

C3places

Using ICT for Co-creation
of Inclusive Public Space

**Carlos Smaniotto Costa, Joana Solipa Batista, Inês Almeida,
Marluci Menezes, Aelita Skaržauskienė, Monika Mačiulienė,
Dick Botteldooren, Timothy Van Renterghem, Rita Pizzi, Paolo Ceravolo,
Ina Šuklje Erjavec, Vita Žlender, Barbara Goličnik Marušić**

ERA-NET COFUND SMART URBAN FUTURES CALL (ENSUF)

URBAN EUROPE

JOINT PROGRAMMING INITIATIVE URBAN EUROPEAN



C3PLACES Project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 693443.

© 2021 C3Places Project

Edições Universitárias Lusófonas



**Edições Universitárias
Lusófonas**

C3Places - Using ICT for Co-Creation of Inclusive Public Places

ISBN 978-989-757-154-1

DOI 10.24140/2021/EB-978-989-757-154-1

Authors

Carlos Smaniotto Costa, Joana Solipa Batista, Inês Almeida
Universidade Lusófona, Portugal

Marluci Menezes
National Laboratory of Civil Engineering, Portugal

Aelita Skaržauskienė, Monika Mačiulienė
Mykolas Romeris University, Lithuania

Dick Botteldooren, Timothy Van Renterghem
Ghent University, Belgium

Rita Pizzi, Paolo Ceravolo
University of Milan, Italy


Ina Šuklje Erjavec, Vita Žlender, Barbara Goličnik Marušić
Urban Planning Institute of the Republic of Slovenia, Slovenia



TABLE OF

CONTENTS

This e-book	4
Introduction	5
C3Places Policy Brief	6
Partners	11
Keywords	12
Inclusive and digital communities	13
Co-creation of public spaces	14
Community involvement	15
Public space users and their socio-spatial practices	16
Web-mobile technologies	17
Results of C3Places Living Labs	18
Ghent	19
Can attitude towards greenery improve road traffic noise perception? A case study of a highly-noise exposed cycling path	20
Influence of personal factors on sound perception and overall experience in urban green areas. A case study of a cycling path highly exposed to road traffic noise	21
Interactive soundscape augmentation of an urban park in a real and virtual setting	22
Classifying urban public spaces according to their soundscape	23
Lisbon	24
C3Places Lisbon	25
The C3Places mobile application	27
Loom of Ideas	28
Brief notes on social value of public spaces	30
Brief notes on user's participation in public spaces planning and design	32
Reflections on teenagers use of public open space	35
Potentials and bottlenecks in digital co-creation with teenagers	37
Exploring teenagers' spatial practices and needs in light of new communication technologies	39
Co-creation of teenager-sensitive public spaces	40
Milan	41
Participatory co-creation and urban sustainability: the role of cooperation in the ICT era	42
ICT-Based participatory co-creation of urban sustainability	44
The University of Milan contribution to the C3Places Project	46
Social Campus	48
An example of digitally shared infrastructure creating a participatory community in an urban open spaces	50
Smart Co-design. An interdisciplinary approach to urban planning via augmented/virtual reality and process mining	53
Vilnius	55
Mapping digital co-creation for urban communities and public places	56

Framing the rationale of C3Places	57
How can ICT provision improve aspects of spatial use and quality?	58
Co-creation of POS – challenges and opportunities	61
Actors and their roles in the co-creation of POS	64
Possible benefits of using ICT tools in co-creation process	66
Evaluation of Digital tools for co-creation of public open space	68
Types of ICT tools	71
Digitally supported co-creation within public open space development process 	76
Methodological Framework for living labs for co-creation of public spaces	77
Co-Creation of Public Open Places. Practice - Reflection – Learning	78
Outcomes by the Project Partners	79
Further Reading	79

Legend



Published article on external source



MILAN LIVING LAB

The Living Lab is promoted by the Computer Science Department of the **University of Milan**. It explores new dynamics of the open spaces as a value-added service for the community, paying attention to the parties interested, to the local context and to the different social groups.

The idea developed by the team is a vibrant new way to create a community that could really communicate and help and grow not only virtually but also in presence by means of technology.

Contributions of the University of Milan to the C3Places Project are various. The main task was the development of a co-creation platform providing a scientifically validated framework for citizens' interaction in and with public spaces, leveraging their diversity potential of co-creation.

Local Partners

- Università degli Studi di Milano
- Department of Computer Science

Social Campus



THE UNIVERSITY OF MILAN CONTRIBUTION TO THE C3PLACES PROJECT



Rita Pizzi

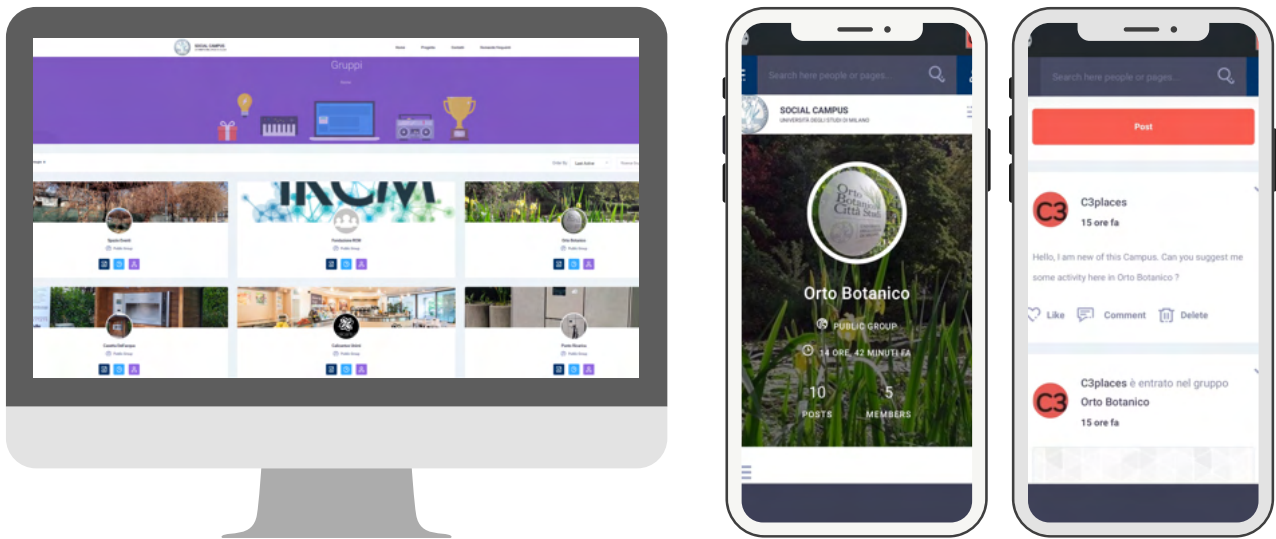
The presentation at the **link** describes the idea developed by the UNIMI team: a vibrant new way to create a community that could really communicate and help and grow not only virtually but also in presence *by means* of technology.

Urban open space can easily become center of shared services and cultural events and opportunities and knowledge (Figure 3.6).

The availability of public hot spots in public places can be seen as a social service, where digital infrastructures may become a way for the supply of public services, ideas, creativity, opportunities for co-creation and collective cultural and social interchange, promoting sustainability, responsibility and knowledge of nature, the city and citizenship in its cultural diversity.



Figure 3.6: View of the "Città Studi" area.



Figures 3.7-3.8: The PC and smartphone Social Campus interface: view of some points of interest. Clicking on the point opens the corresponding social group.

University of Milan main task in C3Places project was the development of a co-creation platform providing a scientifically validated framework for citizens' interaction in and with public spaces, leveraging on their diversity potential of co-creation (Figures 3.7 and 3.8). A social network built around points of interest of public open spaces, where people can exchange useful information, moods, requests, ideas (Figures 3.9 and 3.10).

A complete example has been developed and experiment, yield the novel digital tool to students of the Campus, open also to the citizens living in the area.

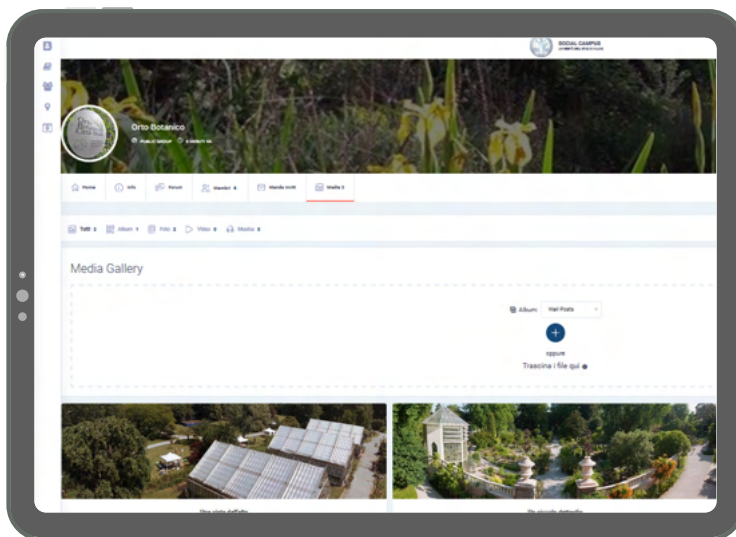


Figure 3.9: View of the Social Campus Media Gallery where the users can upload contents.

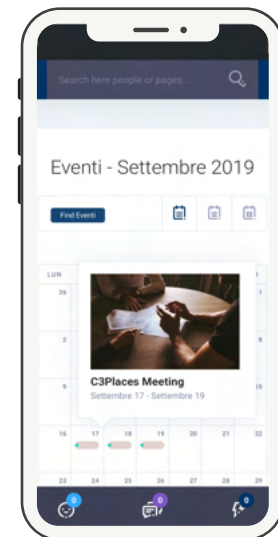


Figure 3.10: View of the Social Campus Agenda where the user can add and find events.



SOCIAL CAMPUS



Rita Pizzi

The **platform** was created by the Department of Computer Science of the dell'Università degli Studi di Milano of the as part of the C3Places European Project, which aims to develop strategies and tools to increase the quality of open public spaces through the information and communication technologies. This platform aims to create a community of students, teachers and citizens who attend the Città Studi ("City of Studies") Campus and its open spaces.

On this web site you can ask, receive and yield information on the various places of interest scattered around the area simply by registering. Entering the dedicated pages it will be possible to interact with the registered members that share the same interests. In the groups section you will be able to communicate with the registered members (Figure 3.11). The group page can also be reached by scanning the QR code on the plate affixed in proximity to the point of interest (Figures 3.12 and 3.13).

[Join this new community](#)

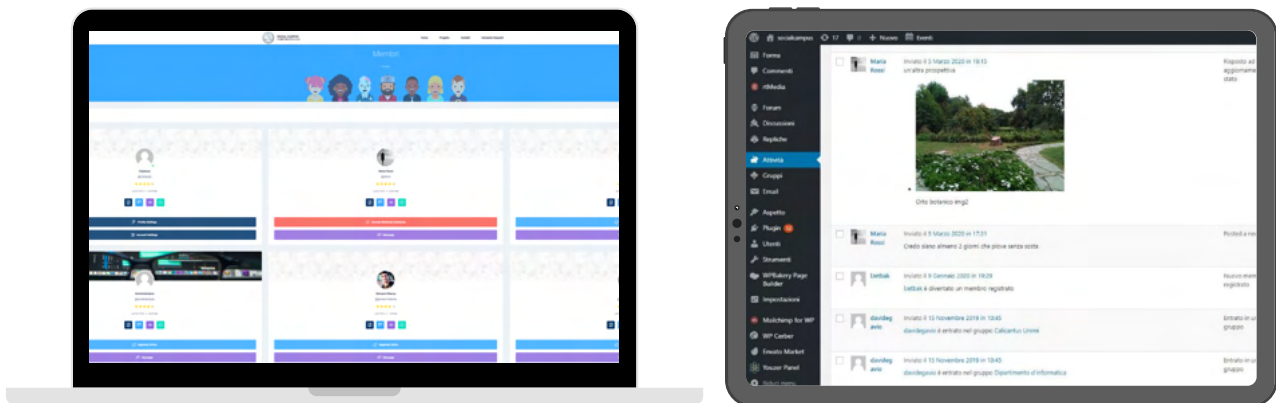


Figure 3.11: Social Campus view of the members page and of a chat between members.



Figure 3.12: Social Campus: an example of QR code tag.



Figure 3.13: Social Campus: enlargement of a QR code tag: it includes both QR code and a short description of the point of interest.



AN EXAMPLE OF DIGITALLY SHARED INFRASTRUCTURE CREATING A PARTICIPATORY COMMUNITY IN AN URBAN OPEN SPACES



Rita Pizzi

An open project of the Department of Computer Science of the University of Milan, **PEOPLE HAVE THE POWER**, in collaboration with the Polytechnic University of Milan (Department of Architecture, Construction Engineering and Built Environment) has proposed a geolocalized app that allows to find in the vicinity of your vehicle private buildings available to lend an electric outlet for charging electric vehicles, especially in yards, garages or parking spots.

As shown in the dedicated platform, the app allows individuals, companies or commercial activities to register, describe their service, arrange payment via PayPal or credit card, or promote their charging spots with scores collection and exchange, discounts etc. Users can use the **recharge service** while leaving the vehicle for commissions or for leisure, or during a holiday trip or when stopping for the night. The project was developed and a charging point was realized in the Città Studi Campus and has become a point of interest of the **Social Campus platform** (Figures 3.14, 3.15, 3.16, 3.17).



C3places

PUNTO PER LA RICARICA DI VEICOLI ELETTRICI LEGGERI

Luogo per diffondere la mobilità elettrica attraverso punti di ricarica innovativi, installabili sulla facciata di ogni edificio e condivisi con un sistema che incrocia i modelli di green e sharing economy.
Place of diffusion of electric mobility through innovative recharging points, which can be installed on the facade of each building and shared with a system that combines the green and sharing economy models.

<https://sites.unimi.it/socialcampus/>



<https://c3places.eu>

Inquadra il QR code per maggiori informazioni e unisciti alla community del Campus
Frame the QR code for more information and join the Campus community

Figure 3.14: Social Campus: the QR code tag of the Smart charging point for soft electric vehicles.



Figure 3.15: The Smart charging point, inserted in the facade of the building.



Figure 3.16: Smart charging point position.



Figure 3.17: Smart charging point close-up view.

OUTCOMES BY THE PROJECT PARTNERS

The Project C3Places produced a series of academic publications, keynotes, talks and posters considering the relationship between people, places and technologies as well as about the four living labs. A complete list is available at:



<https://c3places.eu/outcomes>

FURTHER READING

C3Places provide a vast array of publications on co-creation in practice, on engaging different stakeholders and on digital tools:

Alves, F. B. (2005). *O Espaço Público Urbano. Qualidade, Avaliação e Participação Pública*. Porto: Escola Superior Artística do Porto.

✚ Bisschops, S., & Beunen, R. (2019). A new role for citizens' initiatives: The difficulties in co-creating institutional change in urban planning. *Journal of Environmental Planning and Management*, 62(1), 72-87. <https://doi.org/10.1080/09640568.2018.1436532>.

Boffi, M., & Rainisio, N. (2017). To Be There, Or Not To Be. Designing Subjective Urban Experiences. In *Urban Design and Representation* (pp. 37-53). Springer, Cham.

✚ Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3 (2), 77-101.

✚ Carmigniani, J., Furht, B., Anisetti, M., Ceravolo, P., Damiani, E., & Ivkovic, M. (2011). Augmented reality technologies, systems and applications. *Multimedia tools and applications*, 51(1), 341-377. <https://doi.org/10.1007/s11042-010-0660-6>.

✚ Carmona, M., Heath, T., Tiesdell, S., & Oc, T. (2003). *Public Places, Urban Spaces: The Dimensions of Urban Design*. Michigan: Architectural Press.

✚ CyberParks Project. Pool of Examples (n.d.). Retrieved June 7, 2019. Available at <http://cyberparks-project.eu/examples>.

- ☞ Davies, S. R., Selin, C., Gano, G., & Pereira, Â. G. (2012). Citizen engagement and urban change: Three case studies of material deliberation. *Cities*, 29(6), 351–357.
- ☞ Dunn, C. E. (2007). Participatory GIS — a people's GIS? *Progress in Human Geography*, 31(5), 616–637.
- Gehl, J. (1987). *Life Between Buildings: Using Public Space*. New York: Van Nostrand Reinhold.
- ☞ Gehl, J. (2017). Twelve Urban Quality Criteria. Available at <https://gehlinstitute.org/wp-content/uploads/2017/08/TWELVE-QUALITY-CRITERIA.pdf>.
- ☞ Godbey, G. (2009). *Outdoor Recreation, Health, and Wellness: Understanding and Enhancing the Relationship*. Recreation, May 2009, 1–42.
- ☞ Goličnik Marušić, B., & Šuklje Erjavec, I. (2020) Understanding co-creation within urban open space development process, in: C. Smaniotto Costa, M. Mačiulienė, M. Menezes, & B. Goličnik Marušić. (Eds) *Co-Creation of Public Open Places. Practice—Reflection—Learning*. C3Places Project Lisbon: Lusófona University Press. ISBN 978-989-757-125-1. DOI <https://doi.org/10.24140/2020-sct-vol.4-1.1>.
- Innerarity, D. (2006). *O novo espaço público*. Lisboa: Teorema.
- ☞ Jacobs, J. (1961). *The Death and life of Great American Cities*. New York and Toronto: Vintage Books - Random House.
- ☞ Jupp, E. (2007). Participation, local knowledge and empowerment: Researching public space with young people. *Environment and Planning A*, 39(12), 2832–2844.
- ☞ Kaplan, A., & Haenlein, M. (2014). Collaborative projects (social media application): About Wikipedia, the free encyclopedia. *Business Horizons*, 57(5), 617–626. Available at <https://doi.org/10.1016/j.bushor.2014.05.004>.
- Lefebvre, H. (1991). *The Production of Space*. Oxford: Blackwell.
- ☞ Mitchell, D. (1995). The End of Public Space? People's Park, Definitions of the Public, and Democracy. *Annals of the Association of American Geographers*.
- ☞ Muñoz, S.-A. (2009). *Children in the Outdoors: A literature Review*. Forres: Sustainable Development Research Centre.
- ☞ Participedia. (n.d.). Retrieved 27 March 2019.
- Piga, B. E. (2017). Experiential simulation for urban design: From design thinking to final presentation. In *Urban Design and Representation* (pp. 23–36). Springer, Cham.
- ☞ Piga, B. E. A., Cacciamatta, S., & Boffi, M. (2021). *Smart Co-Design for Urban Planning: Augmented and Virtual Reality Apps in Collaborative Processes*. Springer International Publishing.
- ☞ PPS - Project for public spaces. (2017) *The Placemaking Process*.
- ☞ PPS - Project for Public Spaces. (2009). *What Makes a Successful Place?* Retrieved 10 June 2019. Available at <https://www.pps.org/article/grplacefeat>.
- ☞ Seeber, I., Maier, R., Ceravolo, P., & Frati, F. (2014). Tracing the development of ideas in distributed, IT-supported teams during synchronous collaboration.

Sennett, R. (1977). *The Fall of Public Man*. London: Penguin Books.

☑ Smaniotto Costa, C., Almeida, I., Batista, J., Menezes, M. (2018). Envolver adolescentes no pensar a cidade: reflexão sobre oficinas temáticas de urbanismo no Bairro de Alvalade, Lisboa. *Engaging teenagers in placemaking: Reflections on thematic workshops in urban planning in Lisbon's Alvalade Neighbourhood*. *Revista de Geografia e Ordenamento do Território (GOT)*, 15, 117-142.

☑ Smaniotto Costa, C., Menezes, M. (2016). A agregação das tecnologias de informação e comunicação ao espaço público urbano. Reflexões em torno do projeto CyberParks - COST TU 1306. *urbe*. *Revista Brasileira de Gestão Urbana (Brazilian Journal of Urban Management)*, 8 (3): 332-344. Doi: 10.1590/2175-3369.008.003.AO04.

☑ Smaniotto Costa, C., Šuklje Erjavec, I., Kenna, T., de Lange, M., Ioannidis, K., Maksymiuk, G., de Waal, M. (Eds.) (2019): *CyberParks – The Interface Between People, Places and Technology – New Approaches and Perspectives*. Cham: Springer, Series: Information Systems and Applications LNCS 11380. DOI: 10.1007/978-3-030-13417-4.

☑ Smaniotto Costa, C., Šuklje Erjavec, I., & Mathey, J. (2008). Green Spaces - a Key Resources for Urban Sustainability. *The GreenKeys Approach for Developing Green Spaces*. *Urbani Izziv*, 19 (2 Mestne zelene površine / Urban green spaces), 199–211.

Solipa Batista, J.; Smaniotto Costa, C.; Menezes, M.; Almeida, I. (2020). Co-Creating a Teenagers' Sensitive Public Open Space: A Case Study in Alvalade Neighbourhood. In *Associação Portuguesa de Sociologia (Eds.). Na era da "pós-verdade"? Esfera pública, cidadania e qualidade da democracia no Portugal contemporâneo*. Lisbon: APS.

☑ Stevens, Q. (2007). *The Ludic City*. London and New York: Routledge.

☑ Šuklje Erjavec, I. & Žlender, V. (2020). Categorization of digital tools for co-creation of public open spaces. Key aspects and possibilities. *Planning Practice and Research* (165-183). In Smaniotto Costa, C., Mačiulienė, M., Menezes, M. & Goličnik Marušič, B. (Eds.). *Co-Creation of Public Open Places. Practice - Reflection - Learning*. C3Places Project. Lisbon: Lusófona University Press. <https://doi.org/10.24140/2020-sct-vol.4-2.1>.

☑ Šuklje Erjavec, Ina, and Ruchinskaya, Tatiana (2019). A Spotlight of Co-Creation and Inclusiveness of Public Open Spaces. In *CyberParks – The Interface Between People, Places and Technology*, edited by Smaniotto Costa C. et al. *Lecture Notes in Computer Science*, vol 11380. Springer, Cham.

☑ Talen, E. (2000). *The Problem with Community in Planning The Problem with Community*, 15(2).

☑ Thompson, C. W. (2002). Urban open space in the 21st century. *Landscape and Urban Planning*, 60(2), 59–72.

UN-Habitat (2015). *Adequate Open Public Space in Cities. A Human Settlements Indicator for Monitoring the Post-2015 Sustainable Development Agenda*.

☑ UN-Habitat (2016). *New Urban Agenda: Quito Declaration on Sustainable Cities and Human Settlements for All*. In *Habitat III Conference* (p. 24). United Nations Human Settlements Programme (UN-Habitat).

Valentine, G. (2004). *Public space and the culture of childhood*. Aldershot: Ashgate.

Van Renterghem, K. Vanhecke, K. Filipan, K. Sun, T. De Pessemer, B. De Coensel, W. Joseph, D. Botteldooren (2020). Interactive soundscape augmentation by natural sounds in a noise polluted urban park. *Landscape and urban planning*, vol. 194, 103705, 2020.