

# B.SuRe

## Building SUsustainable REuse

A MULTIDISCIPLINARY AND MULTISCALE EDUCATIONAL APPROACH  
FOR SUSTAINABLE CITIES AND COMMUNITIES  
International Winter School 2022  
BOOK OF ABSTRACTS

Volume 1

edited by  
Marco Morandotti



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Tel. 02/5836.5751 - Fax 02/5836.5753  
egea.edizioni@unibocconi.it  
www.egeaeditore.it

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# B.SuRe

## Building SUstainable REuse

A MULTIDISCIPLINARY AND MULTISCALE EDUCATIONAL APPROACH FOR  
SUSTAINABLE CITIES AND COMMUNITIES

The volume consists of a collection of contributions from the International Winter School “*B.SuRe. Building Sustainable REuse*”. The event, organized by the experimental laboratory of research and didactics STEP Lab. and PLAY Lab. of DICAr - Department of Civil Engineering and Architecture of University of Pavia, promotes the themes of sustainable methods of management and maintenance of building assets and the development of innovative solutions for the production of images and the construction of virtual architectures and environments.

The Winter School has provided the contribution of external experts to promote the development of different knowledge and skills among Students, Researchers and Professors with international experience, supporting the educational program of the School with Open Lectures held by Partnership Expert Researchers and Invited Lecturers.

University of Pavia Organizer: Prof. Marco Morandotti

Winter School Organizing Secretariat: Elisabetta Doria, Alexa Spigolon - University of Pavia



UNIVERSITÀ  
DI PAVIA

DIPARTIMENTO  
INGEGNERIA  
CIVILE  
ARCHITETTURA

**dICAr**

**STEP**

STEP Laboratory- UniPv  
Scienza e Tecnica per l'edilizia  
e la Progettazione

**PLAY**  
Photography and 3D Laser for virtual Architecture Laboratory

PLAY Laboratory- UniPv  
Photography and 3D Laser for visual  
Architecture Laboratory

This volume collects the synthesis of the research products presented by different international authors in the Winter School funded and promoted by the University of Pavia “*B.SuRe: Building SUSTainable REUse*”. The school was held virtually on 24/25 February - 02/03/04 March 2022 for international MSC students of degree course in Building Engineering and Architecture, Civil Engineering and Faculty of Architecture and students of Doctoral Schools.

B.SuRe Winter School is part of EC2U activities for students. The main aim of the School is to trigger processes of exchange and experimentation between students and scholars of different disciplines, focused on the field of building and urban sustainability, with reference to the intervention on historic cities and building heritage.

The School aims to establish the initial nucleus of a community of researchers who share the same interest in the subject according to interdisciplinary and complementary approaches and skills. Sustainable management of built heritage is a priority that cannot be postponed on a global scale. Existing and foreseen policy plans and targets of UE in the Sustainable development area will imply the need of a huge amount of experts with green competencies and skills.



The United Nations Sustainable Development Goal (UNSDG) 11 “*Sustainable Cities and Communities*” is assumed in this Winter School as one of the reference topics for the development of appropriate national and supranational policies.

The European Campus of City-Universities (EC2U) is a multi-cultural and multi-lingual Alliance consisting of seven long-standing, education and research, locally and globally engaged universities from four diverse regions of the European Union.



EC2U ALLIANCE  
THE EUROPEAN CAMPUS  
OF CITY-UNIVERSITIES



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## B.SURE BUILDING SUSTAINABLE REUSE: AN INTRODUCTION

*Marco Morandotti*

Work Package 6: Sustainable Cities and Communities. University of Pavia Representative

Sustainable management of built heritage is a priority that cannot be postponed on a global scale. Existing and foreseen policy plans and targets of UE in the Sustainable development area will imply the need of a huge number of experts with green competencies and skills. Within this framework the United Nations Sustainable Development Goal (UNSDG) 11 “Sustainable cities and communities” is assumed here as one of the reference topics for the development of appropriate national and supranational policies.

The European Campus of City-Universities (EC2U) is a multi-cultural and multi-lingual Alliance consisting of seven long-standing, education- and research-led, locally and globally engaged universities from four diverse regions of the European Union: the University of Coimbra (Portugal), Alexandru Ioan Cuza University of Iasi (Romania), the University of Jena (Germany), the University of Pavia (Italy), the University of Poitiers (France), the University of Salamanca (Spain) and the University of Turku (Finland). It represents a community of 160 000 students and 20 000 staff, in direct reach to more than 1 600 000 citizens.

Within the Alliance framework is established also a specific task, named “sustainable cities and communities” which two main aims are: the implementation and consolidation of a Virtual Institute, active in SDG11 area, and namely in the field of preservation and retrofitting of historical university buildings with relevant cultural heritage; the creation of a new master programme in sustainable cities and communities. On a local scale, in the University of Pavia there are research skills in the field of sustainable restoration and valorisation of heritage, and sustainable urban planning. At the same time the University of Pavia is an active stakeholder due to its relevant historical building heritage, on which it is developing recovery and enhancement projects in the perspective of sustainable development strategies. Due to these reasons it seemed to be a promising opportunity for the launch of an international educational initiative aimed at specifically investigating the issues of building and urban sustainability in historical contexts.

The main aim of the School is to trigger processes of exchange and experimentation between students and scholars of different disciplines, focused on the field of building and urban sustainability, with reference to the intervention on historic cities and building heritage.

The second aim of the School is to establish the initial nucleus of a community of researchers who share the same interest in the subject according to interdisciplinary and complementary approaches and skills.

The school aims to stimulate students to a multi-level debate on the topic, that may be interesting for all the participants, whatever the specific training of each student and the cultural context of reference, in the perspective of a possible future transformation in a so called “open badge” didactic activity.

The school, organized with a full online model, provided a multidisciplinary and multiscale educational approach. The school focuses on a current and strategic topic at international, national, and local level, offering itself as a moment of connection and comparison between international case studies from different partner universities. The educational and organisational model of the school is highly international, since it forms part of the European EC2U programme, both in relation to coordination activities, integration and sharing of research and awareness activities of the Virtual Institute, both as a coherent activity with the training activities of the future joint master. The school included in its activities a representative of students and teachers from several partner university, such as Pavia, Coimbra, Poitiers and Salamanca.

The school also provided a first opportunity for cooperation between the universities involved in the programme on this specific topic and also acted as a trigger for further joint actions. It also contributed to define the first nucleus of a community of teachers and students belonging to the different universities, who share common cultural, scientific and educational interests.

## B.SuRe BUILDING SUSTAINABLE REUSE

A MULTIDISCIPLINARY AND MULTISCALE EDUCATIONAL APPROACH FOR SUSTAINABLE CITIES AND COMMUNITIES



EC2U ALLIANCE ONLINE WINTER SCHOOL  
24/25 FEBRUARY - 02/03/04 MARCH 2022  
UNIVERSITY OF PAVIA



	THUR. 24 FEBRUARY	FRI. 25 FEBRUARY	WED. 2 MARCH	THUR. 3 MARCH	FRI. 4 MARCH
09:00					
09:30	<b>OPENING SESSION</b> GREETINGS AND INTRODUCTIONS	<b>TOPIC 3 ENERGY RETROFITTING OF CULTURAL HERITAGE</b> Prof. Myriam Lazard POITIERS UNIVERSITY	<b>TOPIC 4 INNOVATIVE TECHNOLOGIES FOR HERITAGE REPRESENTATION AND VALORISATION</b> Prof. Sandro Parrinello DIGITAL DOCUMENTATION FOR HERITAGE CONSERVATION AND VALORISATION	<b>BEST PRACTICE &amp; CASE STUDIES: UNIVERSITY OF PAVIA</b> Prof. Andrea Zatti OFFICE FOR SUSTAINABLE ACTIONS (OSIA)	<b>FINAL CONFERENCE AND ROUNDTABLE</b>
10:30	<b>TOPIC 1 URBAN SUSTAINABILITY</b> Prof. Roberto De Lotto URBAN SUSTAINABLE DEVELOPMENT STRATEGIES AND TOOLS	Prof. Anna Magrini ENERGY EFFICIENCY AND RETROFITTING ON EXISTING BUILDINGS	Prof. Massimiliano Savorra HISTORICAL ARCHITECTURE BETWEEN AESTHETIC AND TECHNIQUES	<b>BEST PRACTICE &amp; CASE STUDIES: MUNICIPALITIES</b> Municipality of Pavia PRESENTATION	
10:45	Prof. Juan José Rastrojo Suarez UNIVERSITY OF SALAMANCA	Eng. Cristina Cecchini THE ENERGY-ORIENTED MANAGEMENT OF PUBLIC HISTORIC BUILDINGS	Other municipalities from EC2U alliance PRESENTATION		
13:00	<b>T1 ROUNDTABLE</b>	<b>T3 ROUNDTABLE</b>	<b>T4 ROUNDTABLE</b>		
14:00	<b>TOPIC 2 SUSTAINABLE REUSE</b> Prof. Carlos Gameiro COIMBRA UNIVERSITY	<b>WINTER SCHOOL STUDENT ACTIVITIES</b> STUDENT FOCUS GROUPS	<b>WINTER SCHOOL STUDENT ACTIVITIES</b> STUDENT FOCUS GROUPS	<b>WINTER SCHOOL STUDENT ACTIVITIES</b> STUDENT FOCUS GROUPS	
17:00	Prof. Marco Morandotti SUSTAINABLE REUSE AND RESTORATION: A RESILIENCE-BASED APPROACH				
18:00	Prof. Daniela Besana SUSTAINABLE REUSE OF CULTURAL HERITAGE: MODELS AND STRATEGIES				
	<b>T2 ROUNDTABLE</b>				

**11 SUSTAINABLE CITIES AND COMMUNITIES**

UNSDG GOAL 11: MAKE CITIES INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE

**B.SuRe WINTER SCHOOL BUILDING SUSTAINABLE REUSE**  
WHEN: 24/25 February - 2/3/4 March  
WHERE: Online - ZOOM Platform  
FOR WHO: Msc Students (2 ECTS)  
LANGUAGE: English

FREE ATTENDANCE ON-LINE EVENT

**MANDATORY REGISTRATION:**  
[https://docs.google.com/forms/d/1DSIZ5bXT187eEYN4uH-\\_J35CzWPV1pU4W45PejKAl/edit](https://docs.google.com/forms/d/1DSIZ5bXT187eEYN4uH-_J35CzWPV1pU4W45PejKAl/edit)



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Scienza e Tecnologia per l'Edilizia e la Progettazione



UNIVERSITÀ DI PAVIA



*“B.SuRe – Building SUsustainable REuse” WINTER SCHOOL*

The school was organized with an online model due to pandemic situation and provides a multidisciplinary and multiscale educational approach. The activities are planned as following:

## JOINT LECTURES

Four key topics have been identified. For each of them there were interventions by a Universities teachers, followed by moments of collegial discussion by members of the school's faculty and participants, so as to stimulate the active participation.

- TOPIC T1 Urban sustainability  
Urban sustainable development strategies and tools.
- TOPIC T2 Energy Retrofitting of cultural heritage  
Energy efficiency and retrofitting on historical buildings;  
The energy-oriented management of public historic buildings: an integrated approach and methodology applications.
- TOPIC T3 Sustainable reuse  
Sustainable reuse and restoration: a resilience-based approach;  
Sustainable reuse of cultural heritage: models and strategies.
- TOPIC T4 Innovative technologies for heritage representation and valorisation  
Digital documentation for heritage conservation and valorization;  
Historical architecture between aesthetic and techniques.

## BEST PRACTICES: UNIVERSITY and MUNICIPALITIES CASE-STUDIES

The discussion of case studies concerning functional reconversion projects, restoration, reuse in place or programmed to Pavia and other partner universities was organized in order to stimulate trans-European comparison on similar issues.

## FOCUS GROUP AMONG PARTICIPANT STUDENTS

The students involved in the school have been involved in a focus group aimed to share and discuss personal thoughts concerning their experiences, expectations and visions concerning their studies.

## FINAL CONFERENCE AND ROUNDTABLE

At the end of the week was organized a final conference, open to a wider audience, including local professional associations and a round table with local administrators, school faculty members and local community representatives.

The school aims to become a regular EC2U event, becoming an integrated training moment in the master's degree curricula, for example on the occasion of one of the planned annual seminars, possibly focusing each year on a different aspect while remaining in the context of overall coherence of the theme.



# BEST PRACTICE & CASE STUDIES

## UNIVERSITY OF COIMBRA

# HISTORIC BUILDING SUSTAINABLE REUSE: BARRIERS ON ESTABLISHING PASSIVE BARRIERS IN OFFICE BUILDINGS. A CASE STUDY

*Luisa Pereira*

The adaptation of spaces to different usage typologies can be complex in heritage buildings. Facilities were initially planned for a specific type of use that, when changed, require additional measures to ensure a suitable indoor environment. Passive strategies, e.g., free cooling, are commonly used as an alternative. However, their implementation often leads to unsatisfactory conditions. Therefore, it is important to clarify the main barriers to achieving thermal comfort in readapted historic buildings. The present study investigated the thermal comfort conditions reported by workers in office spaces of a historic building of the University of Coimbra. The main objective focused on the identification of barriers to the effectiveness of passive measures during summertime.

The case-study was the old building of the Faculty of Medicine of the University of Coimbra (FMUC), built in 1951-56 [2]. It is located at Alta, the Campus I of the university, located at the heights of the city, declared by UNESCO as a World Heritage site in 2013, University of Coimbra – Alta and Sofia [3]. According to the Köppen-Geiger classification, the climate of Coimbra is classified as warm and temperate (Csb), and the prevailing wind varies between 1.5 and 3.2 km/h (average min and max), ranging majorly from SSW to WNW direction. A continuous monitoring campaign was carried out for over four months, from May 4th, 2020 until September 9th, to assess the indoor environmental conditions using hygrothermal dataloggers. Data were recorded every 10 minutes, in eleven offices located on the ground floor of the FMUC, west-oriented (rooms on upper floors were not considered because they still maintain their original functions, while the studied spaces changed their function, being converted from classrooms and laboratories into administrative offices). Due to the COVID-19 pandemic context, the occupancy rate of each office was not uniform during the monitoring campaign (it varied between 30 to 50 %), but desktops were all turned on for remote working. A survey on the internal heat gains was carried out during onsite visits. These former single-occupant medical rooms are nowadays used as administrative offices, provided with several office equipment. The field surveys and thermal comfort analyses were performed and classified according to the most commonly used thermal comfort guidelines: ISO 7730 [4] and ASHRAE 55 [5].

Due to the characteristics of this study – onsite field research of occupied offices –, and the traditional equipment needed to perform such measurements, the study was performed under the assumption of some simplifications: i) the mean radiant temperature was considered equal to the indoor air temperature [6], and the air velocity was considered constant and equal to 0.1 m/s (considering a measured average of 0.07 m/s in the one-day measurement); ii) metabolism of occupants equal to 1.2 met; and iii) clothing insulation ranged from 0.6 to 1.0 clo for summer and mid-season (1.0 clo = 0.155 m<sup>2</sup>·°C/W). It was also assumed that no occupants were under direct solar exposure. Additionally, a one-day evaluation of thermal comfort was performed using a climate analyzer and six occupants were surveyed on August 19th, 2020. To conduct this assessment, a Brüel & Kjær 1213 indoor climate analyzer was used to record air temperature  $T_a$ , dew point temperature  $T_{dew}$ , radiant temperature asymmetry  $T_r$ , and air velocity  $v_a$  with a 1-min timestep. The subjective thermal

comfort survey was carried out by the occupants by filling in questionnaires, expressing their thermal sensation on a continuous scale with indicative qualitative indications (as suggested in [7]). Data evidenced that most offices (especially collective ones) were not thermally comfortable enough due to overheating, as a result of: i) the building itself (thermal inertia; insufficient insulation) and solar radiation exposure of the west façade during the afternoon; ii) the heat generated by internal loads (occupancy and equipment); iii) the inadequate windows' operation (most windows were left open after the 8h-10h am period, even during the solar peak hours and periods of outdoor warm air). Previous occupants' complaints of overheating were highlighted, supported by both the objective and subjective data. Several measures were proposed to mitigate the discomfort conditions, namely:

- reduce to half the number of desktops computers in some offices;
- installation of a local cooling unit in the server center, for the safety of the equipment and space, and to reduce thermal discomfort in the adjacent office;
- change to a users' IT infrastructure based on servers (located in a specific and air-conditioned space), replacing desktops with individual terminals (mini PCs).
- improve/educate and instruct natural ventilation procedures to occupants, in order to potentiate/enhance the use of the free cooling effect, especially in the hottest months (June, July, August, and September) - typically, suggesting windows opening at 8h am, and closure after 10h am. For the success of this measure, occupants should be instructed and motivated to take as a reference the instantaneous data from a nearby weather station (and even the weather/temperature forecast, in the corresponding free-access platform). Though all these measures will improve thermal comfort, authors recognize that these might not be enough, especially when the outdoor daily average  $\bar{T}_{out} > 24$  °C. Under such circumstances, the impact of external climate conditions is difficultly counteracted without mechanical cooling systems.

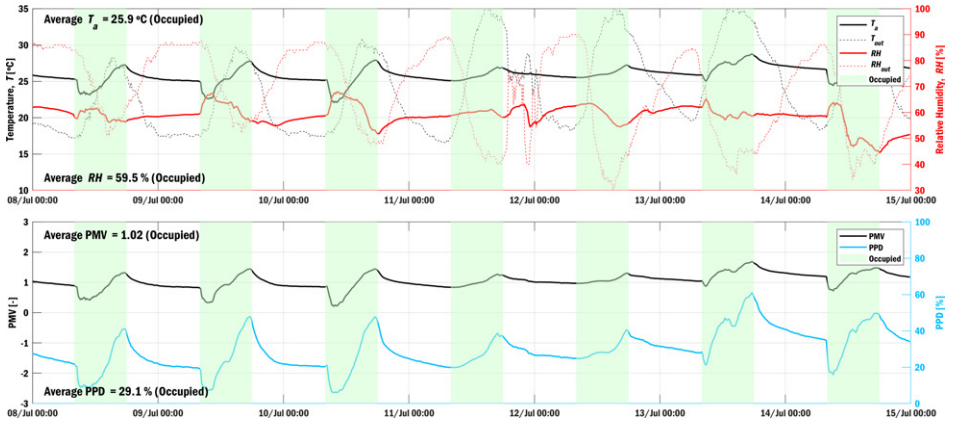
## ACKNOWLEDGMENTS

The following extended abstract is based on the scientific article "Barriers on establishing passive strategies in office spaces: a case study in a historic university building" It was orally presented at the B.SuRe Winter School – "Building Sustainable Reuse" (EC2U ALLIANCE ONLINE WINTER SCHOOL- University of Pavia), on March 3th 2022, and its complemented by the presentation openly available at <https://zenodo.org/record/6325173#.YiznPxR25c>. "Historic Buildings sustainable reuse: barriers on establishing passive barriers in office buildings. A case study" Nuno Baía Saraiva, Luísa Dias Pereira, Adélio Rodrigues Gaspar, José Joaquim da Costa.

## REFERENCES

- [1] Saraiva, N. B. , Pereira, L. D. Gaspar, A. R. da Costa, J. J.: Barriers on establishing passive strategies in office spaces: A case study in a historic university building, *Sustain.*, vol. 13, no. 8, 2021, doi: 10.3390/su13084563.
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Office G - week 9







## B.SURE WINTER SCHOOL 2022- PROGRAM

## B.SuRe BUILDING SUSTAINABLE REUSE

A MULTIDISCIPLINARY AND MULTISCALE EDUCATIONAL APPROACH FOR SUSTAINABLE CITIES AND COMMUNITIES

## EC2U ALLIANCE ONLINE WINTER SCHOOL

24/25 FEBRUARY - 02/03/04 MARCH 2022

UNIVERSITY OF PAVIA



11 SUSTAINABLE CITIES AND COMMUNITIES



UNSDG GOAL 11: MAKE CITIES INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE

THURSDAY 24<sup>TH</sup> FEBRUARY 2022

DAY 1

9.30 - 10.30

**OPENING SESSIONS**

Greetings and introductions

Antonella Forlino

*Pro-rector for internationalization*

Ludovic Thilly

*Coordinator of EC2U Alliance*

Lalo Magni

*Dean of faculty engineering*

Alessandro Reali

*Director of the department of Civil**Engineering and Architecture*

Antonio Bobbio Pallavicini

*Deputy mayor and councillor for Public Works,**Mobility and Transport of the city of Pavia*

Manuel Carlos Gameiro

*EC2U WP6 leader*

Marco Morandotti

*Coordinator of Winter School B.SuRe*

Welcome and introduction

Morning session

**TOPIC 1 URBAN SUSTAINABILITY**

10.45 - 11.30

Urban sustainable development strategies and tools

Roberto De Lotto

*University of Pavia*

Oral presentation

11.30 - 12.15

Partner Alliance EC2U

Juan José Rastrollo Suarez

*University of Salamanca*

Oral presentation

12.15 - 13.00

T1 ROUNDTABLE

Break

Afternoon session

**TOPIC 2 SUSTAINABLE REUSE**

14.30 - 15.15

Partner Alliance EC2U

Manuel Carlos Gameiro

*Coimbra University*

Oral presentation

15.15 - 16.00

Sustainable reuse and restoration. A resilience-based approach

Marco Morandotti

*University of Pavia*

Oral presentation

16.00 - 16.45

Sustainable reuse of cultural Models and strategies.

Daniela Besana

*University of Pavia*

Oral presentation

16.45 - 18.00

T2 ROUNDTABLE



# B.SuRe BUILDING SUSTAINABLE REUSE

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**11** SUSTAINABLE CITIES AND COMMUNITIES



UNSDG GOAL 11: MAKE CITIES INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE



FRIDAY 25<sup>TH</sup> FEBRUARY 2022

DAY 2

Morning session

### TOPIC 3 ENERGY RETROFITTING OF CULTURAL HERITAGE

9.30 - 10.15	Thermal modelling, experiments and numerical simulation applied on historic buildings towards energy retrofiting	Myriam Lazard <i>Politiers University</i>	Oral presentation
10.15 - 11.00	Energy efficiency and retrofiting on existing buildings	Anna Magrini <i>University of Pavia</i>	Oral presentation
11.15 - 12.00	The energy-oriented mangment of public historic buildings	Cristina Cecchini <i>University of Pavia</i>	Oral presentation
12.00 - 13.00	T3 ROUNDTABLE		

Afternoon session

### STUDENTS FOCUS GROUP ABOUT TOPIC 1 AND TOPIC 2

14.00 - 14.30	Presentation of participants	Students focus group	Student activities
14.30 - 17.00	Working group		
17.00 - 18.00	DAY'S WORK PRESENTATION Students roundtable		



WEDNESDAY 2<sup>ND</sup> MARCH 2022

DAY 3

Morning session

### TOPIC 4 INNOVATIVE TECHNOLOGIES FOR HERITAGE REPRESENTATION AND VALORISATION

9.30 - 10.15	Digital documentation for heritage conservation and valorisation	Sandro Parrinello <i>University of Pavia</i>	Oral presentation
10.15 - 11.00	Historical architecture between aesthetic and techniques	Massimiliano Savorra <i>University of Pavia</i>	Oral presentation
11.15 - 12.00	Culture and Sustainability	Olimpia Niglio <i>University of Pavia</i>	Oral presentation
12.00 - 13.00	T4 ROUNDTABLE		

Afternoon session

### STUDENTS FOCUS GROUP ABOUT TOPIC 3

14.00 - 14.30	Presentation of participants	Students focus group	Student activities
14.30 - 17.00	Working group		
17.00 - 18.00	DAY'S WORK PRESENTATION Students roundtable		



UNIVERSITÀ DI PAVIA

DIPARTIMENTO INGEGNERIA CIVILE ARCHITETTURA



UNIVERSIDADE D COIMBRA

UNIVERSITÄT „ALEXANDRU IOAN CUZA“ din IASI

FRIEDRICH SCHILLER UNIVERSITÄT JENA

UNIVERSITÉ de TOULOUSE

UNIVERSIDAD DE SALAMANCA

TURUN YLIOPISTO

# B.SuRe BUILDING SUSTAINABLE REUSE

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## EC2U ALLIANCE ONLINE WINTER SCHOOL

24/25 FEBRUARY - 02/03/04 MARCH 2022

UNIVERSITY OF PAVIA



**11** SUSTAINABLE CITIES AND COMMUNITIES



UNSDG GOAL 11: MAKE CITIES INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE



THURSDAY 3<sup>RD</sup> MARCH 2022

DAY 4

Morning session

### BEST PRACTICE & CASE STUDIES: UNIVERSITY OF PAVIA AND MUNICIPALITIES

09.00 - 09.30	Sustainability at UNIPV: the role of OSA-Office for sustainable actions	Andrea Zatti <i>Office for sustainable actions (OSA) - Pavia</i>	Oral presentation
09.30 - 10.00	Between valorization and innovation, between reuse and new buildings: the strategies of the University of Pavia for the building heritage	Alessandro Greco <i>Building delegate - University of Pavia</i>	Oral presentation
10.00 - 10.30	Historic Buildings sustainable reuse: establishing passive barriers in office buildings - a case study	Luisa Pereira <i>University of Coimbra</i>	Oral presentation
10.30 - 10.45	DISCUSSION		

Morning session

### CULTCITIES PROJECT

11.00 - 13.00	Opening of the meeting	Marco Morandotti <i>University of Pavia</i>	
	EC2U and CultCities project	Maria Spitti <i>Pavia Europe Office Coordinator</i>	
	Municipality of Pavia	Mara Latini <i>Head of the Public Works, Maintenance, Expropriation and Mobility Department</i>	
	Municipality of Hildesheim	Fritz Ahrberg <i>Tourism Manager of Hildesheim Marketing</i>	
	Municipality of Turku	Joanna Kurth <i>Municipality of Turku - Project manager</i>	
	Municipality of Coimbra	Joana Gouveia Loureiro <i>Municipality of Coimbra - Cultural Officer</i>	
	Grand Poitiers Urban Community	Florence Cazals <i>Chargée de mission ingénierie de projets européens et internationaux</i>	
	Municipality of Iasi	Elena Farca <i>Head of International Affairs Office</i>	
	Municipality of Salamanca	Rubén Tostado González <i>Coordinador general Fundación Salamanca Ciudad de Cultura y Saberes</i>	
	Municipality of Besançon	Marieke Steenbergen <i>Head of international relations</i>	

Afternoon session

### STUDENTS FOCUS GROUP ABOUT TOPIC 4

14.00 - 17.00	Working group	Students focus group	Student activities
17.00 - 18.00	DAY'S WORK PRESENTATION	Students roundtable	



# B.SuRe BUILDING SUSTAINABLE REUSE

A MULTIDISCIPLINARY AND MULTISCALE EDUCATIONAL APPROACH FOR SUSTAINABLE CITIES AND COMMUNITIES

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FRIDAY 4<sup>TH</sup> MARCH 2022

DAY 5

Morning session

### WINTER SCHOOL FINAL PRESENTATION AND CLOSING

09.15- 10.00	Online didactic activities within the B.SuRe School: methods and results	Anna Magrini University of Pavia	Oral presentation
10.00 - 10.30	Cultural heritage digital asset management. A forthcoming revolution	Marco Morandotti University of Pavia	Oral presentation
10.30 - 10.45	EC2U 4th Forum in Pavia 4-7 April 2022	Giulia Falchi Project Officer and local coordinator of EC2U project at the University of Pavia	Oral presentation

Break

Morning session

### ROUND TABLE\*

\* LANGUAGE: ITALIAN

11.00 - 12.30	<i>Rigenerazione, riuso, valorizzazione. Nuovi paradigmi nella prospettiva dello sviluppo sostenibile</i>	Marco Morandotti University of Pavia Antonio Bobbio Pallavicini Deputy mayor and councillor for Public Works, Mobility and transport of the city of Pavia Augusto Allegrini President of the Order of Engineers of Pavia Gianluca Perinotto President of the Order of Architects of Pavia Alberto Righini President ANCE Pavia	
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12.30

### CLOSING OF THE EVENT

#### CLOSING EVENTS: B.SURE WINTER SCHOOL

VENERDÌ 4 MARZO - FRIDAY, 4<sup>TH</sup> MARCH  
9:15-13:00 - ITALIAN LOCAL TIME

UNISCITI ALL'EVENTO! - JOIN THE EVENT!

<https://us02web.zoom.us/j/87655650479?pwd=SnlvVDhkl0tlOVzRys5ekRkbGZBQT09>



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