AND CHECKING ITS TECHNICAL AND ECONOMIC VIABILITY. APPLICATION IN THE MUNICIPALITY OF VINALESA

Laura Molina Cañamero / Elisa Peñalvo-López / Vicente León-Martínez / Joaquín Montañana-Romeu

1.4.- THE RECOVERY, TRANSFORMATION AND RESILIENCE PLAN AND ITS INFLUENCE ON BUILDINGS

M^a Emilia Casar Furió

1.5.- BULLWHIP EFFECT ON CONSTRUCTION MATERIAL WEIGHS DOWN EXPECTED PROFITS

Alicia Llorca-Ponce / Adrián González Jiménez / Gregorio Rius-Sorolla

1.6.- USER PERCEPTION OF INDUSTRIALIZATION IN CONSTRUCTION. CASE STUDY: AREQUIPA - PERU

Mayte Maldonado Alvarez / Igor Fernández Plazaola / Antoni Montañana i Aviñó

1.7.- THE CIRCULAR ECONOMY OF MATERIALS AND WASTE IN THE CONSTRUCTION OF NEW-USE BUILDINGS

Fabiola Colmenero Fonseca / Francisco Javier Cárcel Carrasco / Graziella Bernardo / Luis Manuel Palmero Iglesias / Jorge Arturo Gutiérrez Camarena

CHAPTER 2 SUSTAINABILITY

2.1.- HYGROTHERMAL ANALYSIS OF GREEN ROOF IN SERVICE

Júlia G. Borràs / Angeles Mas Tomás / Carlos Lerma Elvira / Enrique Gil Benso / Jose Vercher Sanchis

2.2.- DATA DRIVEN DECISION SUPPORT SYSTEM FOR SELECTING BUILDING RETROFIT STRATEGY

Ania Khodabakhshian / Luca Rampini / Fulvio Re Cecconi

2.3.- REGENERATION AND DECARBONISATION OF THE BUILDING HERITAGE. A COMPROMISE BETWEEN FUNCTIONALITY, AESTHETICS AND SUSTAINABILITY

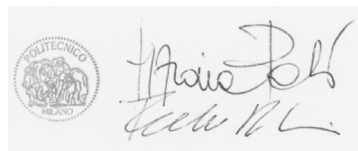

Roberta Melella / Giacomo Di Ruocco

2.4.- DESIGN STRATEGIES FOR RETHINKING SCHOOL ENVIRONMENTS IN A POST-COVID PERSPECTIVE

Enrico Sicignano / Pier Francesco Fiore / Emanuela D'Andria / Rossella Marmo / Carmelo Falce / Ilaria Perrotta

2.5.- WHAT RENEWABLE ENERGY TECHNOLOGIES (TERs) ARE APPLICABLE TO EXISTING UNIVERSITY BUILDINGS?

Joaquín Fuentes-del-Burgo / Elena Navarro-Astor



2.6.- STATE OF THE ART: USES OF RENEWABLE ENERGIES IN CONJUNCTION WITH THE PRIMARY AGRI-FOOD SECTOR

Amparo León-Vinet / Elisa Peñalvo-López / Vicente León-Martínez / Joaquín Montañana-Romeu

2.7.- METHODOLOGY FOR THE REDUCTION OF ENERGY CONSUMPTION THROUGH THE DISCRETISATION OF ELECTRICITY LOADS IN THE RESIDENTIAL SECTOR

Clara Andrada-Monrós / Elisa Peñalvo-López / Javier Cárcel-Carrasco / Vicente León-Martínez

2.8.- ENERGY DECARBONISATION IN SMEs. INITIAL RESULTS IN SMEMPOWER PROJECT

Elisa Peñalvo-López / Javier Cárcel-Carrasco / Vicente León-Martínez / Iván Valencia Salazar

2.9.-ORGANIZATION OF INFORMATION FOR INDUSTRIAL BUILDINGS' EVALUATION. RecoverIND

C. Rivero-Camach / A. Martínez-Rocamora / M.D. Alba-Rodríguez / J. Solís-Gumán1,2,3, M. Marrero

2.10.- RENEWABLE ENERGY TECHNOLOGIES IN UNIVERSITY BUILDINGS IN THE IBERIAN PENÍNSULA: A STUDY OF ARCHITECTURAL AND URBAN PLANNING BARRIERS

Joaquín Fuentes-del-Burgo / Elena Navarro-Astor

2.11.- ORGANIZATION OF INFORMATION FOR INDUSTRIAL BUILDINGS' EVALUATION. RECOVERIND

Cristina Rivero-Camacho/ Alejandro Martínez-Rocamora / María Desiré Alba-Rodríguez / Jaime Solís-Guzmán / Madelyn Marrero

2.12.- MONITORING THE EYE DYNAMIC REPOSE TO LIGHTING CONDITIONS WHILE PERFORMING BUILDING DESIGN ACTIVITIES

Paolo Colombo / Juan Diego Blanco Cadena / Tiziana Poli

2.13.- LARGE SUSTAINABLE INDUSTRIAL PLANTS. CASE STUDY OF THEIR DESIGN AND CONSTRUCTION

Javier Cárcel-Carrasco / Aurora Martínez-Corral / M^a Carmen Carnero / José Ramón Albiol-Ibáñez

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Javier Cárcel-Carrasco / Aurora Martínez-Corral / Carolina Aparicio-Fernández / Luis Palmero-Iglesias

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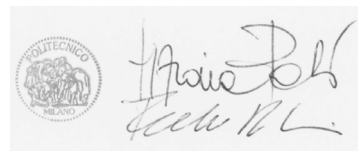

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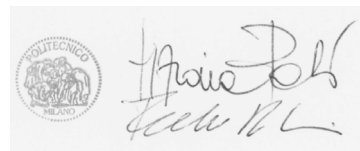

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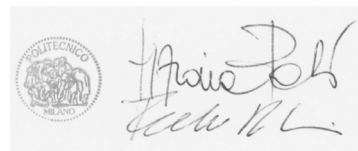

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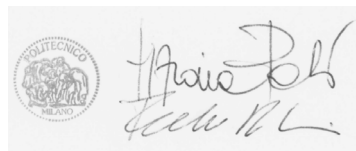
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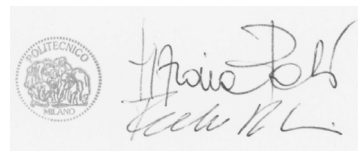
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