

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
From 17th to 29th November 2022
Hall ETS Ingeniería de Edificación

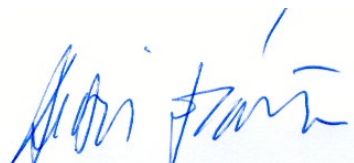
Curator of Exhibition:

Dr. José Ramón ALBIOL IBÁÑEZ (International Curator)

Exhibition

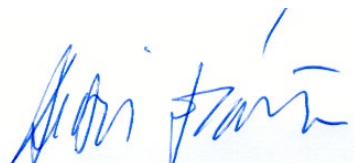
XXXVI INTERNATIONAL SHOWROOM OF CONSTRUCTION TECHNOLOGIES - EXCO 2022 ©

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



INDEX

CURATORS	1
PROLOGUE	3
INTERNATIONAL SCIENTIFIC COMMITTEE	5
INTERNATIONAL ORGANIZATION COMMITTEE	9
CHAPTER INDEX – Research Communications	12



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.

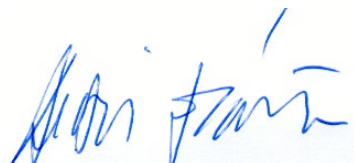
The International Itinerant Research Exhibition EXCO'22 has the collaboration of 63 Universities from America, Europe, Africa, Asia and Oceania. Promoting collaboration between institutions and professors at the international level.

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.*
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.*
35. *Universitat Jaume I, Castellón, España.*
36. *University of Applied Sciences and Arts of Southern Switzerland*
37. *Institut für Bau- und Infrastrukturmanagement /ETH Zürich*
38. *University North, Varaždin, Croacia*
39. *South Ukrainian National Pedagogical University, Odessa, Ukraine.*
40. *Kharkiv National University of Civil Engineering and Architecture, Ukraine.*
41. *Universitat de València, Spain.*
42. *Perm National Research Polytechnic University, Perm, Russia*
43. *University of Cape Town, South Africa.*
44. *National University of Singapore.*
45. *TU Delft, The Netherlands.*
46. *Politecnico di Torino, Italy.*
47. *Wuhan University, Wuhan, China.*
48. *University of Oregon, USA.*
49. *City-University of Hong Kong.*
50. *Shenzhen University School of Architecture, Shenzhen, China.*
51. *Hokkaido University, Sapporo, Japan*
52. *Universidad de la Salle, Bogotá, Colombia.*
53. *Universidad de los Andes, Bogotá, Colombia.*
54. *Universidad Católica de Valencia. España.*
55. *Universidad UTE. Quito. Ecuador.*
56. *Universidad de Napoles Federico II, Napoles, Italy.*
57. *Telematic University Pegaso, Italy.*
58. *University of Guanajuato, México.*
59. *University of La Salle Bajío, México*
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

**Vice Dean International Relations, Employment, Business Cathedra & Entrepreneurship
Director EXCO'22**

ETS Building Engineers - Building 1B. Camino de Vera S/N 46022 Valencia SPAIN

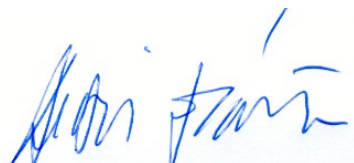
UNIVERSITAT POLITÈCNICA DE VALÈNCIA



INTERNATIONAL SCIENTIFIC COMMITTEE EXCO

SPAIN

ALBIOL IBÁÑEZ, José Ramón	Universitat Politècnica de València
ALMENAR MUÑOZ, Mercedes	Universitat Politècnica de València
ANGULO IBÁÑEZ, Quiteria	Universitat Politècnica de València
APARICIO FERNÁNDEZ, Carolina Sabina	Universitat Politècnica de València
BONET SENACH, José Luís	Universitat Politècnica de València
BOSCH GONZÁLEZ, Montserrat	Universitat de Catalunya
CAAMAÑO MARTÍN, Estefanía	Universidad Politécnica de Madrid
CARCEL CARRASCO, Javier	Universitat Politècnica de València
CASAR FURIÓ, Maria Emilia	Universitat Politècnica de València
CHÍAS NAVARRO, Pilar	Universidad Alcalá de Henares, Madrid
COLMENERO FONSECA, Fabiola	Universitat Politècnica de València
FERNANDEZ PLAZAOLA, Igor	Universitat Politècnica de València
GANDIA ROMERO, José Manuel	Universitat Politècnica de València
GARCÍA BALLESTER, Luis V.	Universitat Politècnica de València
GARABITO LÓPEZ, Javier	Universidad de Burgos
GIL PIQUERAS, M. Teresa	Universitat Politècnica de València
GIRBÉS PÉREZ, Jorge	Universitat Politècnica de València
IBORRA LUCAS, Milagros	Universitat Politècnica de València
LLINARES MILLÁN, Jaime	Universitat Politècnica de València
LLINARES MILLÁN, María del Carmen	Universitat Politècnica de València
LÓPEZ PATIÑO, Gracia	Universitat Politècnica de València
LÓPEZ GONZÁLEZ, María Concepción	Universitat Politècnica de València
MARTÍNEZ CORRAL, Aurora	Universitat Politècnica de València
MAS BARBERÁ, Xavier	Universitat Politècnica de València
MEDINA RAMÓN, Francisco Javier	Universitat Politècnica de València
NAVARRO GARCÍA, María Luisa	Universitat Politècnica de València
NAVARRO ASTOR, Elena	Universitat Politècnica de València
PALMERO IGLESIAS, Luis	Universitat Politècnica de València
PEÑALVO LÓPEZ, Elisa	Universitat Politècnica de València
PEREIRO BARCELÓ, Javier	Universidad de Alicante
RODRÍGUEZ NAVARRO, Pablo	Universitat Politècnica de València
SALANDIN, Andrea	Universitat Politècnica de València
SALINAS MARTÍNEZ, Pedro	Universitat Politècnica de València



ITALY

BERNARDO, Graziella
ANDRISANI, Giuseppe
GUIDA, Antonella
GRECCHI, Manuela
MAININI, Andrea Giovanni
MALIGHETTI, Laura
PISANI, Marco Andrea
POLI, Tiziana
RE CECCONI, Fulvio
DI RUOCCO, Giacomo
SICIGNANO, Enrico

Università degli Studi della Basilicata, Matera
Università degli Studi della Basilicata, Matera
Università degli Studi della Basilicata, Matera
Politecnico di Milano
Politecnico di Milano
Politecnico di Milano
Politecnico di Milano
Politecnico di Milano
Politecnico di Milano
Politecnico di Milano
Università degli Studi di Salerno
Università degli Studi di Salerno

TURKEY

HATTAP, Sibel Onat
AYDEMIR, Olcay

Mimar Sinan Fine Arts University, Istanbul
Zeytinburnu Municipality, Istanbul

LITHUANIA

VILUTIENĖ, Tatjana
ŠAPARAUSKAS, Jonas

Vilnius Gediminas Technical University
Vilnius Gediminas Technical University

UKRAINE

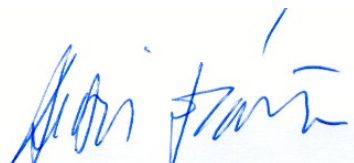
YEKSAROVA, Nadia
YEKSAROV, Vladimir
SURIANINOV, Mykola
POPOV, Oleg
SYURKO, Sergey

Odessa State Academy of Civil Engineering &
Architecture
Odessa State Academy of Civil Engineering &
Architecture
Odessa State Academy of Civil Engineering &
Architecture
Odessa State Academy of Civil Engineering &
Architecture
Odessa Home Exhibition Center

POLAND

DAWCZYŃSKI, Szymon
GORSKI, Marcin
KRZYWON, Rafal
ZIÓŁKOWSKI, Patryk

Silesian University of Technology, Gliwice
Silesian University of Technology, Gliwice
Silesian University of Technology, Gliwice
Gdańsk University of Technology



CUBA

ÁLVAREZ RODRÍGUEZ, Odalys
LÓPEZ LLANUSA, Alejandro
WAINSHOTK RIVAS, Hugo

Universidad Tecnológica de La Habana
Universidad Tecnológica de La Habana
Universidad Tecnológica de La Habana

CANADA

FRIEDMAN, Avi

McGill University, Montreal, Quebec

USA

BUNZA, Matt
GHANDEHARI, Masoud
JIN, Weihua
SUN, Xiaonuan

Massachusetts Institute of Technology (MIT)
New York University, NYC
New York University, NYC
Portland State University

SINGAPORE

NANETTI, Andrea

Nanyang Technological University. Singapore

GERMANY

HOLLERMANN, Sebastian
WESSEL, Thomas

University Jade Hochschule - Oldenburg
University Jade Hochschule - Oldenburg

CHINA

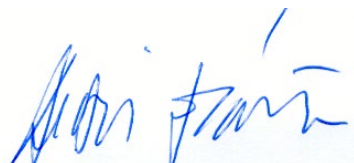
CHENG, Shidan
LAU, Stephen
SUNNIE S.Y. LAU
PALMIOLI, Andrea
HUANG, Li
CAO, Vivian

Wuhan University
Shenzhen University
MIT Hong Kong Innovation Node, MIT
City University of Hong Kong
China Academy of Art, Hangzhou
China Construction Materials & Technology
Consulting Company

The NETHERLANDS

CHAN, Paul

TU Delft



VISSCHER, Henk

TU Delft

SWITZERLAND

MALTESE, Sebastiano

University of Applied Sciences and Arts of
Southern Switzerland

RUSSIA

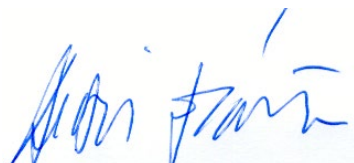
MAKSIMOVA, Svetlana

Perm National Research Polytechnic University

JAPAN

NIGLIO, Olimpia

Hokkaido University, Faculty of Humanities and
Human Sciences



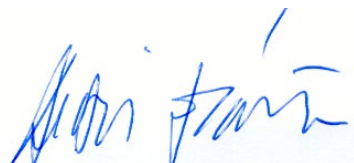
INTERNATIONAL ORGANIZATION COMMITTEE

VALENCIA (Spain)

Jorge GIRBES PÉREZ	Universitat Politècnica de València
José Ramón ALBIOL IBÁÑEZ	Universitat Politècnica de València
Luis PALMERO IGLESIAS	Universitat Politècnica de València
Elena NAVARRO ASTOR	Universitat Politècnica de València
Pedro G. SALINAS MARTÍNEZ	Universitat Politècnica de València
Mercedes ALMENAR MUÑOZ	Universitat Politècnica de València
Francisco J. BLANES PLÁ	Universitat Politècnica de València
Igor FERNÁNDEZ PLAZAOLA	Universitat Politècnica de València
María Jesus FORA MOLLA	Universitat Politècnica de València
Fernando COS-GAYÓN LÓPEZ	Universitat Politècnica de València
Francisco J. MEDINA RAMÓN	Universitat Politècnica de València
Luis Vicente GARCÍA BALLESTER	Universitat Politècnica de València
Andrea SALANDIN	Universitat Politècnica de València
Milagro IBORRA LUCAS	Universitat Politècnica de València
M. Emilia CASAR FURIÓ	Universitat Politècnica de València
Juan Bautista AZNAR MOLLA	Universitat Politècnica de València
Javier CARCEL CARRASCO	Universitat Politècnica de València
Pablo RODRÍGUEZ NAVARRO	Universitat Politècnica de València
María Teresa GIL PIQUERAS	Universitat Politècnica de València
María Luisa COLLADO LÓPEZ	Universitat Politècnica de València
José Manuel GANDIA ROMERO	Universitat Politècnica de València
Paloma ARRUÉ BURILLO	Universitat Politècnica de València
Antonio Manuel ROMERO SEDÓ	Universitat Politècnica de València
Fabiola COLMENERO FONSECA	Universitat Politècnica de València

BEIJING (China)

Zhang LING	Beijing Yong Shan Media Co., Ltd, Pekin
Rodolfo NAVARRO	Rodolfo Navarro ART Co., VLC
CAO, Vivian	China Construction Materials & Technology Consulting Company



GLIWICE (Poland)

Szymon DAWCZYŃSKI
Marcin GÓRSKI
Rafał KRZYWON

Silesian University of Technology, Gliwice
Silesian University of Technology, Gliwice
Silesian University of Technology, Gliwice

MILAN (Italy)

Tiziana POLI
Fulvio RE CECCONI
Manuela GRECCHI
Andrea Giovanni MAININI
Laura MALIGHETTI
Marco Andrea PISANI

Politecnico di Milano
Politecnico di Milano
Politecnico di Milano
Politecnico di Milano
Politecnico di Milano
Politecnico di Milano

SALERNO (Italy)

Giacomo DI RUOCCO
Enrico SICIGNANO
Roberta MELELLA

Università degli Studi di Salerno
Università degli Studi di Salerno
Università degli Studi di Salerno

ISTANBUL (Turkey)

Sibel Onat HATTAP

Mimar Sinan Fine Arts University

ODESSA (Ukraine)

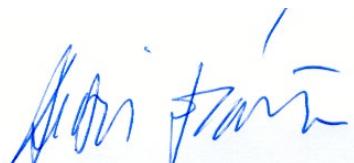
Nadia EKSAROVA
Vladimir EKSAREV
Sergey SYURKO

Odessa State Academy of Civil Engineering & Architecture
Odessa State Academy of Civil Engineering & Architecture
Odessa Home Exhibition Center

MATERA (Italy)

Antonella GUIDA
Giuseppe ANDRISANI
Graziella BERNARDO

Università degli Studi della Basilicata
Università degli Studi della Basilicata
Università degli Studi della Basilicata



VILNIUS (Lithuania)

Tatjana VILUTIENĖ
Jonas ŠAPARAUSKAS

Vilnius Gediminas Technical University
Vilnius Gediminas Technical University

OLDENBURG (Germany)

HOLLERMANN, Sebastian

University Jade Hochschule - Oldenburg

HONG KONG

SUNNIE S.Y. LAU

MIT Hong Kong Innovation Node, MIT

LA HABANA (Cuba)

Odalys ÁLVAREZ RODRÍGUEZ

Universidad Tecnológica de La Habana
(CUJAE)

Alejandro LÓPEZ LLANUSA

Universidad Tecnológica de La Habana
(CUJAE)

Hugo R. WAINSHTOK RIVAS

Universidad Tecnológica de La Habana
(CUJAE)

GDAŃSK (Poland)

ZIÓŁKOWSKI, Patryk

Gdańsk University of Technology

DELFT (The Netherlands)

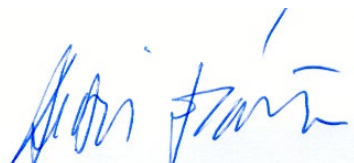
VISSCHER, Henk

TU Delft

GUADALAJARA (México)

JUÁREZ PEREZLETE, Raúl
CANO ESPINOSA, Tania

Tecnológico de Monterrey
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 / Àngeles 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

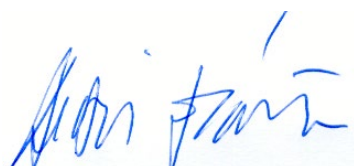
Roberta Melella / Giacomo Di Ruocco

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

2.14.- ANALYSIS OF SUSTAINABLE URBANISM AND INTRODUCTION TO THE RELATIONSHIP BETWEEN THE MOBILITY OF COMBUSTION VEHICLES AND AIR POLLUTION

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

2.15.- STUDY AND IMPROVEMENT OF THE ENERGY EFFICIENCY OF THE COOLING SYSTEM BY REGULATING THE CAPACITY OF THE COMPRESSORS

Javier Cárcel-Carrasco / Aurora Martínez-Corral / Jaime Langa-Sanchís / José Antonio Cárcel-Carrasco

2.16.- ITALY AND THE PRELIMINARY ANALYSIS OF CONSTRUCTION AND DEMOLITION WASTE. THE CHALLENGES AND OPPORTUNITIES

Javier Cárcel-Carrasco / Aurora Martínez-Corral / Fabiola Colmenero Fonseca / Consuelo Gómez-Gómez

2.17.- GREEN ROOFS, VERTICAL GARDENS AND SMALL GARDENS IN THE CONSTRUCTION OF SUSTAINABLE HABITAT

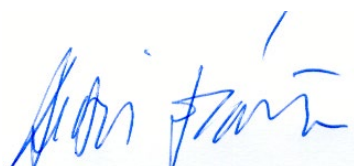
Marina Puyuelo Cazorla / Lola Merino Sanjuán / Mónica Val Fiel

2.18.- DEVELOPMENT OF CONSTRUCTIVE SOLUTIONS AIMED AT IMPROVING THE ENERGY EFFICIENCY OF BUILDINGS AND CITIES

Sergio Navarro García / Arsenio Navarro Muedra

2.19.- SPEEDING UP THE URBAN ENERGY TRANSITION. CHALLENGES AND SOLUTIONS FOR THE DUTCH HOUSING STOCK

Henk Visscher



CHAPTER 3 NEURAL ENGINEERING

3.1.- INTEGRATION OF BIM AND EXTENDED REALITY (XR) APPLICATIONS FOR ARCHITECTURE, ENGINEERING AND CONSTRUCTION (AEC) INDUSTRY

Mónica Val Fiel / Marina Puyuelo Cazorla / Lola Merino Sanjuán

3.2.- DOES THE STUDENTS' MEMORY IMPROVE IF THE LIGHTING LEVEL IS INCREASED?

Nuria Castilla Cabanes / Juan Luis Higuera-Trujillo / Carmen Llinares Millán

3.3.- OPTIMISING COGNITIVE SUPPORT FOR DESIGN USING ARTIFICIAL INTELLIGENCE

Adrián Colomer Granero / Juan Luis Higuera-Trujillo / Valeriana Naranjo Ornedo / Carmen Llinares Millán

3.4.- THE IMPACT OF THE DESIGN OF LEARNING SPACES ON ATTENTION AND MEMORY FROM A NEURO-ARCHITECTURAL APPROACH: A SYSTEMATIC REVIEW

Mar Llorens-Gómez / Juan Luis Higuera-Trujillo / Carla Sentieri / Carmen Llinares Millán

3.5.- OPTIMIZATION OF THE PLEASANT PERCEPTION OF THE CLASSROOM, MEMORY AND ATTENTION OF UNIVERSITY STUDENTS BASED ON DIFFERENT DESIGN ELEMENTS

María Luisa Nolé Fajardo / David Soler Fernández / Juan Luis Higuera-Trujillo / Carmen Llinares Millán

3.6.- EFFECTS OF CLASSROOM INTELLIGIBILITY AND ILLUMINATION ON STUDENTS' WORKING MEMORY

Ana Pérez Fuster / José María Bravo Plana-Sala / Carmen Llinares Millán / Juan Luis Higuera-Trujillo

3.7.- TOWARDS A NEUROPHYSIOLOGICAL INDEX TO MEASURE COGNITIVE SUPPORT FOR CLASSROOM DESIGN

Juan Luis Higuera-Trujillo / Adrián Colomer Granero / Valeriana Naranjo Ornedo / Carmen Llinares Millán

CHAPTER 4 HERITAGE

4.1.- "PATRIMONIO Y ARQUITECTURA VERNÁCULAR" UCHISAR, CAPADOCIA – EXCAVEBITION

Antonella Guida / Antonio Conte / Giuseppe Andrisani / Priscilla Dastoli / Lidia De Pinto / Paolo Direnzo / Giulio Grimaldi / Roselena Sulla

4.2.- BUILDING MUSEUMS – SEVILLE. "REAL FABRICA DE ARTILLERIA": CRISOL (Part 2)

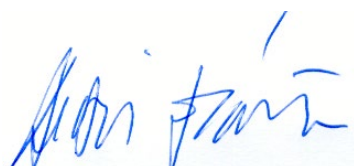
Antonella Guida / Antonio Conte / Giuseppe Andrisani / Priscilla Dastoli / Lidia De Pinto / Paolo Direnzo / Giulio Grimaldi / Roselena Sulla

4.3.- A RECOVERY PROJECT FOR THE REAL HOSPITAL SAN ANDRÉS IN LIMA (Part 1)

Antonella Guida / Antonio Conte / Giuseppe Andrisani / Vito Porcari / Luca Manca

4.4.- A RECOVERY PROJECT FOR THE REAL HOSPITAL SAN ANDRÉS IN LIMA (Part 2)

Antonella Guida / Antonio Conte / Giuseppe Andrisani / Vito Porcari / Luca Manca



4.5.- MASSERIA CASINO DEL DUCA, RESTAURATION AND VALORIZATION OF THE RURAL ARCHITECTURAL HERITAGE (Part 1)

Antonella Guida / Graziella Bernardo / Giuseppe Andrisani / Vito Domenico Porcari / Rossana Latorrata

4.6.- BUILDING MUSEUMS – SEVILLE. “REAL FABRICA DE ARTILLERIA”: CRISOL (Part 1)

Antonella Guida / Antonio Conte / Giuseppe Andrisani / Priscilla Dastoli / Lidia De Pinto / Paolo Dizenzo / Giulio Grimaldi / Roselena Sulla

4.7.- ELECTRICITY TRANSFORMER TOWERS IN THE PROVINCE OF VALENCIA. AN HERITAGE IN THE OBLIVION

Guardiola-Villora, Arianna / Basset-Salom, Luisa

4.8.- CORTINA ARCHITECT AND THE HOUSE OF THE MILL. RECOVERING THE NOLLA TILE

Jorge Girbés Pérez / Ana Estellés Álvarez

4.9.- THE CORTINA ARCHITECT AND THE CITY OF CEUTA

Jorge Girbés Pérez

4.10.- CORTINA ARCHITECT AND THE ERMITA DE LA MISERICORDIA FROM MELIANA. RECOVERING THE NOLLA TILE

Jorge Girbés Pérez / Namibia Cervera Goiti

4.11.- EXCAVATION WORKS OF THE MOSAICS IN ZEYTINBURNU-İSTANBUL, RESTORATION IMPLEMENTATIONS AND PROCESS OF MUSEUM ESTABLISHMENT

Sibel Onat Hattap / Olcay Aydemir

4.12.- RAILWAY HOUSING IN VALENCIA. NOTES ON THE REGULATORY CONTEXT AND CASE STUDIES (1941-1989)

Aurora Martínez-Corral / Javier Cárcel-Carrasco / M^a Carmen Carnero Moya / Luis Palmero Iglesias

4.13.- REPRESENTATIVE IDENTIFICATION OF THE REAL COLLEGE SEMINAR OF CORPUS CHRISTI IN ITS PUBLIC VISIT

Concepción López González / M^a José Viñals Blasco / Jorge Luis García Valldecabres / Luis Cortés Meseguer

4.14.- MASSERIA CASINO DEL DUCA, RESTAURATION AND VALORIZATION OF THE RURAL ARCHITECTURAL HERITAGE (Part 2)

Antonella Guida / Graziella Bernardo / Giuseppe Andrisani / Vito Domenico Porcari / Rossana Latorrata

4.15.- PROPOSALS FOR THE CONSERVATION OF ARCHITECTURAL ELEMENTS PRESENT IN THE FACADES OF THE CABANYAL

Quiteria Angulo Ibáñez / Paula Carabal Maestro

4.16.- THE CORTINA ARCHITECT AND HIS MISSING WORK

Jorge Girbés Pérez

4.17.- BUILDING REHABILITATION PROJECT

Anatoly Yeksarev / Kateryna Sirenko

4.18.- THE CONSERVATION OF THE ARCHITECTURAL HERITAGE THROUGH HBIM

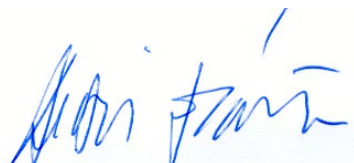
Jorge Luis García Valldecabres / Concepción López González / Luis Cortés Meseguer / Antonio Galiano Garrigós

4.19.- NEW MODELS FOR PUBLIC VISITS TO HERITAGE BUILDINGS. THE AVATAR TOURIST VISIT

María José Viñals / Anna Sanasaryan / Elena Salvador García / Luis Cortés Meseguer

4.20.- HERITAGE VALUES OF VALENCIA'S CATHEDRAL FOR ITS CULTURAL VISIT

Luis Cortés Meseguer / Concepción López González / Jorge Luis García Valldecabres / M^a José Viñals Blasco



4.21.- PLANIMETRIC INTERPRETATION OF VALENCIA'S CATHEDRAL FOR ARCHITECTURAL READING IN HBIM METHODOLOGY

Luis Cortés Meseguer / Concepción López González / Jorge Luis García Valldecabres

4.22.- DATA COLLECTION OF THE CULLERA ANTI-AERIAL BATTERY FOR ITS RESTORATION AND VALUE

Pablo Rodríguez-Navarro / Teresa Gil-Piqueras / Marina Sender Contel / Ricardo Perelló Rosso / Manuel Giménez Ribera

4.23.- TYPOLOGICAL ANALYSIS OF THE HOUSE SITUATED IN THE FERKLA'S PALMERAL, MOROCCO

Pablo Rodríguez-Navarro / Teresa Gil-Piqueras / Anna Pérez Vila

4.24.- DIGITAL GRAPHIC SURVEY FOR THE RESTORATION PROJECT OF THE CHURCH OF THE VIRGEN DE SALES, SUECA, VALENCIA (SPAIN)

Pablo Rodríguez-Navarro / Teresa Gil-Piqueras / Luis Cortés Meseguer / Anna Pérez Vila

4.25.- THE ALABASTER ALTARPIECE OF THE HOLY CHALICE OF VALENCIA CATHEDRAL. CONSIDERATIONS AND CLEANING STRATEGY

S. Martínez-Hurtado / S. Kröner / X. Mas-Barberà

4.26.- WHEN THE ENGINEERING LISTENS TO THE NATURE. TSÛJUN BRIDGE IN JAPAN

Olimpia Niglio / Tsuneaki Fukui

4.27.- THE CORTINA ARCHITECT AND HIS MISSING WORK

Jorge Girbés Pérez

4.28.- CERAMICS IN THE NORTH STATION OF VALENCIA. THE NECESSARY MATERIAL-CONSTRUCTIVE REGISTRATION

Aurora Martínez-Corral / Javier Cárcel-Carrasco / M^{ra} Carmen Carnero Moya / Luis Palmero Iglesias

4.29.- THE RESTORATION OF BURGOS CATHEDRAL. THE HIGH CLOISTER

Javier Garabito López

CHAPTER 5 TECHNOLOGY

5.1.- LATERAL BUCKLING OF STEEL BEAMS. COMPARED ANALYSIS OF CTE DB SE-A, EAE AND EC3 CODES

Arianna Guardiola-Villora / Agustín Perez-García

5.2.- DIGITAL TECHNOLOGIES APPLIED TO THE ACCESSIBLE MANAGEMENT OF ARCHITECTURAL AND MUSEUM HERITAGE. MUSEO DI ARTE ORIENTALE IN TURIN: WORK IN PROGRESS

Francesca Ronco

5.3.- THE TOLEDO STATION OF THE UNDERGROUND METRO STATION OF NAPLES, ITALY: ARCHITECTURE, CONSTRUCTION, MATERIALS

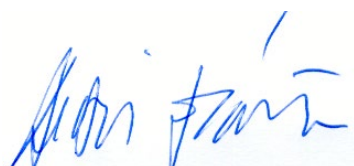
Enrico Sicignano / Pierfrancesco Fiore / Rossella Marmo / Emanuela D'Andria/ Carmelo Falce / Ilaria Perrotta

5.4.- ANALYSIS AND COMPARISON OF TWO HYPAR SHELLS

Quiteria Angulo Ibáñez / Luis Almenar Fernández

5.5.- ANALYSIS OF THE BEHAVIOR OF THE HYBRID TRUSSES OF THE MILSTEIN HALL OF OMA VS. OTHER POSSIBLE SOLUTIONS

Quiteria Angulo Ibáñez / George-Nikolas Caicedo-Pratt



5.6.- BIM & RAPID PROTOTYPING FOR ARCHITECTURAL ARCHIVE HERITAGE

Giulia Bertola

5.7.- OPTIMISATION METHODOLOGY TO MAXIMISE THE ECONOMIC BENEFITS OF THE AGGREGATOR ON ITS CUSTOMER BASE

Jorge Cano Martínez / Elisa Peñalvo-López / Vicente León Martínez / Iván Valencia Salazar

5.8.- APPLICATION OF SPATIAL LOCATION TECHNIQUES IN THE DIAGNOSIS OF BUILDING STRUCTURES USING A DRONE

Jaroslav Domin / Roman Czyba / Marcin Górski / Paweł Piórkowski / Jacek Grzybowski / Michał Nerwiński / Dawid Rudy / Radosław Rosiek / Kamil Niziołek

5.9.- LEAN TOOLS APPLICATION TO THE 2D'S INDUSTRIALIZATION PROCESS IN BUILDINGS

Milagro Iborra Lucas / Lisseth Sáenz Lama

5.10.- EFFECT OF FIRE ON GFRP REINFORCED CONCRETE BEAMS

Isel del Carmen Díaz Pérez / Rafael Larrúa Quevedo / Hugo Wainshtok Rivas

5.11.- CRACKS DETECTION THROUGH ANALYSIS PCA IN HIGH PERFORMANCE CONCRETES

Ana Martínez-Ibernón / Josep Ramon Lliso-Ferrando / Isabel Gasch Molina / José Manuel Gandía-Romero / Manuel Valcuende Payá / Juan Soto Camino / Paola Antonici / Giovanni Anglani / Jean-Marc Tullani

5.12.- LIMITATIONS IN REINFORCEMENT CONCRETE STRUCTURES CORROSION POTENTIALS MEASUREMENT TO THE CORROSION DETECTION

Ana Martínez-Ibernón / Josep Ramon Lliso-Ferrando / Isabel Gasch Molina / José Manuel Gandía-Romero / Manuel Valcuende Payá / Juan Soto Camino

5.13.- THERMOGRAPHIC ANALYSIS OF CERAMIC TILE VENTILATED FACADE PROTOTYPE. WEAKNESSES AND ADVANTAGES IDENTIFICATION

Ana Martínez-Ibernón / Julia Casares Real / Josep Ramon Lliso-Ferrando / Isabel Gasch Molina / José Manuel Gandía-Romero / Manuel Valcuende Payá / Juan Soto Camino

5.14.- CORROSION MONITORING ON REINFORCED CONCRETE SLABS. Part 1

Josep Ramon Lliso-Ferrando / Erika Juliana Pacheco-García / Isabel Gasch Molina / Ana Martínez-Ibernón / José Manuel Gandía-Romero / Manuel Valcuende Payá / Juan Soto Camino

5.15.- CORROSION MONITORING ON REINFORCED CONCRETE SLABS. Part 2

Josep Ramon Lliso-Ferrando / Erika Juliana Pacheco-García / Isabel Gasch Molina / Ana Martínez-Ibernón / José Manuel Gandía-Romero / Manuel Valcuende Payá / Juan Soto Camino

5.16.- EFFICIENT MANAGEMENT OF THE PUBLIC USE OF ARCHITECTURAL HERITAGE THROUGH AN HBIM PROTOCOL

Elena Salvador-García / M^a José Viñals-Blasco / Jorge Luis García-Valldecabres / Concepción López-González

5.17.- SOUND BARRIERS BASED ON SONIC CRYSTALS. SCATTERER DESIGN FOR LOW/MEDIUM FREQUENCY BAND ATTENUATION

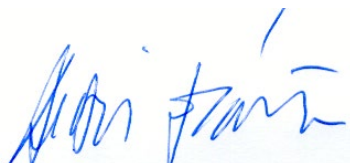
Irene Martínez Muñoz / Sergio Castiñeira Ibáñez / José María Bravo Plana-Sala / Marcelino Ferri García / Juan Vicente Sánchez Pérez / María Pilar Peiró-Torres

5.18.- IDENTIFYING THE NEEDS FOR PLANNING CULTURAL ITINERARIES. AN APPROACH TO THE DESIGN OF A HBIM+GIS PROTOCOL

Ángel Marqués-Mateu / Elena Salvador-García / María Dolores Teruel-Serrano

5.19.- COMPARISON OF THE MECHANICAL BEHAVIOR OF CONCRETE CONTAINING RECYCLED CFRP FIBERS AND POLYPROPYLENE FIBERS

María Isabel Prieto-Barrio / María de las Nieves González García / Alfonso Cobo Escamilla / David Alonso Redondo



5.20.- PRESENTATION OF SERMAP-PRFV SYSTEM, AN ECOLOGICAL ALTERNATIVE TO BUILD BUILDINGS

Gabriel Martínez Licea / Hugo Rafael Wainshtok Rivas

5.21.- THE FUTURE OF CONSTRUCTION IN THE BUILDING SECTOR

Sandra Moyano Sanz / Mercedes Valiente López / Miguel Fernández Álvarez

5.22.- ULTRA HIGH DURABILITY CONCRETES (UHDC) RESHEALIENCE PROJECT

José Manuel Gandía-Romero / Isabel Gasch Molina / Ana Martínez-Ibernón / Josep Ramon Lliso-Ferrando / Manuel Valcuende Payá / Juan Soto Camino

5.23.- ACOUSTIC BEHAVIOR OF THE FIRST 3D PRINTED BUILDING IN SPAIN

Andrea Salandin / Ignacio Guillen / Alberto Quintana / Vicente Gómez

5.24.- LIME CONCRETES WITH AD HOC PERFORMANCES

Joan Ramon Rosell i Amigó / Montserrat Bosch González

CHAPTER 6 TOWN PLANNING

6.1.- ARCHITECTURAL EVOLUTION OF THE JAPANESE HOUSE

Quiteria Angulo Ibáñez / Francisco Oña Tudela

6.2.- PORTO-FRANKO CUSTOMS LINES AS A RESERVE FOR CREATING AN "ARC OF MERCY" IN ODESSA (second half of the 19th century)

Nadia Yeksarova / Vladimir Yeksarov / Andriy Yeksarov

6.3.- RAILWAY HOUSING IN VALENCIA. NOTES ON THE REGULATORY CONTEXT AND CASE STUDIES (1941-1989)

Aurora Martínez-Corral / Domingo Cuéllar Villar

6.4.- TO RENEW OR TO DIE: EXPLORING THE DIGITALISATION OF THE REAL ESTATE BROKERAGE AGENCY IN VALENCIA

Elena Navarro-Astor / Juan Carlos Asensio-Soto / Carolina Mollá

6.5.- VALENCIA NEW MULTY STOREY RESIDENTIAL BUILDING DEMAND ANALYSIS

Fernando Cos-Gayón López / Ángel Martín Furones / Igor Fernández Plazaola / Mayte Maldonado Álvarez

6.6.- OFFER ANALYSIS OF NEW CONSTRUCTION SINGLE-FAMILY HOUSES IN THE METROPOLITAN AREA OF VALENCIA

Fernando Cos-Gayón López / Ángel Martín Furones / Igor Fernández Plazaola / Kaliane Bauzá Reynaldo

6.7.- PREFAB HOUSES: TOWARDS AN ARCHETYPE A REVIEW OF CONTEMPORARY SOLUTIONS

Federico Cavalieri / Marianna Rotilio / Pierluigi De Berardinis / Luis Palmero Iglesias

6.8.- FROM HOMO FABER TO HOMO LUDENS. A NEW WAY TO IMAGINE AND BUILD THE FUTURE

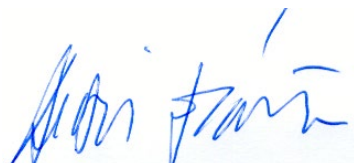
Luis Manuel Palmero Iglesias / Graziella Bernardo

6.9.- THE EDUCATIONAL AND SOCIAL ARCHITECTURE OF GIANCARLO MAZZANTI (Part 1)

Luis Manuel Palmero Iglesias / Graziella Bernardo

6.10.- THE EDUCATIONAL AND SOCIAL ARCHITECTURE OF GIANCARLO MAZZANTI (Part 2)

Luis Manuel Palmero Iglesias / Graziella Bernardo



6.11.- THE GARDEN OF SOULS: CONTEMPORARY REINTERPRETATION OF FUNERAL SPACES, THE CAMPELLO, ALICANTE, SPAIN

Carolina Fernanda Urruty Blaya / Antonio Gómez Gil / Jorge Girbés Pérez

6.12.- THE LANDSCAPE VISION OF CEMETERIES IN ARCHITECTURAL MODERNITY BY: ASPLUND, ROSSI AND PORTELA

Carolina Fernanda Urruty Blaya / Antonio Gómez Gil / Jorge Girbés Pérez

6.13.- KOWLOON EAST INCLUSIVE INNOVATION AND GROWTH: INCLUSIVE INNOVATION – AN EQUITABLE URBAN DESIGN IN HIGH DENSE CITIES

Sunnie S.Y. Lau / Brent D. Ryan

6.14.- NEXT DESIGN IN THE IOT ERA. THE TRANSFORMATION OF ARCHITECTURAL DESIGN PARADIGM

Stephen Siu-Yu LAU / Yiqi TAO / Yi QI / Hongzhan LAI

6.15.- TURIA'S GARDEN. UNIQUE ASPECTS OF A LINEAR GARDEN CONSTRUCTION

Lola Merino Sanjuán / Mónica Val Fiel / Marina Puyuelo Cazorra

CHAPTER 7 *HUMAN RESOURCES*

7.1.- KNOWLEDGE MANAGEMENT APPLICATION IN MAINTENANCE ENGINEERING, ITS ANALYSIS AND PERCEPTION FROM MAINTENANCE TECHNICIANS

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

7.2.- REALITY AND PROBLEMS IN INFORMAL SETTLEMENTS IN LATIN AMERICA

Mirian Guillén Vivas / Fernando Cos-Gayón López

