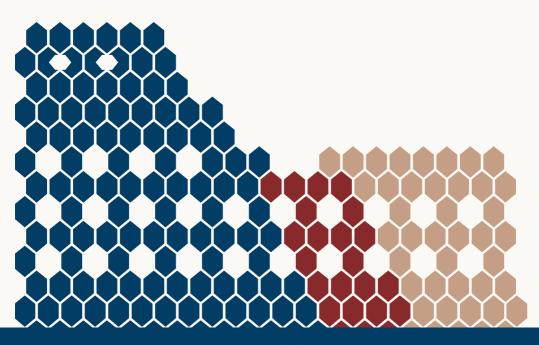
# WORLD ENGINEERING FORUM WFEO GENERAL ASSEMBLY



The World Federation of Engineering Organizations





www.wefrome2017.com







The World Federation of Engineering Organizations



26 November / 02 December 2017 Sheraton Roma Hotel - Rome, Italy S A F E G U A R D I N G H U M A N K I N D'S H E R I T A G E, T H E G R E A T C H A L L E N G E F O R E N G I N E E R S

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# WELCOME



The National Council of Italian Engineers is very glad to host the World Engineering Forum (WEF

2017). The event, organized with WFEO, is due to take place on 27th (opening ceremony), 28th and 29th November, in Rome. The main topic of WEF2017 will be "Safeguarding humankind's heritage, the great challenge for engineers". The Forum will focus on the engineering support offered to the social and economic development, with special reference to the role of engineering in sustainable development and technological innovation. During the WEF2017,

# WEFROME2017

innovative developments, technological applications and best practices related to the general topic of the forum, will be explored and analyzed.

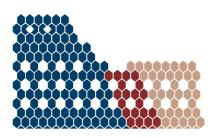
WEF2017's mission will be that of orienting the world towards the safeguarding of its heritage through the help of innovation and creativity.

Public speakers of high-level, national and international organizations, academia, businesses and professionals will meet and confront each other. We will discuss and share innovative ideas, solutions and practices from all over the world.

It will be a pleasure for me to welcome you to Rome!

Armando Zambrano CNI President

# **SCIENTIFIC COMMITTEE**



Jorge Spitalnik President of the World Federation of Engineering Organizations (WFEO)

Marlene Kanga President Elect WFEO

Marwan Abdelhamid Past-President WFE0

Martin Manuhwa Chair of WFEO Committee on Anti Corruption (CAC)

Yashin Brijmohan Chair of WFEO Committee on Engineering Capacity Building (CECB)

Toshimitsu Komatsu Chair of WFEO Committee on Disaster Risk Management (CDRM)

Samuel Grossman Chair of WFEO Committee on Energy (CE)

Jean Venables Chair of WFEO Committee on Engineering and the Environment (CEE)

#### Abdul Menhem Alameddine

Chair of WFEO Committee on Education in Engineering (CEIE)

**Ke Gong** Chair of WFEO Committee on Engineering for Innovative Technologies (CEIT)

S.S. Rathore Chair of WFEO Committee on Information and Communication (CIC)

Valerie Ifueko Chair of WFEO Committee on Women in Engineering (WIE)

Zainab S. Garashi Chair of WFEO Committee on Young Engineers / Future Leaders (YE/FL)

Alex Tarchini

EMEA EDU Business and Market Development

#### Jan Kowal

Director of the Department of Engineering and Innovation at the Open University

#### Paul Jowitt

President of the Commonwealth Engineers Council (CEC)

#### Manchao He

Director of the State Key Laboratory for Geomechanics and Deep Underground Engineering

#### Surendra Kumar Biswa

CSIR Council of the Scientific and Industrial Research

Adil Al Hadithi President of the Federation of Arab Engineers (FAE)

#### Mustafa Shehu

Past President of the Federation of the African Engineering Organizations (FAEO)

#### José Manuel Vieira

President of the FEANI – European Federation of National Engineering Associations

#### John Li Chien Chung

President of the Federation of Engineering Institutions of Asia and the Pacific (FEIAP)

#### Edemar Amorim

Pan American Federation of Engineering Societies (UPADI)

Ashok Kumar Basa, FIE Past President of the Institution of Engineers (India)

#### Michael Milligan

ABET (Accreditation Board for Engineering and Technology)

#### Jennifer Deboer

Co-Director of the International Institute for the Development of Engineering Academics **Gustavo Arvizu Lara** President of the Unión Mexicana de Asociaciones de Ingenieros (UMAI)

Vito Cardone President of the Quacing

**Piero Torretta** President of the Ente Italiano di Normazione (UNI)

Nicola Monda Italian delegate of the WFEO

**Maurizio Tira** Dean of the University of Brescia

Massimo Sessa President of the Consiglio Superiore dei Lavori Pubblici

**Marco Tubino** President of the Conferenza per l'Ingegneria (COPI)

#### Giovanni Cardinale

Vicepresident of the Italian National Council of Engineers (CNI)

Gaetano Manfredi President of the CRUI

**Enzo Siviero** Rector of the University eCAMPUS

# WFEO EXECUTIVE COUNCIL

#### WFEO EXECUTIVE BOARD

Jorge Spitalnik President Marlene Kanga President Elect Marwan Abdelhamid Past President Peter Greenwood Executive Vice President Crtomir Remec Executive Vice President Reginald Vachon Treasurer Pierre de Boigne Deputy Treasurer Jacques de Méreuil Executive Director

#### WFEO COMMITTEE CHAIRS – VICE PRESIDENTS

Abdul M. Alameddine Education in Engineering Jean Venables Engineering & the Environment Ke Gong Engineering Innovative Technologies S.S. Rathore Information & Communication Zainab Garashi Young Engineers / Future Leaders Samuel Grossman Energy Valerie Ifueko Women in Engineering Martin Manuhwa Anti-corruption Toshimitsu Komatsu Disaster Risk Management Yashin Brijmohan Engineering Capacity Building



DEGLI INGEGNERI



The World Federation of Engineering Organizations

### WFEO EXECUTIVE COUNCIL

#### WFEO NATIONAL MEMBERS

José Tadeu Da Silva Brazil Vilas Mujumdar USA Ruomei Li China Ashok Basa India Haro Bedelian UK Khaled Chehab Lebanon Nicola Monda Italy Tomas Sancho Spain

#### WFEO INTERNATIONAL MEMBERS

CEC	Paul Jowitt Commonwealth Engineers Council
FAE	Adil Al Hadithi Federation of Arab Engineers
FAE0	Julius M. Riungu Federation of African Engineering Organizations
FEANI	José Manuel Vieira European Federation of National Engineering Associations
FEIAP	John Li Federation of Engineering Institutions of Asia and the Pacific
UPADI	Edemar Amorim Pan American Federation of Engineering Societies

#### WEF2017 is held under the patronage of UNESCO



United Nations Educational, Scientific and Cultural Organization

# **CONSIGLIO NAZIONALE DEGLI INGEGNERI**

The Italian National Council of Engineers (CNI) is the institutional national body representing the professional category of the Italian engineers. CNI is a non-economic public entity, established in 1944 and placed under the supervision of the Ministry of Justice. The institutional commitment of CNI includes, among others, the following tasks: to express opinions concerning decisions made by the Disciplinary Committees of each provincial Order of Engineers relevant to appeals and complaints; to issue legal opinions, on behalf of the Ministry of Justice, concerning legislative or regulation proposals about the profession of engineer; to act as advisory body towards the Governmental, Institutional and Supervisory Authorities, which deal with the profession of engineer.

CNI plays a significant role in: promoting, developing and safeguarding the figure of the Engineer in the society; providing the Continuing Professional Development and ensuring the quality of the professional performances. Activities and objectives of CNI give high importance to the following topics: safety and security of people and goods, environment protection, safeguarding of the natural resources, sustainable development, scientific and technological progress, and enhancement of the intellectual work.

CONSIGLIO NAZIONALE DEGLI <mark>INGECNERI</mark>

## **WFEO**

**WFE0** is an international, non-governmental organization representing the engineering profession worldwide. Since 1968, the World Federation of Engineering Organizations brings together national engineering organizations from over 90 nations and represents some 20 million engineers from around the world.

**WFEO** serves society and is recognized as a respectable and valuable source of advice and guidance on the policies, interests and concerns that relate to engineering and technology.

**WFEO** encourages all of its national and international members to contribute to global efforts to establish a sustainable, equitable and peaceful world.

#### MISSION

- To represent the engineering profession internationally, providing the collective wisdom and leadership of the profession.
- To assist national agencies to choose appropriate policy options that address the most critical issues affecting countries of the world.
- To enhance the practice of engineering.
- To make information on engineering available to the countries of the world and to facilitate communication between its member nations about the world's best practices in key engineering activities.
- To foster socio-economic security and sustainable development and poverty alleviation among all countries of the world, through the proper application of technology.
- To serve society and to be recognized by national and international organizations and the public, as a respected and valuable source of advice and guidance on the policies, interests and concerns that relate engineering and technology to the human and natural environment.
- To cooperate with Funding Agencies such as development banks.
- To encourage public private partnerships by including the engineering dimension.
- To address the issue of what public policies need to be implemented.



The World Federation of Engineering Organizations

# FORUM OVERVIEW

# THEMES

- Engineering must help achieve material wealth within a sustainable development
  perspective.Technological research and smart applications should support societies
  and countries in generating social values and safeguarding the social and cultural
  heritage of each community of people.
- Defining engineering's social mission in a rapid changing context will be the starting point of the event, which will then focus on challenges related to safeguarding and developing humankind's heritage.
- Science, technology and engineering should contribute to two principles: ensuring social and technological changes for a better life and safeguarding the context in which such changes take place. Engineers should not only lead progressive material wealth but also act for the conservation of humankind's heritage, defining a new development path.
- WEF2017 aims to analyze humankind's heritage in different aspects, considering its conservation and preservation as a great challenge for engineers and for society. Rapid changes on a global scale may represent opportunities for increasing material wealth, but also threats to the preservation of the common heritage of each country, including landscape, natural environment, climate and monumental heritage. Engineering should propose smart solutions, combining development, wealth and conservation of humankind's heritage through different approaches.
- The Forum is open both to decision-makers and professionals working in the field of
  managing, restoring and safeguarding cultural heritage and its different components.
  Managers, designers, researchers and restorers dealing with a wide range of activities
  connected with safeguarding humankind's heritage are warmly welcome to the event,
  as are representatives of governmental and institutional bodies.

## VENUE

#### SHERATON ROMA HOTEL & CONFERENCE CENTRE

Viale del Pattinaggio, 100 - Rome

Sheraton Roma is a Conference Hotel with 20 meeting rooms and over 4,100 m<sup>2</sup> of meeting spaces including a multifunctional ballroom that can be divided into seven soundproof sections. The hotel is located next to the EUR district, between Fiumicino airport and the city centre.







# GLOBAL IDEAS AND SOLUTIONS FOR WORLDWIDE INFRASTRUCTURE PROJECTS

Italferr, the engineering arm of **Ferrovie dello Stato Italiane Group**, is a leading provider of design, site supervision and project management services for infrastructure projects, on the Italian and international markets. From planning and design to commissioning, we have the know-how – based on more than 30 years' experience – to offer our clients the best integrated technology solutions, with a low environmental impact, to help build a better world.



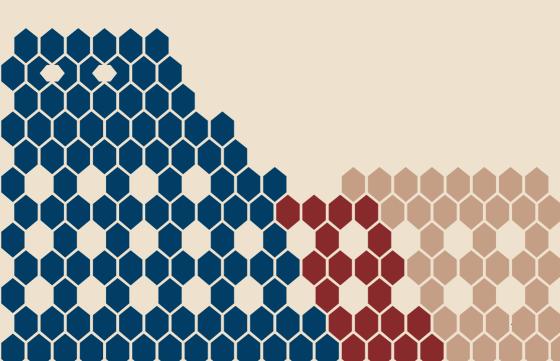








# WFEO PROGRAMME



SUNDAY 26 NOVEMBER 2017								
08:00 / 09:00	WFEO Registration							
	HALL TIZIANO	HALL MALATESTA	HALL LUDOVISI	HALL BENTIVOGLIO	HALL COLONNA	HALL DORIA		
09:00 / 10:30	Young engineers/ Future leaders meeting		WFEO CAC Anti-Corruption Workshops	Finance Committee	Committee on Women in Engineering	IEA International Education Committee		
10:30 / 11:00			Bre	eak				
11:00 / 13:00	Young engineers/ Future leaders meeting	President's Advisors Meeting	WFEO CAC Anti-Corruption Workshops	Finance Committee	Committee on Women in Engineering	IEA International Education Committee		
13:00 / 14:00			Lur	nch				
14:00 / 15:30			WFE0 CAC Anti-Corruption Workshops	Strategic Planning Committee	Committee on Energy	Committee on Engineering Capacity Building		
15:30 / 16:00	Break							
16:00 / 18:00			Committee on Anti-Corruption Meeting	Strategic Planning Committee	Committee on Energy	Committee on Engineering Capacity Building		



CONSIGLIO NAZIONALE DEGLI INGEGNERI

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MONDAY 27 NOVEMBER 2017							
08:00 / 08:30	WFEO Registration						
	HALL TIZIANO	HALL LUDOVISI	HALL BENTIVOGLIO	HALL COLONNA	HALL DORIA		
08:30 / 10:00	Committee on Disaster Risk Management	Committee on Education in Engineering	Committee on Engineering and the Environment	Committee on Information and Communication	Committee on Engineering for Innovative Technologies		
10:00 / 10:30			Break				
10:30 / 12:30	Committee on Committee on Disaster Risk Education in Management Engineering		Committee on Engineering and the Environment	Committee on Information and Communication	Committee on Engineering for Innovative Technologies		
12:30 / 13:00	Lunch						
13:00 / 14:30	Nominations Committee	Marketing Task Group	Committee on Engineering and the Environment	Awards Committee	STCs Performance Group		

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	TUESDAY 28 NOVEMBER 2017			WEDNESDAY 29 NOVEMBER 2017		
08:30 / 09:00	WFEO Registration					
	HALL LUDOVISI	HALL BENTIVOGLIO	HALL COLONNA	HALL COLONNA / DORIA	HALL BENTIVOGLIO	
09:00 / 10:30			Executive Board Meeting		50th Anniversary Meeting	
10:30 / 11:00			Break			
11:00 / 13:00	All STC Chairs Meeting		Executive Board Meeting	WEF/WFEO* Oral Session 6 (10:45 - 13:00)	50th Anniversary Meeting	
13:00 / 14:00			Lunch			
14:00 / 15:30	All STC Chairs Meeting		WURC Committee		Future Events 2018, 2019, 2020, 2023	
15:30 / 16:00	Break					
16:00 / 18:00	Young Engineers/ Future Leaders Workshop (15:30-18:30)		WURC Committee	WEF/WFEO* Oral Session 9 (15:30 - 18:00)		

\*WFEO Attendees are invited to WEF Oral Sessions 6-9



	THURSDAY 30 November 2017	FRIDAY 1 DECEMBER 2017	SATURDAY 2 DECEMBER 2017
08:30 / 09:00		WFE0 Registration	
	HALL ORSINI	HALL FARNESE / BAGLIONI	HALL FARNESE BAGLIONI
09:00 / 10:30	WFE0 Executive Council	WFE0 General Assembly	WFE0 General Assembly
10:30 / 11:00		Break	
11:00 / 13:00	WFE0 Executive Council	WFE0 General Assembly	WFE0 General Assembly
13:00 / 14:00		Lunch	
14:00 / 15:30	WFE0 Executive Council	WFE0 General Assembly	WFEO New Executive Board (Hall Borgia)
15:30 / 16:00	Bri	eak	(Hall Borgia)
16:00 / 18:00	WFE0 Executive Council	WFE0 General Assembly	
18:00 / 20:00	CEC Cocktail		
20:00 / 22:00		WFEO Dinner	





# SUNDAY 26 NOVEMBER 2017

09:00 - 13:00	HALL TIZIANO Young Engineers / Future Leaders Meeting
09:00 - 15:30	HALL LUDOVISI WFEO CAC Anti-Corruption Workshops
09:00 - 13:00	HALL BENTIVOGLIO Finance Committee
09:00 - 13:00	HALL COLONNA Committee on Women in Engineering
09:00 - 13:00	HALL DORIA IEA/International Education Committee
11:00 – 13:00	HALL MALATESTA President's Advisors Meeting
14:00 - 18:00	HALL BENTIVOGLIO Strategic Planning Committee
14:00 -18:00	HALL COLONNA Committee on Energy
14:00 - 18:00	HALL DORIA Committee on Engineering Capacity Building
16:00 - 18:00	HALL LUDOVISI Commitee on Anti-Corruption Meeting





# MONDAY 27 NOVEMBER 2017

08:30 - 12:30	HALL TIZIANO Committee on Disaster Risk Management
08:30 - 12:30	HALL LUDOVISI Committee on Education in Engineering
08:30 - 14:30	HALL BENTIVOGLIO Committee on Engineering and the Environment
08:30 - 12:30	HALL COLONNA Committee on Information and Communication
08:30 - 12:30	Committee on Engineering for Innovative Technologies
	HALL TIZIANO Nominations Committee
13:00 - 14:30	HALL TIZIANO
13:00 – 14:30 13:00 – 14:30	HALL TIZIANO Nominations Committee HALL LUDOVISI



STCs Performance Group



# **TUESDAY 28 NOVEMBER 2017**

09:00 - 13:00	HALL COLONNA Executive Board Meeting
11:00 - 15:30	HALL BENTIVOGLIO All STC Chairs Meeting
14:00 -18:00	HALL COLONNA WURC Committee
15:30 - 18:30	HALL LUDOVISI Young Engineers / Future Leaders Workshop

# WEDNESDAY 29 NOVEMBER 2017

09:00 - 13:00	HALL BENTIVOGLIO 50 <sup>th</sup> Anniversary Meeting
10:45 – 13:00	HALL COLONNA / DORIA WEF / WFE0 Oral Session 6
14:00 - 15:30	HALL BENTIVOGLIO Future Events 2018, 2019, 2020, 2023
15.30 - 18.00	

15:30 – 18:00 HALL COLONNA / DORIA WEF / WFE0 Oral Session 9



# **THURSDAY 30 NOVEMBER 2017**

09:00 - 18:00 HALL ORSINI WFEO Executive Council

# FRIDAY 1 DECEMBER 2017

09:00 - 18.00 HALL FARNESE / BAGLIONI General Assembly

# **SATURDAY 2 DECEMBER 2017**

	General Assembly
09:00 - 13:00	HALL FARNESE / BAGLIONI

14:00 -15:00	HALL BORGIA		
	WFE0 New Executive Board		

15:00 -16:00 HALL BORGIA New Executive Council



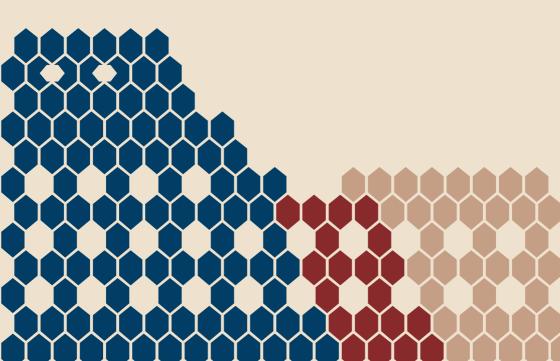


CONSIGLIO NAZIONALE DEGLI INGEGNERI



The World Federation of Engineering Organizations

# WEF PROGRAMME





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MONDAY 27 NOVEMBER 2017			
Camera	Camera dei Deputati, Aula dei Gruppi Parlamentari, Via di Campo Marzio 78, Rome		
WEF Opening Ceremony			
16:00	Welcome Greetings Benedetto Della Vedova, Under-Secretary of the Italian Ministry of Foreign Affairs and International Cooperation		
16:30	Safeguarding Humankind's Heritage, the great challenge Philippe Pypaert, Head of Science Unit, UNESCO Regional Bureau for Science and Culture in Europe		
16:45	WEF 2017 - Engineering for a better world Armando Zambrano, President Consiglio Nazionale degli Ingegneri Jorge Spitalnik, President World Federation of Engineering Organizations Marlene Kanga, President elect World Federation of Engineering Organizations		
18:00	Welcome drink		

#### Important notice:

- Since there will be metal detector security checks at the entrance, participants are kindly requested to arrive at 15:15
- Access to the Chamber of Deputies is permitted only to appropriately dressed visitors, men are requested to wear jacket and tie
- no mineral water or other liquids can be introduced in the venue.

Transportation from Sheraton Rome Hotel is available (departure at 14:30 - no return transfer). Tickets can be purchased at WEF2017 reception desk. As the venue is in the historic centre of Rome and the ceremony finishes around 18:30, participants will have the opportunity for a walk and free evening.





# WEF PROGRAMME

TUESDAY 28 NOVEMBER 2017				
Sheraton Roma Hotel & Conference Centre, Viale del Pattinaggio 100, Rome				
09:15 / 10:00	Registration			
10:00	HALL VISCONTI			
	Rome welcomes WEF 2017 attendees Event organized by CNI			
	Safeguarding Humankind's Heritage: challenges for a better future Gianni Massa, Vice President CNI Roberto Orvieto, Councillor CNI			
10:30	Master Session Infrastructures and Networks in a sustainable perspective Event in collaboration with Italferr SpA Introduction Armando Zambrano, President CNI			
	Gian Luca Galletti, Minister for the Environment, Land and Seas Carlo Carganico, CEO Italferr SpA			
11:00	<b>Designing sustainable infrastructures</b> Antonello Martino, Head of Architecture, Environment and Territory, Italferr SpA			
11:30	Break			
11:45	Envision Protocol Lorenzo Orsenigo, General Director ICMQ SpA John M. Stanton, President and CEO Institute for sustainable Infrastructure (ISI)			
12:15	<b>Mobility and environment safeguarding: ideas and policies</b> Maria Fernanda Stagno D'Alcontres, Ministry for the Environment, Land and Seas			
12:30	<b>Designing infrastructures with a global perspective</b> Admir Nocaj, Director for Foreign Markets, Italferr SpA			
12:45	Question time			
13:00 / 14:00	Lunch			





She	raton Roma Hotel & Confere	nce Centre, Viale del Pattin	aggio 100, Rome			
		HALL VISCONTI				
14:15	Plenary Lecture: Green technologies in the preservation and renovation of historic buildings Keynote speaker: Conghong Liu, Tianjin University					
14:45	Plenary Lecture: Green engineering for a better environment Keynote speaker: Felice Arena, Mediterrenean University Reggio Calabria					
15:15		Break				
	HALL FARNESE	HALL BAGLIONI	HALL BORGIA			
15:30	Oral session 1 Preserving the environment: ideas and technical solutions Chairman: Giuseppe Rossi Accredia Speakers: Shindler L. Tan G. Romolo A. Losasso M. Cremonini P. Barbato E. Liu D. Weifner T. Tsvirko L. Salcedo Jarabo E. Martinoli C. Baldacci S.	Oral session 2 Urban space and building's preservation in a sustainable perspective Chairwoman: Conghong Liu Tianjin University Speakers: Spinosa A. Margarone M. Yamamoto K. Zhang W. Fazio T. Lalsa V. Petras D. De La Fuente C. Abate S. Ruiz Salinas M. T. Wu J. Perillo G. Capezzali M. Marino C.	Oral Session 3 Preventing climate change: engineering for sustainability Chairwoman: Nicoletta Antonias Italferr SpA Speakers: Lopez A. Makaranka T. Pirrera G. Koena T. Rocca U. V. Yao S. Antonini A Lorato N. Antonias N. Xu X. Pirrera G. Colucci B.			
18:30	WEF 2017 1st day closing					
20:00	WEF2017 Social dinner, Pinacoteca del Tesoriere, Rome (by invitation)					

15:30 / 18:30 WFEO Young Engineers / Future Leaders Forum Chairwoman: Zainab S. Garashi

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# WEF PROGRAMME

### WEDNESDAY 29 NOVEMBER 2017

Sheraton Roma Hotel & Conference Centre, Viale del Pattinaggio 100, Rome					
09:00 / 09:30	Registration				
09:30	HALL VISCONTI Plenary Lecture: Safeguarding cultural heritage in the current understanding of earthquakes Keynote speaker: Massimo Mariani, Consiglio Nazionale degli Ingegneri, Counsellor for seismic and hydrogelogical risk				
10:00	Plenary Lecture: Risk prevention and management: the great challenge Keynote speaker: Toshimitsu Komatsu, Kyushu University				
10:30	Break				
10:45	HALL FARNESE Oral session 4 Engineering and technologies for safeguarding and monitoring the cultural heritage Chairman: Fabrizio Vestroni Sapienza University Roma Speakers: Biasiotti A. Vestroni F. Solari L. Sforza G. Del Regno R. Barone F. Anelli A. Marra A. Deiana A. Molinari G.	HALL BAGLIONI Oral session 5 Risk prevention, hazard monitoring, seismic risk mitigation Chairman: Giovanni Cardinale Consiglio Nazionale degli Ingegneri Speakers: Bianchi F. Clemente P. Yoshimi M. Fregatti M. Mita L. Miceli G. Realini E. Vallone I. Cappelli A.	HALL COLONNA/DORIA Oral session 6 Women in engineering: panel discussion Chairwoman: Valerie Ifueko WFEO Speakers: Sigamoney R. Li R. Lopez A. DelVecchio S. Ifueko V.	HALL BORGIA Oral Session 7 Smart technologies for an effective development Chairwoman: Stacey DelVecchio Caterpillar Inc. Speakers: Cella A. Charalambous S. Ladisa P. Unteergger D. Nicolai G. Guermont M. Garzia F. Mutyora M.	
13:00 / 14:00	Lunch				





WEDNESDAY 29 NOVEMBER 2017						
Shera	Sheraton Roma Hotel & Conference Centre, Viale del Pattinaggio 100, Rome					
	HALL VISCONTI					
14:15	Plenary Lecture: Information security: threats and opportunities in a safegurading perspective Keynote speaker: Agostino Bruzzone, University of Genoa					
14:45	Plenary Lecture: Belt and Road Initiative A Global Game Changer in Sustainable Engineering Keynote speaker: Yee Cheong Lee, UNESCO International Science, Technology and Innovation for South-South Cooperation (ISTIC), President Academy of Engineering and Technology of the Developing World (AETDEW)					
15:15		Bre	eak			
	HALL FARNESE	HALL BAGLIONI	HALL COLONNA/DORIA	HALL BORGIA		
15:30	Oral session 8 ICT and Information security for humankind's heritage Chairman: Roberto Orvieto Consiglio Nazionale degli Ingegneri Speakers: Rocco P. Praitano A. Zorzino G.G. Vallone I.	Oral session 5 Risk prevention, hazard monitoring, seismic risk mitigation Chairman: Stefano Bergagnin PASS Speakers: Herrera C. Cecchetti S. Agostinelli S.R. Diaz Perez L.D. Toyooka A. Bergagnin S. Facchinato F. Barletta G.	Oral session 9 Diversity and inclusion in engineering. Women and young professionals: a resource for present and future Chairwoman: Ania Lopez Consiglio Nazionale degli Ingegneri Speakers: Lee Y.C. Callea V. Horting K. Pearson Y. Freda P. Kahdem H. Koma N. Grossman N. P. Anena D.L. Mutala Kabeya R.	Oral Session 7 Smart technologies for an effective development Chairwoman: Stacey DelVecchio Caterpillar Inc. Speakers: DelVecchio S. Martinoli C. Rebola A. Loughlin T. Ncube S. Latino M.E.		
18:00 / 18:30	WEF Closing Ceremony A. Zambrano, J. Spitalnik, M. Kanga					

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# MONDAY 27 NOVEMBER 2017

#### **OPENING CEREMONY**

Camera dei Deputati, Aula dei Gruppi Parlamentari Via di Campo Marzio, 78 - Rome

#### 16:00 WELCOME GREETINGS

Benedetto Della Vedova

Under-Secretary of the Italian Ministry of Foreign Affairs and International Cooperation

- 16:30 SAFEGUARDING HUMANKIND'S HERITAGE, THE GREAT CHALLENGE Philippe Pypaert Head of Science Unit, UNESCO Regional Bureau for Science and Culture in Europe
- 16:45 WEF2017 ENGINEERING FOR A BETTER WORLD Armando Zambrano, President Consiglio Nazionale degli Ingegneri Jorge Spitalnik, President World Federation of Engineering Organizations Marlene Kanga, President elected World Federation of Engineering Organizations
- 18:00 WELCOME DRINK



# **TUESDAY 28 NOVEMBER 2017**

HALL VISCONTI

- 10:00 ROME WELCOMES WEF ATTENDEES 2017 (event organised by CNI) Safeguarding Humankind's Heritage: Challenges for a Better Future Gianni Massa, Vice President CNI Roberto Orvieto, Councillor CNI
- 10:30 MASTER SESSION Infrastructures and Networks in a Sustainable Perspective (event in collaboration with Italferr SpA)

#### INTRODUCTION

Armando Zambrano President CNI Gian Luca Galletti, Minister for the Environment, Land and Seas Carlo Carganico, CEO Italferr SpA

- 11:00 DESIGNING SUSTAINABLE INFRASTRUCTURES Antonello Martino, Head of Architecture, Environment and Territory, Italferr SpA
- 11:45 ENVISION PROTOCOL Lorenzo Orsenigo, General Director ICMQ SpA John M. Stanton, President and CEO Institute for Sustainable Infrastructure (ISI)
- 12:15 MOBILITY AND ENVIRONMENT SAFEGUARDING: IDEAS AND POLICIES Maria Fernanda Stagno D'Alcontres, Ministry for the Environment, Land and Seas
- 12:30 DESIGNING INFRASTRUCTURES WITH A GLOBAL PERSPECTIVE Admir Nocaj, Director for Foreign Markets, Italferr SpA
- 12:45 QUESTION TIME





# **TUESDAY 28 NOVEMBER 2017**

HALL VISCONTI

14:15 **Plenary Lecture GREEN TECHNOLOGIES IN THE PRESERVATION AND RENOVATION** OF HISTORIC BUILDINGS Keynote speaker: Conghong Liu, Tianjin University **Plenary Lecture** 14:45 **GREEN ENGINEERING FOR A BETTER ENVIRONMENT** 

Keynote speaker: Felice Arena, Mediterranean University Reggio Calabria

#### 15:30 HALL FARNESE Oral Session 1 PRESERVING THE ENVIRONMENT: IDEAS AND TECHNICAL SOLUTIONS Chairman: Giuseppe Rossi, Accredia

- 15:30 HALL BAGLIONI **Oral Session 2** URBAN SPACE AND BUILDING'S PRESERVATION IN A SUSTAINABLE PERSPECTIVE Chairwoman: Conghong Liu, Tianjin University
- 15:30 HALL BORGIA **Oral Session 3** PREVENTING CLIMATE CHANGE: ENGINEERING FOR SUSTAINABILITY Chairwoman: Nicoletta Antonias, Italferr SpA
- 15:30 HALL LUDOVISI WFEO YOUNG ENGINEERS / FUTURE LEADERS FORUM Chairwoman · Zainab S. Garashi

18:30 1<sup>st</sup> DAY CLOSING



CONSIGLIO NAZIONALE DEGLI INGEGNERI



# WEDNESDAY 29 NOVEMBER 2017

#### HALL VISCONTI

- 09:30 **Plenary Lecture** SAFEGUARDING CULTURAL HERITAGE IN THE CURRENT UNDERSTANDING **OF HEARTQUAKES** Keynote speaker: Massimo Mariani, Consiglio Nazionale degli Ingegneri, Councellor for Seismic and Hydrogeological Risk
- 10:00 **Plenary Lecture RISK PREVENTION AND MANAGEMENT: THE GREAT CHALLENGE** Keynote speaker: Toshimitsu Komatsu, Kyushu University
- 10:45 HALL FARNESE **Oral Session 4** ENGINEERING AND TECHNOLOGIES FOR SAFEGUARDING AND MONITORING THE CULTURAL HERITAGE Chairman: Fabrizio Vestroni, Sapienza University Rome
- HALL BAGLIONI 10:45 **Oral Session 5** RISK PREVENTION, HAZARD MONITORING, SEISMIC RISK MITIGATION Chairman: Giovanni Cardinale, Consiglio Nazionale degli Ingegneri
- HALL COLONNA-DORIA 10:45 **Oral Session 6** WOMEN IN ENGINEERING: PANEL DISCUSSION Chairwoman: Valerie Ifueko, WFEO
- 10:45 HALL BORGIA **Oral Session 7** SMART TECHNOLOGIES FOR AN EFFECTIVE DEVELOPMENT Chairwoman: Stacey DelVecchio, Caterpillar Inc.







HALL VISCONTI

 
 14:15
 Plenary Lecture INFORMATION SECURITY: THREATS AND OPPORTUNITIES IN A SAFEGUARDING PERSPECTIVE Keynote speaker: Agostino Bruzzone, University of Genoa

### 14:45 Plenary Lecture BELT AND ROAD INITIATIVE A GLOBAL GAME CHANGER IN SUSTAINABLE ENGINEERING

Keynote speaker: Yee Cheong Lee, UNESCO International Science, Technology and Innovation for South-South Cooperation (ISTIC), President, Academy of Engineering and Technology of the Developing World (AETDEW)

- 15:30 HALL FARNESE Oral Session 8 ICT AND INFORMATION SECURITY FOR HUMANKIND'S HERITAGE Chairman: Roberto Orvieto, Consiglio Nazionale degli Ingegneri
- 15:30 HALL BAGLIONI Oral Session 5 RISK PREVENTION, HAZARD MONITORING, SEISMIC RISK MITIGATION Chairman: Stefano Bergagnin, PASS
- 15:30 HALL COLONNA-DORIA

Oral Session 9 DIVERSITY AND INCLUSION IN ENGINEERING. WOMEN AND YOUNG PROFESSIONALS: A RESOURCE FOR PRESENT AND FUTURE Chairwoman: Ania Lopez, Consiglio Nazionale degli Ingegneri

- 15:30 HALL BORGIA Oral Session 7 SMART TECHNOLOGIES FOR AN EFFECTIVE DEVELOPMENT Chairwoman: Stacey DelVecchio, Caterpillar Inc.
- 18:00 WEF CLOSING CEREMONY Armando Zambrano, Jorge Spitalnik, Marlene Kanga





## MAIN SPEAKERS

VISIT WEF2017 WEBSITE TO READ SPEAKERS BIOGRAPHIES

### NICOLETTA ANTONIAS

Chairwoman Oral Session: Preventing Climate Change: Engineering for Sustainability

### FELICE ARENA

Keynote Speaker Plenary Lecture: Green Engineering for a Better Environment

#### **STEFANO BERGAGNIN**

**Chairman** Oral Session: Risk prevention, hazard monitoring, seismic risk mitigation

### **AGOSTINO BRUZZONE**

Keynote Speaker Plenary Lecture: Information security: threats and opportunities in a safegurading perspective

### **GIOVANNI CARDINALE**

**Chairman** Oral Session: Risk prevention, hazard monitoring, seismic risk mitigation

### **CARLO CARGANICO**

Master Session: Infrastructures and Networks in a sustainable perspective

### STACEY DELVECCHIO

**Chairwoman** Oral Session: Smart Technologies for an effective development

### ZAINAB S. GARASHI

Chairwoman WFEO Young Engineers / Future Leaders Forum

### VALERIE IFUEKO

**Chairwoman** Oral Session: Women in Engineering: panel discussion

### MARLENE KANGA

Opening Session: WEF 2017 Engineering for a better world

### TOSHIMITSU KOMATSU

Keynote Speaker Plenary Lecture: Risk prevention and management: the great challenge

### YEE CHEONG LEE

Keynote Speaker Plenary Lecture: Belt and Road Initiative a Global Game Changer in Sustainable Engineering

### CONGHONG LIU

Keynote Speaker Plenary Lecture: Green technologies in the preservation and renovation of historic buildings Chairwoman Oral Session: Urban Space and Building's Preservation in a Sustainable Perspective

### ANIA LOPEZ

Chairwoman

Oral Session: Diversity and inclusion in engineering. Women and young professionals: a resource for present and future

### MASSIMO MARIANI

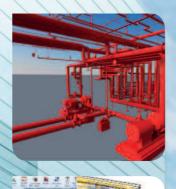
Keynote Speaker Plenary Lecture: Safeguarding cultural heritage in the current understanding of earthquakes





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### MAIN SPEAKERS

VISIT WEF2017 WEBSITE TO READ SPEAKERS BIOGRAPHIES

### **ANTONELLO MARTINO**

Master Session: Designing Sustainable Infrastructures

### **GIANNI MASSA**

Welcome Greetings: Safeguarding Humankind's Heritage: Challenges for a Better Future

### **ADMIR NOCAJ**

Master Session: Designing Infrastructures with a global perspective

### LORENZO ORSENIGO

Master Session: Envision Protocol

### **ROBERTO ORVIETO**

Welcome Greetings: Safeguarding Humankind's Heritage: Challenges for a Better Future

#### Chairman

Oral Session: ICT and Information security for humankind's Heritage

#### PHILIPPE PYPAERT

Opening Session: Safeguarding Humankind's Heritage, the great challenge

#### **GIUSEPPE ROSSI**

### Chairman

Oral Session: Preserving the environment: ideas and technical solutions

### JORGE SPITALNIK

Opening Session: WEF 2017 Engineering for a better world

### MARIA FERNANDA STAGNO D'ALCONTRES

Master Session: Mobility and environment safeguarding: ideas and policies

#### JOHN M. STANTON

Master Session: Envision Protocol

#### **FABRIZIO VESTRONI**

**Chairman** Oral Session: Engineering and technologies for safeguarding and monitoring the cultural heritage

#### **ARMANDO ZAMBRANO**

Opening Session: WEF 2017 Engineering for a better world





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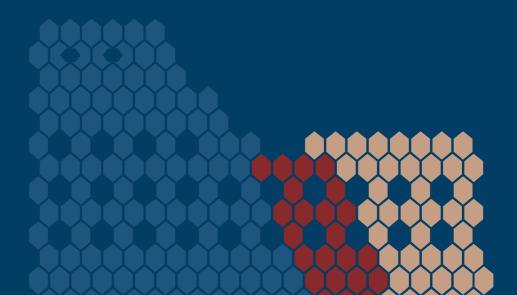


DESIGN WORKS SUPERVISION ENVIRONMENTAL MONITORING SURVEILLANCE AND MAINTENANCE SAFETY ASSET MANAGEMENT PROJECT MANAGEMENT/PROCUREMENT DUE DILIGENCE AND VALUE ENGINEERING



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# WEF ORAL SESSIONS



15:30 -	18:30	HALL FARNESE ORAL SESSION 1
PRESERVING THE ENVIRONMENT: IDEAS AND TECHNICAL SOLUTIONS Chairman: Giuseppe Rossi, Accredia, Italy		
15:30		<b>1 FOR AIR QUALITY MONITORING</b> heri della Provincia di Roma ~ Rome ~ Italy
15:45	ELECTRICAL ENERGY FROM MU Tan G.* <sup>[1]</sup> , Bautista J.J. <sup>[2]</sup> , <sup>[1]</sup> Techr	HARVESTER CIRCUIT IN HARNESSING JLTIBAND RF SIGNALS nological University of the Philippines ~ re Telecom Inc. ~ Taguig City ~ Philippines
16:00		RES FOR WAVE ENERGY EXPLOITATION ean University ~ Reggio Calabria ~ Italy
16:15	PARTICLE BEAM ACCELERATOF Losasso M.*, CERN ~ Geneve ~ S	RS FOR ENVIRONMENTAL APPLICATIONS Switzerland
16:30	CONSTRUCTABILITY & SUSTAIN Cremonini P.*, Fagioli SpA ~ S. II	IABILITY ario d'Enza (Reggio Emilia) ~ Italy
16:45	LANDFILL FOOTPRINT Barbato E.*, Studio Franchetti, A	vrzignano (Vicenza) ~ Italy
17:00	THE ETHICS OF BIOMASS ENER Liu D.*, Yellow River Engineering	<b>GY</b> 9 Consulting Co.,Ltd. ~ Zhengzhou ~ China
17:15	NUMERICAL HYDROLOGICAL M THE BRENNER BASE TUNNEL Weifner T.*, Bergmeister K., BB	ODELLING OF THE BRENNER MASSIF FOR T SE ~ Innsbruck ~ Austria
17:30	OF HYDRODYNAMIC CAVITATION	Management, The National Academy of
17:45		<b>/IRUNGA, MOTHER OF DEVELOPMENT)</b> unga National Park ~ Rutshuru ~ Congo
18:00	IN HEALTHCARE AND ON THE RC Martinoli C.* <sup>[1]</sup> , Gemma C. <sup>[1]</sup> , Vallo Bravar D. <sup>[4]</sup> , Leogrande L. <sup>[3]</sup> , Vals <sup>[1]</sup> Fondazione IRCCS Policlinico S ~ Italy, <sup>[3]</sup> Italian Clinical Engineer	one I. <sup>[1]</sup> , Lago P. <sup>[1]</sup> , Bottura S. <sup>[2]</sup> , Gadaleta M. <sup>[2]</sup> ,
18:15	OF PROCESS PLANTS BY REAL-T	DEALING WITH ENVIRONMENTAL CONTROL TIME SOFT SENSORS AND MONITORING nelli G., Bellassai D., ARPAT ~ Pisa ~ Italy

15:30 - 18:30

URBAN SPACE AND BUILDING'S PRESERVATION IN A SUSTAINABLE PERSPECTIVE Chairwoman: Conghong Liu, Tianjin University, China			
15:30	A NEW ALGORITHM FOR THE CITY: THE USE OF TOPOLOGY AND TRANSPORT MODELING TO MAKE URBAN AREAS MORE EQUITABLE Spinosa A.*, Freelancer consultant ~ Rome ~ Italy		
15:45	A NOVEL LEAN APPROACH OF ENGINEERING CONVERGENCE IN THE HUMANKIND'S HERITAGE MANAGEMENT IN A SMART CITY CONTEXT: THE SAVONA MUNICIPALITY CASE HISTORY Margarone M.*, Pastorino D., Ricci F., Ordine degli Ingegneri di Savona ~ Savona ~ Italy		
16:00	AN EVALUATION OF MEASURES FOR THE REDUCTION OF CARBON DIOXIDE EMISSIONS FROM AUTOMOBILE TRAFFIC IN TOKYO Yamamoto K.*, Shen K., University of Electro-Communications ~ Tokyo ~ Japan		
16:15	BEIJING CAISHIKOU POWER TRANSFORMER SUBSTATION COMPLEX (STATE GRID ELECTRIC POWER SCIENCE AND TECHNOLOGY MUSEUM) Zhang W.*, Wang W., Tsinghua University ~ Beijing ~ China		
16:30	RAILWAY STATION DESIGN FROM LOCAL TRADITION TO INNOVATION IN A SUSTAINABLE PERSPECTIVE Fazio T.*, Aluisi D., ITALFERR SpA ~ Rome ~ Italy		
16:45	ELIMINATE TOILET PAPER Lalsa V.*, Freelancer ~ New York ~ United States of America		
17:00	INDOOR ENVIRONMENT AND ENERGY CONSERVATION BY HOUSING IN SLOVAKIA Petras D.*, Slovak University of Technology in Bratislava ~ Bratislava ~ Slovakia		
17:15	PERMEABLE INTERLOCKING CONCRETE PAVEMENT AS A SUSTAINABLE TOOL FOR PRESERVING THE ENVIRONMENT AND PREVENTING NATURAL DISASTERS De La Fuente C.* <sup>[1]</sup> , Smith D. <sup>[2]</sup> , <sup>[1]</sup> City of Los Angeles ~ Los Angeles ~ United States of America, <sup>[2]</sup> Interlocking Concrete Pavement Institute ~ Chantilly ~ United States of America		
17:30	PAES MUNICIPALITY OF SAN LUCIDO - WINNER AWARD CINEV 2016 Abate S.*, Studio Ing. Abate Santo ~ San Lucido (Cosenza)~ Italy		
17:45	PLANNING OF A TRANSPORT NETWORK FOR THE PROMOTION OF A CULTURE OF SUSTAINABLE MOBILITY IN UNIVERSITY STUDENTS Ruiz, Salinas M T*, Ruiz, Salinas M C, Cabrera E, Pontificia Universidad		

Ruiz Salinas M.T.\*, Ruiz Salinas M.C., Cabrera F., Pontificia Universidad Católica del Perú ~ Lima ~ Peru





HALL BAGLIONI ORAL SESSION 2

15:30 -	18:30	HALL BAGLIONI ORAL SESSION 2
18:00	EV CAR-SHARING AND ITS EFF Wu J.*, Hu K., Tsinghua Univers	ECTS ON URBAN ENVIRONMENT ity ~ Beijing ~ China
18:15	PLANTS IN NEAR ZERO ENERG Perillo G.*, University of Naples F	
18:30	BUILDINGS: THE RIBUILD PRO Capezzali M.*, Lasvaux S., Univ	R ROBUST INTERNAL INSULATION OF JECT ersity of Applied Sciences of Western D   IGT-LESBAT ~ Yverdon-les-Bains
18:45	ZERO ENERGY BUILDINGS Marino C.* <sup>[1]</sup> , Biundo G. <sup>[2]</sup> , <sup>[1</sup> ]Studi <sup>[2]</sup> Studio tecnico Biundo Giovanni	o tecnico Marino Clara ~ Marsala ~ Italy, ~ Castelvetrano ~ Italy





15:30 - 18:30

HALL BORGIA ORAL SESSION 3

PREVENTING CLIMATE CHANGE: ENGINEERING FOR SUSTAINABILITY

Chairwoman: Nicoletta Antonias, ITALFERR SpA, Italy

- 15:30 ENGINEERING FOR CLIMATE CHANGE, THE CHALLENGE FOR THE USE OF NEW RENEWABLE ENERGY Lopez A.\*, Consiglio Nazionale degli Ingegneri ~ Rome ~ Italy
- 15:45 RATIONAL USE AND PROTECTION OF PEAT DEPOSITS OF THE REPUBLIC OF BELARUS Makaranka T.\*, Institute for Nature Management, The National Academy of Science of Belarus ~ Minsk ~ Belarus
- 16:00 TECHNOSOILS FOR THE PREVENTION OF DESERTIFICATION RISK Pirrera G.\*<sup>[1]</sup>, Calvo R.<sup>[4]</sup>, D'Asaro F.<sup>[2]</sup>, Ferrara L.M.<sup>[3]</sup>, Lo Nardo C.<sup>[5]</sup> <sup>[1]</sup>AIPIN (Associazione Italiana per l'Ingegneria Naturalistica) ~ Palermo ~ Italy, <sup>[2]</sup>University of Palermo ~ Palermo ~ Italy, <sup>[3]</sup>Freelancer ~ Palermo ~ Italy, <sup>[4]</sup>PhD student - University of Palermo ~ Palermo ~ Italy ~ <sup>[5]</sup>Student ~ University of Palermo ~ Palermo ~ Italy
- 16:15 WATER CRISIS CAUSING A DROUGHT IN THE SOCIO-ECONOMIC ENVIRONMENT OF SOUTH AFRICA Koena T.\*, South African Institution of Civil Engineering ~ Johannesburg ~ South Africa
- 16:30 SUGGESTION TO ROME CITY COUNCIL TO AVOID POLLUTION Rocca U.V.\*, NEW ~ Rome ~ Italy
- 16:45 CHINA'S CCUS PROGRESSES AND A NEW EVALUATION METHOD OF CO2 STORAGE CAPACITY IN COALBED RESERVOIRS Yao S.\*, The Research Institute of Petroleum Exploration and Development (RIPED) ~ Beijing ~ China
- 17:00 A LOW COST AUTOMATIC WEATHER STATION DEVELOPED AT SCHOOL, OPPORTUNITY FOR STUDENTS TO MEET THE JOB WORLD Antonini A.\*<sup>[1]</sup>, Bini L.<sup>[2]</sup>, Coppola M.<sup>[3]</sup>, Floridia G.<sup>[4]</sup>, Alessandro P.<sup>[3]</sup>, Rafanelli G.<sup>[3]</sup>, Cantini I.<sup>[3]</sup>, <sup>[1]</sup>Lamma Consortium ~ Sesto Fiorentino -Florence ~ Italy, <sup>[2]</sup>Azienda Agricola La Capannaccia ~ Scandicci - Florence ~ Italy, <sup>[3]</sup>Istituto Cellini Tornabuoni ~ Florence ~ Italy, <sup>[4]</sup>Parsec Srl ~ Sesto Fiorentino - Florence ~ Italy
- 17:15 EXPLORING ECONOMICAL GROUNDWATER RESOURCES IN KWA-ZULU NATAL MIDLANDS, SOUTH AFRICA Lorato N.\*, South African Institute of Civil Engineering ~ Johannesburg ~ South Africa





15:30 -	18:30	HALL BORGIA ORAL SESSION 3
17:30	DESIGNING SUSTAINABLE RAILW PROTOCOL AND THE CARBON FO SUSTAINABILITY OF RAILWAY INF Antonias N.*, Martino A., ITALFER	RASTRUCTURES
17:45	STUDY ON AUTOMATION TRAIN OPE Xu X.*, Song Z., Li Y., Yi H., Wang Y.	RATION APPLIED TO HIGH SPEED RAILWAY , Xiaoning Xu ~ Beijing ~ China
18:00	Pirrera G.* <sup>[1]</sup> , Pluchino A. <sup>[2]</sup> , Ferrar	eria Naturalistica) ~ Palermo ~ Italy,
18:15	REGION	ACENT TO COASTS IN CARIBBEAN R. <sup>[1]</sup> , Didier V. <sup>[1]</sup> , <sup>[1]</sup> UPRM ~ Mayaguez ~





10:45 - 13:00

HALL FARNESE ORAL SESSION 4

# ENGINEERING AND TECHNOLOGIES FOR SAFEGUARDING AND MONITORING THE CULTURAL HERITAGE

Chairman: Fabrizio Vestroni, Sapienza University of Roma, Italy

- 10:45 ADVANCED TECHNOLOGIES FOR PROTECTION OF ARCHAEOLOGICAL HERITAGE Biasiotti A.\*, UNESCO ~ Modena ~ Italy
- 11:00 ENGINEERING ANALYSIS AND MONITORING TO PRESERVE THE COLOSSEUM Vestroni F.\*, Pau A., Sapienza University of Roma ~ Rome ~ Italy
- 11:15 ENGINEERING FOR THE PROTECTION OF FLORENCE FROM FLOODING: THE PROJECT FIRENZE 2016 Solari L.\*, Caporali E., Castelli F., Federici G.V., Francalanci S., Paris E., University of Firenze ~ Florence ~ Italy
- 11:30 IN SITU TESTS AND EXPERIMENTAL DYNAMIC CHARACTERIZATION OF THE SANCTUARY OF MADONNA DELLA LIBERA IN PRATOLA PELIGNA (AQ) Sforza G.\*, Lepori L., ESSEBI Srl ~ Rome ~ Italy
- 11:45 SAFETY AND CONSERVATION IN THE HISTORICAL AND ARCHITECTURAL QUALITY BUILDING SITES. STUDY CASES Del Regno R.\*, Cucco P., University of Salerno ~ Fisciano (Salerno) ~ Italy
- 12:00 THE UNISA MONOLITHIC FOLDED PENDULUM: AN INERTIAL COMPACT SENSOR FOR LOW FREQUENCY HIGH SENSITIVITY LINEAR AND ANGULAR MONITORING OF THE HISTORICAL MONUMENTAL HERITAGE Barone F.\*<sup>[1]</sup>, Giordano G.<sup>[2]</sup>, <sup>[11]</sup>University of Salerno ~ Baronissi (Salerno) ~ Italy, <sup>[21]</sup>University of Salerno ~ Fisciano (Salerno) ~ Italy
- 12:15 UAV'S (SO CALLED "DRONE") EMPLOYMENT IN SURVEYING: A FAST AND AFFORDABLE WAY TO ARCHIVE OUR HERITAGE Anelli A.\*<sup>[1]</sup>, Grimaldi P.<sup>[2]</sup>, <sup>[1]</sup>Aerial Drone Ostro ~ Andria ~ Italy, <sup>[2]</sup>Politecnico di Bari ~ Bari ~ Italy
- 12:30 ANALYSIS OF THE RECONSTRUCTION PROCESS OF THE HISTORICAL CENTRES HIT BY THE 2009 ABRUZZI EARTHQUAKE: INTERVENTION COSTS AND CONSIDERATIONS ON THE EFFECTIVENESS OF THE GRANT INCREASES FOR HISTORIC TRADITIONAL BUILDINGS Marra A.\*<sup>[2]</sup>, Fico R.<sup>[1]</sup>, Gualtieri R.<sup>[1]</sup>, Pecci D.<sup>[1]</sup>, Mannella A.<sup>[2]</sup>, Sabino A.<sup>[2]</sup>, <sup>[1]</sup>Special Office for Reconstruction of Crater Municipalities ~ Fossa (L'Aquila) ~ Italy, <sup>[2]</sup>Italian National Research Council, ITC ~ L'Aquila ~ Italy





10:45 -	HALL FARNESE ORAL SESSION 4
12:45	SMART TECHNOLOGIES AND WORKFLOWS FOR ENVIRONMENTAL AND CULTURAL HERITAGE: INTEGRATING BIM AND 3D GIS INTO A 4D WEB GLOBE Deiana A.*, GeoInfoLab ~ Olbia ~ Italy
13:00	TEMPORARY RELIGIOUS BUILDINGS TO PRESERVE HUMANKIND'S HERITAGE FROM NATURAL AND MAN-MADE DISASTERS Molinari G.*, Forte P.L., <sup>[1]</sup> Molpass Srl ~ San Giovanni in Persiceto (Bologna)

~ Italy



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10:45 - 13:00

HALL BAGLIONI ORAL SESSION 5

### RISK PREVENTION, HAZARD MONITORING, SEISMIC RISK MITIGATION

Chairman: Giovanni Cardinale, CNI, Italy

- 10:45 ADVANCED STRUCTURAL MODELLING FOR RISK ASSESSMENT OF BUILDING PORTFOLIOS SUBJECTED TO INDUCED SEISMICITY Bianchi F.\*, Nascimbene R., Pinho R., Mosayk Srl ~ Pavia ~ Italy
- 11:00 SAFEGUARDING HUMANKIND'S HERITAGE AGAINST EARTHQUAKES: CIVIL, INDUSTRIAL AND CULTURAL HERITAGE STRUCTURES Clemente P.\*, Bongiovanni G., Buffarini G., Saitta F., ENEA ~ Rome ~ Italy
- 11:15 ACTIVE FAULT RESEARCH IN JAPAN FOR DISASTER MITIGATION Yoshimi M.\*, Research Institute of Earthquake and Volcano Geology ~ Tsukuba ~ Japan
- 11:30 THE "THEORY OF CATASTROPHES" AS HEURISTIC-HERMENEUTIC INNOVATIVE PLATFORM FOR THE ORGANIZATION AND MANAGEMENT OF CHANGE AND RISK IN COMPLEX PROJECTS FOR SAFEGUARDING HUMANKIND'S HERITAGE Fregatti M.\*, Ordine degli Ingegneri della Provincia di Rovigo ~ Rovigo ~ Italy
- 11:45 THE WEB-BASED FLOOD WARNING SYSTEM EXPLOITING THE JGRASS-NEWAGE Mita L.\*<sup>[1]</sup>, Bancheri M.<sup>[3]</sup>, Dal Sasso S.F.<sup>[1]</sup>, Davenia G.<sup>[2]</sup>, Glisci C.<sup>[2]</sup>, Grasso S.<sup>[3]</sup>, Laguardia N.<sup>[3]</sup>, Lanorte V.<sup>[2]</sup>, Fiorentino M.<sup>[1]</sup>, Manfreda S.<sup>[1]</sup> <sup>[1]</sup>University of Basilicata ~ Potenza ~ Italy, <sup>[2]</sup>Civil Protection Basilicata Region ~ Potenza ~ Italy, <sup>[3]</sup>Interuniversity Consortium for Hydrology (CINID) ~ Potenza ~ Italy
- 12:00 A GEOMATIC MULTI CRITERIA APPROACH TO ASSESS LANDSLIDE HAZARD AND SUPPORT REMEDIAL WORKS PLANNING ALONG RAILWAY LINES Miceli G.\*, ETS Srl ~ Rome ~ Italy
- 12:15 LOW-COST GNSS TECHNIQUES FOR CONTINUOUS MONITORING OF STRUCTURES AND LAND MOVEMENTS Realini E.\*<sup>[2]</sup>, Rambaldi A.<sup>[1]</sup> Caldera S.<sup>[1]</sup>, <sup>[1]</sup>Softeco ~ Genova ~ Italy, <sup>[2]</sup>Proteco Group ~ Como - Italy
- 12:30 DISASTER PREPAREDNESS: THE CENTRAL ROLE OF CLINICAL ENGINEERING Vallone I.\*<sup>[1]</sup>, Gemma C.<sup>[1]</sup>, Martinoli C.<sup>[1]</sup>, Lago P.<sup>[1]</sup>, Bottura S.<sup>[2]</sup>, David Y.<sup>[3]</sup>, Allegrini A.<sup>[4]</sup>, <sup>[1]</sup>Fondazione IRCCS Policlinico San Matteo ~ Pavia ~ Italy, <sup>[2]</sup>Higea Srl ~ Pavia ~ Italy, <sup>[3]</sup>IFMBE Board Member ~ Houston ~ United States of America, <sup>[4]</sup>Ordine degli Ingegneri della Provincia di Pavia ~ Pavia ~ Italy
- 12:45 A FIRST STEP TO GETTING TO HYDRAULIC RISK ASSESSMENT METHODOLOGY FOR RAILWAY INFRASTRUCTURES Cappelli A.\*, Cabas F., Tortora A., Villani M., Italferr S.p.A. ~ Rome ~ Italy





15:30 -	18:00	HALL BAGLIONI ORAL SESSION 5
RISK PREVENTION, HAZARD MONITORING, SEISMIC RISK MITIGATION Chairman: Stefano Bergagnin, PASS. Italy		
15:30	REDUCTION: A CASE STUDY	ONAL RESILIENCE FOR DISASTER RISK -i H., Muñoz G., Díaz L., Universidad de
15:45	LEARNING AND PROTECTING FR Cecchetti S.*, Consultant ~ Rome	OM NATURAL IONIZING RADIATIONS ~ Italy
16:00	Agostinelli S.R.*, Junta Central de	ERVE THE CULTURAL HERITAGE OF HUMANITY e los Consejos Profesionales de niería ~ Buenos Aires ~ Argentina
16:15		DPOSAL TO DRAWN ON INDIGENOUS R FLOOD AND DROUGHT MANAGEMENT Córdoba ~ Córdoba ~ Colombia
16:30	SEISMIC DESIGN OF RAILWAY ST Toyooka A.*, Railway Technical Re	
16:45	TEMPORARY EVENTS IN HYSTOR	ne R. <sup>[3]</sup> , Toneguzzo A. <sup>[4]</sup> , <sup>[1]</sup> PASS Srl ~
17:00	USE OF FIXED BY VIBRATION STE ENVIRONMENT'S SAFEGUARDIN Facchinato F.*, Studio Tecnico ing Italy	
17:15	BLU CONSULTING MODEL APPLI MANAGEMENT (BCM-2-BCM) Parlotta G * Maggiarolli M. Serge	ED TO BUSINESS CONTINUITY

Barletta G.\*, Masciarelli M., Scrocca C., Ordine degli Ingegneri di Roma ~ Rome ~ Italy





10:45 - 13:00

HALL COLONNA-DORIA ORAL SESSION 6

### WOMEN IN ENGINEERING: PANEL DISCUSSION

Chairwoman: Valerie Ifueko, WFEO, Nigeria

- 10:45 UNESCO'S ACTIVITIES ON WOMEN IN STEM Sigamoney R.\*, UNESCO
- 11:00 GENDER ISSUES IN CHINA Li R.\*, WFEO ~ China
- 11:15 INGENIO AL FEMMINILE. GENDER ISSUES IN EUROPE Lopez A.\*, CNI ~ Rome ~ Italy
- 11:30 GENDER ISSUES IN AMERICA Del Vecchio S.\*, United States of America
- 11:45 CWiE PROGRAMS & PROJECT Ifueko V.\*, WFEO ~ Nigeria







10:45 –	18:00 HA	LL BORGIA ORAL SESSION 7
SMART TECHNOLOGIES FOR AN EFFECTIVE DEVELOPMENT Chairwoman: Stacey DelVecchio, Caterpillar Inc., USA		
10:45	CELLULAR ALGORITHMS A NEXT-GENER APPLICATIONS Cella A.*, Ordine degli Ingegneri della Pro	
11:00	HP'S PRODUCTS AND SERVICES AS A CIF Charalambous S.*, Lahn B., HP ~ Milan ~	
11:15	INDUSTRIAL MACHINES AND SUPPORT E SUSTAINABLE PRODUCTION Ladisa P.*, Ordine degli Ingegneri della Pr	
11:30	MACRO SCALE NUMERICAL MODELLING FO Unteregger D.*, Weifner T., Bergmeister H	
11:45	NEW TECHNOLOGICAL AND SERVICE PR Nicolai G.*, De Franco G., Ordine Ingegneri d	
12:00	PHARES A HIGH-TECH DIALOGUE WITH OL Guermont M.*, MILENE GUERMONT ~ Pa	
12:15	THE INTERNET OF EVERYTHING SYSTEM SACRED CONVENT OF SAINT FRANCIS IN Garzia F. * <sup>[1]</sup> , Gambetti M. <sup>[2]</sup> , Baiocchi V. <sup>[1]</sup> , I Chakaveh S. <sup>[4]</sup> , Costantino D. <sup>[5]</sup> , Culla A. <sup>[1]</sup> , M.A. <sup>[6]</sup> , Fusetti S. <sup>[2]</sup> , Kodl J. <sup>[7]</sup> , Livatino S. <sup>[9]</sup> , Peng J. <sup>[13]</sup> , Ramalingam S. <sup>[9]</sup> , Ramasamy M A. <sup>[2]</sup> , Smejkal V. <sup>[7]</sup> , Thirupati D. <sup>[111]</sup> , Vargas J <sup>[1]</sup> Sapienza University of Roma ~ Rome ~ Italy Convent of Saint Francis in Assisi – Minor Co <sup>[3]</sup> School of Engineering, SISTEMIC, Universito Colombia, <sup>[4]</sup> University of Southampton ~ Sou <sup>[5]</sup> DICATECh, Politecnico di Bari ~ Bari ~ Italy, Gran Canaria ~ Las Palmas de Gran Canaria College Olomouc ~ Olomouc ~ Czech Republ Rome ~ Italy, <sup>[9]</sup> University of Hertfordshire ~ H Technologies India Private Limited ~ Coimbal Coimbatore ~ India, <sup>[12]</sup> ESUP Tecnocampus- Pi (Barcelona)~ Spain, <sup>[13]</sup> University of Bedfordsh	ASSISI, ITALY Borghini F. <sup>[11]</sup> , Ciarlariello D. <sup>[2]</sup> , Faundez Zanuy M. <sup>[12]</sup> , Ferrer Lombardi M. <sup>[11]</sup> , Marsella S. <sup>[8]</sup> , M. <sup>[10]</sup> , Sacerdoti S. <sup>[2]</sup> , Sdringola Bonilla F.J. <sup>[3]</sup> , <sup>[2]</sup> General Custody of Sacred nventual Friars ~ Assisi ~ Italy, Idad de Antioquia ~ Medellin ~ thampton ~ United Kingdom, <sup>[6]</sup> Universidad de Las Palmas de ~ Spain, <sup>[7]</sup> Moravian University ic, <sup>[8]</sup> National Corp of Fire Brigades ~ Iatfiled ~ United Kingdom, <sup>[10]</sup> Netcon tore ~ India, <sup>[11]</sup> Bharathiar University ~ ompeu Fabra University ~ Matarò ~





### 10:45 - 18:00

HALL BORGIA ORAL SESSION 7

12:30 INTELLIGENT TRANSPORTATION SYSTEMS IN SOUTH AFRICA: AN AFRICAN PERSPECTIVE ON USE OF TECHNOLOGY AND INNOVATION TO SAFEGUARD ENGINEERING HERITAGE Mutyora M.\*, South African Institution of Civil Engineering ~ Pietermaritzburg ~ South Africa THINK BIG...START SMALL...ACT FAST: DEPLOYING ADDITIVE 15:30 MANUFACTURING IN A FORTUNE 50 COMPANY DelVecchio S.\*, American Association of Engineering Societies ~ New York ~ United States of America 15:45 MACHINE PERFUSION: NEW DEVICES AND HUMAN RESOURCES TO IMPROVE TRANSPLANTATION Martinoli C.\*<sup>[1]</sup>, Gemma C.<sup>[1]</sup>, Vallone I.<sup>[1]</sup>, Lago P.<sup>[1]</sup>, Bottura S.<sup>[2]</sup>, Signorini M.G.<sup>[3]</sup>, <sup>[1]</sup>Fondazione IRCCS Policlinico San Matteo ~ Pavia ~ Italy, <sup>[2]</sup>Higea Srl ~ Pavia ~ Italy. [3]Politecnico di Milano ~ Milan ~ Italy 16:00 BUILDING NEW TECNOLOGICAL CELL FACTORIES: THE ROLE OF CLINICAL ENGINEERS AS PROJECT MANAGERS. Rebola A.\*, Ordine degli Ingegneri della Provincia di Torino ~ Turin ~ Italy 16.15THE VISIONARY FOCUS FOR TECHNOLOGY DEVELOPMENT Loughlin T.\*, AAES/ASME ~ New York ~ United States of America 16.30 CASE STUDY: THE INVESTIGATION OF THE FEASIBILITY OF INCORPORATING AUGMENTED REALITY AND INFORMATION TECHNOLOGY SYSTEMS TO ASSIST WITH THE TRAINING OF COMMUNITIES, EDUCATORS AND THE YOUTH Ncube S.S.\*, Pather B., SAICE JHB ~ Midrand ~ South Africa 16.45TECHNOLOGY SYSTEM FOR AQUACULTURE SUSTAINABILITY AND FISH TRACEABILITY Latino M.E.\*<sup>[3]</sup>, Zizzari A.<sup>[1]</sup>, Corallo A.<sup>[1]</sup>, Menegoli M.<sup>[2]</sup>, Cataldo M.<sup>[3]</sup> <sup>[1]</sup>University of Salento ~ Lecce ~ Italy, <sup>[2]</sup>Naica SC ~ Lecce ~ Italy, <sup>[3]</sup>Apphia Srl ~ Lecce ~ Italy



15.30 - 18.00

HALL BAGLIONI ORAL SESSION 8

### ICT AND INFORMATION SECURITY FOR HUMANKIND'S HERITAGE

Chairman: Roberto Orvieto, CNI, Italy

- 15:30 CYBER SECURITY FRAMEWORK FOR HUMANKIND'S HERITAGE Rocco P.\*[1], Dominici D.[2], Taballione A.[3], Rosciano E.[3]. [1]Ordine degli Ingegneri della Provincia di Roma ~ Rome ~ Italy, <sup>[2]</sup>University of L'Aquila ~ L'Aquila ~ Italy, <sup>[3]</sup>Gitais S.R.L ~ Rome ~ Italy
- 16:00 HOW TO PROTECT THE COMMON HERITAGE SITES WITH LIMITED IMPACT IN THE SURVEILLANCE? A DYNAMIC AND NOT INVASIVE SURVEILLANCE SYSTEM THROUGH THE USE OF DRONES AND OTHER TOOLS FROM MILITARY KNOWLEDGE Praitano A.\*, Zorzino G.G., Ordine degli Ingegneri della Provincia di Roma ~ Rome ~ Italv
- 16.15HYBRID CYBER THREAT TO HUMANITY'S CULTURAL HERITAGE: RISKS AND OPPORTUNITIES Zorzino G.G.\*<sup>[1]</sup>, Praitano A.<sup>[1]</sup>, Pirrò M.<sup>[2]</sup>, <sup>[1]</sup>Ordine degli Ingegneri della Provincia di Roma ~ Roma ~ Italy, <sup>[2]</sup>Ordine degli Ingegneri Provincia di Napoli ~ Naples~ Italv
- 16.30 ICT SYSTEMS: THE KEY FOR IMPROVEMENT IN HEALTHCARE Vallone I.\*<sup>[1]</sup>, Martinoli C.<sup>[1]</sup>, Gemma C.<sup>[1]</sup>, Lago P.<sup>[1]</sup>, Bottura S.<sup>[2]</sup>, Buizza A.<sup>[3]</sup>, <sup>[1]</sup>Fondazione IRCCS Policlinico San Matteo ~ Pavia ~ Italy, <sup>[2]</sup>Higea Srl ~ Pavia ~ Italy, <sup>[3]</sup>Dipartimento di Ingegneria Industriale e dell'Informazione, University of Pavia ~ Pavia ~ Italy



DEGLI INGEGNER



15:30 - 18:00

HALL COLONNA-DORIA ORAL SESSION 9

# DIVERSITY AND INCLUSION IN ENGINEERING. WOMEN AND YOUNG PROFESSIONALS: A RESOURCE FOR PRESENT AND FUTURE

Chairwoman: Ania Lopez, CNI, Italy

- 15:30 ACHIEVING SUSTAINABLE DEVELOPMENT GOAL NO. 5 ON GENDER EQUALITY IS THE RESPONSIBILITY OF HUMANKIND Lee Y.C.\*, UNESCO International Science Technology an Innovation for South Cooperation (ISTIC) ~ Malaysia
- 15:45 COACH-ING (COACHING-INGEGNERIA) COACHING AND ENGINEERING INTEGRATION Callea V.\*, Santini E., Sapienza University of Roma ~ Rome ~ Italy
- 16:00 MEN AS DIVERSITY PARTNERS: BEING A CHAMPION OF WOMEN IN ENGINEERING Horting K.\*, DelVecchio S., Society of Women Engineers ~ Chicago ~ United States of America
- 16:15 SUSTAINABILITY AND INCLUSION: A PERSPECTIVE ON DIVERSIFYING ENGINEERING EDUCATION Pearson Y.\*<sup>[1]</sup>, Mattingly S.<sup>[2]</sup>, Haselbach L.<sup>[3]</sup>, <sup>[1]</sup>Rice University ~ Houston ~ United States of America, <sup>[2]</sup>University of Texas at Arlington ~ Arlington ~ United States of America, <sup>[3]</sup>Lamar University ~ Beaumont ~ United States of America
- BIOMEDICAL ENGINEERS: THE INCREASING ROLE OF WOMEN AND YOUNG PEOPLE AS A RESOURCE FOR HUMAN HEALTH Freda P.\*<sup>[4]</sup>, Bottura S.<sup>[1]</sup>, Martinoli C.<sup>[2]</sup>, Gemma C.<sup>[2]</sup>, Lago P.<sup>[2]</sup>, Vallone I.<sup>[2]</sup>, Velazquez Berumen A.<sup>[3]</sup>, <sup>[1]</sup>Higea SpA ~ Pavia ~ Italy, <sup>[2]</sup>Fondazione IRCCS Policlinico San Matteo ~ Pavia ~ Italy, <sup>[3]</sup>World Health Organization ~ Geneva ~ Switzerland, <sup>[4]</sup>Azienda Ospedaliero-Universitaria Città della Salute e della Scienza di Torino ~ Turin ~ Italy
- 16:45 A MODEL FOR DEVELOPING THE ENTREPRENEURIAL CAPACITY OF YOUNG ENGINEERS AND TECHNOLOGISTS FROM WAR AFFECTED REGIONS - A CASE STUDY ON KURDISTAN AND IRAQ Kadhem H.\*<sup>[3]</sup>, Zandi R.<sup>[1]</sup>, Yasser A.<sup>[4]</sup>, Mustafa J.<sup>[2]</sup>, <sup>[1]</sup>Kurdistan Society of Engineers ~ Erbil ~ Iraq, <sup>[2]</sup>Modern Education for Kurdistan ~ Kurdistan ~ Iraq, <sup>[3]</sup>Al-Kindi Society of Engineers ~ London ~ United Kingdom,<sup>[4]</sup>Rekreo Labs ~ Jönköping ~ Sweden
- 17:00 YOUNG ENGINEERS: SELF PREPARATION FOR THE INDUSTRY WHILST ON CAMPUS Koma N.\*, Anena D.L., University of Kwa-Zulu Natal ~ Durban ~ South Africa





15:30 - 18:00		HALL COLONNA-DORIA ORAL SESSION 9
17:15	THE HISTORY OF ALL BENEFITS THE PROF OF YOUNG WOMEN W PROFESSION	RING HAVE A UNIQUE STORY TO TELL. PRESERVING WOMEN IN ENGINEERING, IN THEIR OWN VOICE, ESSION; AND WILL INSPIRE FUTURE GENERATIONS WHO ARE INCLINED TO PURSUE ENGINEERING AS A
17:30	AN AFRICAN CONTEX	GINEERS SAFEGUARD HUMANKIND'S HERITAGE? – KT rsity of KwaZulu  ~ Natal ~ Durban ~ South Africa
17:45	PROCESSING SYSTEM "CASE STUDY OF CLE	NG: EXPERIMENTAL CONTRIBUTION IN THE WASTE M AND ITS APPLICATIONS IN COOKING EAN AND ECOLOGICAL SUB-SAHARAN AFRICA (DRC) ivil Engineer in Environment Country: DR ~ Congo



CONSIGLIO NAZIONALE DEGLI INGEGNERI



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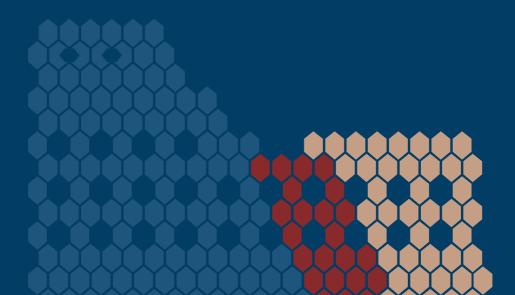
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# **SOCIAL EVENTS**

### WEF SOCIAL DINNER

TUESDAY 28 NOVEMBER - HRS 20:00

### Pinacoteca del Tesoriere

Piazza San Luigi dei Francesi, 37 - Rome

Nested in between the Pantheon and the famous Piazza Navona in Rome, the palace, belonging to the Patrizi family houses a collection of important frescoes and paintings which includes masterpieces of Vasari, Pietro da Cortona, Guercino and Albani. The dinner offers the opportunity to visit the property of one of the patrician families still living in Rome.

Bus transfer from Hotel Sheraton Roma and return to the hotel at the end of the dinner

### **WFEO DINNER**

FRIDAY 1 DECEMBER - HRS 20:00

### Sheraton Roma Hotel

It will be a great opportunity to taste Mediterranean food, and share this experience with WFEO professionals coming from all over the world.





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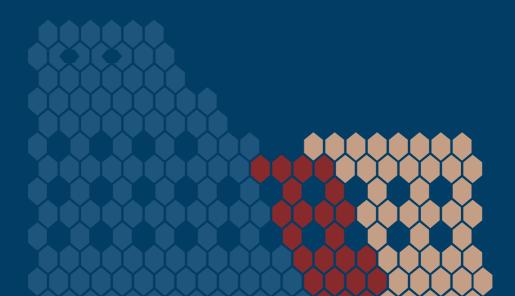
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# **GENERAL INFORMATION**



# **GENERAL INFORMATION**

### Official Language

Official language of WEF2017 is English.

Simultaneous interpretation (from/into Italian) will be provided for WEF Opening Ceremony at the Chamber of Deputies, master sessions of Tue 28 November, all plenary lectures and WEF Closing session (Wed 29 November). Simultaneous interpretation will not be available for Oral Sessions.

### Badges

Badges must be worn at all times. Access to the meeting rooms is allowed only to participants wearing their badges.

WEF delegates **blue** WEF students **beige** WFEO attendees **green** Fondazione CNI **purple** Daily Pass **light blue** Accompanying Persons **orange** 

## Proceedings

- Abstracts presented will be published in a special issue of the magazine "L'Ingegnere Italiano", in December 2017.
- Full papers or copy of the slides used as support to the presentation will be uploaded on the website of Consiglio Nazionale degli Ingegneri, after the end of the meeting.





### CFP - Italian delegates

Italian delegates will be entitled to receive a total of 9 credits split as follows:

TUE November 28 (morning)	3 credits
TUE November 28 (afternoon)	2 credits
WED November 29 (morning)	2 credits
WED November 29 (afternoon)	2 credits

Delegates will be requested to sign the attendance sheet upon arrival at Sheraton Roma Hotel and before leaving the venue on both Tuesday 28 and Wednesday 29.

### **Emergency Numbers**

For emergencies: Dial 112 (Police, First aid and Ambulance, Fire)

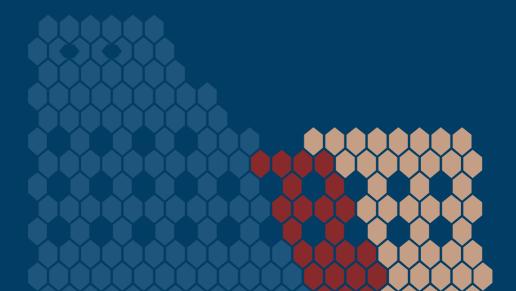
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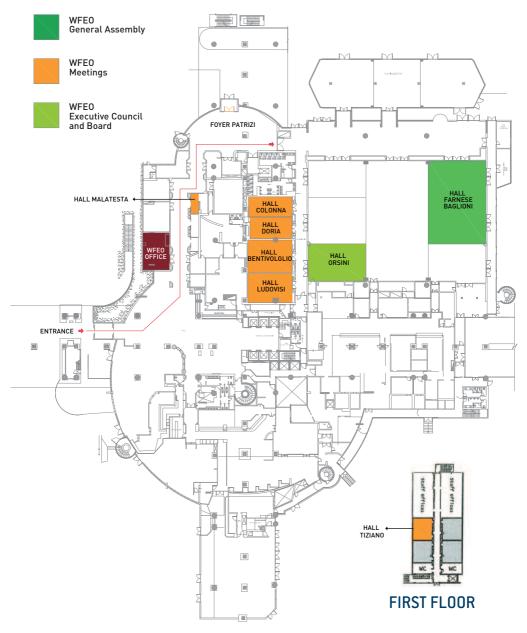




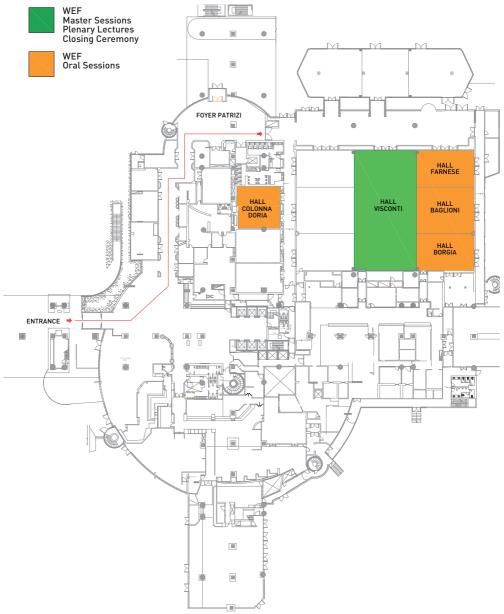
# WFEO/WEF MAPS



# WFEO GROUND FLOOR



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