Crossing the Rubicon: Tevere Cavo, an Urban Project for Rome

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Abstract

We believe that the new frontiers of Information Technology have to deal with the central role of Infrastructures in the existing city. Indeed, this new generation of infrastructures will allow the 'redirection' of the development. To arrest developments in "Green fields" and direct developments towards "brown areas" in the existing cities we need infrastructures of new generation. In this historical moment, a development phase has to focus on the use of urban voids in the existing city to stop the endless urban sprawl. 'Crossing the Rubicon' was an expression I used years ago - in the preface of Kas Oosterhuis's book "Towards new Architecture" - to underline the role of a generation of architects that put Information Technology at the heart of a new development phase for architecture. I am using the same expression now to highlight the role that Information Technology has to play to shape new infrastructures. As an example, here I present and discuss the urban project "Tevere Cavo" in Rome.

Introduction

Tevere Cavo is the name of an urban project developed between 2012 and 2018 – in the Faculty of Architecture at 'Sapienza – Università di Roma' – within the university chair of Antonino Saggio.

This project involved Ph.D. students, graduating and senior students, in designing almost three hundred projects for the northern sector of Rome, which is marked out by the presence of the river Tiber.

The design proposal sees the river Tiber as a new generation infrastructure based upon five essential principles ranging from multi-functionality to ecological systems, from mobility to information networks, up to the relaunch of the civic and symbolic role of the infrastructures to foster interventions in the built environment.

In this way, the river acts as a fly-wheel to invert the direction of the development, shifting from the constant erosion of the agricultural land to the rehabilitation of small and significant abandoned urban areas.

For further details and the extensive related bibliography, for access to the maps that guided through the work, and for the many lectures, please refer to the official page of the design proposal:

http://www.arc1.uniroma1.it/saggio/TevereCavo/

Rome: Two Foundings one Tiber.

The project 'Tevere Cavo' profoundly relates to the city of Rome, and Rome displays a peculiarity. It has two origin myths, and both connect to its river, the Tiber indeed.

The first is a pastoral and autochthonous one; it has a damp culture, made of woods, forests, and animals.

Romulus and Remus, sons of rape and abandoned in the water, were found inside a basket in the Velabrum (the swamp area between the Capitol and the Tiber Island) and breastfed by a she-wolf.

The second one is a myth of foreign extraction (anti-autochthonous); this myth is grand and heroic: the light of the fate takes the place of the wood's moisture.

At dawn, Trojans arrived at the Tiber's mouth: defeated indeed, but valiant and beautiful.

In the Aeneid, there is a passage that recalls the docking at the Tiber's outlet: "At this moment, gazing from the sea, Aeneas saw a vast forest. Through it the Tiber's lovely river, with swirling eddies full of golden sand bursts into the ocean…"

Indeed, the more you study ancient myths, the more you find the components of reality. It was thought that the Iliad and the Odyssey grounded in legends, then Troy was conclusively discovered by Heinrich Schliemann. It is a fact – thanks to years of archaeological excavations and Andrea Carandini's scientific work – that the base upon which Rome developed has its roots in the Etruscan culture.

Therefore, do not the two different origin myths regarding the founding of Rome – one autochthonous and the other one cultured and of foreign extraction – clearly explain the marriage that characterizes the Etruscan culture itself?

A culture that does not arrive as pre-formed, but comes into the world following the hybridization between a native culture – the Villanovan one, deeply connected to the earth – and an external that is more advanced in the fields of thought, art, and writing.

THE TIBER DIGS

Rome strongly links to its orography. The city develops on a volcanic area, continuously moving and waving. Volcanoes are within its DNA: from Bolsena, Vico and Bracciano in the North, to Albano and Nemi in the South, large mouths of fire surround the city. It seems to be shaped by lava elevations that draw a shifting landscape, endlessly variable.

Lava's solidification processes – deeply related to rainwater flows, wind, and vegetation – outline the space: the gorges in which water streams erode tuff. In this sequence of movements, and ups and downs, we see the rise of the first villages.

The Tiber is a sort of big rift between lithospheric plates emerged after the drop in the sea level. As much as the fissures, that create within a dry soil. The river, volcanoes and eruptions shape places, and model the renowned hills.

Giambattista Piranesi, in his drawings and etchings, knew how to represent this magmatic nature made of digs, vegetation, and ruins. Piranesi staunchly fights against both the classical and neo-classic Greek myth in favor of a vegetal, stratified, magical, ancestral, and Etruscan, world of Rome.

He repeatedly drew Rome and the Tiber. His drawings are beautiful, touching, and indeed projects 'in fieri'.

Therefore, Rome was born on rough and volcanic soil, its founding relates to two myths that see the Tiber in their hearts, and rooted in the Etruscan culture. Fragment and stratification are present: these are the reasons that set the scene for the 'Tevere Cavo' project. However, why does this adjective, "cavo", appear in the title?

Tevere "Cavo"

The idea regarding the slit in the ground where the Tiber flows is only the first reason why Tevere Cavo (empty or void in English) is the name of the project showed up here.

The second one deals with the 'Vie Cave' or 'Etruscan Tagliate.' Let us try briefly to understand. We have spoken about the articulation of the land and, on this territory; the Etruscan civilization set itself up and developed.

Now, in this land, the Etruscan culture creates a relationship between architecture and environment that cannot be anything else rather than a marriage, a twine between nature and artifact. The section

is the key. However, we do not refer only to an operative process. Indeed, the section and the digging reveal a deeper connection. According to the Etruscans, the Earth is sacred and endlessly sends a message. The Earth 'speaks'.

This relationship wholly reveals itself in the so-called "Tagliate" or, indeed, Vie cave. These are processional paths, dug by men in the tuff even fifteen meters high and for hundreds of meters. Vie cave are the symbol of a holistic approach – or systemic as we would say today – to the topic regarding the relationship between nature and artifact. In these, a set of meanings overstepping mere functional data to insert cultural, symbolic, and religious reasons, condense. What we call 'a road' is, at the same time, a processional path, a celebration of Mother Earth and – functionally and prosaically speaking – a 'quarry' where to extract building material that is used in the construction of temples and most relevant public buildings.

Nevertheless, if we relate with the modern conception of a quarry, and with the Etruscan Tagliata as a proper quarry itself, then we understand the presence of a systemic twine that profoundly inspires us. An action – the digging – made not only for one reason but roundly for many.

Much of our work on this topic cobbles together these ancient echoes - these endlessly recalled 'imprinting' - and the issues related to Information Technology, to develop a critical consciousness that without IT cannot face contemporary crises.

Indeed, if on the one hand, the word 'cavo' refers to the orographic history of the fracture and on the other hand to the Etruscan world, the word 'cavo' also means in Italian electric wire and rope. And a substantial aspect of the work Tevere Cavo is indeed related to the implementation of Information Technology within the Design of new generation.

1. Abandoned or underutilized industrial and productive buildings;
2. Under the viaduct areas, traffic dividers;
3. Green areas and abandon and underutilized river bands;
4. Free areas, build-able but unused lots, unfinished and in the state of abandoned buildings and urban complexes.
5. Areas belonging to public buildings that are visibly under or misused – these include garden, parking lots, storages, schools' common areas;
6. Gas stations and small stores, either still productive or already abandoned.

The areas eligible to these categories have been recorded in a shared map (search for "Tevere cavo" in Google Maps or go to goo.gl/HSmviY). Each of these areas links to a specific record in the designated blog that contains further information regarding the specific area and, above all, the titles and the authors of the different projects proposed for that lot.

Every link progressively leads to the project development. Overall, we are dealing with almost three hundred proposals allocated to approximately 50 areas.

Now, let us see the principles that move a "next generation urban infrastructure" like Tevere cavo is.

Five Principles

As said, infrastructures, whether artificial like streets, highways and railways or natural like waterways and water paths, have always been a fundamental tool for development. They have been the fly-wheel that – in a few decades in XIX century - led us to the doubling, the triplication, and the decoupling of the building stock. But starting on the 1960s of XX century with the crisis of the traditional industrial society and model of production, many industrial areas were abandoned and furthermore the more our cities expanded, the more abandoned areas, empty and dilapidated buildings they left behind.

As is known, in the current historical phase we entirely have to limit the agricultural soil consumption. However, even though we have to restrict soil consumption, we surely cannot stop the development! The answer to address this topic is simply "to invert the development direction". From the expansion toward free land to the re-use of existing but abandoned or underutilized parts of the cities.

Anyway, to do this and to focus towards the recovery and the usage of urban voids, we need, indeed, new generation infrastructures.

Five fundamental features mark the latter. They have to be ***multitasking***, that is doing multiple things at the same time, and active towards the direction of a sustainable development, and able to create ***green systems*** (specifically not only they do not have to pollute and waste a few energy, but – above all – they have to insert active cycles of decontamination and de-pollution). They have to guarantee quality mobility, which we call ***slowscape***, and a vector towards digitization of the city to form an ***information technology foam.*** Lastly, they have to be able to ***galvanize*** souls and instill citizens' value in public space.

Multitasking

A new generation infrastructure must be able to carry out multiple functions at the same time, weaving and strengthening them with one another.

The world changes, and in the Third Wave of the Information Society, the idea of multitasking erased the concept of monotasking that belongs to the industrial civilization; the Mixitè erased the Zoning, and the Tablet, coming from the Silicon Valley, replaced Henry Ford's Ford T.

Indeed, one of the most incomprehensible things for one who has never seen a computer is that it can simultaneously do many things and be structurally multitasking. After all, if we had the chance to visit an assembly line in a car factory, we would discover that, also there, the assembly line and the conveyor belt do not exist anymore. What we would find is a sort of neo-artisan that makes all by himself, and that we would call a robot.

Therefore, a new generation infrastructure has indeed to be multitasking like our computers. The new productive models have changed and shaped the city in their image and likeness. If the Zoning represented an optimized monotasking idea applied to the town, today's parallel and coexisting cycles of the IT society go in the opposite direction.

Indeed, the idea of multitasking infrastructures is not new. It only has been erased by the monotasking vision of the world that came with the industrialism. Immediately, our thoughts go to the bridge as a place for commerce and living, as a custom or a market. From Ponte Milvio in Rome to Ponte Vecchio in Florence or Ponte di Rialto in Venice, we Italians have many models to which we can refer.

However, also elsewhere there are fantastic examples of them. In Iran, for example, there is an exciting multitasking infrastructure, the Khaju Bridge, where the dike serves to the bridge, the bridge to the strolling, and the shelters are useful to public spaces. All the Tevere Cavo projects try to be intrinsically multitasking. To make an example, if we have a green area we want this to produce energy and to be an exciting aesthetical and educational space. If we have a sports facility, we expect that the athletes' movement will contribute physically to shape the public space instead of only contribute to the building energy supply. If we design a bridge, this must be a collector for rainwater, a device for air purification using particular algae inserted in the guardrail, and an emitter of information and performances. Moreover, the asphalt has to produce energy through the presence of piezoelectric elements underneath the road surface. Is it not the river one of the most multitasking structures one can think of?

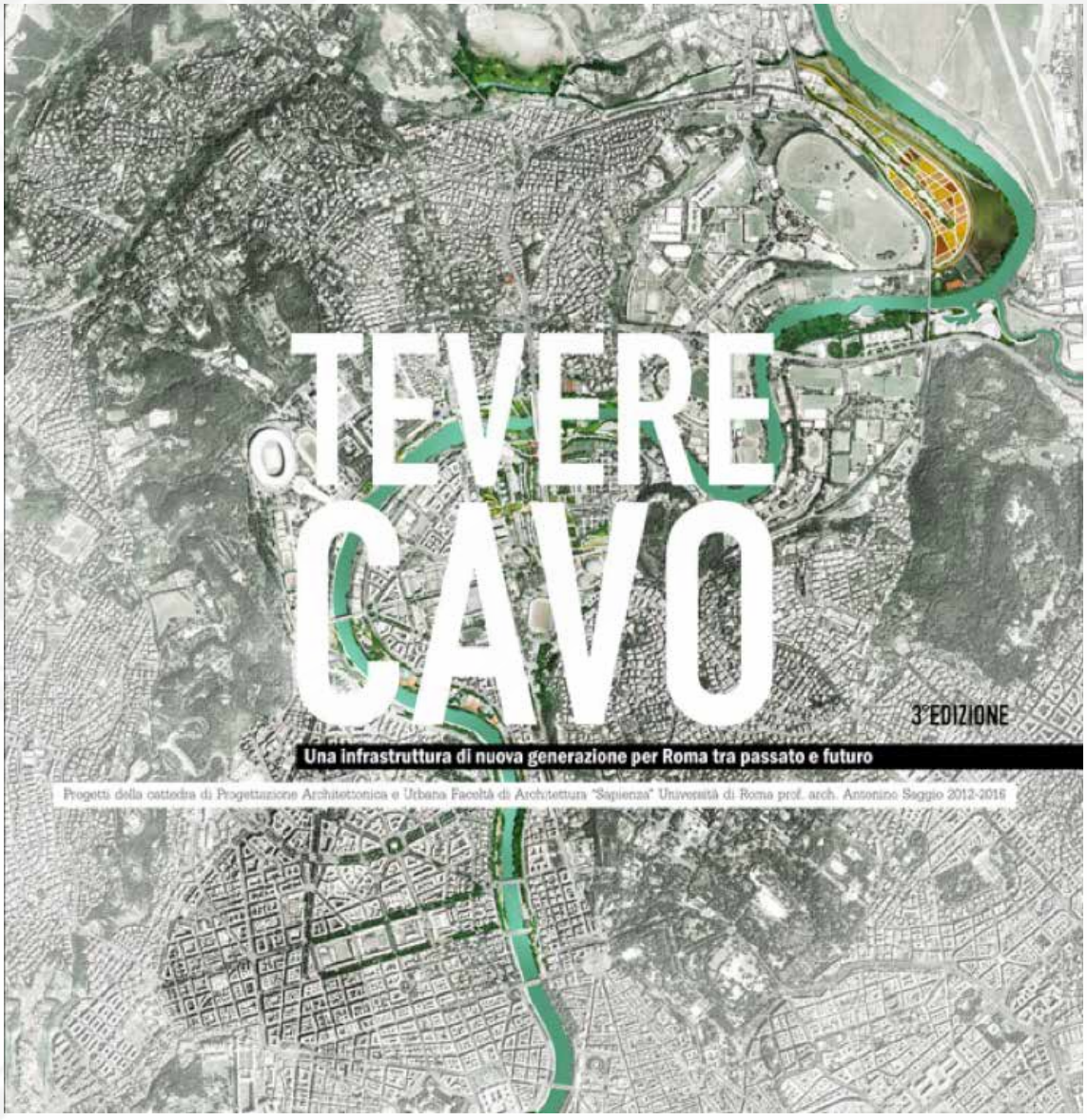
Editorial Note:

The author wishes to thank Dr. Valerio Perna, Lecturer at Polis University of Tirana, for his translation in English of this text.

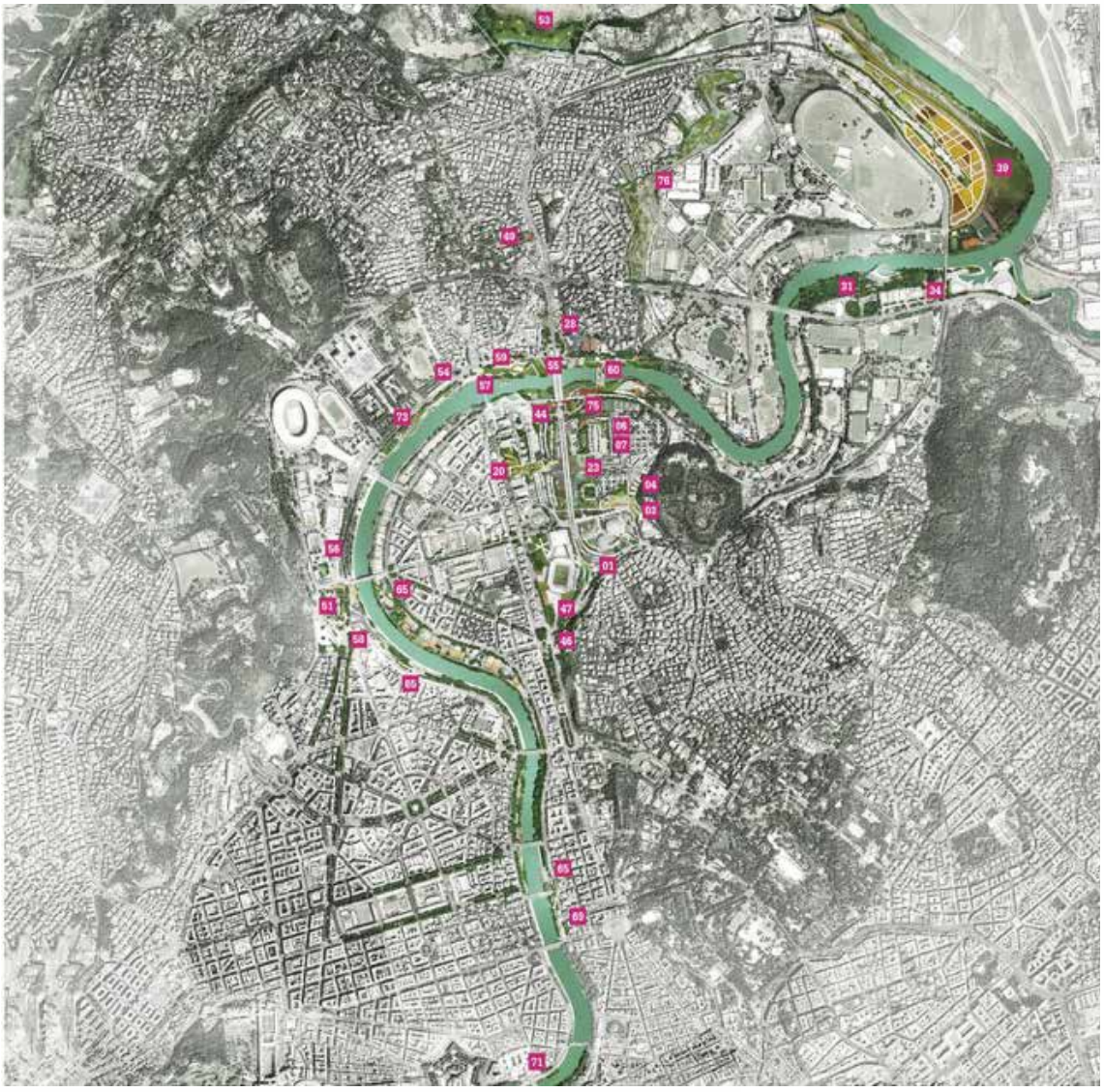
Key of Images

0 -Tevere cavo overall view Tevere cavo Antonino Saggio Chair project for Rome 2013-2018 drawing by L. Cavallo, G. Rubino and v. Perna.

0a -Book cover "Tevere cavo una infrastruttura di nuova generazione per Roma tra passato e futuro" eds Antonino Saggio, Gaetano de Francesco (Itools-Lulu.com, 2018).

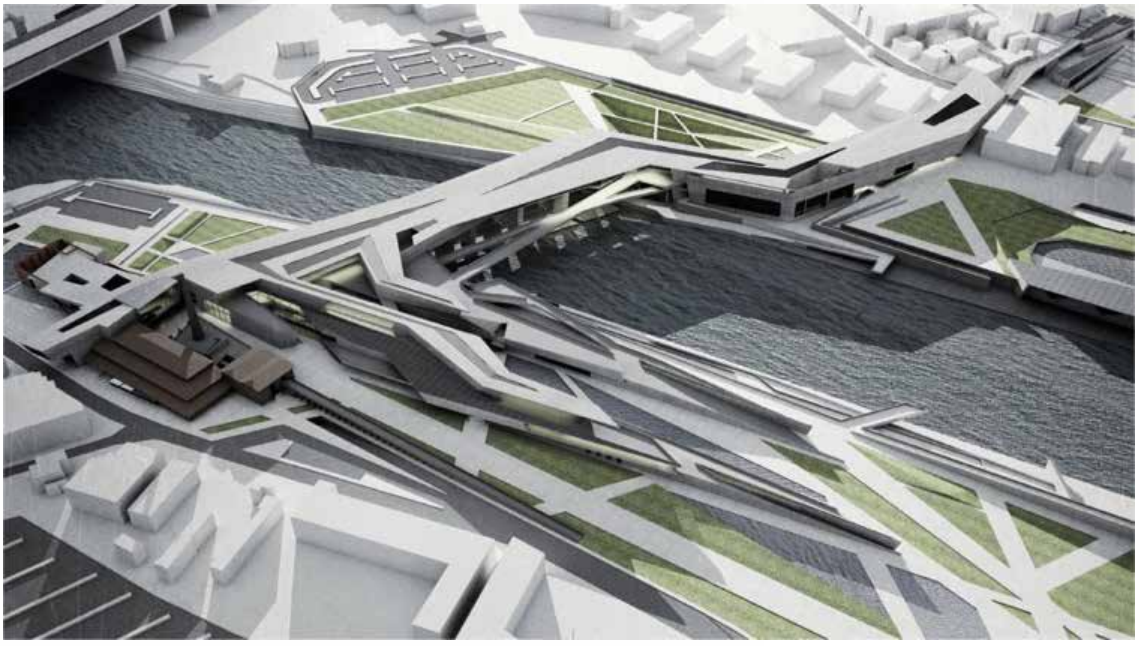


0b- Map of the major projects of Tevere cavi in the map of northern part of Rome.



A- Map of the major projects of Tevere cavo in the map of northern part of Rome.

A0. Site plan Liborio Sforza, “ex.[PO]. A new bridge at the furnaces of Castel Giubileo and technological center for the development of constructive experimentations.” Tevere Cavo Antonino Saggio Chair project for Rome 2013-2018.



B - Perspective view Liborio Sforza, "ex.[PO]. A new bridge at the furnaces of Castel Giubileo and technological center for the development of constructive experimentations." Tevere Cavo Antonino Saggio Chair project for Rome 2013-2018.

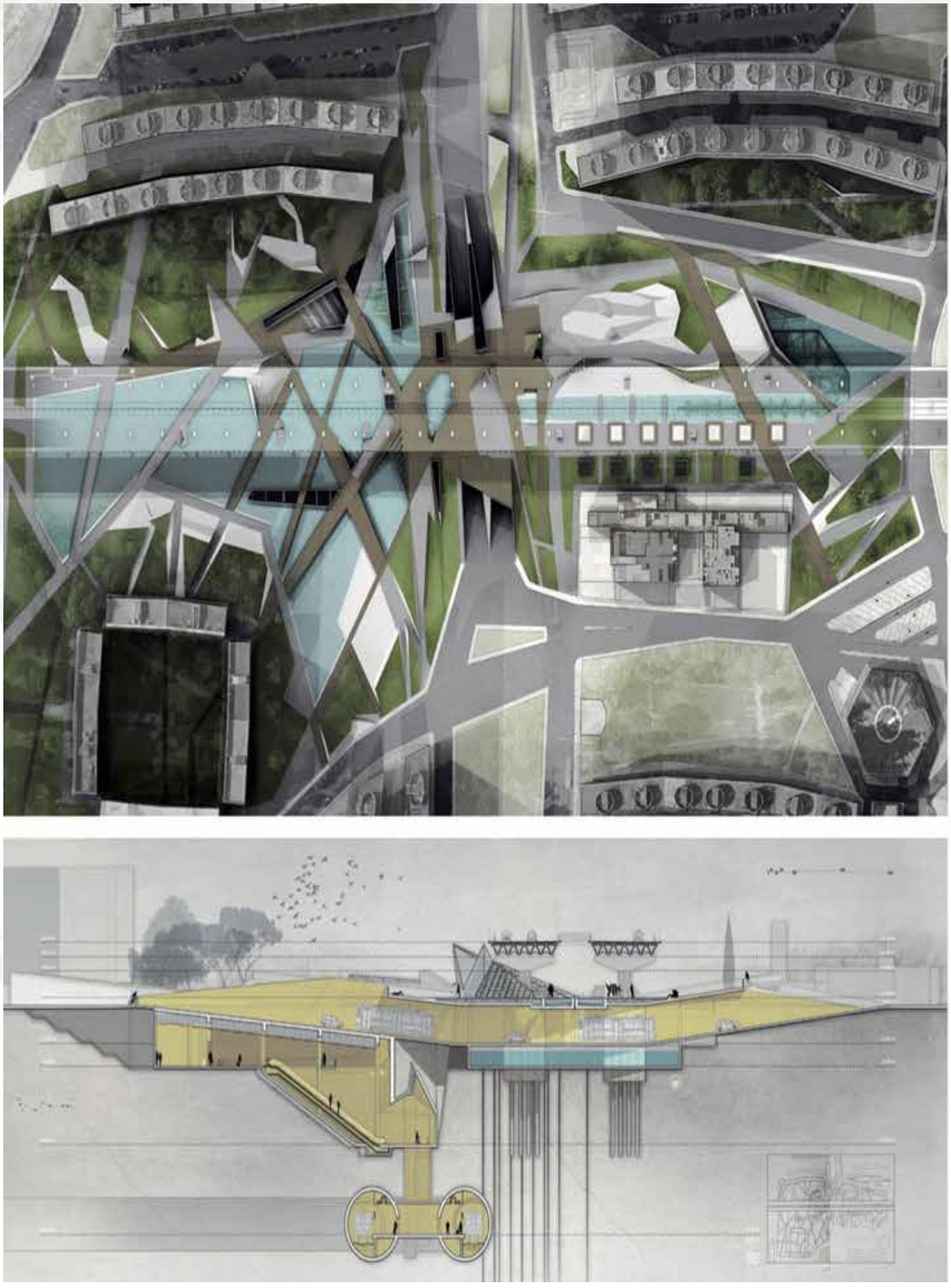
B0. Perspective view Matteo Benucci, Carmelo Radeglia, Alessandro Rosa, "Logica Eco-Logica. Productive and depolluting park at Inviolatella Borghese." Tevere Cavo Antonino Saggio Chair project for Rome 2013-2018.

C- Site plan Matteo Benucci, Carmelo Radeglia, Alessandro Rosa "Logica Eco-Logica. Productive and depolluting park at Inviolatella Borghese" Tevere Cavo Antonino Saggio Chair project for Rome 2013-2018.

Ca. Perspective view Alessandro Perosillo, "Eco District Park: Urban park, industrial district, and center to educate about recycling," Tevere Cavo Antonino Saggio Chair project for Rome 2013-2018.

Cb. Site plan and views, Alessandro Perosillo, "Eco District Park: Urban park, industrial district, and center to educate about recycling," Tevere Cavo Antonino Saggio Chair project for Rome 2013-2018.

D. Elevation Alessandro Perosillo, "Eco District Park: Urban park, industrial district, and center to educate about recycling," Tevere Cavo Antonino Saggio Chair project for Rome 2013-2018.



D0. Site plan and section Valerio Galeone, PARK [ing] Hub for the intermodal transportation and bio-monitoring, Tevere Cavo Antonino Saggio Chair project for Rome 2013-2018.

E. Perspective view Michela Falcone, "Water Playground: Urban happiness system for the phytoremediation and the reconquering of the Tiber," Tevere Cavo Antonino Saggio Chair project for Rome 2013-2018.

F. Side by side Microprojects on the riverbank of Tevere, Livia Cavallo, Giuseppina Rubino, Silvia Di Marco, Tevere Cavo Antonino Saggio Chair project for Rome 2013-2018.

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