POLITECNICO DI TORINO
Repository ISTITUZIONALE

The ‘Restoration Road’ Culture and Practice of Heritage Conservation and Enhancement

*Original*
The ‘Restoration Road’ Culture and Practice of Heritage Conservation and Enhancement / Novelli, F.. - STAMPA. - 4:(2025), pp. 103-107. (XIII edizione della “Italy-China Science, Technology and Innovation Week” Napoli 26-28 novembre 2024).

*Availability:*
This version is available at: 11583/3004406 since: 2025-10-23T15:46:09Z

*Publisher:*
CNR Edizioni

*Published*
DOI:

*Terms of use:*

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

*Publisher copyright*

(Article begins on next page)

19 November 2026

BRIDGES
ITALY - CHINA

4, 2025

# THE VALUE OF SCIENCE AND TECHNOLOGY IN ADDRESSING THE GREAT CHALLENGES OF OUR TIME

edited by
Francesco De Matteis and Diana Angela Palma

with the collaboration of
Natascia Conforti, Michaela Riccio, Emanuele Scarpato, Diletta Taverni



edizioni
Consiglio Nazionale delle Ricerche

BRIDGES
ITALY - CHINA

4, 2025

# THE VALUE OF SCIENCE AND TECHNOLOGY IN ADDRESSING THE GREAT CHALLENGES OF OUR TIME

edited by
*Francesco De Matteis* and *Diana Angela Palma*

with the collaboration of
*Natascia Conforti*, *Michaela Riccio*, *Emanuele Scarpato*, *Diletta Taverni*

edizioni
Consiglio Nazionale delle Ricerche

BRIDGES
ITALY - CHINA

4, 2025

*Monographic Series by the Department of Social sciences and humanities, cultural heritage of the National Research Council*

CNR | DSU

Scientific Director
*Lucia Alberti,* National Research Council

*The value of science and technology in addressing the great challenges of our time*

Honorary Committee
*Massimo Ambrosetti*, Ambassador of Italian Republic in People's Republic of China
*Jia Guide*, Ambassador of People's Republic of China in the Republic of Italy
*Lamberto Maria Moruzzi*, Diplomatic Advisor of Ministry of University and Research of the Italian Republic
*Dai Gang*, Director General of the Department of International Cooperation, Ministry of Science and Technology of the People's Republic of China
*Riccardo Villari*, President of Fondazione Idis-Città della Scienza
*Tiziana Lippiello*, Rector of Ca' Foscari University of Venice
*Salvatore Capasso*, Director of the Department of Social sciences and humanities, cultural heritage of the National Research Council
*Virginia Coda Nunziante*, Head International Relations Office of the National Research Council
*Zhang Yulei*, Deputy Director Municipal Science and Technology Commission of Beijing, Administrative Commission of Zhongguancun Science Park

Scientific Committee
*Francesca Argenio*, National Research Council
*Andrea Ballabio*, University of Naples Federico II
*Alessandro Boero*, Ministry of University and Research of the Italian Republic
*Vojko Bratina*, Consulate General of Italy in Shanghai

*Gennaro Carillo*, University of Naples Suor Orsola Benincasa
*Gianluigi Consoli*, Ministry of University and Research of the Italian Republic
*Fabio Costigliola*, Fondazione Idis-Città della Scienza
*Sabato D'Auria*, National Research Council
*Francesco De Matteis*, Fondazione Idis-Città della Scienza
*Filippo de Rossi*, University of Naples Federico II
*Donatella Guida*, University of Naples L'Orientale
*Alessandra Guidi*, Embassy of Italy in Beijing
*Guo Rui*, Beijing Municipal Science & Technology Commission,
Administrative Commission of Zhongguancun Science Park
*Loredana Incarnato*, University of Salerno
*Lu Yiming*, Beijing Municipal Science & Technology Commission,
Administrative Commission of Zhongguancun Science Park
*Silvia Martuscelli*, Ministry of University and Research of the Italian Republic
*Michele Mazzola*, Ministry of University and Research of the Italian Republic
*Maria Moreno*, University of Sannio
*Luigi Nicolais*, University of Naples Federico II
*Diana Angela Palma*, Fondazione Idis-Città della Scienza
*Apostolos Paipais*, engineer
*Gerardo Pappone*, University of Naples Parthenope
*Giuseppina Tommasielli*, Fondazione Idis-Città della Scienza
*Guido Trombetti*, University of Naples Federico II
*Lida Viganoni*, University of Naples L'Orientale
*Zhang Yan*, Beijing Municipal Science & Technology Commission,
Administrative Commission of Zhongguancun Science Park
*Lu Ping*, Embassy of People's Republic of China in the Republic of Italy

Editorial Board
*Cheng Tao*, International Technology Transfer Network
*Emanuele Scarpato*, Fondazione Idis-Città della Scienza
*Tianyuan Li*, International Technology Transfer Network
*Diletta Taverni*, Fondazione Idis-Città della Scienza
*Zhang Zhang*, International Technology Transfer Network

Graphics and Layout
*Laura Attisani*, National Research Council



Editorial coordination: *Sara Di Marcello*
Graphics and Layout: *Laura Attisani*
Cover: *Laura Attisani*

@ Cnr Edizioni, 2025
P.le Aldo Moro 7 - 00185 Roma
www.edizioni.cnr.it
bookshop@cnr.it

ISSN 3103-246X
ISBN (print ed.) 978 88 8080 773 5
ISBN (digital ed.) 978 88 8080 774 2
DOI https://doi.org/10.36173/BRIDGES-2025-4



This work is licensed under CC BY-SA 4.0
The digital version is published in Open Access on www.edizioni.cnr.it.

The Publisher is at the disposal of those entitled for any inaccuracies in the citation of sources.

# THE VALUE OF SCIENCE AND TECHNOLOGY IN ADDRESSING THE GREAT CHALLENGES OF OUR TIME

Inaugural Session and Thematic Forums Proceedings

**Italy-China Science, Technology and Innovation Week**
**13th edition**

Promoted by

MUR
Ministero dell'Università e della Ricerca

中华人民共和国科学技术部
Ministry of Science and Technology of the People's Republic of China

Realized by

FONDAZIONE IDIS
CITTA'DELLASCIENZA

Consiglio Nazionale
delle Ricerche

北京市科学技术委员会、
中关村科技园区管理委员会
Beijing Municipal Science & Technology Commission,
Administrative Commission of Zhongguancun Science Park

In collaboration with

Ca' Foscari
University
of Venice

ITTN 国际技术转移协作网络
International Technology Transfer Network

*This volume presents the proceedings of the inaugural session and thematic forums held in Naples and Venice from November 26th to 28th, 2024, on the occasion of the 13th edition of the Italy-China Science, Technology and Innovation Week. The event is part of the bilateral programme of scientific and technological cooperation between Italy and China. It was jointly promoted by the governments of the two countries through the Ministry of Universities and Research of the Italian Republic and the Ministry of Science and Technology of the People's Republic of China. The programme was coordinated, on the Italian side, by the Idis Foundation – Città della Scienza, in collaboration with the National Research Council of Italy, and, on the Chinese side, by the Beijing Municipal Science & Technology Commission and the Administrative Commission of Zhongguancun Science Park. The 13th Edition also benefited from the cooperation of Ca' Foscari University of Venice (Italy) and the International Technology Transfer Network (China). The thematic forums brought together scholars, researchers and experts from Italian and Chinese universities and research centers, who engaged in a rich and wide-ranging exchange of views, driven by interdisciplinary approaches and sustained dialogue between the two scientific communities.*

INDEX

Premise 15

**OPENINGS**
**Institutional Speeches**

The Value of Science and Technology in Addressing the Great Challenges of our Time
*Riccardo Villari* 21

Strengthening Italy-China Innovation Cooperation for a Shared Technological Future
*Zhang Yulei* 25

The Campania Region for the Cooperation Italy-China
*Valeria Fascione* 27

Naples, Big Cities and Current Challenges
*Gaetano Manfredi* 29

Address at the Opening Ceremony of the 13th Italy-China Science, Technology and Innovation Week
*Tiziana Lippiello* 31

Address at the Opening Ceremony of the 13th Italy-China Science, Technology And Innovation Week
*Zhang Zongyi* 33

Coasts, Seas, Ocean and Polar Sciences: Italian Ministry of University and Research's Initiatives and Actions Highlighted During the Italy-China Science, Technology and Innovation Week
*Michele Mazzola* and *Alessandro Boero* 35

**Keynote Speeches**

Law and the Future. Science, New Technologies, and the Need for Shared Rules
*Oliviero Diliberto* 43

Responding to the Risks of Climate Change and Leading Green and Sustainable Development
*Cui Peng* 47

**Ministers' Speeches**

*Anna Maria Bernini* 55

*Yin Hejun* 59

**FORUM**

The CNR in the Italy-China Week: Ten Years of Scientific Cooperation (2015-2024)
*Francesca Argenio* 63

**Forum 1 - Conservation of Artistic and Cultural Heritage**

New Challenges for the Management and Enhancement of Tangible and Intangible Heritage
*Andrea D'Andrea* 69

China's Grand Canal Intangible Cultural Heritage Protection and Inheritance Research
*Yi Tong* 75

Research on the Interpretation and Dissemination of Cultural Values in the Great Wall National Cultural Park
*Peng Jian* 83

The Protection of Italian Cultural Heritage from Natural Risks in the Climate Change Context
*Daniele Spizzichino* 89

Digital Intelligence Exploration: Decoding Cultural Data from a Design Perspective
*Min Xiaolei* 95

The 'Restoration Road' Culture and Practice of Heritage Conservation and Enhancement
*Francesco Novelli* 103

Protecting Cultural Heritage and Fostering Design Innovation in the Central Plains Region: the Cradle of Chinese Civilization
*Wang Xiaoyu* 109

Nanotechnologies and Advanced Materials for the Conservation of Cultural Heritage
*Teresa Guaragnone* 113

Research on Technology Supporting the Inheritance, Protection and Innovative Development of Beijing's Intangible Cultural Heritage at Museums and Cultural Institutions
*Jiang Guanghua* 117

Study on the Feasibility of the Tg Method for Maximum Water Content Measurement of Waterlogged Archaeological Wood
*Shen Dawa* 125

**Forum 2 - Food Production and Processing Systems**

Food Production and Processing Systems
*Michelangelo Pascale* 131

The Challenges of Agrifood Sector: the Role of Research Infrastructures
*Claudia Zoani* and *Chiara Nobili* 133

China Coarse Cereal Power: the Great Potential of Buckwheat Functional Food Innovation
*Zhao Gang* 137

New Frontiers of Food Processing and Preservation Systems
*Silvana Cavella* 143

Practice of Establishing a Fair, Healthy, and Environmentally Friendly Food System in Henan, China
*Zhao Jianshe* 147

Advanced Plant Phenotyping Platforms for Enhancing Agricultural Productivity Under Climate Change
*Mauro Centritto* 151

Antibacterial Mechanism of Atmospheric Cold Plasma Against Pseudomonas Fluorescens and Pseudomonas Putida and its Preservation Application on In-Packaged Red Shrimp Paste
*Hu Jiajie*, *Ying Xiaoguo* and *Andrea Armani* 157

Innovative Systems to Ensure Food Safety
*Yolande Proroga* 169

**Forum 3 - Climate Change and Biodiversity**

Climate Change and Biodiversity
*Stefano Pignatti* 173

National Biodiversity Future Center: Research, Innovation, and Sustainability
*Luigi Fiorentino* 179

Human Factor Integration in City Drainage System Resilience Under Extreme Weather Influence
*Yang Shuo* 183

Mediterranean Climate: a Hotspot Under Pressure
*Gianmaria Sannino*, *Alessandro Anav* and *Franco Catalano* 187

Technology Empowerment for Kunming-Montreal Global Biodiversity Framework City Partnership Program
*Li Weiwei* 191

How the World Works
*Ferdinando Boero* 199

Co-Creation Between Industry and Research for a Connected Future
*Hu Xiaojing* 205

Biodiversity and Ecosystem Responses to Climate Changes and Human Well-Being: Research Priorities and Challenges
*Alberto Basset* 211

**Forum 4 - Disaster Risk Reduction**

The Italian Early Warning System for Meteo-Hydro Risks
*Giulio Fancello* 219

Sino-Italian Cooperation on Hazard Mitigation: Response to Climate Change Sino-Italian Joint Laboratory on Geological and Hydrological Hazards
*Zhou Gongdan* 225

Geological Effects Induced by Recent Earthquakes in Italy and China: Inputs for Improved Seismic Intensity Assessment
*Luca Guerrieri* 231

State Key Laboratory of Mountain Hazards and Engineering Safety, CAS has Achieved Significant Results in Disaster Risk Reduction
*Su Lijun* 235

Research on Refined Investigation and Risk Prevention Management of Geological Hazards in Alpine Valleys Region of Southwest Sichuan, China
*Ye Jiaolong* 239

**Forum 5 - Advanced Manufacturing**

Advanced Manufacturing. Italy-China Science, Technology and Innovation Week 2024
*Sergio Cavalieri* 247

Advanced Manufacturing
*Edoardo Bemporad* 249

Integration and Innovation - Exploration and Practicing of Technology Transfer Paths in BJUT
*Wang Wei* 253

Additive Technologies Between Innovation and Sustainability
*Gianluca D'Urso* 259

Serving the Industrial Development of Hunan. Building an Innovative Technology Engine
*Yu Jinqing* 263

Robotics and Artificial Intelligence for Interaction Technology
*Bruno Siciliano* and *Daniela Passariello* 267

China-Italy Collaboration on EV Powertrain Technology. China-Italy Cooperation to Promote Electric Drive Integration Technology for New Energy Vehicles
*Liu Chaohui* 271

Advanced Manufacturing for Inclusivity: Digital Assistance and Robotics for Diverse Cognitive Profiles
*Alessandro Simeone*, *Fan Yuchen*, *Dario Antonelli*, *Paolo C. Priarone* and *Luca Settineri* 275

Application of Two Kinds of Micro and Nano Materials in Advanced Manufacturing Field
*Li Shiyang* 281

**Forum 6 - Coasts, Seas and Ocean**

Marine Ecosystems Restoration: an Opportunity for a Joint Sino-Italian Cooperation
*Roberto Danovaro* 289

New Opportunities for China-Italy Marine Science and Technology Cooperation under the Maritime Community with a Shared Future
*Yan Xiaojun* 291

Xenobiotics, Alien Species and Pathogens: Insidious Impacts on Reproductive Patterns of Marine Organism
*Antonio Terlizzi* 297

Development of Wound Dressings Using Marine Biomaterials
*Li Huaqiong* 307

The Sino-Italian Joint Laboratory "Functional Biology of Marine Biota" 15 Years of Collaboration between ISPRA and ZJOU
*Isabella Buttino* 311

Assessment and Response to Microplastic Pollution on Marine Ecological Environment at the "Coral Triangle" Region
*Wang Zheng* 313

**Forum 7 - Polar Sciences**

Polar Sciences
*Carlo Barbante* 317

Petrogenesis of the Hughes Bluff Granitic Pluton in the Transantarctic Mountains, Antarctica and the Potential Fields of Bilateral Cooperation Between China and Italy
*Cui Yingchun*, *Ma Lijie*, *Liu Chenguang* and *Andreas Läufer* 321

The National Research Program in Antarctica, 40 Years of Italian Research in Antarctica
*Silvano Onofri* 341

Four-Dimensional Observation for Marine and Polar Environment and Ecosystem
*Chen Jianfang* 343

The Ross Sea in the Context of Climate Change
*Giorgio Budillon* and *Pasquale Castagno* 347

Impacts of Glacier Melting on Downstream Ecosystems
*Liu Yongqin* 353

The Arctic Station Dirigibile Italia: a Window on the Arctic
*Mauro Mazzola* 359

The PNRA's Facilities in Antarctica
*Gianluca Bianchi Fasani* 363

**Biographies** 367

**Colophon** 401

## PREMISE
## COOPERATION BETWEEN ITALY AND CHINA. A SHARED RESPONSIBILITY IN THE WAKE OF A THOUSAND-YEAR-OLD TRADITION

Cooperation is an implicit dimension of intellectual work. Since ancient times, the inherent tendency of intellectual work to look beyond what is already known has resulted in the overcoming of geographical, political, cultural and linguistic barriers, and in the different historical periods it has found forms adapted to the different contexts.

Today, in an increasingly globalized world, despite the right and opportune persistence of cultural specificities and even different visions on the ways of organizing social life, cooperation between peoples is confirmed as a common value and, even more than in the past, as a necessity to be accomplished. The challenges humanity is facing have, in fact, a global dimension and there is a shared awareness that only a common and coordinated commitment can make it possible to respond to these challenges effectively.

Relations between the Western world and China have a history that has its roots in antiquity, and as early as the 2nd century BC, with the opening of the *Silk Road*, diplomatic relations between China and the Roman Empire were initiated.

The Italians have been the main protagonists of the encounter between European and Chinese culture from the time of Marco Polo's voyages to the 18th century[1] onwards, and even today our country continues to play an essential role in spreading knowledge of Chinese civilization in Europe and European civilization in China, drawing inspiration from the spirit that originally animated the *Silk Road* and which was based on the concepts of peace and cooperation, openness and inclusion, mutual learning and mutual benefit.

The fact that the Italian Government has given to the Fondazione Idis-Città della Scienza the role of coordinating the most important event in which the meeting between Italy and China takes place with reference to the prospects opened up by developments in the cultural and scientific spheres is, of course, a source of pride for the Foundation but it is, at the same time, recognition of a responsibility that must be exercised in keeping with the values that our entire country and the city of Naples express.

Placing principles such as solidarity, cooperation and responsibility at the center of the processes of scientific and technological innovation obliges man to design forms of social evolution that do not obscure the *humanitas* that permeates the humanistic culture of which Italy - with Naples often playing a leading role - has become the promoter throughout the world. Starting from the *Circolo degli Scipioni*, Italy has tried to design, through practice

[1] Menegatti 2005; Bertuccioli, Masini 1996; Meneguzzi Rostagni 2012.

and thought, a modernity in which attention to man and the dynamics of history, as also affirmed by Pope Francesco, "contributes to a vision of the world that is opposed to the individualist [...] because it is based on the interconnection between people and has the common good as its goal"[2].

Cooperation is therefore not to be understood as a neutral or merely technical space, but as a sphere of authentic commitment, where the relationship with the other becomes an ethical opportunity and shared responsibility.

Today, everyone – by which is meant the institutions, but also all social actors including individual citizens – is called to play a role in governing the epochal change that the world is experiencing.

It is a change that has two engines acting synergistically: the impetuous developments of science and technology, on one hand, and the processes of globalization, on the other. In similar epochal passages of the past, innovative experiences of thought and of man's place in the world have flourished, such as the season of Humanism that asserted itself in the transition from the medieval to the modern world. A similar effort of conception and creativity is therefore required which cannot disregard the fact that there is an inextricable connection between the social, economic, demographic and environmental dimensions. This also means that it is necessary to overcome the fragmentation of the disciplines and the opposition between the "different areas of knowledge", both between the different scientific fields and between these and the human sciences. It is therefore necessary to support the organization of collective research, in every sphere of knowledge, research that is certainly characterized by scientific rigor, but also supported by the experience of solidarity gained by researchers. It is thus a matter of encouraging, by overcoming national barriers, the formation of integrated research groups between researchers and experts representing the world of education, professions, arts, commerce and enterprise. At the heart of this joint effort there are the idea of sustainability in all its possible dimensions, from the environmental to the social and economic, and the idea of responsibility not simply understood as technical responsibility, limited to specific aspects, but as a commitment to a dimension that takes into account the totality of man, the world and the relationship between man and the world.

This is the framework and, at the same time, the perspective in which the work for the organization and realization of the 13th edition of the Italy-China Science, Technology and Innovation Week took place, a work that Fondazione Idis-Città della Scienza carried out in agreement with the Ministry of University and Research and in collaboration with

---

[2] Pope Francis' speech on the occasion of the international convention "Solidarity, Cooperation and Responsibility: the antidotes to fight injustices, inequalities and exclusions" organized by the Fondazione Centesimus Annus, October 21-22, 2021.

the National Research Council, starting from the priorities identified in the Action Plan for the strengthening of the China-Italy Global Strategic Partnership (2024-2027). This was a team effort that saw the universities, research centers and all those in the world of innovation who care about sustainability and responsibility at the forefront. In this context, Fondazione Idis-Città della Scienza joined the team effort with actions taken were perfectly in line with its statutory principles, particularly with the promotion and dissemination of scientific, technological, humanistic and artistic culture, and with the view to contribute to the development of a knowledge-based society in a truly democratic direction where the benefits that the growth of knowledge in the various fields can offer possibly will spread to all social actors, from institutions to associations, companies and individual citizens.

## Bibliographical references


Menegatti 2005: Gabriele Menegatti, *Sulla via di Tientsin*, IsIAO.

Bertuccioli, Masini 1996: Giuliano Bertolucci, Federico Masini, *Italia e Cina*, Laterza, Bari 1996.

Meneguzzi Rostagni 2012: Carla Meneguzzi Rostagni, Italia e Cina - un secolo di relazioni, *Italogramma* (2), 43-53.

# THE "RESTORATION ROAD" CULTURE AND PRACTICE OF HERITAGE CONSERVATION AND ENHANCEMENT

*Francesco Novelli*
Politecnico di Torino - China Center, Architecture Area
francesco.novelli@polito.it

**Keywords**: china center, restoration road, heritage, conservation

## 1. Premises

The history of the relations between the Politecnico of Torino and China has a significant starting point in 2005 with the *Politong Program*, which involved PoliTO, Tongji University (Shanghai), and Politecnico of Milano. Stemming from intergovernmental dialogue between Italy and China, the project was funded by the Italian Ministry of Education, Universities and Research (MUR) until 2013 and subsequently primarily by China. Over the years, more than 1000 students have benefited from the program in Information and Communication Engineering, Mechanical and Production Engineering, and Systemic Design. In 2017 finally, Politecnico of Torino established the China Center[1] with the aim of offering a strategic vision and dedicated management of activities in which China is the leading partner.

The China Center introduced several structural innovative aspects into PoliTO's approach to China and intends to promote and facilitate relations and communications with Chinese institutions; provide support for planning and management of projects and research activities with Chinese partners; strengthen the competitiveness of the Politecnico in China in the field of training, research, and consultancy in the academic, institutional and industrial sectors; increase the familiarity of scholars and professionals with the Chinese university system and the Chinese market.

It should be noted that the China Center is not conceived as a Research or an Innovation center but rather as a facilitator/promoter of the research and training activities conducted by the PoliTO departments in cooperation with Chinese partners. The China

[1] https://www.polito.it/en/polito/international-campus/politecnico-around-the-world/china-center (last consultation 02/01/2025).

Center supports specific research groups such as the China Room[2], established in 2016, dedicated to urban and architecture studies in China, or the automotive group, recently enriched with a specific headquarters dedicated to Chinese collaborations and supporting various individual researchers or small groups as well.

Since its start in 2018, the China Center has contributed to achieving different results alongside implementing traditional education programs in partnership with top partner HEIs, such as bilateral Student Exchange agreements and Double Degree agreements at all levels.

Among the latter, we can mention the Joint PhD in Architecture with Tsinghua University (2018), the Agreement on scholarships for full-degree and visiting PhD students (2019, China Scholarship Council, CSC), the DD Master of Science in Urban Design with South China University of Technology (SCUT, from 2020)[3].

## 2. Intersecting perspectives on the future of architectural heritage: best practices in academic cooperation between Italy and China

It is precisely within the scope of the Dual Master's Degree Program in Urban Design with SCUT (South China University of Technology) in the *Restoration* course that studies have been started that concern the conservation and enhancement of the Ancestral Hall in the Village of Lijiao[4]. The teaching activity involved a group of 30 students who worked on the subject of the exercise starting from a study and analysis of the current context, with a methodological approach attentive to the transformations of urban morphology. The fundamental objective was to identify the remains of the original urban system, undergoing strong transformation and demolition, with the aim of protecting and preserving its identity. This activity was then followed by a careful analysis of the geometric and architectural structure of the studied assets, with an identification of the materials and their state of

[2] https://chinaroom.polito.it (last consultation 02/01/2025).

[3] More details in Bonaglia, Bonino, Facchinetti, Frisoli, Begani, Gottardo, Gonzo, 2023. Similarly, in the field of Architecture, Politecnico has had the opportunity to develop contacts not only with large public institutions, like universities and their design institutes but also with private firms, which have led to significant design opportunities. These opportunities are not only meant as business opportunities but can help PoliTO understand a rapidly transforming reality. In some cases, these relations have involved other entities in the Turin area, which PoliTO collaborates with, and in particular, some architectural firms involved in international collaboration - especially in China - with PoliTO through an agreement signed in 2019 with the Torino Council of Architects.

[4] The Restoration course, active since the 2020 academic year, is held by Professors Emanuele Morezzi and Francesco Novelli, from Politecnico of Torino. For similar contributions, see also Pugnaloni, Carlorosi, Issini, 2011.

alteration to identify possible restoration interventions. The results of these investigations constitute a wealth of knowledge that is very important for the drafting and testing of new guidelines aimed at the implementation of planned conservation programs for this heritage, respecting its material and immaterial value components.

Also, within the framework of cooperation between Politecnico of Torino and South China University of Technology, on December 6, 2024, the Cantonese Opera Art Museum in Guangzhou hosted the *Sino-Italian Heritage Day*, an event dedicated to promoting the recovery, enhancement, and preservation of architectural and urban heritage in South China's Greater Bay Area (GBA).

The initiative, organized by the Department of Architecture and Design at Politecnico of Torino and the School of Architecture at the South China University of Technology, with support from the Consulate General of Italy in Guangzhou and Urban Elephant Architects and Politecnico of Torino China Center, reinforced the partnership between the two universities, which began in 2016.

The day highlighted the added value of cultural heritage recovery across architectural, landscape, and industrial contexts, remarking how Italy and China are the two nations with the highest number of UNESCO World Heritage Sites. In this process, preserving heritage and passing it on to future generations means keeping alive the material and intangible values embodied in every artifact through in-depth knowledge and projects that ensure their relevance in contemporary life.

The event of Heritage Day has also been the occasion to introduce presentations by academic experts from Italian and Chinese institutions emphasizing the vital role of cultural education in heritage preservation, showcasing interventions on archaeological sites, and exploring how cultural heritage can drive high-quality urban-rural development[5].

Moreover, it was presented *La Via del Restauro (Restoration Road)*, a project developed in collaboration with the Conservation and Restoration Center at La Venaria Reale (Italy)[6]. The project's objectives are aimed at highlighting how the dialogue between historical landscapes and contemporary architecture is a fundamental principle for preserving territorial heritage. Thoughtfully integrated contemporary structures can enrich historic settings with new meanings and narratives.

[5] Luigi Franciosini, professor of Architectural and Urban Design at Roma Tre University (Italy), and Cao Jing, representing the Guangdong Provincial Institute of Cultural Relics and Archaeology.

[6] The project was presented by Carla Bartolozzi and Francesco Novelli, with a speech entitled Intersecting perspectives on the future of architectural heritage. Carla Bartolozzi is the scientific director and creator of the project, together with Michele Bonino (Director of the Department of Architecture and Design) and Sara Abram(General Secretary of the CCR - Center for Conservation and Restoration Venaria Reale).

*The Restoration* Road is a trilogy of videos[7] produced within the Multimedia Lab of the Politecnico of Torino: all three videos were conceived around case studies belonging to the World Heritage List, a theme that unites our two countries and which - from the point of view of exchanges and collaborations - opens up a dialogue that could be very interesting for the future. The first one of the three videos is dedicated to the topic of the Royal Residences of the House of Savoy and their historic gardens[8], the second one is dedicated to the wine landscapes of the Langhe Roero and Monferrato[9]. Finally, the third video is dedicated to Industrial Archaeology and urban transformation projects, with the case of Ivrea industrial city.

The aim is to illustrate in which way our monument (first video), landscape (second one), or legacy from the industrial heritage (third one) can be or become the wheel for development in economic, social, and cultural fields. Especially if we consider, in the three different categories, the great weight that being part of the WHL represents.

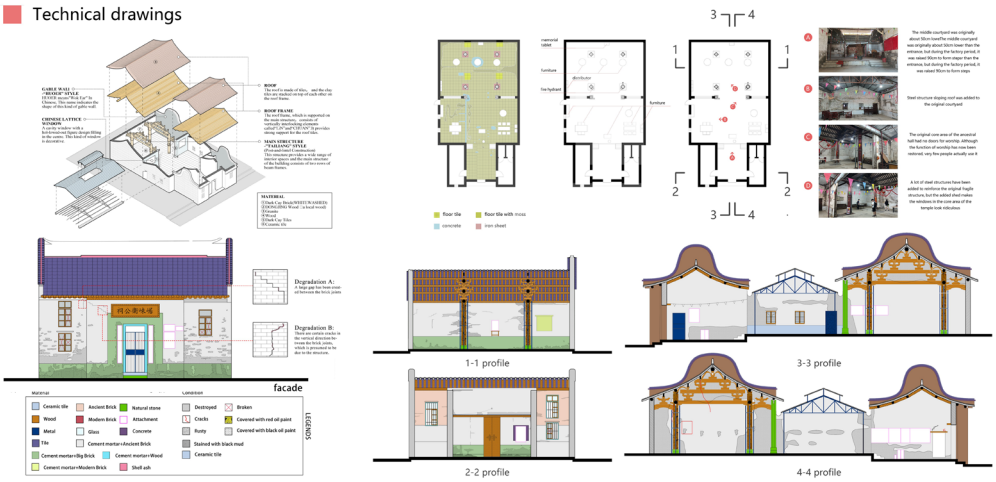



Fig. 1. Julai Ancestral Hall of Wei in Lijiao Village, Technical drawings, materials and alterations analyses, Restoration course, Dual Master's Degree Program in Urban Design, 2024.
Students: Daqi Chen, Sunpeng Chen, Zhaohong Du, Hongming Xu.
Professors: Emanuele Morezzi, Francesco Novelli.

7 https://youtu.be/mKN1PCkn59k (last consultation 02/01/2025).

8 Among the various connections, we can underline the one with the historical imperial palaces in China, like the Summer Palace in Beijing.

9 We have a joint with the Honge Hani terraces (a twinning agreement is already running).

## 3. Conclusion

The initiatives cited which, of course, do not claim to be an exhaustive account of a broad and articulated international comparison, represent, however, a (virtuous) synthesis of comparison and cooperation, consolidated over the years with agreements and collaborations still active between the Politecnico di Torino and the Chinese partner universities.

The same documentaries briefly illustrated want to encourage and promote, in terms of cooperation, activities aimed at the creation of workshops intended as places of exchange, where work will be done on cultural comparison and the different operational practices, from the restoration project to the conservation interventions on individual assets, to the scheduled maintenance plans.

## Bibliographical references

Bonaglia, Bonino, Facchinetti, Frisoli, Begani, Gottardo, Gonzo 2023: M. Bonaglia, M. Bonino, A. Facchinetti, A. Frisoli, M. Begani, M. Gottardo, L. Gonzo, *Navigating Transnational Innovation: Best Practices in Academic Cooperation between Italy and China* (2023, in printing).

Pugnaloni, Carlorosi, Issini 2011: F. Pugnaloni, C. Carlorosi, G. Issini (edited by), *Knowledge and Architectural Design in Beijing*, (Errebi Grafiche Ripesi srl) Falconara Marittima.

**Sitography** (last consultation 02/01/2025):

https://chinaroom.polito.it
https://www.polito.it/en/polito/international-campus/politecnico-around-the-world/china-center
https://youtu.be/mKN1PCkn59k

SCIENCE, TECHNOLOGY AND INNOVATION ITALY-CHINA WEEK
XIII EDITION

# THE VALUE OF SCIENCE AND TECHNOLOGY IN ADDRESSING THE GREAT CHALLENGES OF OUR TIME

Promoted by
Ministry of University and Research of the Italian Republic
Ministry of Science and Technology of Peoples's Republic of China

Coordinated and Organized by
Fondazione Idis-Città della Scienza
National Research Council
Beijing Municipal Science & Technology Commission, Administrative Commission of Zhongguancun Science Park

with the support of
Embassy of Italy in Beijing
Embassy of Peoples's Republic of China in Italy
Ca' Foscari University of Venice
International Technology Transfer Network

With the partecipation of
Research and Cultural Institutes and Centers
Archaeological Park of Pompeii
Center for Colloid and Surface Science
Civil Protection Department - Risk Forecasting and Prevention
Council for Agricultural Research and Economics
Experimental Zooprophylactic Institute of Southern Italy
Italian Institute for Environmental Protection and Research
Italian National Agency for New Technologies, Energy and Sustainable Economic Development - Division Biotechnologies and Sustainable Agri-Food System
National Biodiversity Future Center
National Institute of Geophysics and Volcanology - Vesuvius Observatory
National Institute of Oceanography and Applied Geophysics

National Research Council with
*Institute of Applied Sciences and Intelligent Systems "Eduardo Caianiello"*
*Institute of Electronics, Computer and Telecommunication Engineering*
*Institute of Heritage Science*
*Institute of Methodologies for Environmental Analysis*
*Institute of Polar Sciences*
*Institute of Polymers, Composites and Biomaterials*
*Marine Science Institute*
National Scientific Commission for Antarctica
Sino-Italian Joint Laboratory on Geological and Hydrological Hazards
Stazione Zoologica Anton Dohrn
Beijing Tsinghua Industrial R&D Institute
Chinese Academy of Cultural Heritage
Chinese Academy of Sciences, Wenzhou
Global Healthcare Innovation Center
Henan Zhongyuan Organic Agriculture Research Institute
Institute of Mountain Hazards and Environment, Chinese Academy of Sciences
Institute of Oceanology, Chinese Academy of Sciences
Institute of Tibetan Plateau Research, Chinese Academy of Sciences
Key Laboratory of Grain Processing, Ministry of Agriculture and Rural Affairs
Key Laboratory, Ministry of Agriculture and Rural Affairs of the People's Republic of China
Kunming Institute of Zoology, Chinese Academy of Sciences
National New Energy Vehicle Technology Innovation Center
Newford Research Institute of Advanced Technology
Northwest Institute of Eco-Environment and Resources
Polar Research Institute of China
Second Institute of Oceanography, Hangzhou
Shanghai Institute of Microsystem and Information Technology,
Chinese Academy of Sciences
Sichuan Institute of Nuclear Geology Survey
Talent Development Research Centre of Gongshu District
The 21st Research Institute of China Electronics Technology Group Corporation
Tibet Plateau Research Institute, Chinese Academy of Sciences
Wenzhou Institute, University of Chinese Academy of Sciences
Yuelushan Center for Industrial Innovation

Universities

Alma Mater Studiorum - University of Bologna
Politecnico di Torino - International University
Roma Tre University
Sant'Anna School of Advanced Studies - Pisa
Sapienza University of Rome
University of Bergamo
University of Florence
University of Macerata
University of Milano - Bicocca
University of Naples Federico II
University of Naples "L'Orientale"
University of Naples Parthenope
University of Palermo
University of Salento
University of Salerno
Academy of Fine Arts, Zhengzhou University
Beijing Polytechnic University
Central South University
Communication University of China
Law School of Shanghai University
Northeast Agricultural University
Quzhou Fudan Institute
School of Design, Hunan University
Shanghai Polytechnic University
Shanghai University
Sichuan University of Culture and Arts
Tsinghua University
University of Shanghai
University of Technology, Zhengzhou
Xiamen University
Zhejiang Ocean University

Associations, Enterprises and Startups

Accelerat s.r.l.
Amog s.r.l.
Association for International Economic and Cultural Development
Blue Wings Composting

Clover Venture
Covenant with the Sea for the Earth Foundation
Dielle s.r.l.
Easypharm s.r.l.
Fuki
GeckoWay s.r.l.
GreenApp s.r.l.s.
H.0.Me. s.r.l.
Hyper Wind
Kinsect s.r.l.
Mares Marketing s.r.l.
MinervaS s.r.l.
Officinae Efesti Cultural Association
Oyster Next s.r.l.
PIN Foundation - Prato Campus of University of Florence
PolyEur s.r.l.
PROT.IT s.r.l.
SEEDS s.r.l.
Smart Sensing s.r.l.
SoftMining s.r.l.
Starhealth
VHOS-ai s.r.l.
Volvero
3Bee s.r.l.
Beijing Dongsheng Agriculture Industry and Commerce Corporation
China Electronics Technology Group Corporation
Chinese Energy Conservation Association
Hangzhou Juqi information technology company limited
Hangzhou TaRen Robotics Technology Co., ltd.
Incubation Branch of China Technology Entrepreneurship Association
Photon Technology s.r.l.
Sand Tech Inc.
Shaoxing Jinjiang Machinery Co., ltd.
Yoking Pump Industry Co., ltd.
Yunnan Shanlihong Biotechnology Co., ltd.
Zhejiang Fubao Intelligent Technology Co., ltd.
Zhejiang Tongyi Transportation Technology Co., ltd.
Zigong Haitian Culture Co., ltd.

Finito di stampare
nel mese di ottobre 2025
dalla
Grafica Elettronica srl
Via Bernardo Cavallino, 35g
80128 Napoli, Italia
T. +39 081 559 5114
www.graficaelettronica.it
info@graficaelettronica.it

Bridges series

1. Interconnections in the Mediterranean through time:
Montenegro and Italy
edited by Lucia Alberti

2. Archeologia italiana in Montenegro:
storia e prospettive di una cooperazione scientifica
a cura di Carla Sfameni e Tatiana Koprivica

3. Movement of men, goods and cultures in two areas of Europe.
Hungary and Southern Italy between the 15th and 21st centuries
edited by Paola Avallone and Mónika F. Molnár

ISBN 978 88 8080 774 2