

3 ATELIERS

PROJECTS

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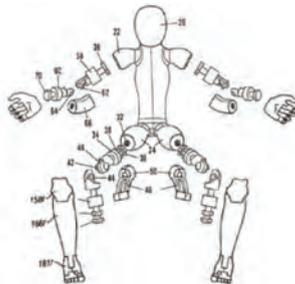
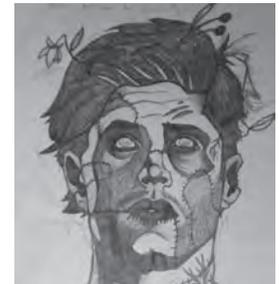
I project

I PROJECT

by Giovanni Carli, Luciana Macaluso, Roy Nash



METHODOLOGIES,
STRATEGIES
AND RESULTS

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I project***It was a dark and stormy night*** [1] [2]
For an architectural exegesis of the body*Giovanni Carli*

First of all, why *I*?

I describes myself and ourselves
I signs the presence of the author
I as prefix that describes high-tech products
I as the eye to look at the world
I as number one, as the first step towards the construction of a new world
I as interactive
I as informational
I as indeterminate
I as intelligent
I is the matrix
I AM THE BODY.

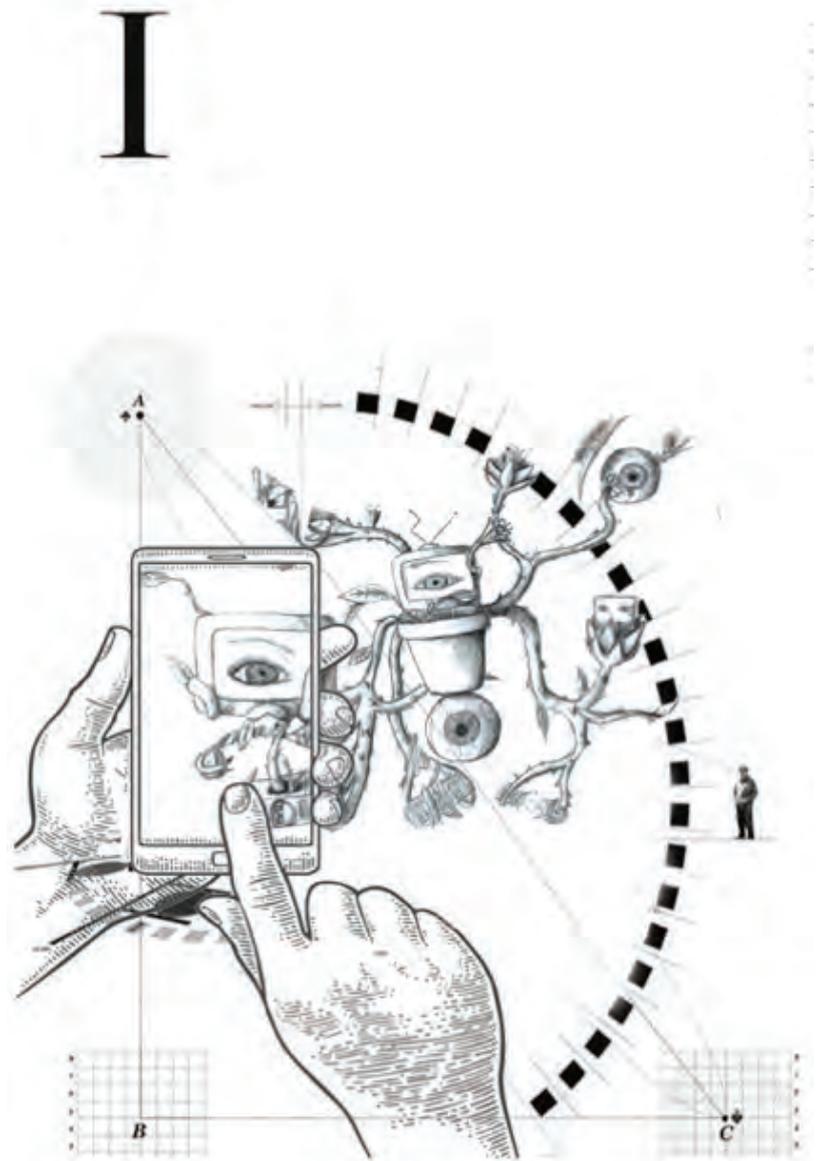
It was on a dreary night of September when Mary Shelley beheld the accomplishment of her tools; in one night she gave life to an amazing creature [3] elaborating an innovative and rather dramatic vision of the human body. As Mary Shelley wrote "*we shall all be monsters, cut off from the world but on that count we shall be more attached to one another*": in 1818, two centuries ago, the young British author foresaw the present and the upcoming future. The meaning of Landscape 4.0 lays inside our modified bodies. What is the meaning of being "monster", according to Mary Shelley? The subtitle of her Frankenstein is *The Modern Prometheus*, so the reference to the Greek myth underlines the ancestral need of the Mankind to evolve and to invent, taking the risk of failing and being violently punished. The 2018 OC Summer School is an experimental tale where students, scholars and professors try to fix possible definitions of what, nowadays, has been

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called Landscape 4.0 verifying those definitions on the urban plot of Piacenza. The fourth version of landscape is, basically, the result of the digital revolution that controls every single action of the contemporary living. The digital revolution has been changing our biology, the human body is losing some abilities and, at the same time, is increasing others: screens, prosthesis, technologies, speed, liquidity [4], networks are driving us through an 'augmented anatomy' of which we are still engaged to understand potential and power. The bodies have been becoming interactive with other artificial organisms, such as processors, devices, apps and Cloud services. The bodies have been becoming adaptive: they learn information, they resolve ambiguity and accept uncertainty, they may be engineered to feed on dynamic data in real time. Starting from this theoretical interpretation, the students of Group 1 have been invited to design with a certain degree of creative irreverence, the one of a modern Prometheus, the urban section of Piacenza between the Po river, Palazzo Farnese and Caserma Pontieri.

The augmented anatomy includes, compulsorily, an idea of augmented architecture; the architectural *body*, imaging the future of Piacenza, starts from the *soil*, a soil that becomes a *margin* and that margin evolves in an interactive bank (it is due to underline that in Italian language *margin* and *argine* share the



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same roots). Studying the etymological dictionary [5], the hidden meanings of the words represent the first sources for the project and draw a system of relation between them: *soil* expresses the sense of moving and is the surface on which the body moves; *border* means to mark lines and banks, it describes the blank space in which are framed the written words of the page (in other words the text of the project) and it is a scar on the body.

Caserma Pontieri is located in an intermediate position between the old city of Piacenza and the river Po; in the area converge the grid and the stratification of the historical plot, the tensions of the system of the infrastructure and the signs of the agricultural fields. How the architectural design could solve this complex equation?

According to the concept, we consider the city as a biological organism of limbs; the former military function of the area recalls the structures of ancient systems of defense, made of walls, moats, bastions, and the system of the riverbanks designed to protect the Piacenza from floods. The movement of these lines generates and inspires new shapes, overwrites the anatomic layers of Landscape 4.0. But what are the reasons of Landscape 4.0? The *I Project* answers to this legitimate question, which opens to infinite possibilities, considering an informational, indeterminate [6] and intelligent landscape. The Po River represents an organism, a lymphatic system that nourish the fields, it is also a *limen*, a symbol of separation and simultaneously of conjunction between the countryside and the urban area: the river has been generating a conflict, but today, in the vision of a Landscape 4.0, the river has been opening to a diversity of interactive geographies.

The *I Project* has not been designed as sole system but as process of discovery of the city of Piacenza, *I* is a multisensory body that reshapes and links an augmented and prosthetic anatomy of landscapes. When in history riverbanks were only devices of defense to protect the city from floods, the *I Project* makes the banks perform as urban and hi-tech public spaces, part of the city plot, able to deal and react with the forces of Nature. In this way this limit is not an obstacle but is turned into a resource; the *I Project* transforms the infrastructures into a space to inhabit.

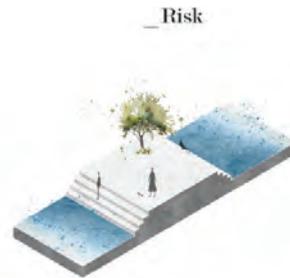
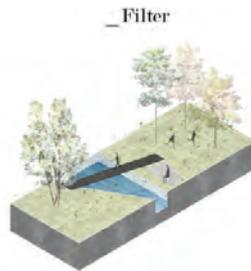
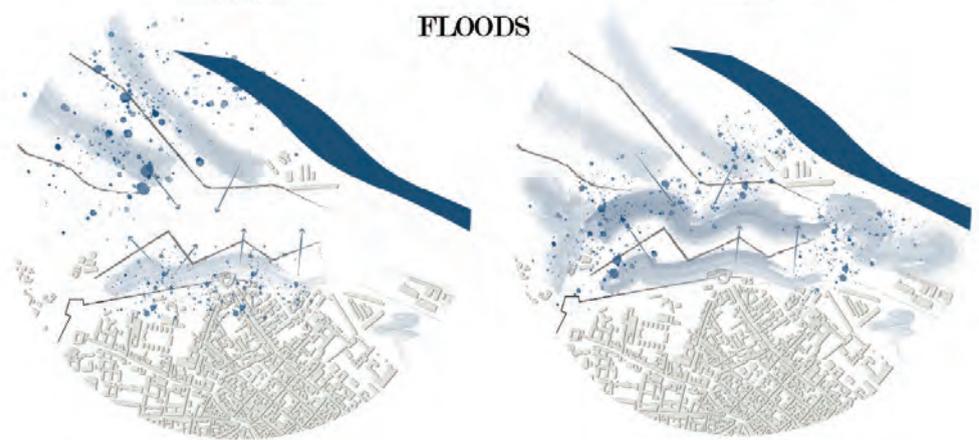
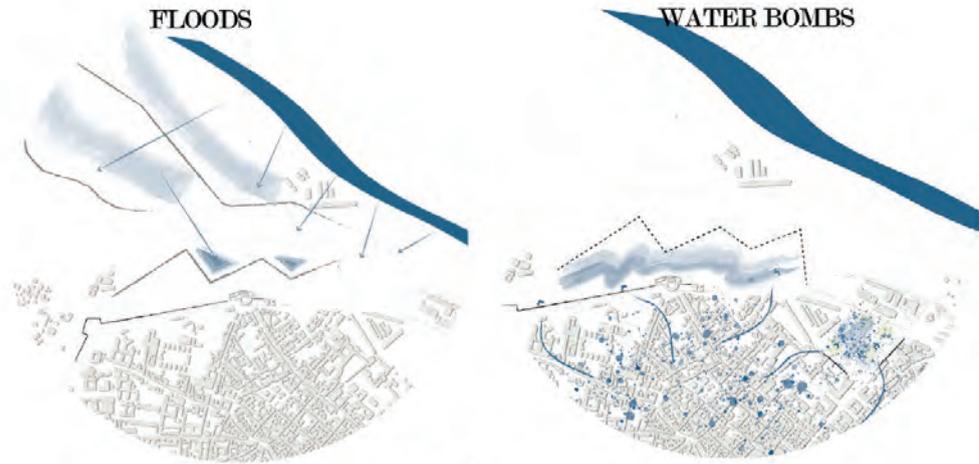
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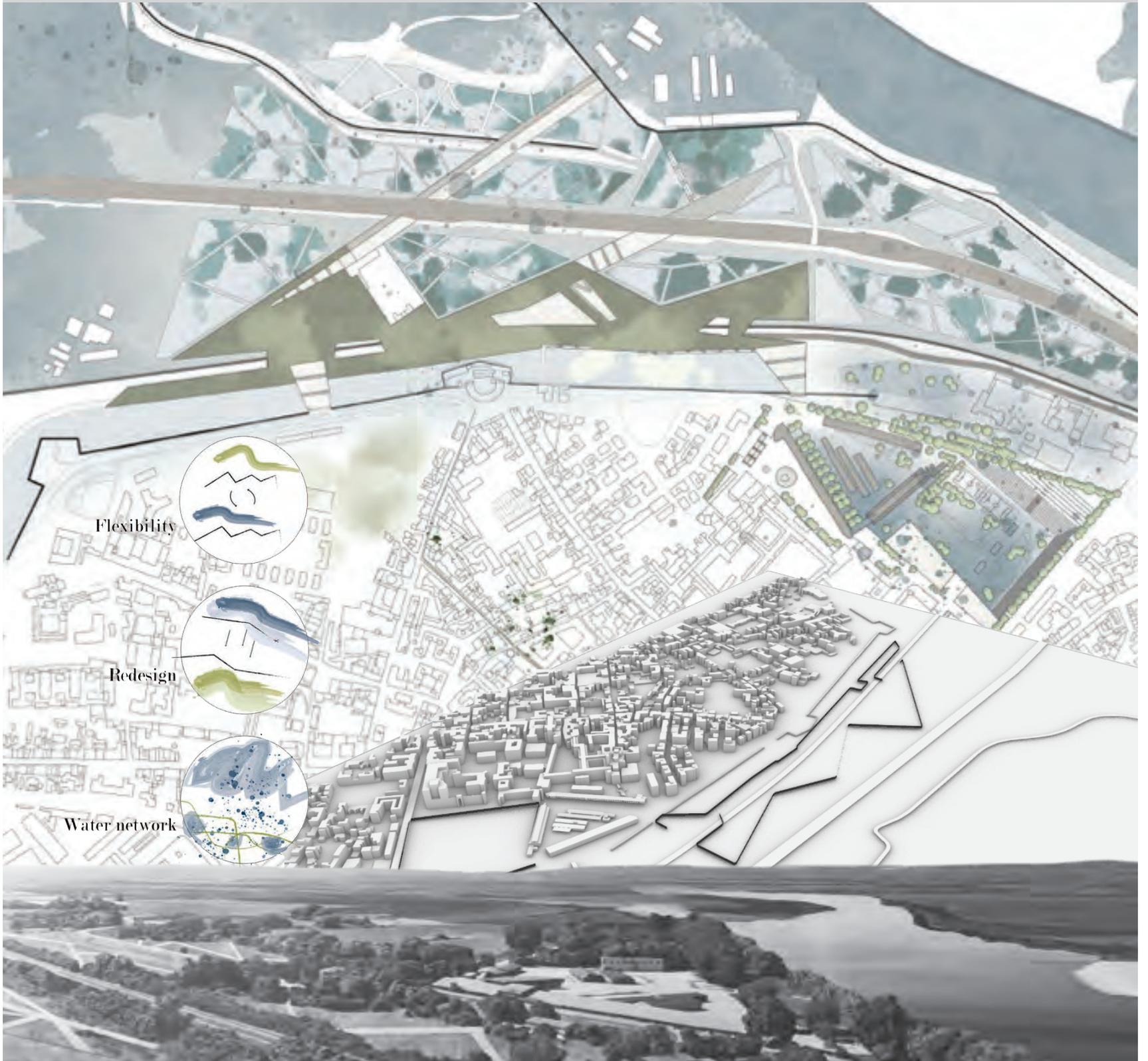
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Flexibility

Redesign

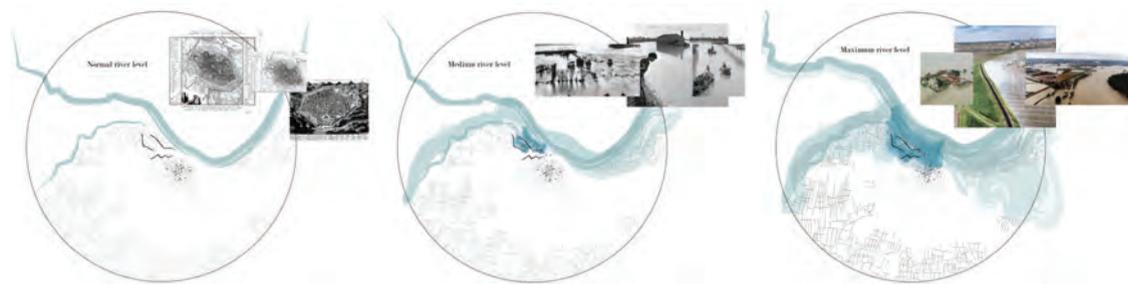
Water network

The Caserma Pontieri in the Fourth Industrial Revolution

Luciana Macaluso

In April 2011, at the Hanover Fair, Henning Kagermann, Wolf-Dieter Lukas and Wolfgang Wahlster announced the Zukunftsprojekt Industrie 4.0 [7], able to make German products globally competitive. In Europe, automation organized into cybernetic and cyber-physical systems is changing the economy, the work and the society, making critical and creative thinking the most sought-after expertise. Automation has been existing for more than two centuries; new technologies (augmented reality, custom mass production, cloud, big data analytics) updated it. The innovation lies in the importance that the system is gradually assuming, as well as in the implementation of the ability to build interactions between machines and operators. Like Franco Farinelli pointed out during his lecture at the Summer School of Piacenza [8], in this world, *subjects* and *objects*' contours were less defined than a few decades ago. In the web sometimes we got information of uncertain origin. It would be a machine (*object*) or a human being (*subject*)? Were we playing chess with an algorithm or with someone more similar to us? In this condition, Farinelli said, the landscape was a really adequate interpretative model, because the *subject* and the *object* interpenetrated and transformed each other in a suspended and fleeting time [9].

In this perspective, the barracks of the Second Regiment of the Pontoon Corps

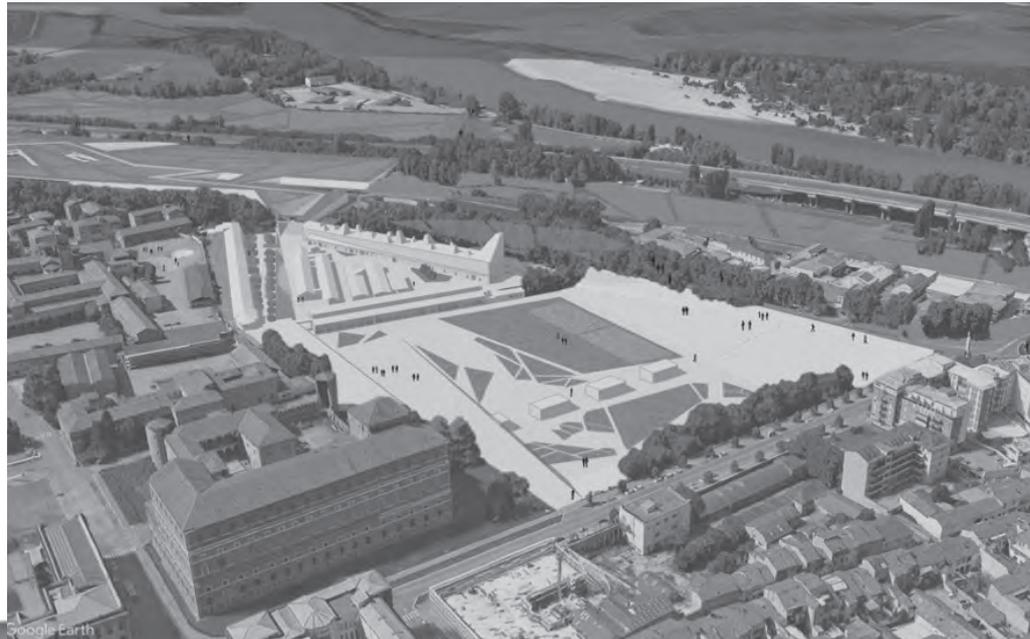




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in Piacenza - currently partially abandoned - offers areas full of memories and expectations. During the workshop we considered the landscape architecture as a plot of relations to be experimented as material and immaterial connections: through new physical links between heterogeneous urban *objects* and shared, multifunctional, flexible, real and virtual spaces that interpreted the need of the contemporary society (*subjects*). The experiences of these places - the interactions between *subjects* and *objects* - had to be strengthened or "augmented" in a new life and narration. We started from the ground line. The soil slopes towards the river, to the north. Close to the historic Palazzo Farnese there is a depression about 4 meters deep and 100x160 meters wide (where the Daturi arena is currently located). During the visit at the place, the inhabitants told us it was an ancient tank used to bring from the Po River the materials to construct the gigantic building, which today includes the Civic Museums and the State Archives. This depressed area skirts to the northwest one side of the barracks' triangular complex. Also here, the building on the west side is set at an altitude of about 4 meters higher than the others. The historical town



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rises on a higher base. Around it, the ground line decreases towards the river with exceptions in the city walls and San Sisto bastion, in the embankments of protection, in the road infrastructures, and in the railway.

The interaction between land and water made the shape of the ground. Therefore we imagined excavated squares as safe basins in extreme cases of catastrophe. In everyday life these could be inhabited sometimes also as virtually inundated. Like in a science fiction film, the spaces would be populated with eels, pikes and carps with which it would be possible to interact for educational or recreational purposes. We designed fluid spaces where the awareness of the river's presence could be alive. In the plan, the continuity of the ground was also useful to shorten the distances within the new pedestrian perception. Furthermore, the soil project revealed unexpected closeness, like between the barracks and the crypt below the San Sisto church. At the end, excavations, "communicating vessels" and "capillary galleries" put together a wide museum open to the city including the barracks, San Sisto former monastery, and Palazzo Farnese. A new entrance to Palazzo Farnese from an underground level amplified the meaning of the intervention; it



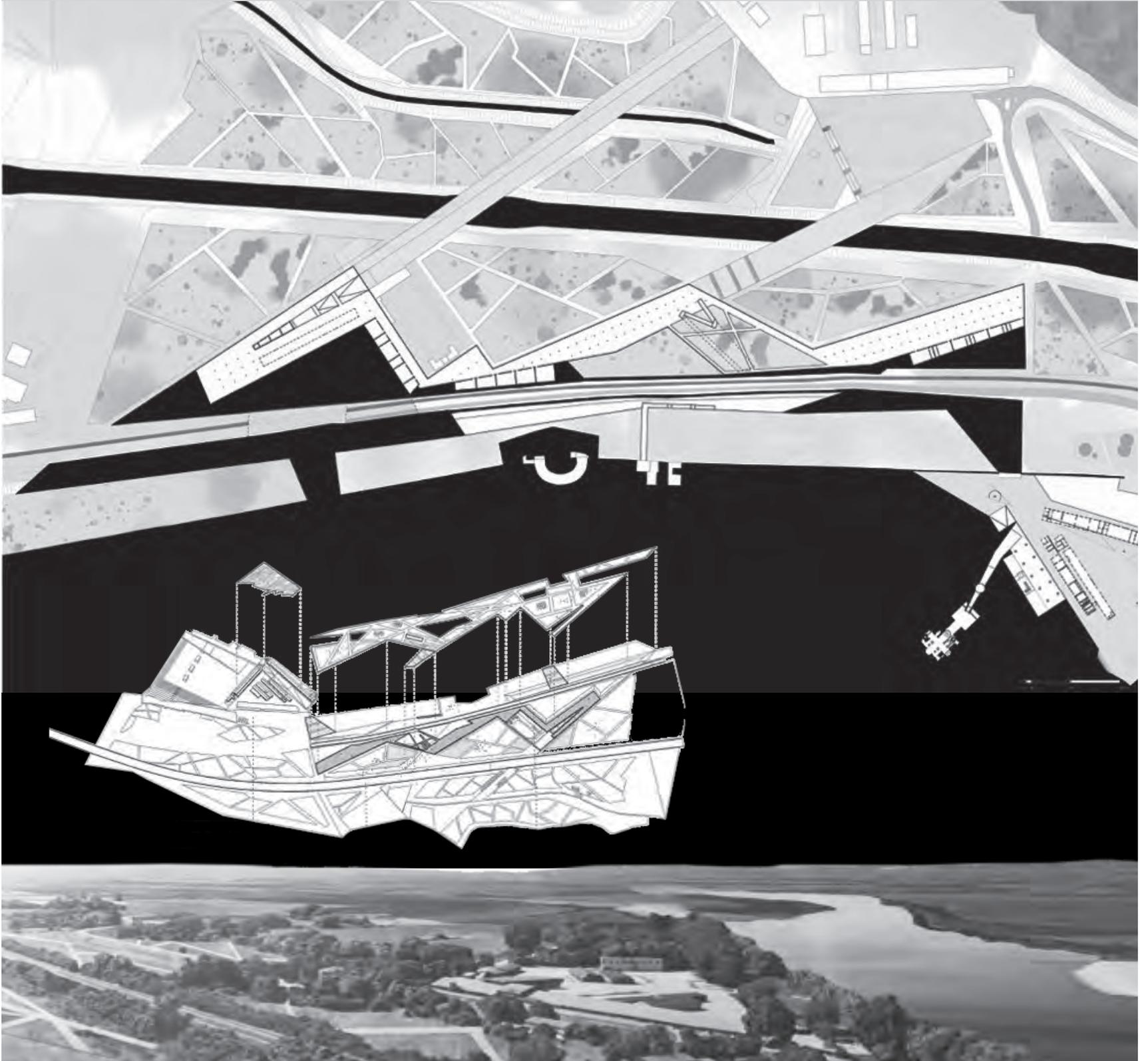
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characterized the depressed square itself and introduced an additional floor for the temporary exhibitions. Transparent cases with display functions and various services (exhibition rooms, showcase boxes, memory corners, halls, bars, and restaurants) have been sited both inside and outside this access in a unitary sequence. A public ramp slowly connects the excavated space with the court of the Palazzo Farnese. Similarly, the ground below a military building became habitable. Taking a cue from an existing tunnel (an escape from the military area) that connects the barracks to the San Sisto crypt, we proposed to open a wider gallery towards the same crypt, the church, and the cloister. This was also an opportunity to qualify the space between the barracks itself and between those and the historical fabric where patios illuminated and opened the gallery. We multiplied the accesses to the museum complex: from via San Sisto, from the two renewed open spaces between the barracks and Palazzo Farnese. The reasoning about urban connections along the river-city direction was analogously carried out in other tracks. It concerned a longitudinal permeability from viale Risorgimento crossing one of the barracks' ground floors and using a system of ramps to reach the historical walls in via Cardinale Maculani. The new paths, in a wider scale, made the Caserma Pontieri a system of interacting thresholds to the Po River from the town. Beyond the walls the perspective opened towards the extended horizon of the geography. The re-use of the Caserma and its change in flexible and open spaces allowed to consider also other functions: offices for cultural start-ups, co-working (shared infrastructures, collective services) and public areas with innovative equipment. No new building is proposed for this area, just extensions (for example to Palazzo Farnese); partial demolitions (some temporary structures serving the barracks); additions that make existing volumes more sustainable from the point of view of lighting and climate control (skylights / pyramid-shaped chimneys in one of the buildings of the barracks); new landmarks (to reinforce the identity of the place and make it recognizable); planting of vegetation (the garden in front of the Palazzo Farnese which introduced to the river park). These actions lead to a renewed balance between tradition and innovation, local and global spheres experimenting like the architectural and landscape design can trigger new and partially indeterminate interactions between *subjects* and *objects*, always in motion.

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| project**From the river to the city, a new interactive bank for a landscape 4.0***Roy Nash*

What if the knowledge and technological advancement today would be really able to let us interact with nature and the landscape that surround us? Would we be capable of listening and providing solutions in symbiosis with the environment? Would then a collective effort focus on understanding Mother Nature rules or simply on preventing a conflict in case of catastrophes?

How we can cooperate in an effective way with the others to nurture our collective intelligence? So that we can get to know each other and resolve conflicts preventing disasters?

How nature and ecology in architecture and urban planning can rebuild a good and sustainable environment? How good behaviours can help society and educate people to respect higher values? How sharing ideas, good attitudes and positive approach to life can shape others and our future world?

It seems the fourth revolution called Industry 4.0 has started [10]. The process has begun with automation and data exchange, in all the fields that embrace manufacturing technologies.

It includes "cyber-physical systems, the Internet of things, cloud computing and cognitive computing" [11].

But what fascinated most our profession is the ability (such as already is happening with the use of maps and interactions on our mobiles) to create a "virtual copy of the physical world" and "over the Internet of Things, cyber-physical systems" let them cooperate "with humans in real-time both internally and across organizational services offered and used by participants of the value chain" [12].

The world, nowadays digitalized, reproduces a virtual copy of itself, with the use of maps, drawings and 3D models to track the real physical mutation of what constantly happens.

And if this idea at the moment belongs mostly to what humans create and control (industrial processes and goods production), a step forward could be done in trying to link our anthropic world to the environment, monitoring its 'breath' and





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S. SISTO CHURCH

S. SISTO CRYPT

BARRACKS PONTIERI



BARRACKS PONTIERI



PALAZZO
FARNESE

MUSEUM
PALAZZO FARNESE

BARRACKS PONTIERI

PO RIVER



PALAZZO
FARNESE

MUSEUM
PALAZZO FARNESE

PUBLIC RAMP

TEMPORARY EXHIBITION



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finding correlation between our actions and the “unpredictable entropic disorder”.

In few words “landscape 4.0” will be a new and interactive approach to the environment, which seeks to foster, through the constant exchange of data between climate changes and human activities, in a growing network of communities and instant collaboration, a dialogue with all the ecosystems we live in.

The project of a new type of city, the ‘city of the future’ will therefore strive to find an ever-growing connection with the environment, a collaboration based on contextual values.

Piacenza and the connection with the rivers has been fundamental in the development of the city, and if on one hand in the Po valley each city has benefitted from the presence of rivers, on the other hand the Po river itself has often become a threat for villages. This explains the far distance between the Po and the heart of the city of Piacenza that has never developed along the waterway, but has rather built a series of embankments to avoid floods.

Our effort has focused on letting the embankments become a place to urbanize rather than a mere infrastructure avoiding disasters.

How this can happen? The first thought comes from the impression of a map, which shows the different river flows in our site. The different maps over time, explain a non-constant behaviour of the water, based on the interaction between the soil, the currents, the trees and the floods. In fact while it is possible to trace diagrams by estimating the amount of rainfall, it is often difficult to predict disaster by the effect of climate changes. The target of a new landscape 4.0 is, through monitoring and constructing a fairly sophisticated system of water basins and canals, to let the water become part of the landscape during the year and inundate, while controlling it, the valley. Inundating means finding spaces for the rainfall in the city and in the valley and giving the chance to handle the water and levels to decrease gradually spreading the water around the land rather than containing it within the banks. The scale it is therefore embracing the entire territory of the valley around the city, and defines ‘scars’ as the new places of interaction, the compromise between a prosthetic human intervention and the natural environment.

The scar on the landscape becomes a positive narration, a story of human conciliation with environment, the sign of a memory that learns from mistakes to build a dialogue with the irreverence of nature.

The water flowing through the valley and a series of tanks and natural basins, will define a fluvial and interactive landscape, where *flora* and *fauna* will enrich an agricultural and urban context, opened to let participate river floods to create a dynamic environment. Dynamisms is given by flows and tides that would be expected to contribute to the production of energy, as much as wind and sun already do in a new sustainable vision of landscape. The monitoring and analytic approach to nature, although complex and in a large scale, is proven to create benefits for human being, by producing clean energy, reinforcing the relationship between people and environment, and encouraging more social behaviours.

Finally the synergistic approach of technology and environment is based on a widespread method that investigates



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the quality of the site, its geography and the topography of the land.

While the design of an inhabited bank might look as a mega-structure from above, in reality it is a very sensitive way of combining architecture with existing contour lines, working with the different levels already offered by the site.

Architecture is the linking chain between the topography and the current embankments, a flexible device that processes the information extracted from nature and elaborated by humans. A techno-interactive-pole of knowledge, a museum of conscience, a school of learning, a theatre for listening to climate screams.

Finally the monitoring via virtual devices will allow human to take action on the real world by participating actively to a series of planned events and recording our effects on landscape and viceversa the consequences of a life lived newly closer to nature. Whether nature is more controlled and domesticated, whether its borders disappear in a built and man made ecosystem, the objective of a fairly healthier environment legitimate a complex and participated approach to future projects.

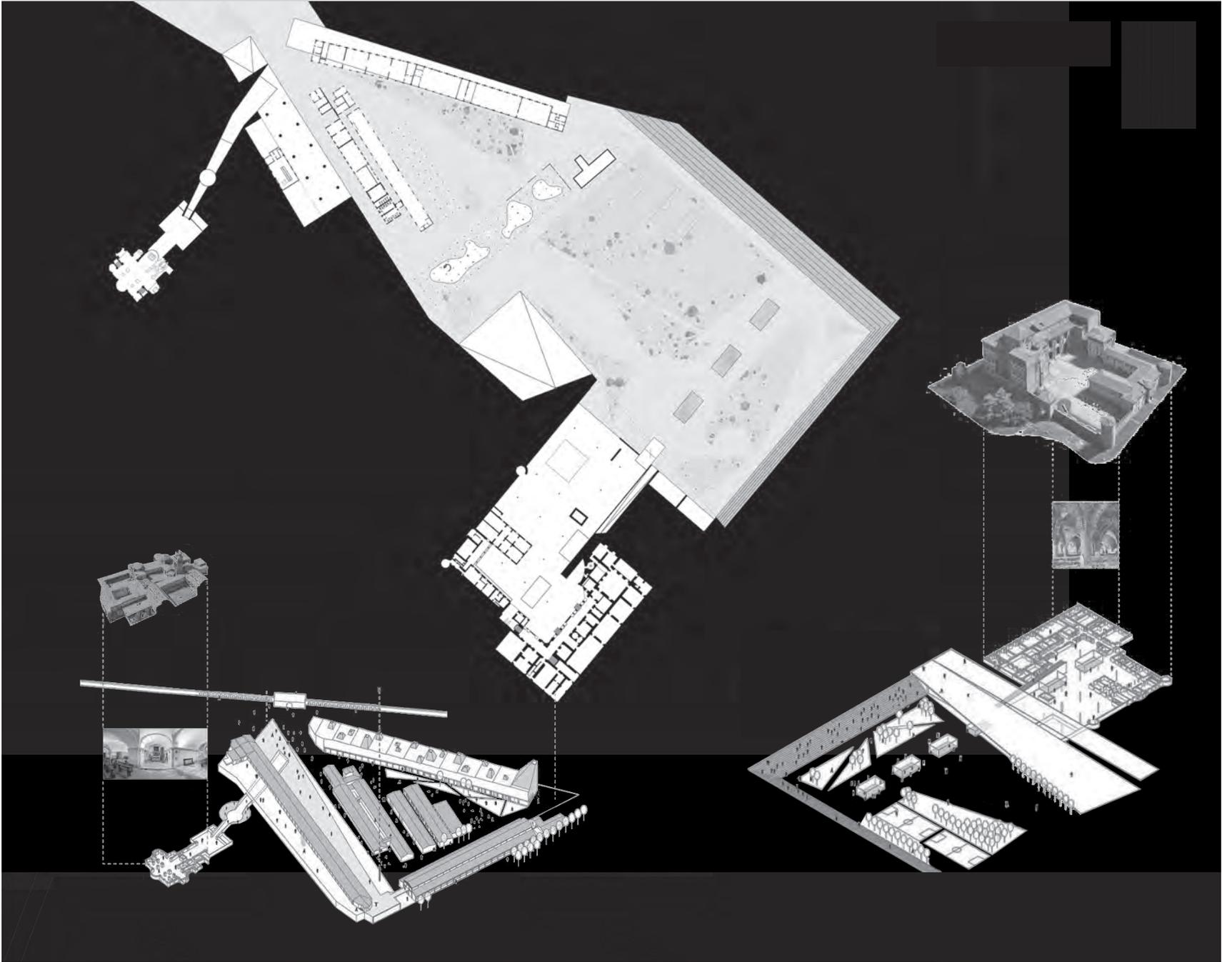
The scope of our work goes beyond just the final use of the digitalization and Internet of things, it involves the participation of each single citizen and city/landscape user by enhancing the value of each single human and by exploring and divulgating knowledge and consciousness.

Notes

[1] This essay is the result of the collaboration and of the dialogue between the three Supervisors of Group 1 of the 2018 OC Summer School. It was a dark and stormy night

[2] "It was a dark and stormy night" is an expression written by English author Edward Bulwer-Lytton as *incipit* of his novel *Paul Clifford* (1830). The sentence has become one of the most famous quotation in the history of Western literature: Charles M. Schultz, creator of the Peanuts gang, choses it as main title of every





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romance composed by Snoopy (first appearance in July 1965) and also Umberto Eco states that the beginning of *The Name of the Rose* is an homage to Bulwer-Lytton's words. The mysterious atmosphere that the brief sentence evokes makes it suitable for describing scenes of unexpected and extraordinary events

[3] M. Shelley, *Frankenstein; or, the Modern Prometheus*, 1818

[4] On the theme of liquidity see Z. Bauman, *Liquid Modernity*, Polity Press, Cambridge (UK) 2000; Id., *Liquid Love: On the Frailty of Human Bonds*, Polity Press, Cambridge (UK) 2003; Id., *Liquid Life*, Polity Press, Cambridge (UK) 2005; Id., *Liquid fear*, Polity Press, Cambridge (UK) 2006; *Culture in a Liquid Modern World*, Cambridge, Polity Press, Cambridge (UK) 2011

[5] "Corpo": <https://www.etimo.it/?term=corpo&find=Cerca>; "Suolo": <https://www.etimo.it/?term=suolo&find=Cerca>;

"Margine": <https://www.etimo.it/?term=margine&find=Cerca>.

Webpages consulted on 7th September 2018

[6] See A. Bertagna, *Il controllo dell'indeterminato. Potëmkin villages e altri nonluoghi*, Quodlibet, Macerata 2011

[7] Henning Kagermann, Wolf-Dieter Lukas, and Wolfgang Wahlster, *Industrie 4.0: Mit dem Internet der Dinge auf dem Weg zur 4. industriellen Revolution*, VDI Nachrichten, April 1, 2011. Cfr. Holger Kinzel, *Industry 4.0 - Where does this leave the Human Factor?*, 27th Annual Conference of Human Dignity and Humiliation Studies, At Dubrovnik, Croatia, September 2016, www.researchgate.net, 06-02-2019

[8] Franco Farinelli's lecture has been held on 6th September 2018, at the Campus Arata of Piacenza

[9] See Franco Farinelli, *L'invenzione della Terra*, Sellerio, Palermo 2016, p. 141 and ff.

[10] Marr, Bernard. "Why Everyone Must Get Ready For The 4th Industrial Revolution". Forbes. Retrieved 2018-02-14

[11] Heiner Lasi, Hans-Georg Kemper, Peter Fettke, Thomas Feld, Michael Hoffmann: Industry 4.0. In: Business & Information Systems Engineering 4 (6), pp. 239-242

[12] Hermann, Pentek, Otto, 2016: Design Principles for Industrie 4.0 Scenarios, published in: 2016, 49th Hawaii International Conference on System Sciences (HICSS)



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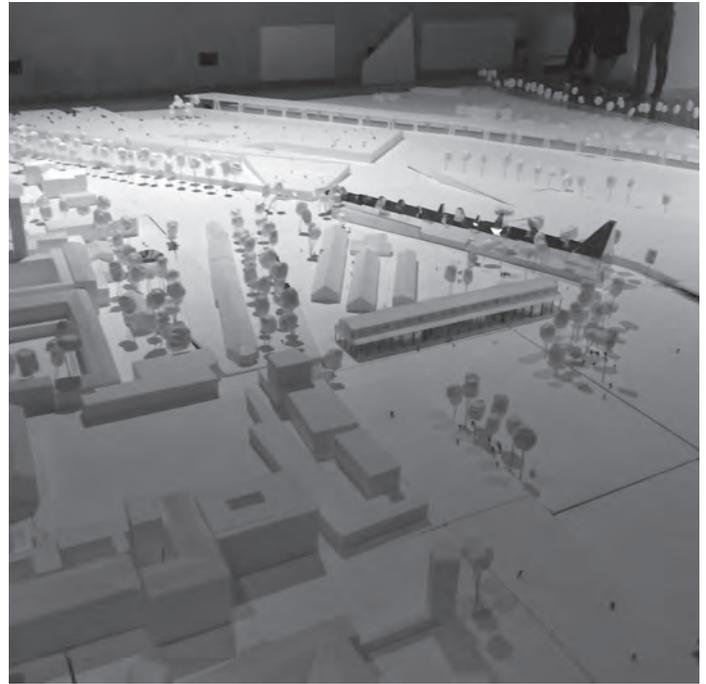
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