

PROGRAMME

03– 05 September 2019, University of Florence, Italy



WREN/WREC
World Renewable
Energy Network

etaflorence@renewableenergies
ETA - FLORENCE RENEWABLE ENERGIES ITALY
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MED GREEN FORUM 5

Mediterranean Green Buildings
& Renewable Energy Forum

**Venue : School of Architecture Santa Teresa
Via Della Mattonaia 14 _ 50125 Florence Italy
Tel.+39 055 2755410, +39 335309948**



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THIS IS PART OF WORLD RENEWABLES ENERGY CONGRESS

Chairman's Welcome



This is the fifth WREN-WREC Med Green Forum 5th and the third one to be held in Florence, City of art, culture and beauty, teaming with ABITA from University of Florence and ETA from Renewable Energy Florence..

The three Organizations: WREN, ABITA and ETA are working together to highlight the importance of sustainable buildings and renewable energy especially in regions of abundant sunshine.

I would very much like to thank all the sponsors of this event, especially ISESCO and SPRINGER and other Italian companies and authorities. I very much like to thank the various committees

for their hard work and commitment and the University of Florence in letting us use their facilities during the summer vacation.

On behalf of my colleagues, Professor Marco Sala, Mrs Angela Grassi and I, we wish you all the success in delivering your scientific work at the Forum and having a rewarding experience in networking and meeting new friends.

Aki Sayigh

Chairman of Med Green Forum



Some of the Participants in Med Green Forum_4th

Monday 02 September

17:00 – 18:15

Registration 18:15 – 19:00 Reception at SANTA TERESA

Tuesday 03 September

09:00 – 09:30

OPENING REMARKS & PLENARY 1- ROOM 401

Chair: Prof Ali Sayigh – Brighton, UK

Welcome Speech by Prof Ali Sayigh

Chairman of World Renewable Energy Congress & DG of WREN, Brighton – UK

Welcome Speech by Prof. Saverio Mecca

Director of DID_Department of Architecture – University of Florence - Italy

Welcome Speech by Prof Vincenzo A Legnante

Ex Dean of the School of Architecture, University of Florence - Italy

Welcome Speech by Prof Marco Sala

President of ABITA, Florence - Italy

09:00 – 11:00

KEY NOTES PRESENTATION - ROOM 401

Chair : Prof Marco Sala – Florence, Italy

- 1. Solar and Wind Energy will supply more than 50% of world electricity by 2030**
Prof Ali Sayigh, Chairman of WREC & Director General WREN, Brighton, UK
- 2. The Ethics and Principles of being an Architect**
Prof Vincenzo A Legnante – Ex Dean of the School of Architecture, Florence Italy
- 3. Energy Balance Analysis for an Island PV Station used for EV-charging on the basis of Net-metering**
J.K. Kaldellis, G. Spyropoulos, K. Christopoulos, *University of West Attica (UNIWA), Athens 1220, Greece*

11:00 – 11:20

COFFEE BREAK

11:20 – 13:00

INVITED SPEAKERS - ROOM 401

Chair: Prof Riadh Al-Dabbagh – Ajman, UAE

- 1. Extreme Design: Preparing for a Different Future**
Susan Roaf¹, Joao Pinelo Silva², Manuel Correia Guedes³
¹ Institute of Sustainable Buildings Design, Heriot Watt University, UK
² Department of Architecture and Interior Design, University of Bahrain, Bahrain
³ University of Lisbon, IST, Portugal
- 2. Paving the Way towards Zero Energy Hospitals in the Mediterranean Region**
Despina Serghides¹, Stella Dimitriou¹, Ioanna Kyprianou¹
¹ Energy, Environment and Water Research Center (EEWRC), The Cyprus Institute, Cyprus
- 3. Energy and ecology efficiency as a chance for cultural heritage**
Prof. Arch. PhD Alessandra Battisti, Dipartimento DISDRA La Sapienza, ROMA, ITALY
- 4. Energy retrofit cost-optimal design solutions in social housing: the case of three tower buildings of the Eighties**
Michele Morganti^{1,2}, Valerio Vigoni³, Edoardo Currà⁴, Alessandro Rogora⁴
¹ Department of Architecture and Urban Studies, Politecnico di Milano, Milano, Italy
² Architecture & Energy, Department of Architectural Technology, UPC Barcelona Tech, Barcelona, Spain
³ Building Engineer
⁴ DICEA Department, Sapienza University of Rome, Roma, Italy

13:00 – 14:00

LUNCH BREAK

14:00 – 15:30

TECHNICAL SESSION – 1

Chair : Mr Rainer Hinrichs-Rahlwes - ROOM 401

1. **Assessing optimal U-value in residential buildings in temperate climate conditions considering massive dynamic simulation and statistical uncertainty**
Giacomo Chiesa^{1*}, Andrea Acquaviva², Lorenzo Bottaccioli³, Mario Grosso¹, Francesca Pacella⁴, Annalisa Pelati⁴, Stefania Titone⁴
¹Politecnico di Torino, Department of Architecture and Design, Torino, Italy;
²Politecnico di Torino, Department DIST; Italy
³Politecnico di Torino, Department DAUIN and EClab; Italy
⁴Politecnico di Torino, Department DET, students M.Degree in ICT4SS, Italy
2. **Sustainable construction methods and materials in hot arid climatic region of Iran**
Seyedehmamak Salavatian¹
Department of Architecture, Rasht Branch, Islamic Azad University, Rasht, Iran
3. **Winery and oil-factory recovery and regeneration in Veglie: bioclimatic and sustainable principles.**
Dora Francese, Cittam, University of Naples “Federico II” , Naples, Italy
4. **Building Beauty – a new program teaching students to help heal the world**
Yodan Rofè^{*1}, Sergio Porta, Susan Ingham, Chris Andrews, Or Ettlinger, Paolo Robazza and Maggie Moore Alexander
¹Department of Geography and Environmental Development, Ben-Gurion University of the Negev, Israel.

14:00 – 15:30

TECHNICAL SESSION – 2

Chair : Prof Mohsen Aboulnaga – Egypt - ROOM 402

1. **European First Recyclable Facade System With Reclosable Fastner Fixation - Research Development, Grants of Patents, Pre-Certification Testing's and Product Publication of Façade System StoSystain R**
Ferdinand OSWALD, Dr. Techn. Dipl. Ing. Arch, School of Architecture and Planning, University of Auckland Auckland, New Zealand
2. **Energy management & savings in the domestic situation, A Case Study**³
Mr Tony Book, Hove, UK
3. **Climate Action: Urban Farming as an Innovative Tool for Regenerating Cities to be Sustainable Case of the City of Conegliano, Italy**
Mohsen M. Aboulnaga^{1*}, Youssef M. AbouZied², and Sara S. Abouelsoud³
¹Professor of Sustainable Built Environments, Dept. of Architecture, Cairo University, Egypt,
^{2, 3}, Research students, Dept of Architecture, Faculty of Engineering, Cairo University, Egypt
4. **Urban spaces for playing in thermal comfort conditions. A case study V.**
Dessi¹, R. Eltonouby²
Dept DASTU, Politecnico di Milano, Milan, Italy

15:30 – 16:00

COFFEE BREAK

16:00 – 17:00

TECHNICAL SESSION – 3

Chair : Dr Antonella Trombadore – Italy ROOM 401

1. **Green Living Building Solutions.** Towards the renovation of the construction sector under industry 4.0, Hybrid manufacturing & building construction technology.
Dr. Fernando Recalde (Ph.D), Senior Research Consultant, ABITA, Department of Architecture, Florence, Italy
CEO Italian Green Design Studio, Florence Italy

2. **Smart active envelope solutions, integration of Photovoltaic/Thermal Solar Concentrator in the building façade.**
Lucia Ceccherini Nelli¹, Alberto Reatti²
¹Department of Architecture DIDA, University of Florence, Firenze, Italy
²Department of Information Engineering, University of Florence, Florence, Italy
3. **Passive Design Strategies of Colonial Mosques in Malaysia**
Aliyah Nur Zafirah Sanusi¹, Fadzidah Abdullah¹, Aida Kesuma Azmin¹, and Mohd Hisyamuddin Kassim¹
¹International Islamic University Malaysia

16:00 – 17:00

TECHNICAL SESSION – 4

Chair : Prof Marco Sala – Italy ROOM 402

1. **The Imitation Game: the urban sustainability game as an experience of participation, knowledge, evaluation and project sharing**
Alessandro Rogora¹, Paolo Carli¹, Michele Morganti¹
¹DASTU – Politecnico di Milano
2. **Feasibility Study of a Low Carbon House in Tabriz, Iran**
Dr Hossein Mirzaei and Mrs Sanaz Hariri Shabestari
Faculty of Science, Engineering and Computing, Kingston University, Kingston, UK
3. **Physical and Economic Aspects of New Material Production Technologies for Sustainable Development of Photovoltaics**
Sergey M. Karabanov¹, Dmitry V. Suvorov¹, Dmitriy Y. Tarabrin¹, Evgeny V. Slivkin¹, Andrey S. Karabanov², Oleg A. Belyakov²
¹Ryazan State Radio Engineering University, Ryazan 390005, Russia;
²Helios Resource Ltd., Mordovia

WEDNESDAY – 4 September

09:00 – 11:00

KEYNOTE PRESENTATIONS

Chair : Dr Marta Szabo – Hungary ROOM 401

1. **Climate-neutral Europe 2050 – How to bridge the gap between vision and implementation**
Rainer Hinrichs-Rahlwes, Berlin, Germany
2. **Climate Adaptation Action: the Role of Clean Energy and Strategic Action Plans of South Mediterranean Cities**
Mohsen Aboulnaga^{1*}, Naguib Amin², and Bruno Rebelle³
¹Professor of Sustainable Built Environments, Faculty of Engineering, Cairo University, Egypt
²CES-MED Project's Team Leader, Beirut and Morocco, Egypt
³Managing Director, Transitions, France, Paris, France,
3. **SMART AND SUSTAINABLE URBANISM WITH IDENTITY IN MEDITERRANEAN CITIES 4**
Derya Oktay, Prof. Dr., Faculty of Architecture, Ondokuz Mayıs University, Samsun, Turkey.
4. **A REVIEW OF GREEN HEALTHCARE SYSTEM BASED ON MAIN FEATURES IN SUPPORTING SUSTAINABILITY - AN OVER REVIEW**
Dr. Jazla Fadda, Visionary Mindset Professional& Management Development Training, Dubai, UAE

11:00 – 11:20

COFFEE BREAK

11:20 – 13:00

INVITED SPEAKERS

Chair : Dr Lucia Ceccherini Nelli – Italy ROOM 401

1. **The development of Renewable Energy in Buildings in UAE.**
Prof. Riadh H. AL-Dabbagh, Ajman University, UAE

2. **People and Place: identity survey and responsible design for architectural resilient regeneration process**
Paola Puma, Antonella Trombadore, University of Florence – Italy
3. **Significance of Courtyard Houses Design in the Arab World**
Dr Falah AlKubaisy, Development Advisor, Bahrain
4. **Efficient energy conversion contribution in urban area transition toward smart cities**
Andrea Rocchetti, and Filippo Nocentini, DIEF Università degli Studi di Firenze, Firenze; Italy

13:00 – 14:00 LUNCH BREAK

14:00 – 15:30 TECHNICAL SESSION – 5
Chair: Prof Derya Oktay – Turkey ROOM – 401

1. **The intangible resources of vernacular architecture for green and responsible tourism in Mediterranean Areas**
Antonella Trombadore, University of Florence – Italy
2. **URBAN GRAPEVINE – Visions of Regenerative Multi-Family Housing in Washington, DC**
The Urban Grapevine Collaborative: 4002 Underwood Street, Chevy Chase, MD 20815 USA
Michael Binder¹, Marcie Meditch², Lael Taylor², Jenny Wienckowski³
¹Binder Regenerative Design, Washington DC, USA
²Meditch Murphey Architects, Chevy Chase, USA
³Rain Underground LLC, Baltimore, USA
3. **Evaluation of multifunctional aspects of a green roof in mitigating the negative effects of urbanization in Mediterranean environment.**
Pratesi Martina, Cinelli Fabrizio, Santi Giovanni
Department of Energy, Systems, Territory and Constructions Engineering, University of Pisa, Pisa, Italy
4. **Energy auditor and building certification -Three school buildings case studies in Florence, Italy**
Lucia Ceccherini Nelli¹, Alessandra Donato²
Department of Architecture DIDA, University of Florence, Firenze, Italy.

14:00 – 15:30 TECHNICAL SESSION – 6
Chair: Prof Alessandra Battisti – Italy ROOM – 402

1. **The Potential of Solar Thermal in Europe**
Marta Szabo, PhD, Szent Istvan University, Godollo, Hungary
2. **External insulation systems for buildings with complex façades in urban historic centers**
Paolo Carli – Assistant professor @ DASTU – Politecnico di Milano
Alessandro Rogora – Full professor @ DASTU – Politecnico di Milano
Alessandro Trevisan – Architetct
3. **A Developed Slide Mode Control Strategy Applied to PV pumping System**
Sarah Adoulrazig¹, Med Amine Abdourrazig²
¹Sidi Mohammed Ben Abdellah University, Fez, MOROCCO
4. **Short Considerations on Urban Dynamics**
Dr. Arch. RUXANDRA CRUTESCU GHERASIM, Active Green Architects, Bucharest, Romania 5

15:30 – 16:00 COFFEE BREAK

16:00 – 17:00 TECHNICAL SESSION – 7
Chair: Prof Maurizio Carta – Italy ROOM – 401

1. **Impacts of Exploiting Nano-coating on Buildings’ Façades to Improve Air Quality in Megacities,Mitigate Climate Change and Attain Liveability**

Ehsan M. Elhennawi^{1*} and Mohsen M. Aboulnaga²

¹ Research Student, Department of Architecture, Faculty of Engineering, Cairo University, Egypt,

² Professor of Sustainable Built Environments, Department of Architecture, Cairo University, Egypt

2. **Refurbishment of Goris Old Batshs Buildings as Tool for Historic Urban Environmental renaissance traditions rehabilitation**

Nune Petrosyan^{1*}, Marina Bunatyan²

^{1, 2} National University of Architecture and Construction of Armenia

3. **Study of the Possibility of IoT Use in a Microgrid on the Basis of Renewable Energy Sources**

Sergey M. Karabanov¹, Pavel P. Bezrukikh², Oleg V. Loban¹, Sergey S. Belykh², Dmitriy V. Suvorov¹

¹Ryazan State Radio Engineering University, Ryazan 390005, Russia

²Moscow Power Engineering Institute, Moscow, Russia

16:00 – 17:00 TECHNICAL SESSION – 8

Chair: Prof Antonella Violano – Italy ROOM – 402

1. **Comfortable places for moving and rest along cycle paths.**
Valentina Dessi, Dept. DASTU, Politecnico di Milano, Milan, Italy
2. **Enhancing Energy Consumption using BIM: A Case Study of Egyptian Palace**
Mohamed Marzouk¹, Maryam ElSharkawy², and Aya Eissa³
¹Professor, Structural Engineering Department, Faculty of Engineering, Cairo University, Egypt
²PhD Candidate, Architectural Engineering Department, Faculty of Engineering, Cairo University, Egypt
³MSc Student, Architectural Engineering Department, Faculty of Engineering, Cairo University, Egypt
3. **Thermal Characterization of a New Composite Construction / Material Based on Plaster and Chicken Waste**
Mohamed OUAARROUCH¹, Najma Laaroussi², Mohammed Garoum³
¹PhD Student, Higher School of Technology in Salé, Morocco

THURSDAY – 5 September

09:00 – 11:00 KEYNOTE PRESENTATIONS

Chair: Prof Marco Sala – Italy ROOM - 401

1. **Green Sustainable Regional Development and Digital Era**
Narcisa Roxana Moşteanu, Professor PhD, AUE, UAE
2. **Towards Resilient Cities: Improving Unplanned Urban Areas – Strategic Environmental Assessment and Upgrading Guidelines in Developing Countries**
Mai M. Barakat¹, Mohsen M. Aboulnaga², and Mona F. Badran³
¹ Research Student, Dept. of Architecture, Faculty of Engineering, Cairo University, Egypt,
² Professor of Sustainable Built Environments, Dept. of Architecture, Cairo University, Egypt,
³ Associate Professor, Dept. of Economics, Faculty of Economics and Political science, Cairo, Egypt,
3. **Fallacies and Misunderstandings about Global Warming**
Prof. Don Swift-Hook, Visiting Professor at Kingston University, London and Secretary of WREN, UK
4. **Future Cities for Climate Action: Automated Code Compliance Checking in Reference to Energy Efficiency Building Regulations**
Asmaa S. Eid^{1*}, Mohsen M. Aboulnaga², Ayman H. Mahmoud³
¹ PhD Research Student, Dept. of Architecture, Faculty of Engineering, Cairo University, Egypt
² Professor of Sustainable Built Environments, Dept. of Architecture, Cairo University, Egypt,
³ Professor of Sustainable Architecture & Landscape, Faculty of Engineering, Cairo University, Egypt

11:00 – 11:20 COFFEE BREAK

11:20 – 13:00 INVITED SPEAKERS

Chair : Dr Fernando Recalde – Italy ROOM - 401

1. **Urban regeneration with rooftop farming pilot projects**
Lucia Ceccherini Nelli

- Department of Architecture DIDA, University of Florence, Firenze, Italy
2. **The role of the architectural survey in the sustainable refurbishment of the historical building heritage**
Paola Puma, University of Florence, Department of Architecture, Florence, Italy
 3. **Analysis of wind energy potential inside a tunnel located on the highway**
Kamil M. Yousif¹, Diyar A. Bleej², Alan I. Saeed³ and Rezheen A. Bleej⁴
Dept. of Environmental Sci., Faculty of Science, Zakho University, Zakho, Iraq¹.
Dept. of Physics, Faculty of Science, Zakho University, Zakho Iraq^{2, 3, 4}
 4. **The Role of Urban Farming in Revitalising Cities for Climate Change Adaptation and Attaining Sustainable Development: Case of the City of Conegliano, Italy**
Haidy Mousa^{1*}, May Elhadidi², Hadil Abdelhafez³, Pietro Tonini⁴, Lorenzo Fellin⁵, Antonella Frongia⁶, Virginia Castellucci⁷ and Mohsen Aboulnaga⁸
1, 2, 3, Research students, Dept. of Architecture, Faculty of Engineering, Cairo University, Egypt
4, 5, 6, Research students, Dept. of Agricultural Sciences and Technologies, University of Bologna, Italy
7 Research student, Dept. of Economic and Business Sciences, University of Trento, Italy
8 Professor of Sustainable Built Environments, Dept. of Architecture, Faculty of Engineering, Cairo University, Egypt.
 5. **Impact of traditional architecture on the thermal performances of building in south Morocco**
K. El Azhary¹, M. Ouakarrouch¹, N. Laaroussi¹, M. Garoum¹, M. Mansour²
1University Mohammed V in Rabat, (MEAT), Salé Médina, Morocco
2National School of Architecture Rabat, Medinet Al Irfane, Rabat, Morocco
 6. **The diurnal and nocturnal aspects of Urban Heat Island during the four seasons - Case of Casablanca**
L. El Ghazouani^{*a}, M. Mansoura, A. Lachir^b, M. Faouzi Smiej^c, N. Laaroussi^d
^aNational School of Architecture of Rabat, Allal El Fassi Avenue, Rabat, Morocco;
^bNational School of Architecture of Agadir, Nouveau complexe universitaire, Agadir Morocco;
^cRoyal Centre for Remote Sensing, FAR avenue, Rabat, Morocco;
^dMohammed V University in Rabat, EST Salé, Materials Energy and Acoustics Team (MEAT), Salé, Morocco.

13:00 – 14:00 LUNCH BREAK

14:00 – 15:30 POSTER - SESSION – Chair: Dr Fernando Recalde – Italy

JUDGES: Prof. Vincenzo Legnante, Prof. Maurizio Carta, Prof. Marco Sala, Prof. Ruxandra Crutescu, Prof. Alessandra Battisti, Prof. Fernando Recalde, Prof. Ali Sayigh, Dr. Rainer Hinrichs-Rahlwes, Prof. Riadh Al-Dabbagh

15:30 – 16:00 COFFEE BREAK

16:00 – 17:00 POSTERS AWARDS & CLOSING CEREMONY

17:15 – 18:30 RECEPTION

ADDRESS OF SCHOOL OF ARCHITECTURE, FLORENCE, ITALY

Santa Teresa

Via Della Mattonaia N.14

Tel.+39 055 2755418, +39 335309948

FORUM HOTEL

Grand Hotel Mediterraneo

Lungarno del Tempio

50121 Florence

Tel: +39 055 660241

Programme at Glance 03 – 05 September 2019

MED GREEN FORUM – 5th

DAY TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	COMMENTS
09:00 – 09:30	Arrival To Florence	Opening Ceremony	Keynote Presentation 30 Minutes each	Keynote Presentation 30 Minutes each	
09:30 – 11:00		Keynote Presentation 30 Minutes each			
11:00 – 11:20		COFFEE - BREAK			
11:20 – 13:00		Invited Speakers 25 minutes each	Invited Speakers 25 minutes each	Invited Speakers 25 minutes each	
13:00 – 14:00		LUNCH - BREAK			
14:00 – 15:30			A- Tech B- Tech	A- Tech B- Tech	Poster Competition
15:30 – 16:00		COFFEE - BREAK			
16:00 – 17:00	REGISTRATION	A- Tech B- Tech	A- Tech B- Tech	Winners Awards & Closing Ceremony	
17:15 – 19:00	RECEPTION			RECEPTION	Santa Teresa
19:15 – 20:00			RECEPTION		Hotel
20:00 – 22:00			GALA - DINNER		Mediterranean



DIDA Department of Architecture
University of Florence