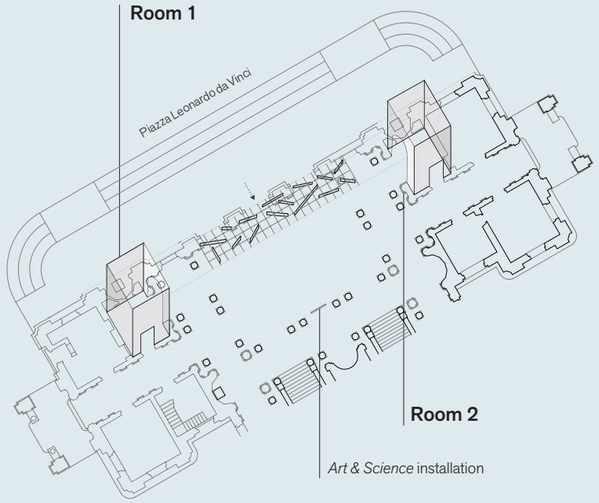
MADE IN POLIMI is the story of the past, present and future of the Politecnico di Milano, from its foundation in 1863. The facade of the Politecnico's main building, inaugurated with the new "Città Studi" campus on 22 December 1927, features two statues placed symmetrically in two niches: the first depicts its founder Francesco Brioschi (1824/97) and was brought here from the first location of the University. The second portrays Giuseppe Colombo (1836/1921), rector of the Politecnico from 1897 to 1921. From their position on the University's main building, these two sculptures represent the history of the Politecnico di Milano. The area behind them, facing onto the entrance hall, hosts **MADE IN POLIMI**, an informative space describing the projects conceived and implemented by professors and students throughout their academic and professional careers, inside and outside the University. Here you will find stories of inventions and patents, objects and products, buildings and infrastructures; but above all, stories of women and men, of discoveries stemming from long and patient research, of extra-ordinary passions interweaving the spheres of life and work. The lifelong goal of these Politecnico di Milano engineers, architects and designers was to design something that did not exist, but that has since become a part of our daily lives, of the cities and of the world we live in. Projects rooted in our past, that stimulate new ideas and make us dream of something that tomorrow may become indispensable.

Opening: Monday to Friday 8.45 am – 7.00 pm, Saturday 10.00 am – 3.00 pm by appointment



Curated by Federico Bucci, Claudio Camponogara, Ludovica Cappelletti, Alessandro Colleoni, Laura D'Ambros, Vincenzo Ficco, Luisa Lualdi, Simona Olgiati, Chiara Pesenti, Mascia Sgarlata

Exhibition Design Lola Ottolini with Beatrice Chiarini
Exhibition Graphic Design Francesca Ceccoli, Andrea Puppa

Installation, construction and management support
area Tecnico Edilizia, Politecnico di Milano
Press-Office Media Relations Unit, Politecnico di Milano

Room 1

Ⓐ **History & Memory**
Storia e memoria

Ⓑ **Student Life**
Vita da studente

Ⓒ **Pioneers**
Pionieri

Ⓓ **Drawings for Milan**
Disegni milanesi

Ⓔ **Art & Science**
Arte e scienza

Ⓕ **Poliroom**

Ⓖ **On the Road**
In viaggio

Room 2

Ⓗ **Community**
Comunità

Ⓘ **Everyday Life**
Cronache quotidiane

Ⓛ **Politecnico geographies**
Geografie politecniche

Ⓜ **Micro & Macro**

Ⓝ **In the society**
In società

Ⓞ **Seen by...**
Visti da...

Ⓟ **A Sky of Politecnico Products**
Un cielo di prodotti politecnici

Acknowledgements Archivio Alessandro Mendini, Archivio Crepax, Archivio Ermenegildo Preti, Archivio Gabriele Basilico, Archivio Giulio Natta, Archivio Studio Magistretti – Fondazione Vico Magistretti, Archivio Muzio, Archivio Storico Ernesto Breda – Sezione fotografica, Archivio Storico Fondazione Fiera Milano, Archivio Storico Istituto Luce Cinecittà srl, Archivio Storico Maserati, Archivio Storico Piaggio, Askanews, Federico Brunetti, CAP DESIGN spa, Carlo Folcio – Officine della Luce, Cassina spa, Centro di Ricerca Gianfranco Ferré, Laura Curino, FAI Fondo Ambiente Italiano, Fondazione Cineteca Italiana, Fondazione Corriere della Sera, Fondazione Fausto Melotti, Fondazione FS Italiane, Fondazione ISEC, Il Giornale, Il Giorno, Il Sole 24 Ore, Marco Introini, Kartell spa (Museo Kartell), LAB I Allestimenti "Paolo Padova" e Lab Immagine – Dipartimento di Design, La Repubblica, La Triennale di Milano, Piccolo Teatro di Milano – Teatro d'Europa, RAI, RAI Teche, SIM2 BV International srl, Studio fotografico Ballo + Ballo, Studio fotografico Enrico Cano, Zanotta spa, all the personalities who have contributed to the tales of MADE IN POLIMI with their voices and images, the Departments, the Laboratories and the research groups, Campus Life Division and Public Engagement and Communication Division of the Politecnico di Milano.

MADE IN POLI MI

racconti dal /tales from Politecnico di Milano

POLITECNICO
MILANO 1863

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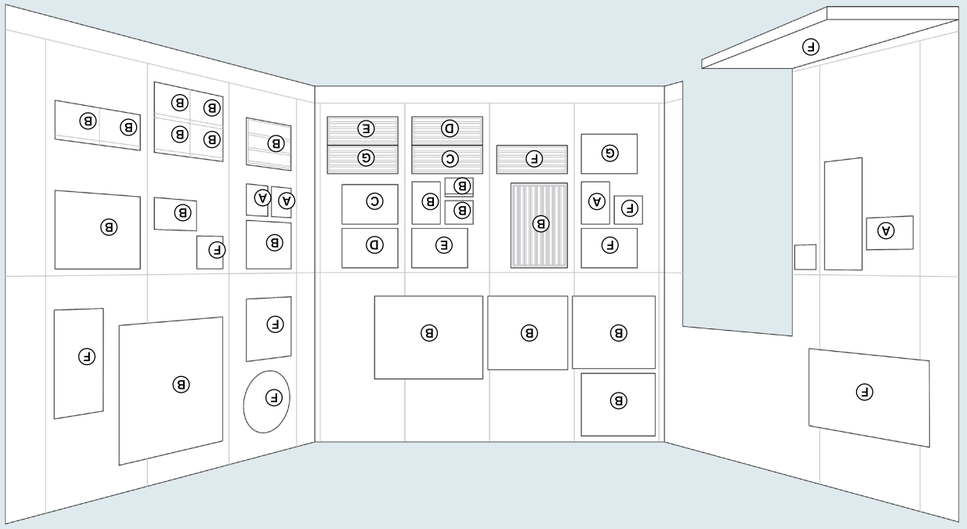


Room 1

Ⓐ **History & Memory**
The history of the Politecnico di Milano through the adventures of research and education that shaped the first specialization institute for architects and engineers

Ⓑ **Student Life**
Teaching and research activities since 1863

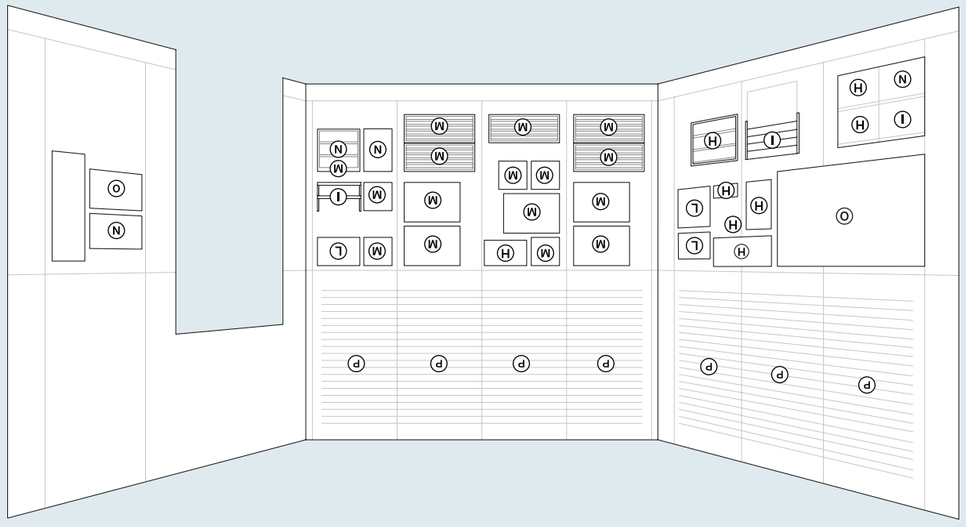
Ⓒ **Pioneers**
Stories of women and men who lived to design something that did not previously exist and that has since become a part of our daily life

Ⓓ **Drawings for Milan**
The stories of the designs that have renewed the city of Milan

Ⓔ **Art & Science**
Stories of architects, engineers and designers who have distinguished themselves in the world of Fashion, Art, Cinema and Literature

Ⓖ **On the Road**
Infrastructures, mean of transportation and communication that have brought the *Made in Italy* to the world

Ⓕ **Poliroom**
Design objects that have renewed and changed our way of inhabiting spaces



Room 2

Ⓗ **The community**
The community of Politecnico di Milano in its values, its image, its associations and its celebrations

Ⓘ **Everyday Life**
The press review dedicated to Politecnico di Milano since the nineteenth century

Ⓛ **Politecnico geographies**
The classrooms, the laboratories and the campuses of Politecnico di Milano

Ⓜ **Micro & Macro**
The ongoing researches at the Politecnico di Milano, from nanotechnologies to space exploration

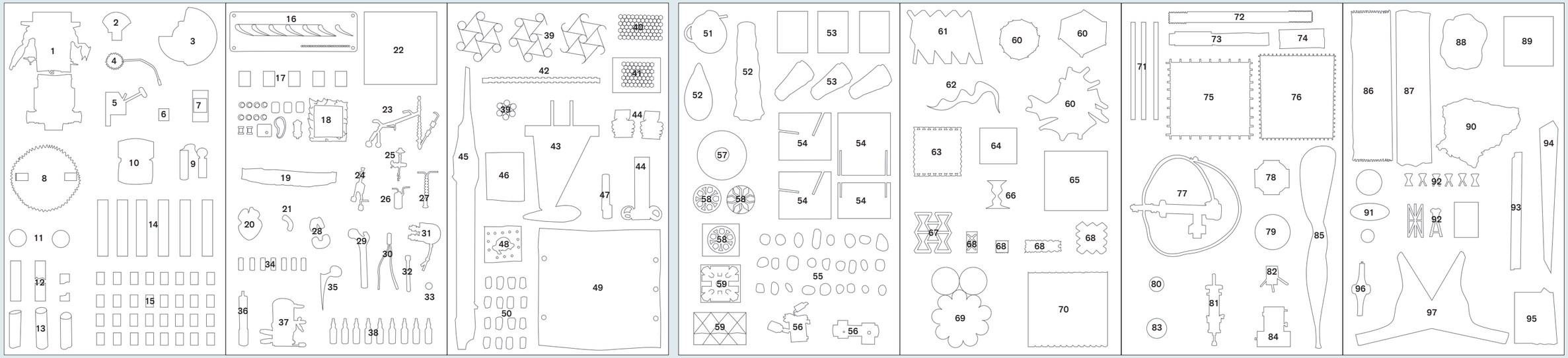
Ⓝ **In the society**
The cultural policies of the Politecnico di Milano, between art and science

Ⓞ **Seen by...**
The MADE IN POLIMI icons recounted by protagonists of the world of Culture, Art, Science and Business

Ⓟ **A Sky of Politecnico Products**
Objects and fragments, tools and prototypes produced by the Research Laboratories of the Politecnico di Milano

Ⓟ A Sky of Politecnico Products

Objects and fragments, tools and prototypes produced by the research laboratories of the Politecnico di Milano



Panel 1 | Panel 2 | Panel 3 | Panel 4 | Panel 5 | Panel 6 | Panel 7

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The Department of Electronics, Information and Bioengineering (DEIB) Laboratories

1. Body and base of commercial robot (Spyke) modified with sensors and LED. Used for various *Robogames*
2. Holder and card with micro-camera
3. The robot salesman Cin-Cin's base with rotational mechanism
4. Arm of the robot salesman Cin-Cin to hold the camera for selfies with the robot
5. Part of the dynamic football retaining mechanism for the football player robot Rakataa
6. Motor control card
7. Holder and micro-camera card for the football player robot Rakataa
8. Metal ring to detect contacts with the robot. Used to implement the robotic version of the game Pac-Man

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The Department of Management, Economics, and Industrial Engineering (DIG) Laboratories

9. ZID. IoT device that, positioned on cable reels, estimates the quantity of residual cable. With its onboard connectivity module, it reports information about events concerning the reel (impact, transfer or winding) and its GPS coordinates to a Web asset management platform, thus allowing continuous monitoring from remote

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Department of Civil and Environmental Engineering Laboratories

10. Structural design and development of materials constituting an innovative floor for a new airport hub featuring high performance, high safety and durability standards, while also ensuring economic and environmental sustainability of the work
11. Samples of cement past and hydrated lime subjected to the Vicat Needle Test for bonding and hardening
12. Test on laboratory-made hydraulic mortar, and tests on mortar subjected to flexion and compression
13. Samples of brick and hydraulic mortar masonry collected with the corer (cores)
14. Clincker cut glass tiles collected from the façade of the apartment block in via Nievo (MILAN) and subjected to acid and base resistance tests. Apartment block designed by Luigi Caccia Dominioni and Mario Forlano
15. Bricks made to scale with various types of clay and baked at different temperatures

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Department of Energy Laboratories

16. Industrial gas turbine blades with shaped wall (1994): flat array model of the first stator downstream of the combustor, used in the transonic wind tunnel of the Fluid Dynamics of Machines Laboratory for studies on aerodynamic performance with profile film cooling
17. Whole body personal dosimeter, a device that reveals the dose absorbed following exposure to ionizing radiation. The dosimeter is made up of a detector (photographic film, thermoluminescent crystal or OSL (crystal made of recrystallised Al2O3:C powder) and of a container, which differs based on the use (whole body, tips) and on the type of radiation to be revealed
18. Polymer electrolyte membrane fuel cell for hydrogen conversion on heavy duty vehicles. Material designed and tested at Politecnico di Milano to verify improved durability

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Department of Mechanical Engineering Laboratories

19. Piece of belted Pirelli 225/50R17 P7 tyre. Joint Labs Pirelli-Politecnico di Milano (partnership established in 2011)
20. Model of the human heart reconstructed with CT scan images and 3D printed in polyamide with Selective Laser Sintering (SLS) technology
21. Model of human aortic root reconstructed from CT scan images and 3D printed in flexible resin with stereolithographic technology (SLA)

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Department of Chemistry, Materials and Chemical Engineering "Giulio Natta" Laboratories

22. *Titaniocromia* — Waves by Pietro Pedeferri and Maria Pia Pedeferri, 2001
23. Low pressure fractional distillation system
24. Liquid degassing system
25. Spherical joint connection with tap
26. Drechsel trap for gas purification
27. Immersion cooling coil
28. Knee prosthesis
29. Osteosynthesis plate
30. Vascular prosthesis for iliac bifurcation
31. Ventricle for cardiac assistance (pneumatic power)
32. Shape memory metal alloy carotid stent
33. Cardiac valve prosthesis (mechanics)
34. Slow release hydrogel
35. Hip prosthesis
36. Copper/Copper Sulphate (CSE) reference electrode
37. Aerator and heat exchanger for extracorporeal blood circulation during heart surgery
38. Polichina: hand sanitizing liquid produced according to the formula provided by the WHO (World Health Organisation). During the emergency phase, more than 100,000 litres were donated to the Civil Defence System and to LHAs in Lombardy, and to the Milan prisons (San Vittore, Opera e Bollate)

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Department of Aerospace Science and Technology Laboratories

39. Chiral structure for aviation frames
40. Honeycomb for energy absorption systems
41. Flat plate honeycomb for energy absorption systems
42. Composite Greek fret for aviation frames
43. Bulb, fluid dynamics research
44. Shock absorbers for crash test experiments
45. Longeron for aviation frames
46. Aileron for aviation frames
47. Sabot for debris impact tests
48. Bird strike system resistance vent
49. Bird impact for aviation frames
50. Metal links for aviation tanks

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Department of Design Laboratories

51. Models of small domestic items, teapot study made of expanded polystyrene using the hot wire cutting method and hand-finished
52. Teaching sessions, models of vases made of PLA (Polylactic Acid) produced using a 3D FDM (Fused Deposition Manufacturing) printer
53. Knitwear yarn, cones of yarn used to produce knitwear with manual knitwear machines present in the areas dedicated to Knit design
54. Interlocking model, teaching session, creation of a 1:3 scale wooden model of the small armchair with net 1/2 and ½
55. Wood stones, teaching session, hand made wooden stones to acquire experience-based knowledge of the various wood types
56. Multifunctional structural joint, experiment and prototyping of new types of accessories for the events sector, designed by Paolo Padova and patented by Politecnico
57. PLA (Polylactic Acid) thread for 3D printer
58. Silicone mould for Car wheel rim model – resin cast wheel rim
59. HD polyurethane textures made with CNC milling machines

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Department of Architecture, Built Environment and Construction Engineering Laboratories

60. Textile-hybrid tensegrity system. Prototypes of innovative hybrid tensegrity systems integrating textiles as an essential part of the construction system
61. 3D printed latex structure
62. Fluidity tests of 3D printed material
63. 3D printed auxetic pattern
64. Panel with foldable geometries
65. Milled cork panel for acoustics
66. 3D printed beam section
67. 3D printed auxetic section
68. 3D printed latex structure
69. 3D printed construction system
70. 3D printed shield prototype

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Material Testing Laboratory

71. GFRP (Glass Fibre Reinforced Polymer) rods to be used as reinforcement or concrete elements
72. Sample with carbon fibre mesh and cement mortar making up the FRCM (Fibre Reinforced Cementitious Matrix) system, used to reinforce existing concrete structures
73. Sample with PBO (Polyparaphenylene Benzobisoxazole) fibre mesh and cement mortar making up the FRCM (Fibre Reinforced Cementitious Matrix) system, used to reinforce existing concrete structures
74. Basalt fibre mesh for FRP (Fibre Reinforced Polymer) systems used to reinforce existing concrete structures
75. GFRP (Glass Fibre Reinforced Polymer) reinforcement for CRM (Composite Reinforced Mortar) systems, used to reinforce existing masonry structures.
76. Starched glass fibre mesh reinforcement for FRCM (Fibre Reinforced Cementitious Matrix) systems, used to reinforce existing masonry structures

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Department of Physics Laboratories

77. Optoelectronic element for source of spin-polarized electrons
78. Optical glass fibre for laser power systems
79. 6" silicone slice with optical lithographed components made by Polifab
80. Hot filament vacuum gauge for low pressure measurements in ultra high vacuum
81. Translation motion loop along three axes for ultra high vacuum
82. Laser rods: Rubino (pink) Neodimio (cyan-purple) Olmio (green)
83. Multichannel electron detector for photoemission electron microscopy
84. Moving mirror holder for dielectric laser mirror alignment

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Polifactory

85. TAYLOR, parameter rod developed as part of project Creative Europe DDMP (Year2). This project developed a digital design and manufacturing method to materialize personal parameter rods – with Kinect and Grasshopper – that have a 3D printed structure. It is one of the forms of the design catalogue of a method studied to create generational rods, which change depending on the user's weight, height and gender

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Material Testing Laboratory

86. PBO (Polyparaphenylene Benzophenone) fibre mesh for FRCM (Fibre Reinforced Cementitious Matrix) systems, used to reinforce existing concrete structures
87. UHTSS (Ultra High Tensile Strength Steel) fibre mesh to reinforce SRG (Steel Reinforced Grout) systems, used to reinforce existing concrete structures
88. Draft of steel tube for axial load

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Department of Mathematics Laboratories

89. 3D print of a stool designed using the SIMPATY algorithm

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Department of Architecture and Urban Studies Laboratories

90. Level curves in 1 mm cardboard for boxes cut with a laser plotter and assembled by hand
91. Solids with spatial grids in plant-based cardboard cut with a laser plotter
92. Milled solid wood beam, trestle and trellis elements with number control
93. Milled lime wood beam of the church in Baranzate (MILAN), with number control
94. Beam of the Church of the Sacred Heart, in Ivrea, made of solid lime wood cut with a circular saw
95. White cardboard preparatory study model for the roof of the Church of the Sacred Heart, in Ivrea

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Polifactory

96. DERMAWARE. Smart band developed as part of project Creative Europe DDMP (Year1). Digital bracelet to sensitize people on the effects of atopic dermatitis. In this case the SLA printed stiff body can be provided
97. AUXETIC TEXTILE. PALPATINE, educational bra to learn how to correctly perform the various breast palpation techniques and to improve efficacy of the prevention phase. The project, produced using only the laser cutting technology, was developed as part of the Creative Europe DDMP (Year 1)