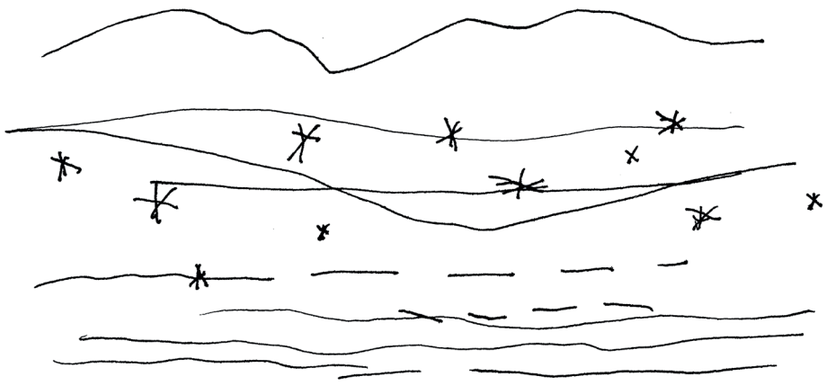
PORTO MARGHERA

LANDSCAPE FOR A NEW PRODUCTION CYCLE



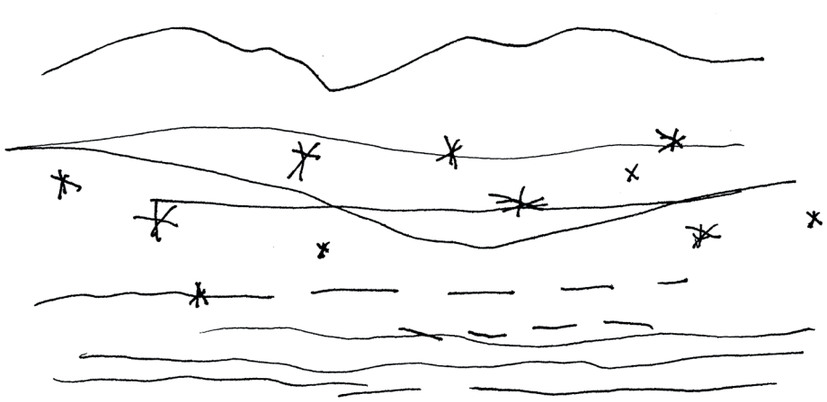
Nicola Zanin

Enoncé théorique de master
January 2016
EPFL

Under the supervision of:
Prof. Harry Gugger
Charlotte Truwant

PORTO MARGHERA

LANDSCAPE FOR A NEW PRODUCTION CYCLE



Nicola Zanin

Enoncé théorique de master
January 2016
EPFL

PART 1
RE-CYCLING INDUSTRIES
An introduction pag.8
- An image of Marghera
- The process of de-industrialization
- The condition for a re-industrialization

PART 2
HISTORY OF A CYCLE
Marghera: a case study pag.11

2.1 Veneto Region: Hisotry of a productive landscape pag.12

Productive landscapes pag.12
- Ancient: water mills pag.18
- Modern: steam mills pag.20
- Modern: Hydroelectric factory pag.22
- Current: Industrial barn pag.24

2.2 The rise: Porto Marghera and the futuristic dream. pag. 26

2.3 The fall: the petrolchemic era and the de-industrialization pag. 38

2.4 A contemporary poetic landscape pag. 42

2.5 Lost futures and possible futures pag. 46

PART 3
READING THE SITE pag.51

3.1 European corridors pag. 52

3.2 Industrial Po Valley pag. 58

3.3 NAPA ports pag. 65

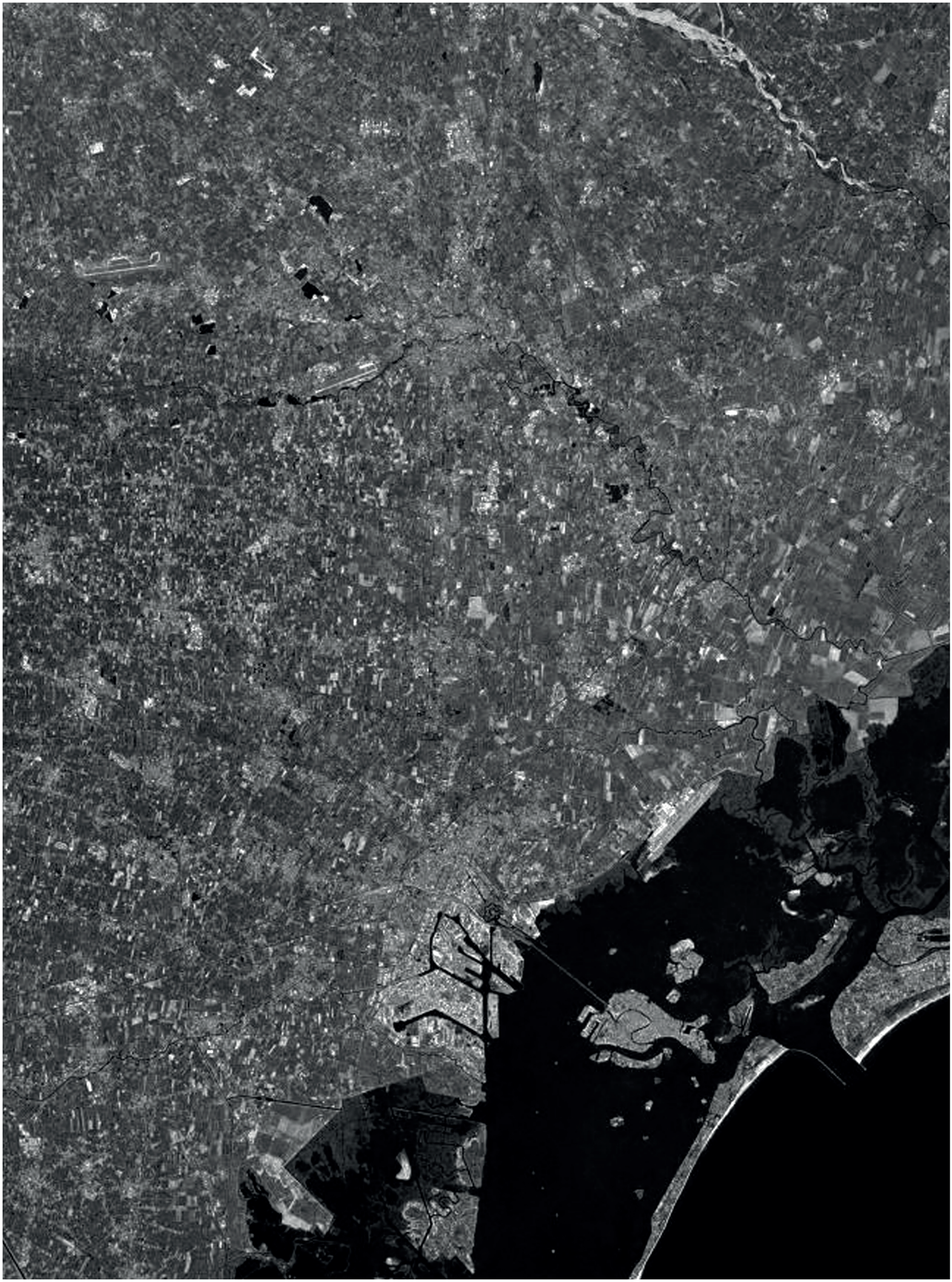
3.4 Industrial Veneto Region pag. 72

3.5 Marghera industrial area pag. 94

PART 4
VISION pag. 109

4.1 Vision pag. 114

BIBLIOGRAPHY pag. 120



PART 1
RE-CYCLING INDUSTRIES
an introduction



In the previous pages
Areal view of Venetian mainland, personal photomerge from Bing Maps (https://www.bing.com/mapspreview)
In this page:
- *View from Via dell'Azoto*, Federico Floriani, April 21, 2001
In the next pages:
- *Areal view of Porto Marghera*, personal photomerge from Bing Maps (https://www.bing.com/mapspreview)

AN IMAGE OF MARGHERA

The most familiar image of Porto Marghera industrial area is the Fusina skyline, that you may observe from *Ponte della Libertà*, the bridge that connects Venice to the mainland. Large oil tanks, tall chimneys that exhale flames and smoke, the grid of lights, the arc of the gas pipeline that surmounts the canal, reflecting in the water. This area nowadays looks like a lunar territory. A jungle of industrial infrastructures, a post-atomic setting where the abandoned factories seem to conquer and affect the topography, becoming natural elements of the landscape.

Walking through Porto Marghera, the industrial area shows some contradictory characteristics. The large scale of industrial architecture, with factories that reach to the length of 800 meters and are still highly visible from the lagoon, canals five times larger than those of the historic center and bridges supported by futuristic tensile structures coexist with the small scale of the preexisting rural settlement.

Also an intensive and continuous rhythm of production coexists with the rhythm of small commercial activities and of the rural works. The big industrial compound is on closer look not so dense: isolated abandoned infrastructures, industrial structures and a vast empty space where plants and trees have wildly regrown.

As the ruin of the Colosseum reminds of a period of splendor during the Roman Empire, so Marghera's factories ruins remind of the great economic and industrial development of the second part of the twentieth century, now ceased. In light of this, Marghera has become an artifact of the past, a contemporary ruin, that, however, represents a big opportunity in terms of conversion, recycling and reconstruction.

THE PROCESS OF DE-INDUSTRIALIZATION

Nevertheless the current situation of Porto Marghera needs to be described in critical terms. The industrial and harbour companies which are currently active on the platform are facing the need for a urgent change.

New restrictions and regulation from European Union, have determined negative effects on local communities, forced to find quick ways to re-industrialization; unemployment has increased and some companies have been forced to close their activity, leaving the area abandoned and polluted.

Most of the industries that have managed to react and resist, have been trying to find compromises and compensations, rather than repairing the already caused damage. Only a few of them have been exploring new and cleaner ways to sustain their activities.However, the image of the platform has not changed that much in the last three decades. Every attempt for a consistent change has been diluted because of bureaucratic procedures, and it is reasonable to think that is because of conflict of interests.Subsequently, nowadays Porto Marghera employment has decreased; the number of abandoned buildings has increased significantly and pollution level is so high that can not to be handled by those companies that are still in the area.

THE CONDITIONS FOR A RE-INDUSTRALIZATION

Many researches have already been developed regarding a potential renewal of this area. Most of them provided the conversion of Marghera into a residential quarter or into a big public garden.

This statement tries to propose a different vision and wants to preserve the industrial character of Porto Marghera.

The reason why Porto Marghera was born one century ago is still actual: Venice, for its conformation, can't stand a proper industrialization. The center of Venice attracts tourists from all over the world to cultural events, like the Architecture and Art Biennial or the Venice Film Festival. But Venice can't compete internationally, for other events (as evidenced by the failed attempts to apply for Expo 2000 or for the Olympics game in 2020) or in terms of productive plan.

The large infrastructures (roads, highways, trainrails, navypeers, bridges) and the abandoned industrial structures can be reused and regenerated with a limited efforts for a new cycle of productuion.

The level of pollution is so high and it is so widely spread that a new industrialization, respectful of the environment and careful to employment, should represent the only base for a regeneration.

Is it possible a new, upgraded industrial pole that is exclusively based on renewable resources, that is producing the same amount of energy as today, that doesn't pollute, that integrates in its activities the process of de-pollution, and provides spaces of interaction, integration and inclusion with the city?

Is it possible that, through the process of re-industrialization, Porto Marghera becomes a place 100% clean, innovative industry?

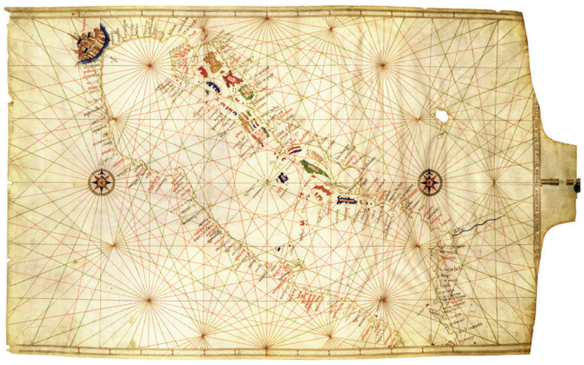
Is it possible to integrated an industrial quarter with other activities, becoming a hybrid public and productive space?





-*Skyline of Maghera*, Alex Hutte, 1999

PART 2
HISTORY OF A CYCLE
Marghera as a case study



In this page:
-*Adriatic Nautic Map,* Grazioso Benincasa (1400-1482), 1472
In the next page:
-*Mouth of Brenta river*, Niccolò dal cortivo, 1540

2.1 VENETO REGION:HISTORY OF A PRODUCTIVE LANDSCAPE

THE QUEEN OF THE SEA

Venice began to assume a dominant role in the commercial trades with the countries of the Mediterranean area and with the Eastern world in the thirteenth century.
The population growth and the birth of new cities on the mainland lead to growing demand of goods from the East and to growing production of goods for the export.
In the first half of the fourteenth century Venice reached its maximum expansion in the commercial trades and at the end of the century the city become the main commercial pole in the Mediterranean area and one of the richest countries in Europe.
The Venetian State was expert in getting privileges and concessions for docking its commercial ships in many port cities, while belonging to rival States. The relationship between Venice and the Ottoman Empire has always been contradictory: on one hand the Ottoman Empire was the main partner for commercial trades, on the other hand it was a rival State that undertook several wars for the domination of the Mediterranean area.
After the fourth Crusade and the redistribution of the Ottoman Empire, Venice become an empire made by port cities and naval bases: the most important bases was Constantinople (Venice controlled the arsenale area and the docks), the island of Creta, Negroponte, Modone, Corone and the Dalmatian region with the submissions of Zara.

PROTO-INDUSTRIAL VENICE

Venice became an important commercial pole thanks to its maritime domain. The commerce constituted an incentive for industrial development. Many traders bought goods from Venetian artisans not only for their personal use but also for export. The vessels not only expanded the market of the artisans but also could bring to them the raw materials.
Venice develop two different organization of the productive activities: the small workshop and the large factories. Many small independent craftsmen bought the raw material, worked it individually and sold it directly to the consumer. These craftsmen were in particular furriers, cabinet makers, and some carpenter and glassmaker.
But contrary to what was happening in the rest of Europe during the Middle Ages, Venice developed less the textile industry and more the chemical one: glass, soap, dyes, tiles and bricks, metals.
This kind of industries required large common work spaces, could not be developed privately and involved skilled craftsmen, expert more of artisanal techniques rather than of commercial activities.
Moreover Venetian merchants could never become entrepreneurs because their knowledge and their capital were engaged in the complex and vast international trade.
For these reasons Venice developed an unusual and original organization of the production, different from the European traditional medieval one.
The establishment of large common working spaces marked the transition of production from the workshop to the factory. These new productive spaces were really close to the modern idea of factory and differed only for the absence of powered machinery.
Silversmiths and goldsmiths worked at the so called *La Zecca*, a factory where metals were melted and coins and jewels were minted. *La Zecca* constituted one of the biggest productive concentration of employers at that time. The decision to bring together all the silversmiths of the city in one workplace allowed the standardization of the product and the preservation of the material. *La Tana* was a stock / factory for the processing of hemp, where all specialized craftsmen of the city were concentrated. High quality hemp was preserved to produce ship ropes; low quality hemp was used to produce cords for packaging. The largest factory in Venice was the *Arsenale*, a shipyard for the construction and repair of commercial and military vessels.
Murano glassmakers were able to imitate precious pearls and to combine glass with colored enamels in the production of cups and vases. But the glass processing also relates to the production of spectacle lenses, the production of large transparent windows, the production of bottles.
In the soap production, the use of fine materials, allowed to produce a high quality goods compared with the other european country.
Metallurgical industries had a good supply of materials. A dedicated law imposed that ll the copper, silver and gold directed to the East were refined before being exported. Coppersmiths were experts in the production of large boilers like the one used in the manufacture of soap or the one used in sugar refinement.


BRENTA
lamira
villa delle ganbarare
fiume arera
lago
volpadego
molle
Tore del Coran
laronzello
chanal mazore
s. Ilario
chaxe de vriago
fiume de vriago
morenzan
lauexa
lago de vigo
lizafexina
corbolla
s. lunardo de fossamalla
ponta di loui
fondamenta
chanal de vigo
lasacha de volpadego
s. zorzi daliga
s. anzolo de concordia
s. marc de lama
VENECIA
Copia.
Jacobus berengo plebanus
s. apostolicus notarius Curie



In this page:
-*Territory at the mouth of the Dese river,* 1456
In the next page:
-*Mills along Brenta river*, Niccolò Memo, 1572

TERRAFERMA: A SUBORDINATED RESERVOIR

The most important reason why Venice has always looked at the mainland with significant interest was the need to have a supply source for commerce and production: food and timber, and sometimes also water, when exceptional tides affected wells.

When the town developed as a manufacturing centre, the demand for raw materials became more intense: hemp from wetlands along the Po river, iron and copper from the subalpine hills, wood for the construction of vessels from the distant Dolomites, silicates necessary for the production of glass from the Adige river, close to Verona, clay for the construction of ovens from Vicenza and the firewood comes from Friuli and Istria.

To preserve this productive and commercial reservoir from a possible interdiction of competing states, in fifteenth century Venice extended its dominion on the mainland. The relationship, between the Capital city and its Mainland has always been complicated and conflicted, from the late Middle Ages to the fall of the Republic.

The main aim of Venetian Republic was to develop the factories of capital. Concerning mainly specialized industry, Venice kept for itself all the production technologies, considered to be most innovative and advanced, and limited their spread to other cities in the Republic. Venice looked at the mainland as a reservoir where could be developed complementary industries, more dependent from the raw material and related to the rural activities, such as the wool and the silk industry.

Thus, if it's true that Venice had always played an unquestionably primary role in the Republic, both in trade activities and in several specialized industry sector, it's also true that the mainland presented a precocious vocation to to manufacturing.

The development of venetian wool and silk industry was deeply link to the mainland resources. In the wool industry, while the major Italian centers producing export oriented clothes were compelled to purchase raw material from abroad, Verona, Padua and Vicenza, under Venetian Influence, aimed at improving the quality of sheep breeding.

About silk industry, in the period before the first half of the fifteenth century, the presence of mulberry trees was already widespread in the foothills areas (Schio, Thiene, Marana, Valdago, Arzignano) and in the areas next to Vicenza. Around Verona, sericulture may have begun to spread already in the fifteenth century, mainly in the high lands at the western and eastern side of the Adige river and in the lower Valpolicella.

The diffusion of mohair (mulberries) cultivation in the estates of the Veronese landowners represented one of the most important innovations in agriculture. Some important operations in the production of the manufacture goods, like spinning, fulling and dyeing of clothes started to be developed in the mainland. All these activities was carried out by private workers mainly under the control of a Venetian merchants entrepreneurs.

COSTITUTION OF AN AGRO-INDUSTRIAL LANDSCAPE

During the seventeenth century, Venice lost its remarkable role in international trade. This was due to many reasons: the new emerging trading centers



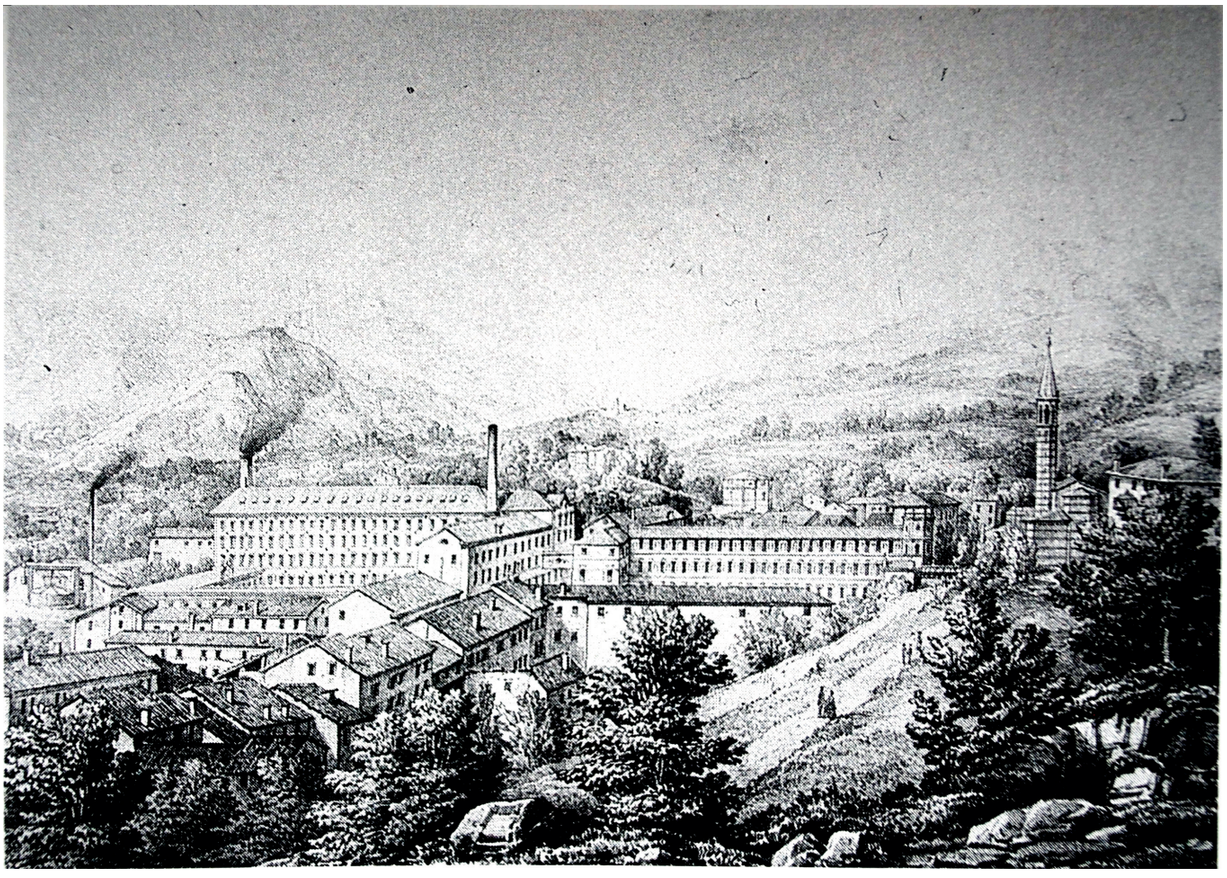
of Lisbon, Amsterdam and London that eluded the city from the main trade routes, conquering the Atlantic Ocean; the increasing vitality of Northern European merchants and vessels and especially French merchant ships began to replace Venetian companies and ships in the Eastern Mediterranean sea ports; the spread of piracy in the Eastern Mediterranean, so consistent that the Venetian Senate was forced to re-introduce armed convoys to escort its merchant ships; the severe economic crisis in the Ottoman Empire itself and the strong competition from English and Flemish woolen precarious and more exposed to greater risks.

If the productive dominance of Venice on the others cities of the Republic had made sense during the early modern age, when Venetian manufacturing could boast of a strong hold on the market, by the seventeenth century with Venice itself flooded with 'foreign' products, it appeared counterproductive, all the more so given that some of the mainland cities had shown themselves able to compete with the external manufacturing.

Some industries, especially the luxury one, rested in the capital, maintaining a strong urban character (production of glass, furniture and musical instruments), but the difficult environmental conditions of the lagoon obstacle the development of many other industries. The production of the paper and leather, for instance need dry conditions of work. The mainland could offers several advantages in this sense: presence of high quality material, lack of corporation, diffuse energy sources, presence of low-payed labour force.

Presence of high quality raw material and diffuse source of energy established a strong relationship between productive activities and rural activities and led to the settlement of the first selfsame factory. This is the case of the mills, one of the first machines that can give an industrial dimension to Veneto region history. A type of autonomous production, that takes place in a close and deep relation with the hydro infrastructure (the presence of water) and the topography (steeply sloping changes in ground level). To prevent mills from the risk of flooding and landslides sometimes they were constructed far away from the river course, in the middle of the countryside. A series of infrastructure were constructed to bring the water from the main river to the wheels, such as canals and embankments. The mechanical energy of the wheel, originally used to grind the cereals, was then used also for industrial operations, such as the processing of metals, the catting of the timber and the production of clothes. This productive spaces become part of the poetic Veneto landscape, as emerge from the painting of many artists, from Bellini to Ciardi.

The diffusion of industries in the rural landscape was also link to the presence of low payed labour force, to the lock of corporations and, more in general, to the particular organization of the production. The production toked places in small private workshops of independent farmer/artisans and it was based on the family workforce. In these sort of domestic industries all the members of the family, including children, took part to the productive activity. The organization of the work was more flexible and discontinuous because the productive activities were integrated with the agricultural one and for this reason this farmer-artisan was payed less than a urban specialized worker.



A SLOW INDUSTRIAL REVOLUTION

In the nineteenth century the industrial revolution in the Veneto region was slow, not continuous and interested to isolated cases. This phenomenon is due to a missed technological renewal and to a late development of some manufacturing sectors, like the cotton industry.

The ironworks, the factories and the textile mills that took part in the progressive industrialization of the territory of the Veneto in the nineteenth century initially found a convenient location along the foothill strip situated at north of the main cities of the Veneto, along the river courses and close to small urban centers. Here they were able to count on energy that was at first mechanical, then hydro-electrical, and on a sizable population, featuring a poor social tissue and an agricultural craft type economy. Exemplary of this process is the progressive rise of the Valdagno district and more in general the industrial district of the upper Vicenza area, that developed during the nineteenth century, headquarters for over a century of the historic Marzotto group brand: water infrastructure, topography and energy models all contribute to creating a system of production based on a widespread entrepreneurism and a polycentric organization of the territory

An important industrial type that diffused in this period was the steam spinning mill. Its tall chimney ejecting vapor and smoke strongly marked the rural landscape making it more discontinuous.

In these new structures the exploitation of new form of energy is linked to a complete reorganization of the workforce. Women involved in the silk production moved their private houses into new industrial structures, in order to reduce costs and standardize the quality of the goods. However, the employment was seasonal and the relationship with the factory followed the rural paternalistic model, so that the mills were often annexed to neighboring the manor houses or to the farms.

LANDSCAPE OF ENERGY

In the twentieth century emerged a productive model that is based on the concentration of energy production. It also corresponds to the progressive realization of a transmission network scaled to the entire region. This system, that began to emerge from 1905 on-wards, is mainly due to the Società Adriatica di Elettricità (SADE) and the figure of its founder Giuseppe Volpi. The model can be schematized as a large transmission network that unites the main geographical features of the Veneto area: the mountains and the lagoon. They also correspond to the two main systems of electricity production of the modern era: hydroelectric and thermoelectric. The first network location, also in terms of chronological order, are the hydro-electric power plants built between the nineteenth and twentieth century on the mountains of the Veneto — Friuli regions, the performance of which was increased in time with the capacity to build ever bigger dykes and artificial basins. This corresponds to a positivist attitude that, thanks to the confidence in the technological advancement, sees nature and water as ductile, pliable entities. In the first half of the twentieth century the Alps became a formidable machine for energy production; the Piave becoming one of the most artificial rivers of Europe; SADE a world leading electrical company. The second network location corresponds to the industrial



port of Venice, located as willed by the same Volpi from 1917 onwards at Marghera, between the lagoon and the mainland, where large amounts of electricity produced in the Alps were conveyed to be consumed by the growing industrial center.
I the second half of the 20th century, hydroelectric power, which had seen constant growth until then, and which before the Second World War represented the majority of energy generated and consumed in the Veneto, began to give way to a model based on the importation, refinement and application of fossil fuels. The era of hydroelectric power also saw its symbolic end with the Vajont disaster in 1963, in which a landslide on Mt. Toc resulted in the deaths of nearly 2000 people. Porto Marghera, Fusina and the Po Delta soon became of strategic importance in generating power for large areas. Their accessibility by sea made it possible to gather large quantities of oil, and their large water reserves were ideal for cooling the installations. During the 1990s, just seven thermoelectric power stations produced 90% of the Region's electric energy. This energy model, based on large hydroelectric and thermoelectric power stations, enabled the Veneto to maintain total energy self-sufficiency until the year 2000.

A CONTEMPORARY DIFFUSE INDUSTY

After the second world war the dominant industry in Veneto Region changed from textile to the mechanical, and increased the production of plate, appliance, mechanic and eletcromechanic components. This production was also increased by high quality materials, recognizable design, administrative and productive dynamism, inclination to export.
The big industry let independent craftsmen, who could work in their private houses to work for the starting phases of the goods production . Many of them also increased the production and transformed their workshop into a factory. When the production increase was really high they also built barns and warehouse to store the goods. If private residential space didn't permit their construction the little entrepreneurs occupied the closed fields. For this reason passing through the Veneto countryside it's easy to see factories built close to private houses but also industrial structure isolated in the middle of the countryside: the so called "diffused industry".

In this page:
-*Picture of the button factory* Rossi, 1864
In the next page:
- *Factory inTreviso*, Personal photo, December 2015

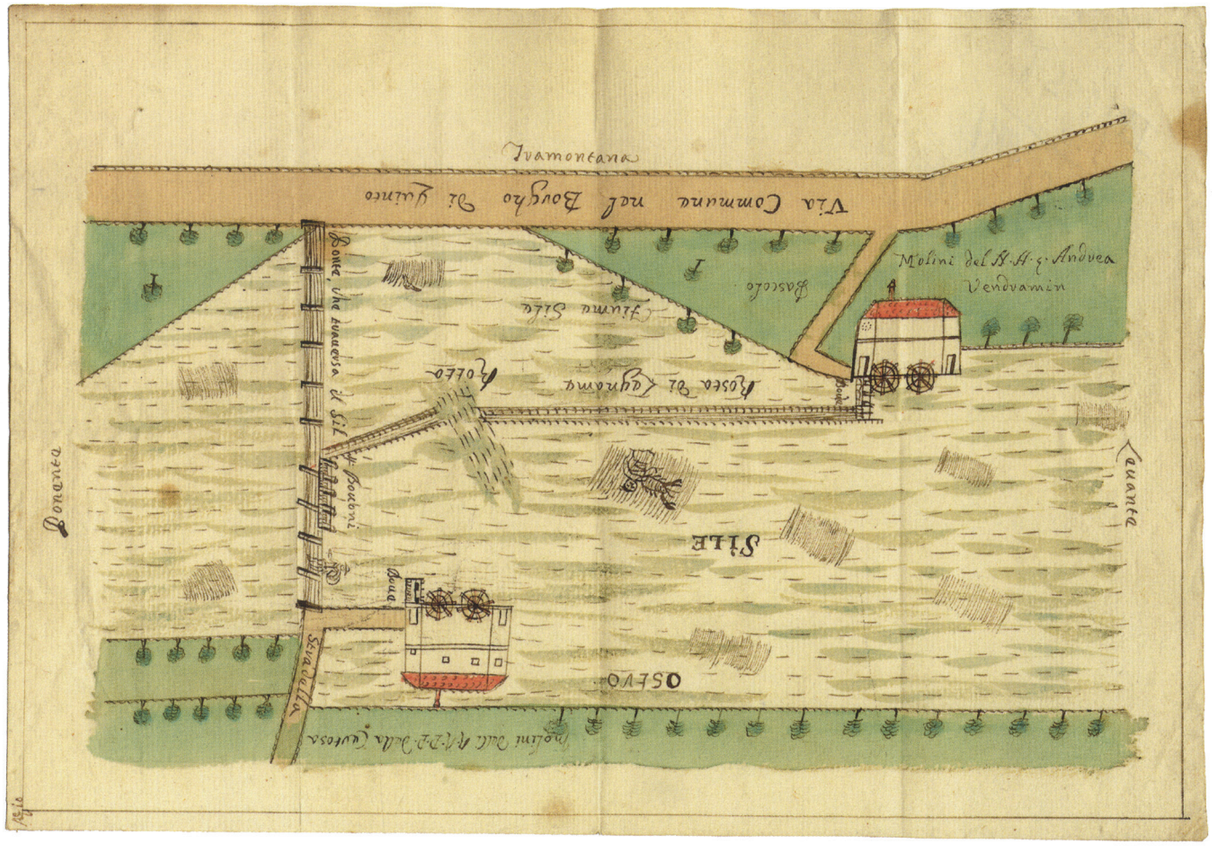
Productive landscapes / ancient

WATER MILLS

Mills can be considered the main machine that give an industrial dimension to the Veneto region history.
In the Po Valley, thanks to the diffused presence of waterways, a large number of mills were constructed from the early medieval age. The water flood activated directly the wheels of the mills and consequentially the machines contained in the inner spaces. These machines were not only used to grind cereals but also to cut the wood or to handle the wood.
To prevent mills from the risk of flooding and landslides sometimes they were constructed far away from the river course, in the middle of the countryside. A series of infrastructure were constructed to bring the water from the main river to the wheels, such as canals and embankments.
During the fifteen and the sixteenth century, the mills began to develop as a productive places especially in the subalpine area, the so called Pedemontana. In the pedemontana's, the presence of rivers with waterfall bring to the settlement of a particular kind of mill, the so called *Bolognese* mill, producing high quality silk and paper.
But the mills early expanded also in the lowland. Already in the fifteenth century the woolen industries in Venice looked at the close mainland to do some basic operations: for example fulling, (a phase in woollen clothmaking which involves the cleansing of cloth to eliminate impurities). These operations generally took place at the mouths of rivers flowing into the lagoon, where water courses are faster and more strong..
The mills developed as a productive spaces thanks to the singular organization of production established in Veneto region: in poor rural areas the famers were used to produce manufactures for a merchants / entrepreneurs as an integration to the low agricultural income. Instead of buying finished products from the farmers, merchants/entrepreneurs provide to the farmers the raw material and the tools to transform it. In this way they could pay to the farmer only the labour costs.
The difference between industry and agriculture in Veneto has never been a marked line and mills as it is now represented by this phenomenon.

In this page:
- *Mills along the Baccaglione/Brenta river, in Padova*, 1753
- *Hydraulic weels in Piazzola del Brenta*, 1799
- *Mills along Sile river in Quinto di Treviso*, 1740

In the next pages:
- *Mills in Ponte Molino, Padova*, 1780

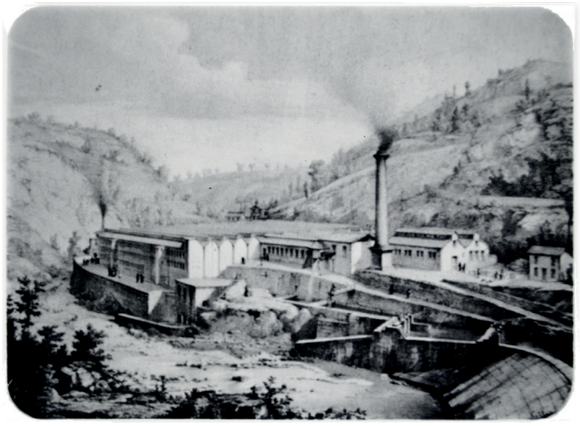


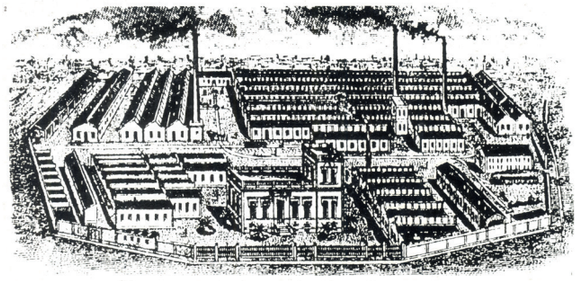

E
E
E
D
D
E
E
D
D
C
A
A
B
B
D
A
B.
C. Acqua Publica
D. Acqua Corrente
E. Acqua Tutta

Productive landscapes / modern

STEAM MILLS

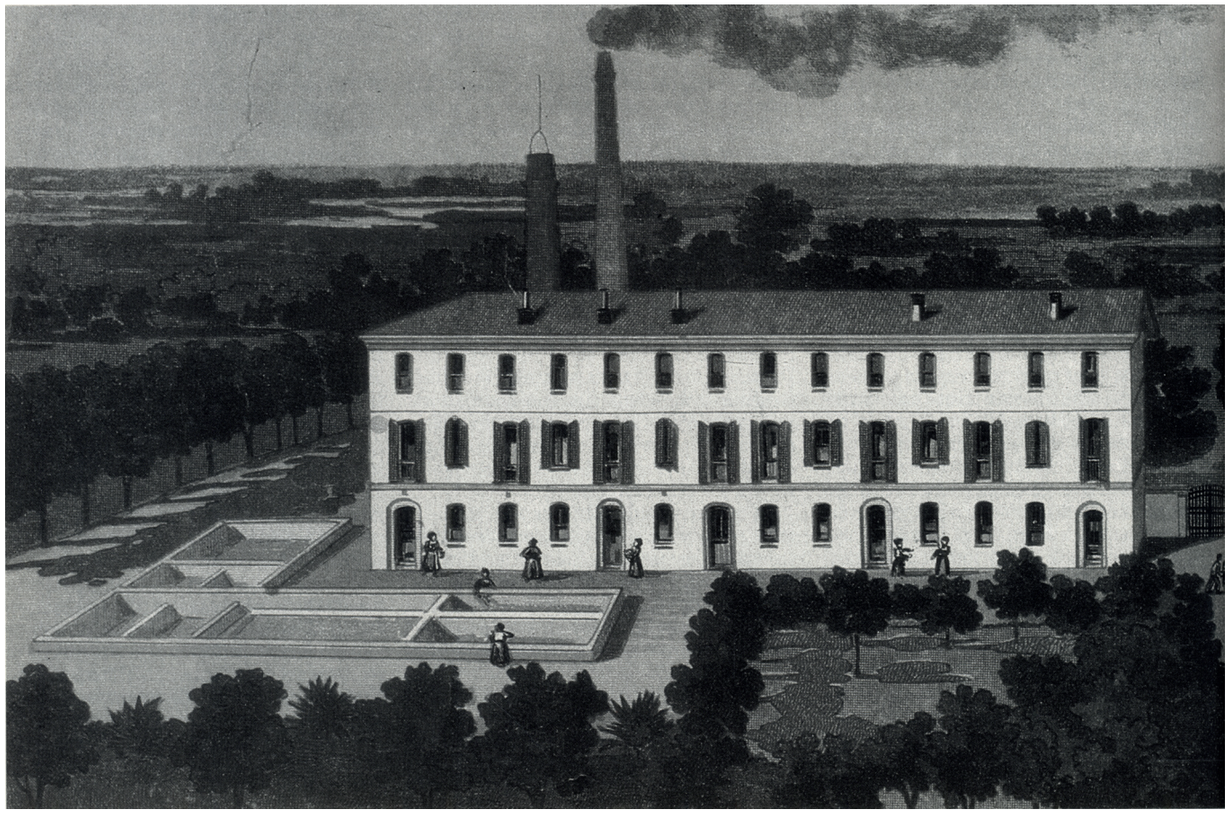
The steam mills were one of the first modern factory settled in Veneto Region. This activity took place in the nineteenth century and represented the passage from the rural organization of the production to a modern one. To increase productivity and to have a better control over production, the merchants/entrepreneurs decided to gather all the farmers together in a single industrial space. The small workshops, where farmers produced manufacture as an integration of the rural work, were substitute with big factories where farmers were full-time employed .
These new productive spaces were characterized by a central open area. Here big machineries and a large number of workers where hosed.
Their tall chimneys ejecting vapor and smoke was a recognizable architectural object and it was strongly visible even from a distance in the Veneto low plan. It marked the rural landscape making it more discontinuous.
The fog, a phenomenon very common in the Veneto lowland, merge sometimes with the vapor that comes out from the fabrics, creating a poetic landscape, where all is indefinite, all is suspended between the ground and the sky.





In this page:
- *Internal view of the steam spinning mills* Rossi, 1864
- *Button factory* Zuccherman & Diena *in Pontevigodarzene*
- *Hemp factory* Antonini *in Crocietta del Montello*
- *Steel spinning mills in Lancenigo*, 1860

In the next pages:
- *Sugar factory in Legnago*, 1887





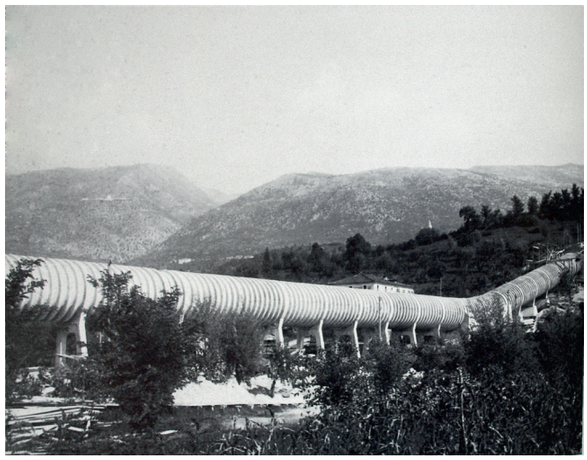
Productive landscapes / modern

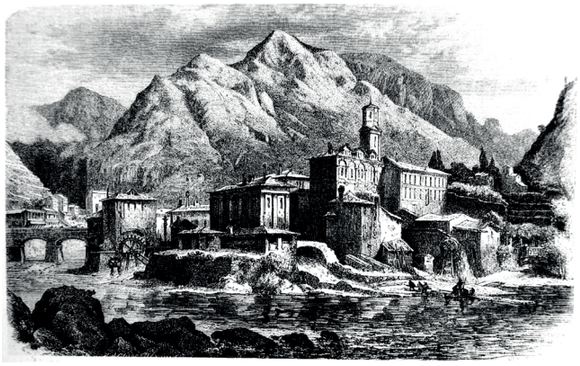
HYDROELECTRIC PLANTS

At the beginning of the twentieth century, thanks to the new knowledge on energy transport and production, that make possible to pass from a mechanical transmission to a electric transport, the hydroelectric plants could be built far from the water source of energy, in the valleys and in the lowland. For these reasons, the new hydroelectric plants required the support of big infrastructure such as large concrete dams and long tubes for the circulation of the water.

The confidence in the technological advancement produce a positive attitude that sees nature and water as ductile, pliable entities. The infrastructures connected watercourse to hydroelectric plants passing beyond mountain and hills, generally without any relations with the environment. The big concrete tubes that surmounted canals and fiels, the dams that interrupt the natural watercourses, the galleries that break the mountains: all these big, sometimes monumental, infrastructures constituted a really impactive sign in the landscape.

In this way The industrial facilities reach also the more hostile environment possibly made for man, creating a continuous industrial landscape that goes from the mountain to the see, passing trough courtyard and valleys.





In this page:
- *Concrete tube to transport the water on the Friga river*
- *Picture of the hydroelectric plants in Carpenè,* around 1850
- *Hydroelectric plants in Nove Nuova*

in the following page:
- *dams in Ponte Serra*





Productive landscapes / contemporary

INDUSTRIAL BARNS

After the second world war, the area has experienced a constant and unquestioned growth, which turned it into one of the largest manufacturing areas in Europe. Many independent craftsmen built their factories next to their private homes and with the exponential increasing of production they also built barns and warehouse in the close field, invading the countryside. This phenomenon is caused by a permissive legislation, a lack of a master plan, a diffuse and aggressive entrepreneurship.
But factories doesn't constitute isolated objects in the landscape: their settlement comport also the construction of a tube system for water runoff, a connection to the general electric mains, a connection to the main roads.
This cause the break of the geometric division of the field and the brutalization of the Veneto villas and, in general of all the historic buildings scattered in the whole region. These buildings was design by some of the most famous architects of all the time, Palladio, and represented a model for many other buildings in the world, such as the White House. Unfortunately Veneto villas attended, nearby, the massive production of industrial barns and warehouses in the last few decade . The juxtaposition of these two opposite buildings typology, a example of beauty internationally recognized and a brutal product of industrialization merged together in the same rural environment, create a contradictory and sometime embarrassing situations.
In the current moment of recession, the friction between systems becomes visible, forcing the area to deal with its inherent limits. The economic crises bring many industries to move to other country, where there are more favorable work conditions.
The phenomenon of the diffuse industry is generally criticized not only for the objective damage of pollution and degradation but also for the degradation of the landscape. One of the most famous critic of this kind of landscape was the poet Andrea Zanzotto, that set against the rural landscape, result of a slow and careful work of the farmer, to the industrial barns, results of a violent and wild capitalism.

In this page:
-*Landscape of Vittorio Veneto*. Personal photo.
In the next parge
-*Various industrial barns in the Veneto region*. From google street view












SAEL

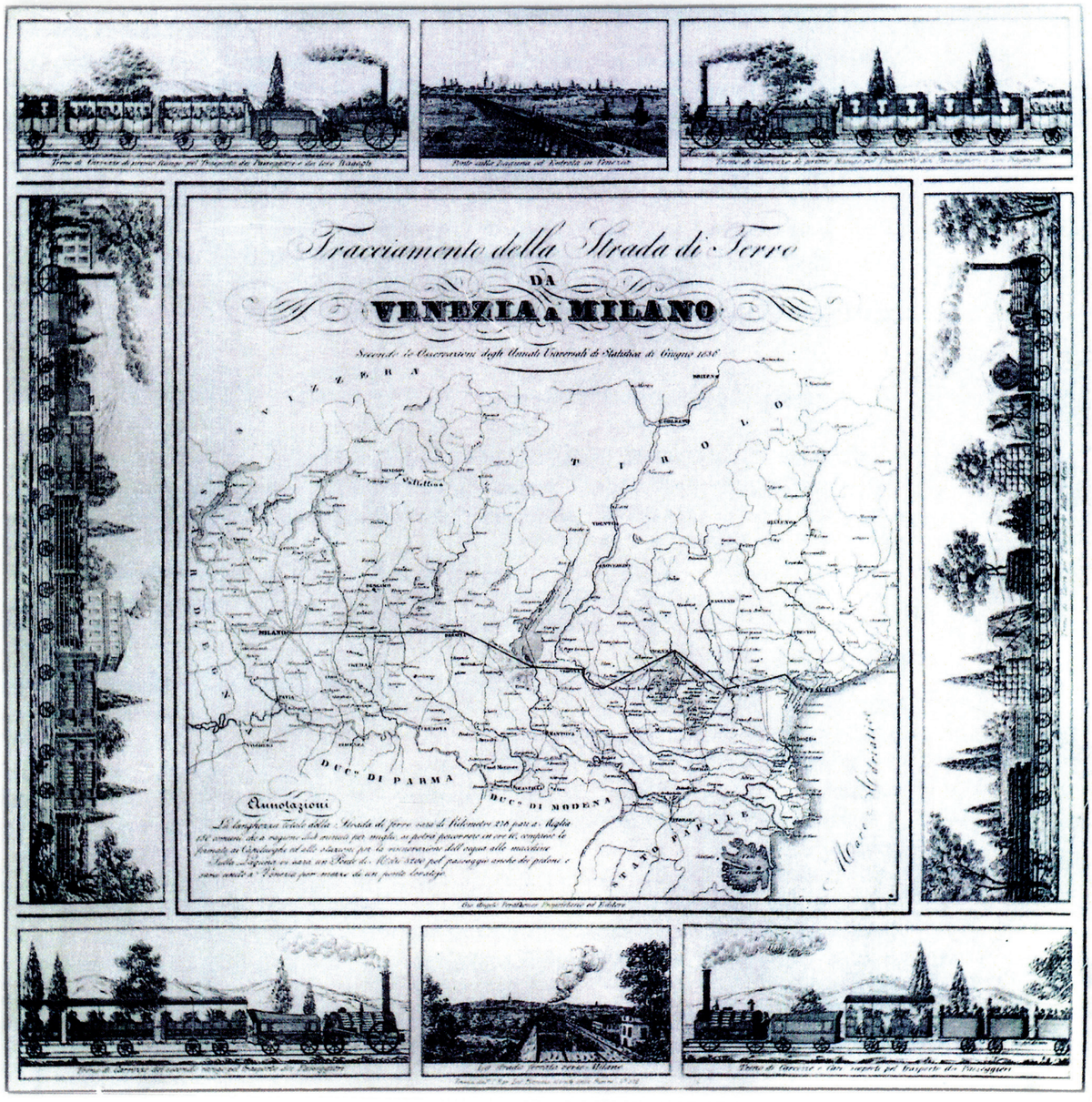






The picture of the locomotive running across the rural landscape becomes the metaphor of a nineteenth-century idea of distruptive progress, that goes beyond the physical boundaries.

In this page:
- *Project of the Milan-Venice before dthe construction*
1844
In the next page:
Illustration of the lagoon landscape with the new rail infrastructure





2.2 THE RISE: PORTO MARGHERA AND THE FUTURISTIC DREAM

BIG INFRASTRUCTURES FOR A MODERN VENICE

Like all the tragedies, also the project of Porto Marghera was born from a need and a lack. specifically of a harbour.

At the end of the nineteenth century, while the industrial area between Genoa, Turin and Milan were invested by the wave of the heavy industry, in Veneto region there still was a small industry, low mechanized, based on the post-feudal agrarian use of land by tenant farmers. When Venice was chosen to become the main port for trade of manufactured goods from the Padan Plain throughout the Adriatic, a new railway bridge was planned. The line should connect Milan to Venice, crossing the entire lowplan. The picture of the locomotive running across the rural landscape becomes the metaphor of a nineteenth-century idea of distruptive progress, that goes beyond the physical boundaries. Opening in 1846, it connected Venice to the mainland, (or that connected the continent to Venice, as the islanders say, chronically self-centered). More in detail, the new bridge connected Venice to the city of Mestre, an important pole from witch many roads to the mainland departed, following a straight line with the only exception of a curve, due to military interest, in correspondence of Marghera Fort bastions.

For the first time in history, Venice could be achieved by a way of transport different from ships, an most rellevant, by innovation that must have seemed to be blasphemous to some old conservative man. But there was still an embarrassing lack for the old queen of the seas: a modern port.

In 1867 started the construction of a maritime station in the area of Santa Marta, facing the mainland, small but comfortable, connected by the railways.

However, by beginning of the twentieth century, the port could no longer sustain the heightened activity. A part of Giudecca Island and the northern area of Cannareggio were designated as centers for the production and stocking of merchandise, but Venice itself could not be expanded. At this point it become necessary to shift economic expansion to the mainland. It actually represented the birth of Porto Marghera.

In the 30's, because of the growing number of workers who moved from Venice to the mainland factories, a motorway bridge was built in parallel to the railway bridge. The bridge, initially called Littorio Bridge, was renamed after the end of the second world war as Ponte della Libertà (Freedom Bridge) to emphasize the freedom from nazi-fascism regime.

THE BORN OF MARGHERA: THE GARDEN CITY AND THE INDUSTRIAL AREA

In 1917, Venice port authority is created to manage the area's development following 3 main directives. First of all, Build industrial platforms that should attract capital and bring jobs. Secondly, in order to be attractive, a seaport has to be built too to receive raw materials requested directly by the industry and the new power plants. Then a new neighbourhood was planed on Howard's model of a garden city.

In 1921, the construction site of Marghera's garden city is inaugurated, following the plans of Engineer Piero Emilio Emmer, who designed the garden city. In 1922, fascists seized power of the country. Contrary to popular opinion, the new neighbourhood wasn't built for the workers of Porto Marghera. At this time Venice city center was populated by many inhabitants, facing problem of alcoholism, poverty, and illness, so Marghera was designed to host mainly Venetian poor inhabitants.

In the same period began the construction of the industrial area with the reclamation of the wetland and the excavation of the first canal, the so called North canal. Where once there were salt marshes, it was created a solid platform for the establishment of industry, redefining the border of the lagoon. The birth of Porto Marghera corresponded also with the redesign of the political border of the town to link this area to the historical city: to prevent that Porto Marghera became part of the municipality of Mestre was decided to join Mestre, Venice and other close villages under the same large municipality.

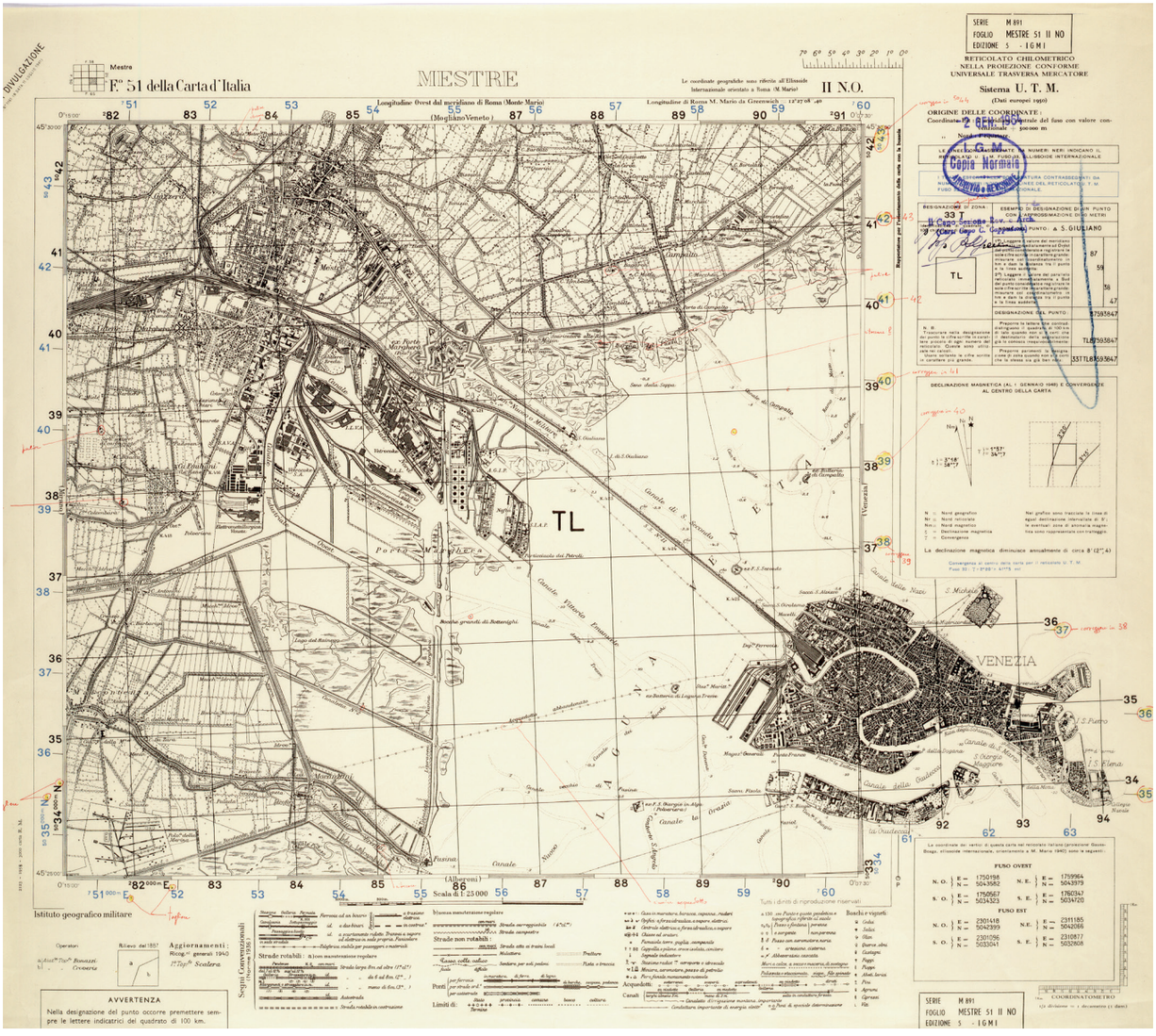
FASCIST PORTO MARGHERA: DEVELOP OF THE INDUSTRIAL AREA

Both the infrastructure of heavy industry and the culture industry of Venice in the twentieth century were established by the same man, Giuseppe Volpi: an influential politician who served as Finance Minister Mussolini's cabinet and acted as one of his main advisor.

On one hand he conceived some important cultural events, like the Film Festival and the International Art Biennale; on the other he was the main protagonist in the development of Porto Marghera industrial area.

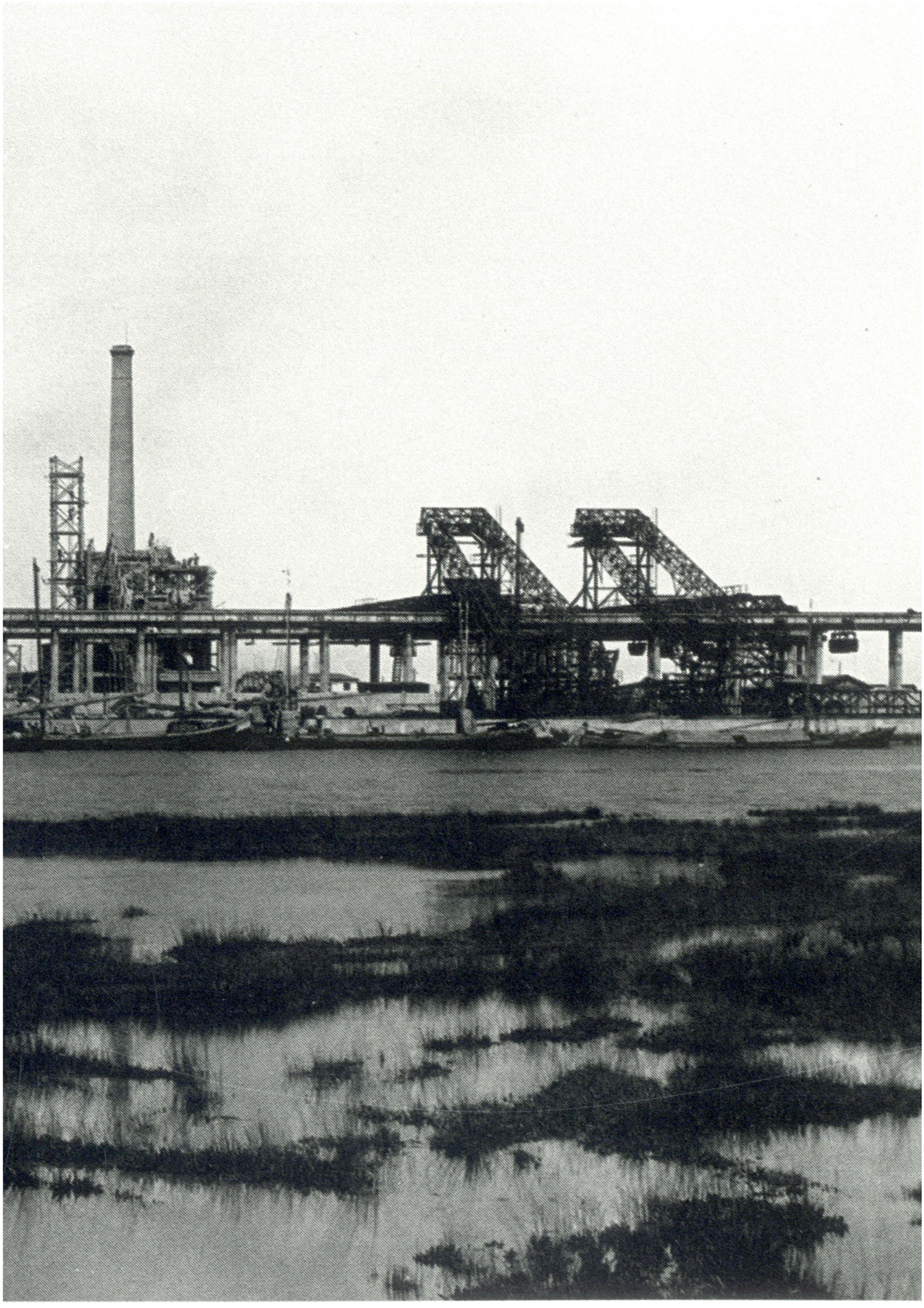
The limit of the lagoon, slowly eroded by the action of tides and characterized by salt marshes was strongly transformed into a compact and geometrical enclave. The rural landscape characterized by woods, campaign and isolated vernacular buildings turned into an industrial landscape characterized by infrastructures, factories, vapor and ash.

In this page:
-*Map of Marghera in 1909, 1915, 1958*
In the next page:
- *Excavation of the canal for* Breda *shipyard*, 1919





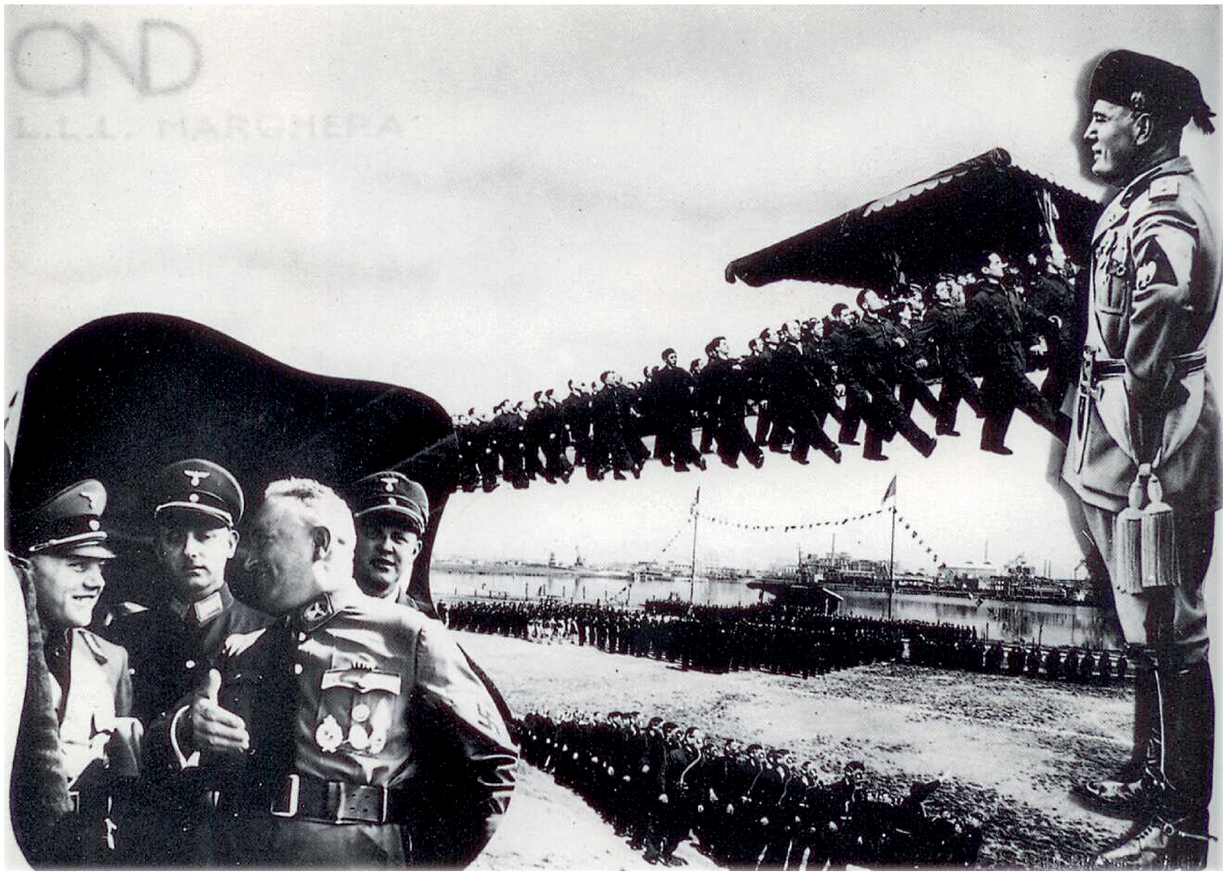




“We want to cure and heal this putrefying city, magnificent sore from the past (...). We want to prepare the birth of an industrial and military Venice that can dominate the Adriatic Sea , that great Italian Lake”

Filippo Tommaso Mrinetti
Against Past-Lovin Venice, 1910

In the previous page:
-*First excavation for the construction of Vetrocoke glass factory*
In this page:
- *Fascist propaganda manifest showing the visit of Mussolini in the industrial area of Porto Marghera*, 1934
In the next page:
- *Sala Volpi, the facilities for Venice Movie Festival,*





He was the president of the nation's largest insurance firm and the biggest energy company in Northen Italy, SADE, which was the first company with its headquarter based in Marghera.
Porto Marghera was initially dedicated to three areas: the construction of a large industrial port, the preparation of huge land area for industrial production and the development of a planned community to house workers.
The industrial pole flourished quickly, mainly due to the importance of the steel and welding sectors during the First World War. But the most significant development occurred between the two great wars, when the Fascist Government bestowed the title of count upon Volpi, who was a ubiquitous authority: director of the Italian employers' federation, owner of the most popular Venetian newspaper, president of the Port of Venice.
The quick development of Porto Marghera was due to specific reasons: the presence of a large concentration of industrial companies, promoting national development and linked to international finance; the presence of a permissive and accommodating legislation and the state finance of public works useful for the private development, the presence of low cost unskilled labour come from the countryside.
The establishment of chemical and metallurgical industries, in particular dedicated to the production of aluminum, synch and calcium carbide, fitted perfectly to the interests of Giuseppe Volpi and the group of electrical entrepreneur. In fact, this kind of production involved high energy consumption and permit to SADE and others electric companies to spread the energy generated to the close mountain and foothills facilities since the costs to conserve it was too high.
The Fascism promotes industrial development and financed especially some kind of factory, like the weapons one. The production of aluminum increase even if it was really expensive and Marghera became soon the main producer of aluminum in the country.
The chemical industry developed thanks to the growing demand of fertilizer in agriculture and also to the commercialization of new synthetic products produced by a policy of independence. Moreover the production of organic composts increased, especially the one with nitrogen. Fascism also promoted the production of nitrogen composts, ushering a new industrial phase of Marghera, premonition of the future petrochemical compound. As consequence, a new innovative resin began to be produced, the plexiglass.

At the beginning of the second World War Marghera was one of the biggest and technologically most concentrated industrial area in Europe.

THE MYTH OF PROGRESS: PORTO MARGHERA AS A PRODUCT OF THE FUTURISTIC CULTURE

The Fascist fantasy of a ruthless industrial revolution in Italy was explicitly idealized in the writings of the Futuristic poet Marinetti. According to the Futurist protest against the past and, in general, against any sentimental romanticism, Marinetti theorized his "Manifesto Against Past-Loving Venice" (1910), the systematic destruction of Venice by their most famous and picturesque aspects. He proposed to bury the channels and to burn the gondolas to "introduce to the birth of a Venice, industrial and military".
This vision was in part actuated with the founding of Porto Marghera. The limit of the lagoon, slowly eroded by the action of tides and characterized by salt marshes was strongly transformed into a compact and geometrical enclave. The rural landscape characterized by woods, campaign and isolated vernacular buildings turned into an industrial landscape characterized by infrastructures, factories, vapor and ash. Many farmers became metal or chemic worker.
Even if it was founded earlier, Fascist propaganda used constantly Porto Marghera industrial area to extol some myth of the regime, like the poetry of the machine or the faith in progress. The visit of Mussolini to Porto Marghera industrial area in 1934 was really emphasized by the press of the time.

LE CORBUSIER AND MARGHERA

In the story of Marghera there is a little-unknown episode: the attempt of Le Corbusier, in 1934, to participate at the construction of the city district through a series of proposals.
Le Corbusier was in Venice from 25 to 28 of July 1934, invited by Giuseppe Volpi to participate at the conference *Arte e Realtà - L'arte e lo stato*. Le Corbusier took part at the conference talking about Venice in a singular way. He was not anymore agree with John Ruskin theories, that want to preserve traditions from the threat of industrialization, but he was not even close to the futuristic polemic on the past and to the idea that tradition should be erase by the coming of modernity.
Le Corbusier empathized the specificity of Venice *dans sa conservation actuelle* but he support also the building of a new residential district, *as a oputillage de l'epoque*



LA POESIA DELLA MACCHINA

Qualcuno s'è dimenticato il presagio eroico che era contenuto nell'Allegoria dell'Autunno? « Se tutto il popolo emigrasse abbandonando le sue case attratto da altri lidi come già la sua giovinezza fu tentata dall'arco del bosforo, e nessuna preghiera più percotesse l'oro sonoro dei mosaici e nessun remo perpetuasse col suo ritmo la meditazione della pietra, Venezia rimarrebbe pur sempre una città di vita ».

Per chi entra la prima volta a Marghera, nel dedalo infinito dei suoi canali crociati, il vaticinio ormai lontano e sperduto nella ridda delle fantasie e nel tumulto rissoso dei ricordi, diviene una palpitante realtà.

Infinite volte ero passato accosto alle banchine, ai doks, alle grues, agli argani, ai magazzini, alle tolde allineate, da levante a ponente, ma non ero riuscito a cogliere quella che mi parve davvero, assai più tardi, l'anima musicale dell'emporio stupendo, la clamorosa o raccolta poesia della macchina dove, per un miracolo o per una magìa, la fatica umana par cancellata dall'ordegno sottile della meccanica applicata alle industrie, e non è che una utopia o un gioco effimero dei rilievi e dei contorni.

Fu una mattina, quasi all'alba, mentre accompagnavo il direttore dell'Istituto Nazionale Luce che desiderava « girare » l'immenso alveare per portarlo nei più lontani paesi d'America dove la vecchia fiaba di una Venezia lirica, oleografica, romantica ha assunto gli aspetti enigmatici di una leggenda colorata. (Vi ricordate il tentativo della Florida? Gli americani ci tolsero dodici gondolieri degli Ognissanti, l'arco di un ponte, la gola di un canale, un campiello, un arzere, uno squero, una canzonetta, una sinfonia, e misero assieme una Venezia di cartapesta. Prima dell'alluvione, sotto forma di vendetta ironica, la stessa New Jork... intellettuale sfasciò la cittadina di caucciù nella quale le bocche d'oro ricantavan la « biondina in gondoletta... con un mezzo jazz di oboe e di peltri).

Nell'intrigo dei canali lunghi e ampi che sboccavano nei bacini sonori, fuori dai cantieri e dagli opifici, questo doveva essere veramente il volto rifatto della città nuova, e quell'altro più scialbo, il più vecchio, con le sue illusioni e le sue chimere, i suoi sogni e le sue follìe, e dei due visi dissimili e discordi nessuno di noi, preso d'improvviso, seppe scegliere il migliore, così quello che vaniva s'adattava a questo che l'aurora coronava di un fastoso alone violetto.

La triste e fosca palude tagliata dalle correnti monotone o dai canali stagnanti, per volontà, per fedeltà, per ardore di uomini che avevano seguito un loro gran capo, d'ingegno fortissimo e d'iniziative maestro e condottiero, fra maestranze sagaci e operose, non era divenuta la Marghera che cadeva automaticamente sotto i nostri occhi — gran quartiere urbano di una città vicina e più grande — ma la stessa città secolare, superava due e tre volte, la metteva nei margini, la suscitava dal flutto e dallo splendore, ne faceva un anfiteatro luminoso sul quale il serpentino e il bardiglio rinnovavano l'incanto ripetendo la fatica e la fortuna dello statuario che, dalla stessa pietra dura liberava la creatura più alta del suo sogno e della sua vendetta.

Il nuovo porto aveva le sue liquide arterie solcate da velieri leggeri e da navi di tutte le bandiere, il Canale Vittorio Emanuele, il canal Brentelle, il canale industriale, groviglio di serbatoi, di cisterne, di bocche spalancate sugli abissi, di trinchetti sollevati alle chiostre dei cieli. Più in là della muraglia di sponda del bacino commerciale, tesa come uno scoglio candidissimo di mille metri, di settanta enormi massi affondati ad aria compressa a undici metri sotto il livello medio dell'acqua, lo spettacolo dissueto di una vita mercantile rinnovava le meraviglie delle più bizzarre varietà di lavoro; il bianco emporio dei sali sulla riva del canale del nord, vigili squadre silenziose di lavoratori, fiocchi radi e soffici, leggere nevicate d'una mattina

Original pages taken from the magazine
Le Tre Venezie, July 1932

di luglio, elevatori di sali gialli e rossi (gelati per gli uomini, medicine per gli animali....) e al di là del canale nord, la zona industriale con gli stabilimenti dei vetri e il gruppo della Montecatini, il cristallo e l'alluminio, la vita molteplice dei piroscafi che, dopo aver solcati tutti i mari, giungevano allora con carichi preziosi o con i fosfati della costa di Tunisi, e per il miracolo delle draghe (dieci milioni di metri cubi di terra tolti al fondo del mare) nessuna insegna, nessuna leggenda...



Verso il canale dell'ovest lo spettacolo mutava: la lunga teoria delle fabbriche, delle torri, dei pinnacoli, le scolte del cielo, la centrale termo-elettrica dell'Adriatica, il palazzo della Sava, il molino, la riseria italiana. Un esperto — sulla soglia di una terrazza vertiginosa della termo elettrica volle ripetermi i numeri e i nomi delle macchine gigantesche, volle che io vedessi, più abbasso, più da vicino, la sala delle caldaie e delle sbarre per lo smistamento delle linee, la sala delle pompe per l'alimentazione e il raffreddamento dei condensatori, gli eroismi della scienza, della prudenza, della costanza, la forza del lavoro, il miracolo dell'invenzione. Così tutti gli opifici, gli hangars, le officine, sfilarono di fronte ai miei occhi trasognati a guisa di un nastro che mi mostrasse il profilo d'una città nuova e tuttavia qualche cosa celasse, bizzarramente, alla mia stessa curiosità; la San Marco che produceva il carburo di calcio, il parco del carbone, sterminato «mar nero» ai limiti del ponte, grue che poteva trasportare cento tonnellate all'ora dal piroscafo al terrapieno, la gabbia vermiglia della intelaiatura, il canale di raccordo fra il naviglio del Brenta e il Porto, il nuovo ponte sulla conca di navigazione, la sala di trasformazione da dove si alimentano incessantemente i gruppi convertitori, la «centrale» che a sua volta alimenta la serie dei forni, il processo della scintillante rifusione dell'alluminio, piastre, striscie, verghe, simili all'argento, lentissime colate, il parco aereo per lo scarico della pirite (il rame, la ghisa, il bronzo e qualche volta..., l'oro....), i cantieri navali e le acciaierie venete, il ferro lavorato da squadre di artieri, punzoni, trancie, presse, la musica degli argani, la fucina nera e selvaggia dalla quale escono alla marina i pontoni che sollevano cento tonnellate, gli enormi pesi morti lungo le dighe dei canali, l'agip, la diesa, l'inea, le società di dieci combinazioni di nomi e di cento opere febbrili nelle quali il cuore dell'uomo ha il palpito concorde della macchina.

Il creatore e la sua creatura...

Più lontano da noi, avvolto in un diadema di topazi e di ametiste, il quartiere costruito pietra su pietra, la città nella città — ville, giardini, orti, passeggiate — profilava la torre dell'acquedotto che sul vertice levava una bandiera. La sera cadeva, adagio adagio, componeva in un nero mantello trapunto di stelle, il panorama discreto delle sue ombre tremanti. Non era che una illusione. Tornando, dopo tante ore, la vita di prima, la vita mattutina, senza soste, senza interruzioni, senza riprese, rifaceva il ritmo incessante delle sue fanfare metalliche.

Quest'era la città di vita.

GIANNINO OMERO GALLO



In this page
Marghera garden city in the 20's, detail of a district,
In the next page
Marghera garden city in the 20's, view from the top

moderne. It have to be noticed that the safeguard of Venice (*as a phénomène unique d'harmonie totale, de pureté intégrale, et d'unité de civilisation*) is one of the main arguments for the moving of infrastructures from Venice to the close mainland.
Le Corbusier continued his speech affirming that a new era (that he define la seconde *ère du machinisme*) was begging, an era in which the technologic revolutions would bring new harmony and order in the society. In fact at that time in Venice, like in other parts of Europe, the "car culture" imposed its rules: the construction of the motorway bridge Ponte Littorio permit to the cars to arrive at the historic city. Touching this arguments during the conference, Le Corbusier thought to capture the imagination of Volpi even if he wasn't been in Marghera jet.
After the end of the congress Volpi accompanied Le Corbusier to visit Marghera. It was decided to reach Marghera by boat and not by car, passing through *Piazzale Roma / Ponte Littorio*, to make the visit more exclusive and unusual. From the lagoon the boat entered into the large artificial canals of the industrial area: here stood some of the biggest factories ever built at the time. In particular, the big cranes of the new dock for the coal storage were impressive. Then Le Corbuiser moved also to the district of Marghera where the new garden city took place.
The visit to Porto Marghera really impressed Le Corbuiser and brought to his mind the FIAT industrial structure, the so called Lingotto, already seen in Turin:

Qui donc parmis les autorités responsables ne reconnaîtrait pas que le moment est venu d'initier la construction de la ville avec la même foi, le même courage, la même témérité des chefs de la Fiat (...) Du reste – con- clude – il y a bien de choses que la Fiat suggère et qui, pour l'architecture et l'urbanisme, intéressent le Pays.

In the following month, Le Corbusier expressed in many letters his admiration for the construction of the industrial area of Porto Marghera: a logistic platform where railways, waterways and roadways come together. At the same time, he expressed his disapproval for the close city garden: en effet, je demeure persuadé que c'est un crime de réaliser sur un tel tracé une ville toute noeuve he wrote.
In the transcription of his speech at the conference of Venice, Le Corbuiser, thinking that his main interlocutor Giuseppe Volpi could be a potential protagonist of what he called *seconde ère machiniste* wrote like this:

La fabrication de produits de consommation féconde: le logis, et qu'elle s'oc- cupera enfin du bâtiment, exécutant en usine toutes les merveilles que l'on peut faire (...). Ce qu'il nous faut, aujourd'hui, ce sont des gens animés d'assez de foi et d'assez de force de caractère pour s'obstiner à faire (...) les plans nécessaires dans tous les domains. (...) Le jour où ces plans seront assez vastes et purs pour que l'on puisse y voir l'unité vers laquelle on marche, l'ouvrier devine- ra que, dans l'usine, c'est de son propre logis qu'il s'agit. Lorsque, par exem- ple, s'élévera quelque part dans le monde, le premier groupe de trois ou quatre mille habitations faites avec les mêmes machines qu'il utilise pour faire aujourd'hui les autos des riches, il comprendra que la société a discerné des buts neufs. Alors, cette faculté commune interviendra (...) qui est l'amour, l'amour de toute entreprise des travaux humains.

Le Corbusier tried several time to contact directly and indirectly Giuseppe Volpi to define a project able to transform the master plan of Marghera, based on the garden city model. He wanted to repurpose in Marghera what he already did in Antwerp. The new city would be organized in a series of functional relations with big infrastructures and residential buildings: fifteenth floors high. The project was too visionary and extreme and the construction of Marghera was already too advanced to let the proposal of Le Corbusier be accepted. In the significant letter reported below Le Corbusier try to convince Volpi to consider his proposal, talking also about the industrialized city and his faith in progress:

Cher Monsieur
Vous vous souvenez peut-être du ton décidé avec lequel je me suis permis, lors de la visite du port industriel de Venise, de vous dire combien j'étais frappé par le contraste que font, l'un à côté de l'autre, le port industriel d'une part et le quartier d'habitation d'autre part. Par "quartier d'habita- tion", j'entends tout le réseau routier, la division du sol et le principe des constructions elles-mêmes. J'entends de plus encore la situation du quartier d'habitation actuel et futur par rapport au port industriel.
Mon intention n'est pas du tout d'être critique, mais d'être constructif et d'être utile à quelque chose. Je me contente donc, dans cette lettre, d'une affirmation qui est



celle-ci: c'est que la révolution architecturale accomplie au cours du siècle dernier nous a mis depuis la guerre en posture de construi- re sur des bases entièrement nouvelles. Ces bases sont seules capables d'appor- ter à l'urbanisation des villes contemporaines les solutions indispensables. Ces solutions indispensables tiennent compte d'un facteur entièrement nouveau dans l'histoire de l'himanité: c'est l'introduction des vitesses vingtuples (les automobiles) dans les occupations de la vie quotidienne. C'est ensuite des fac- teurs d'hygiène, physique et morale, indispensables à la société présente (socié- té machiniste). La journée solaire d'un individu de l'époque machiniste n'est plus celle d'autrefois, le temps est divisé autrement, les occupations sollicitent le corps et l'esprit d'une manière différente. Il est indispensable d'apporter aux habitants des villes le cadre utile pour que soient satisfaits les plus indi- spensable besoins physiques et moraux. C'est là qu'est l'urbanisme. C'est là que l'urbanisme touche à l'autorité, à la décision.

Or votre entreprise magistrale du port industriel de Venise montre que l'au- torité y est maîtresse entière, et c'est pour cela que je me sens le goût et le courage de vous apporter modestement les certitudes que j'ai eu l'occasion d'ac- quérir au cours de vingt années de recherches et d'expériences. L'accueil fait à ces certitudes dans tous les pays me rassure et je sens que ce que je puis vous proposer n'est pas une fantaisie individuelle seulement.

Pour ne pas prolonger cette lettre, je vous demanderai simplement ceci, c'est de bien vouloir accorder quelques minutes d'attention à cette question par la lecture du rapport que j'ai établi l'an dernier pour l'urbanisation de la boucle de l'Escaut, rive gauche d'Anvers (cas très semblable à Porto Mar- ghera). Ce rapport et les plans qui l'illustrent seront suffisants, je crois, pour que vous puissiez vous rendre compte qu'une page est tournée en matière d'urbanisme et d'habitations et que nous avons le devoir d'aller maintenant vers les temps nouveaux.

Si cette lecture retient votre attention, je serai heureux de vous apporter maints autres documents qui vous prendrons quelque temps, bien entendu. Ma documentation est énorme: il s'agira simplement de choisir. Et après cela vous me direz fort probablement: que désirez-vous exactement? Que me proposez-vous exactement?

J'offre ceci: c'est de venir discuter avec vous de la manière dont on pourrait poursuivre dans l'avenir l'urbanisation et la construction des quartiers d'habitations de Porto Marghera; de vous établir, si vous le désirez, une pro- position; et ensuite l'organiser avec les camarades italiens que vous pourriez me désigner un développement des principes qui seraient admis et une mise en exécution.

J'ajoute, pour terminer, que le IV Congrès International d'Architecture Moderne que s'est réuni l'année dernière à Athènes et qui a été l'objet de manifestations très importantes de la part du Gouvernement grec, avait inscrit à son programme la "Ville fonctionelle". Les solutions de ce Congrès sont toutes venues consacrer les recherches que j'avais faites depuis longtemps et je me permets de joindre à cette lettre le numéro de la revue "Beaux-Arts" qui relate ce Congrès et qui donne un extrait des résolutions admises.

Le rapport sur Anvers dont je parle ci-dessus est reproduit dans le numéro spécial de l'Architecture d'Aujourd'hui, consacré à nos travaux. J'ai voulu vous envoyer ce nméro, mais l'éditeur m'a fait savoir qu'il est entièrement épuisé. J'ai donc prié la baronne d'Erlanger de vous communiquer l'exem- plaire que je lui avais envoyé.

La ville de Venise que je revoyais pour la troisième fois m'a fait une impres- sion encore plus forte que jamais. Une belle oeuvre d'urbanisme c'est l'auto- strade et le garage qui la termine dans Venise. Vous avez sauvé la Venise ancienne en créant Porto Marghera. J'ai la plus intime convinction qu'il est possible de faire à Porto Marghera une cité d'habitation qui soit également un poème comme Venise en est un – ceci sur un autre plan, bien entendu. J'espère ne pas vous avoir trop ennuyé. Je vous avais promis cette lettre, j'at- tendrai avec le plus vif intérêt de vos nouvelles et je vous prie de croire, cher Monsieur, à mes sentiments très dévoués.



In this page:
- *The area of the first petrolchemic compound,* San Marco *and* Enel *compnies* 1966
In the following page:
- *The petrolchemical compound that process ethylene* 1992

2.3 THE FALL: THE PETROLCHEMIC ERA AND THE DE-INDUSTRIALIZATION

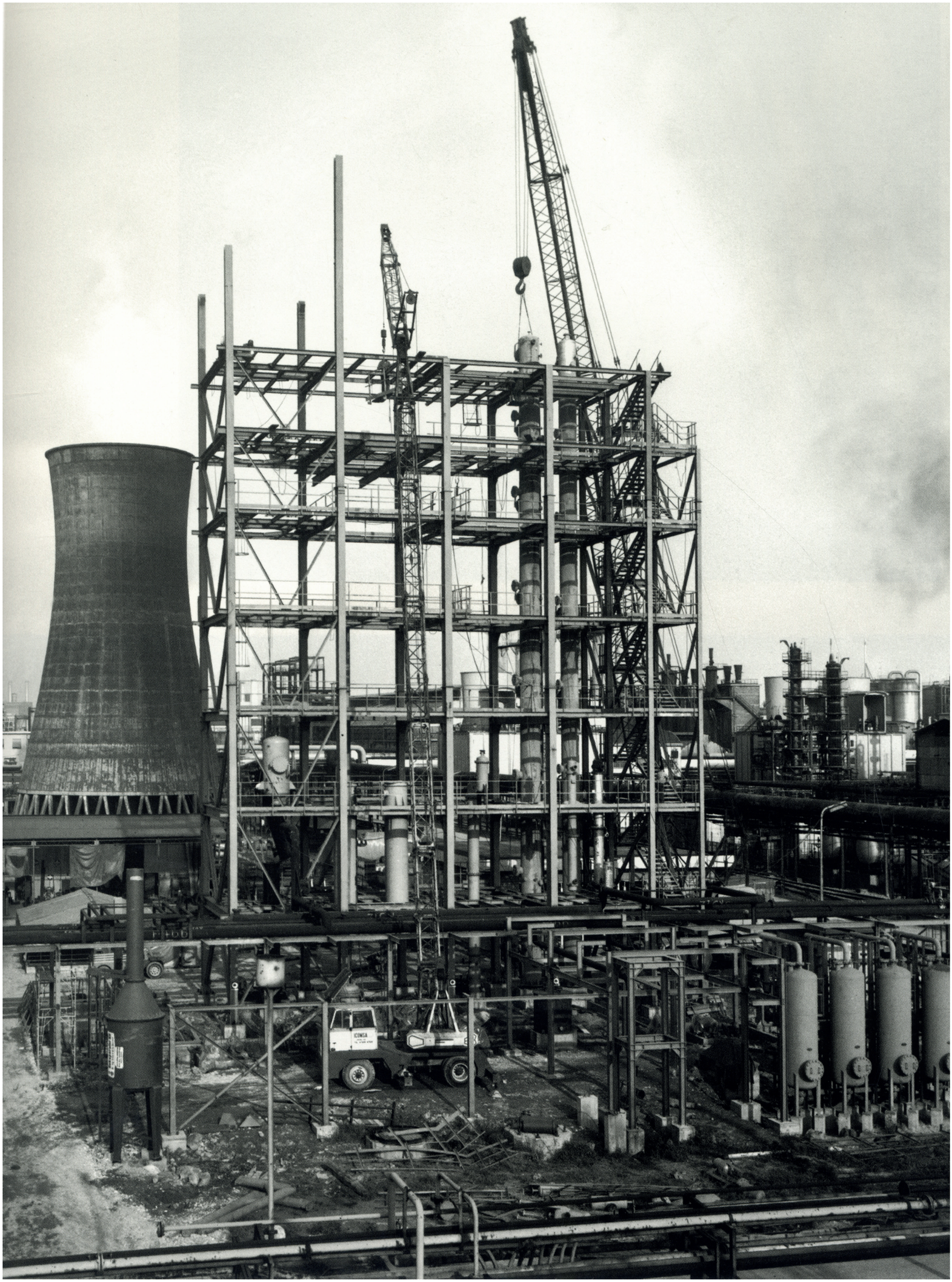
THE DEVELOP OF THE PETROLCHEMIC INDUSTRY
In the second post war period the economic recovery led to renovations and expansions of the first companies in the industrial area.
These companies took up a big technical-productive renovation, in order to reach higher levels of productivity. Even the request of sites where to establish new factories increased, reaching the maximum level in the early 50's. With the excavation of Fusina cannel, Venice gained it so-called "second industrial area".
New factories launch, in this new second industrial area was supported by flexible laws and foreign investments. The same as it happened in the past.
In this phase the petrochemical industry was the most important among the others and Marghera became one of the biggest chemical pole in Europe, also thanks to the intervention of an important company dealing with energy, called Edison.
But Marghera has other major industries that continue to distinguish it as one of the country's most important industrial sites, The largest coal-fired power plant stands on the banks of the lagoon, natural gas depots have the highest capacity in the entire Mediterranean region, and factories produce the large part of the aluminum, steel and glass consumed by the country.

THE THIRD INDUSTRIAL AREA
In 1963 a new master plan provided the expansion of Porto Marghera to a third industrial area.
In 1966 an important and devastating flood caused significant damages to Venice. This fact increased international awareness of the fragile eco-system of the lagoon.
The most representative example of the third industrial area was the rolling mill, built in 1969 by SAVA: with it's 800 meters of lengths it was still highly visible from venice and the lagoon. Business boomed until the end of the 80's when the premises were bought by a state-owned company. Just a few years later bankruptcy was declared.
In 1971, the leftist new paper *l'Unità* tittles: "Danger, from the plastic industries to cancer". The concern about petrol-chemical pollution spreads like wild fire though Venice and Venetian inhabitants started to feel concern about the damage that industry could do on the whole lagoon and the precious city centre.

The end of the 60's and beginning of the 70's are affected by an important social instability all around Europe. The Marxist movement "Autonomia Operia" comes out in Italy in 1973. The same year, World Heath Organisation recognises the Vinyl Chloride as a toxic element dangerous for human life. Yet general strikes take place in the port against the petrol-chemical industries.

THE PROCESS OF DE-INDUSTRIALIZATION
During the recessionary phase in the mid-Seventies, started third industrial revolution, the passage from the first to the second modernity, that deeply transformed the organization of production.
It marked the passage from the Ford-Taylor productive model, characterized by mass and standard production, no limit development, scientific organization of the work, to a post Ford productive model, characterized by flexible and temporary organization of the work. In addition, the manufacturing facilities moved to under-developed countries, where the cost of employees was lower.
In light of this, a process of de-industrialization of Marghera started. The technological innovation that was at the base of the new international economy, imposed the use of new raw materials, new systems of production and a new productive cycle: the large part of Marghera industry actually became soon obsolete.
Decline of the industry has lead to socio-political shifts such as strikes, rise of the unemployment, and violent conflicts between workers and citizen against the petro-chemical companies. From this time, Marghera garden city started to decline too, relegated to a position of second importance by Venice municipality.
Currently, dismissed industrial areas are often seen as "bad" places both by outsiders and citizens living close by. In that case, one street, Fratelli Bandiera, represents a strong barrier splitting the territory in two parts. Marghera's garden city is sharply divided from the port, where any kind of illegal activities came over.




CINSA

Marghera represents a contradiction, a place of dirty production, a brutal landscape. It is the place where Venice can compete with the rest of the world without self celebrations and re-propositions of ancient glories.

A low against Venice, Wladimiro Dorigo, Rome ,1973

In the previous page:
- *Costruction of Perochemic factories* 1969
In the following page:
- *Abandoned industries*, Google maps







- *Still life*
  Girogio Morandi, oil
- *Urban landscape*
  Mario Sironi, oil, 1927
- *Peinture*
  Aldo Rossi oil, 1949-1950

2.5 A CONTEMPORARY POETIC LANDSCAPE

ABANDONCY

The economic crises of production and a missed technological renovation have lead many corporations to collapse and many others to move to development countries, without any interest for the consequences they produced in the territory, for example pollution and degradation.

The most visible sign of the degradation of Porto Marghera is the industrial abandon. The history of Porto Marghera is also the history of many companies that settled in this area and then delocalized without any interest for the consequence they have produced and leaving a large number of factory's dereliction.

Talking about industrial archeology is a bit premature for what concerning Porto Marghera because of the archeology deals with larger period of time: productive cycle in Porto Marghera began and ended in less than one century (as the architect Francesco Venezia observed). It is possible in any case to find some similarities with the architectonical ruin. The most evident, obviously, are the esthetic one.

The abandoned factories show clear signs of degradation: ruin cladding, broke windows, regrow of spontaneous nature, collapse of some part that shows the rough structure. This devastated landscape bring to mind the representation of the roman ruin represented by the engraver of the eighteenth century.

To define a ruin it's not sufficient the esthetic aspects. It is also necessary a rapport with the collective memory. In Porto Marghera case: a working memory. Porto Marghera in fact is the place where many specialized laborer find a job and where some of these died because of the precarious work condition or because of pollution problems consequence . It's the place of many virulent workers protests that took on the character to a broad social movement .

As the ruin of Colosseum reminds a period of splendor during the Roman Empire, so Marghera's factories ruins remind the great economic and industrial development of the second part of twentieth century, now ceased.

BIGNESS

The superiority of the industrial development on the men it's evident from the bigness of the industrial structures to the loss of the human scale.

The factories were usually built with combinable prefabricated elements and this gave the possibility to develop limitless structures. If production increased, it was sufficient to simply add other pieces to continue the structure already built.

Continuous enormous structures form insuperable walls and obstacle the crossing of the area and the view of the surrounding landscape. Long straight streets shape the industrial factories and usually end with a blind curt.

Some factories reach length of 800 meters length and the 100 meters high chimney are still highly visible from the lagoon and become a territorial landmark. Artificial canals are five times larger than those of the historic center in order to permit the passage of large oil tanks tracks and cruises. Modern bridges are supported by futuristic tensile structures in steel or iron.

Especially during the night, when the streets are empty and there is no one around, the bare surfaces of the industrial buildings that seem to continue without any

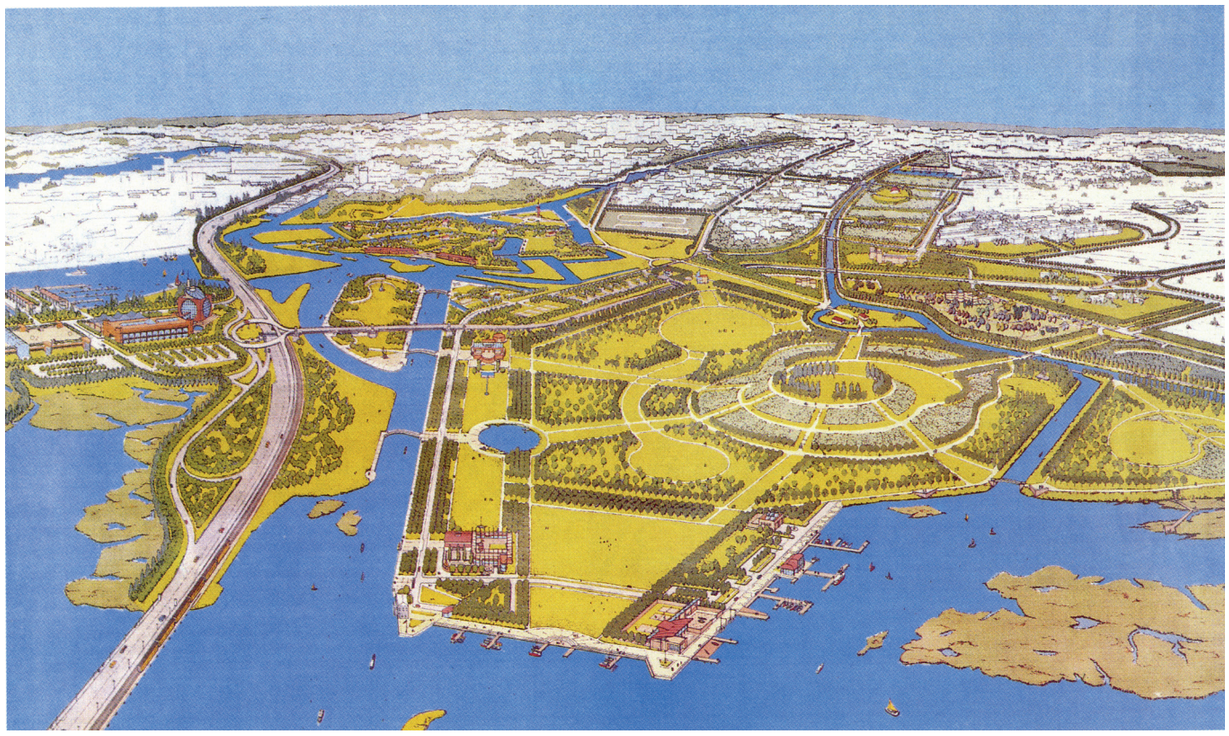


limits bring to the main the urban landscape painted by Mario Sironi or some others metaphysic painters.
A territory made built to serve the machine and where the men feel continuously lost and insignificant. Some signs of a rural past are still present: vernacular houses, churches, secondary canals but the comparison with the industrial fabric make their bigness even more impressive.

AUTONOMY
Coming from the mainland to Venice, spying form the window's train, the visitors meet first a rural landscape made of cultivated fields, hay stacks, vines, industrial barns, warehouses and single family houses. Then they meet Mestre, the main infrastructural system in Veneto region, with its large train station and its dense network of binaries. Just before leaving the mainland, the visitors can see the big industrial area of Porto Marghera. The metaphysic vision of this dense enclave stacked between the rural landscape and the lagoon is impressive and shocking.
Porto Marghera is an incoherent settlement, completely isolated from the surrounding landscape. This situation is caused by a violent process of industrialization (intense and apparently unlimited development, wild capitalism, an establishment that look only at its personal interest). High chimneys , large oil tanks, barns and hangars, the arch of the gas pipeline reflecting in the water: they all seems established objects made by accident from a distracted God, reminding the black monolith landed in a primitive world from the movie *2001. A space odyssey* by Stanley Kubrik. They also suggest the groups of bottles and carafes in an anonymous background painted by Giorgio Morandi that deeply inspired the paintings of a young Aldo Rossi.
Far from any esthetic or architectural aims, the functionalist development of Porto Marghera industrial area led to the settlement of poor and essential buildings, characterized by engineering structures, raw concrete surfaces or metal sheets, standard prefabricated blocks connected by tubes and caves.
Each building was built in the fastest and easiest possible way, without a formal coherence with the preexistent landscape nor the preexistent settlements. The enclave can be seen as a group of distinct geometric forms clearly readable and not coherent one with each others.
Unintentionally the industrial fabrics in Porto Marghera constitute examples of autonomous architecture, on the basis of how the historian Emil Kaufmann define it. In his book *von Ledoux bis Le Corbusier*, Kauffmann define autonomous architecture emphasizing formal aspect of the buildings: cubic masses, bare walls, frameless apertures, and flat roofs. For Kaufmann, the isolation of parts, their dialogue as either repetitive or oppositional elements, represented a formal autonomy. If autonomy is a quality that can be found in several architectures in several ages, able to link for instance the Enlightenment architecture with the Modern movement, it can be found also in a place like Porto Marghera industrial area even if is it's not intentional and it's far from the traditional idea of architectonic beauty. Autonomy can provide a poetic way to read Porto Marghera industrial area, always described as a negative presence.







In this page:
San Giuliano park, masterplan, 1991
In the next page:
Aquae pavillion, masterplan, 2014

2.5 LOST FUTURES AND POSSIBLE FUTURES

The 70's oil crise bring to the de-industrialization of many productive poles. The Mediterranean ports were not excluded from this phenomenon: the port facilities and the productive activities delocalized leaving many void areas, waiting for a recycle. This situation opened an international debate on the future of the urban waterfronts. Many cities, like Marseilles or London, changed the program of the abandoned industrial areas from industrial to public, rediscovering the quality of living close to the sea. In some cases the success of the recycle was so strong that the waterfront acquired the role of urban centre.

The condition for this kind of operations is the delocalization of the port activities from a place to another, because they are considered incompatible with the urban activities. Contrary to the rest of Europe, in Italy this kind of operation proceeds very slowly: delocalization it's very complex because of the presence of historic urban centres, stabilized in centuries.

The case of Marghera, then, is more complex and cannot be taken as a standard example. First of all, the industrial area is defined by strong limits, like the railways, the roads, Brenta river. For this reason the surrounding urbanity didn't occupy in the years the close abandoned spaces.

But to understand the singularity of Porto Marghera it is necessary to take in account another aspect: the position of the waterfront. Infact, in most port cities the waterfront looked directly at the sea; in the case of Marghera it looked at Venice. Contrary to what happen in the other european port cities, the establishment of a public space in the case of Porto Marghera is not so obvious: why the visitors should observe the landscape from Marghera, when they can go directly to Venice? The particular urban structure of Venice poses some complex question about the future of its industrial area.

LOST FUTURES

Marghera, like all the abandoned industrial areas, represents a promise for the future. It offers many opportunity of urban regeneration: vast void areas, abandoned factories and infrastructures. Since the 80's the slogan "renew Marghera" has produced many urban plans, master plans, architectural and infrastructural projects, thematic maps, researches.

Some of the proposals consider the industrial enclave as a tabula rasa in which the industrial preexistences can be erase and substitute with other activities, for example public spaces or residential districts. Porto Marghera became the scenario for a sustainable and eco friendly mobility based on the establishment of land, water and air transports in contrast to the traditional urbanity based on car mobility. In this scenario the industrial area was transformed in a vast park where its industrial memory was completely erase in favor of an ecologic aim. On the contrary, some others proposals preserve the industrial memory through an accurate restauration of old factories. The industrial facilities in this case turn to museums or exposition spaces. Conservation and ecology represent strategies that have to be explored but cannot be the only possible answer to a very complex problem. For example, no proposal considers the process of re-industrialization as a solution.

One of the latest vision proposes Porto Marghera as a logistic district for port activities that Venice cannot stand anymore, for example the docking of the big cruises. Another problem of the projects already proposed for Porto Marghera is the loss of a urban vision: they try to



solve a localized problem without consider the general masterplan or big scale connections or large scale interests. However, the majority of the masterplans and architectural projects, have never been realized.
All the projects and master plans designed on Marghera can produce infinite maps to show alternative futures but also to understand better the character of the area. I will describe only the most representative ones.
The most iconic project proposed for Porto Marghera is for sure the Lumiere Tower, known as “the Venetian Eiffel Tower”, financed by the italo-french stylist Pierre Cardin. Some other examples: a waterfront terminal in Fusina district by Ove Arup; the reconversion of Enichem Agricoltura facilities into a office quartier; the Reconvertion of ex Feltrificio Veneto factory in a public market. Some projects for Porto Marghera was then actually built and they became famous examples for industrial area recycle. VEGA, a science and technology park, designed by Roberto Sordina in 1994; and Aquae, a satellite pavilion referred to EXPO, designed by Michele De Lucchi in 2015.

LUMIERE TOWER

The case of Lumiere Tower is very anecdotic and somehow ambiguous but highlighting very well how dramatic could become paradoxes when they start to be spatial projects. This story occurred between August 2012 and January 2013. Pierre Cardin presented to Venice his project of Palais lumière, which included a huge visualization of where the towers had to be built in an abandoned industrial area in Porto Marghera. So, Pierre Cardin’s idea was to build a palace of light in one of the most polluted sites of Italy just nearby the disused buildings of the petrol chemical industry. Pierre Cardin and his architect proposed a futurist sculpture composed of 3 towers of 245 m high, 60 floors, 72 elevators, 284 private residences, 34,000 m2 of luxury hotel, one university, one museum, an auditorium of 7,000 places, a swimming pool, and a shopping centre, complete with a self-sufficient permanent lighting system. Cardin’s tower became a phenomena and a violent debate as soon as it entered the stage of Porto Marghera.
Even though a scandalous, spectacular project, Cardin’s tower was not too shocking for Marghera inhabitants and Venice municipality to claim the project as a good opportunity for the city.
But why? The main arguments were it would bring new jobs and more tourism to Marghera. The question of the abrupt insertion of the architecture in the low-lying terrain remained secondary for inhabitants. Venice’s municipality also defended the project and gave all the authorizations required.
So, a real conflict began: on the 27 th of November members of the regional institutions reminded to the municipality that the area of the project was under a special law related to the protection of the lagoon ecosystem. The Mayor, however, answered that all permissions for the concession of the land would be given to Cardin at the price of 40 millions euros “essential to responding to the stability and growth pact imposed for January 2013”.
But a surprise came from abroad: every single French bank refused the 40 million euro credit to Pierre Cardin. Then, He counter proposed with 3% of this price from his personal capital stock. In January 2013, the municipality rejected Pierre Cardin’s offer.
This news item exposed all the paradoxes embodied in the land of Porto Marghera: a land that could become a place of brutal speculation the name of



In this page:
- VEGA (VEnice GAteway for Science and Technology) compound, source: NovaMarghera

urban transformation. Indeed, Porto Marghera, even if it seems to be Venice's Dump today, has a view for tomorrow. Exclusion is not just a concentric process and even in such small territory exclusion just creates over pockets mushrooming on the territory

SAN GIULIANO PARK

Parco San Giuliano is the main park that face the Venetian lagoon. It hosts sport facilities, cultural activities, and also a centre for the control of the lagoon eco-system. The park represents the main touristic attraction and it is used for important events, such as big concerts or exhibitions

The park was the result of a reclamation in a marshy area, utilized in the last years as a dump by the close factories. The recycle of this part of territory include also the remediation of the surrounding canals and the preservation of the close marshes. The park represent one of the most important recycle intervention in the last years in Italy for dimensions and complexity. It is one of 20 biggest park in the world 700 hectare big.

This park is in a strategic area: it represents the connections between the historic centre of Venice and the modern city of Mestre. Moreover it is the extreme point of the mainland before leaving the lagoon. But San Giuliano Park is an unfinished project, part of a bigger masterplan deigned in 1990. The original masterplan included also the area beyond the railways and close to the petrochemical pole. The project proposed to built a metropolitan terminal, a permanent recreation ground, a dock for small ship and a aquarius/research centre. This project stared from some valid premises: the area represents a door to venice and at the same time the starting point for a general recycle. A continuous public space could help to go beyond the hard barrier of the railway. But the result didn't follow these wishes and it seems not to considered the industrial preexistences, resembling more a luna park ten a new urbanity.

VEGA, an acronym for the VEnice GAteway for Science and Technology, is a science and technology park that collaborates with universities, research centres and the productive sector, in key technology areas such as nanotechnology, information technology, communication and Green Economy. The building alongside Via della Libertà hosts numerous companies as well as an incubator for technological start-ups and laboratories to test the developed technologies.

In the last years many project try to copy what VEGA represented. The so-called VEGA2, designed by Alberto Cecchetto, is an example of this.The project called for the creation of a new attractive urban landscape offering multiple activities. The project reveal an attention to the industrial memory especially on the esthetic level: it presents steel façades married with the use of glass. Without negating the constructive and "stylistic" traditions of the industrial landscape, the intervention privileges an "urban" scale. The project includes commercial and pedestrian spaces, to the flows of automobiles, underground parking and ground floor commercial spaces. The buildings develop in the long direction, moving toward the park and the lagoon like "metallic fingers". The palm of this hand is instead a confluence of flows: a two-storey plaza, shops and large glazed openings. This is the collective life of the future Marghera, a contemporary waterfront city.

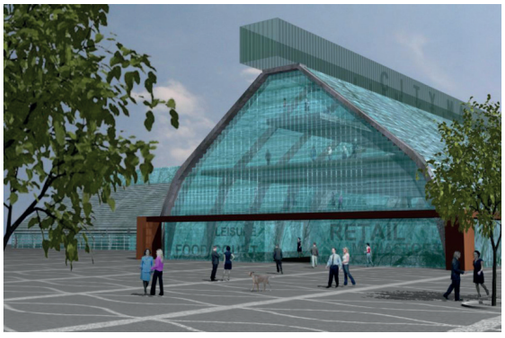
1



2



3



4



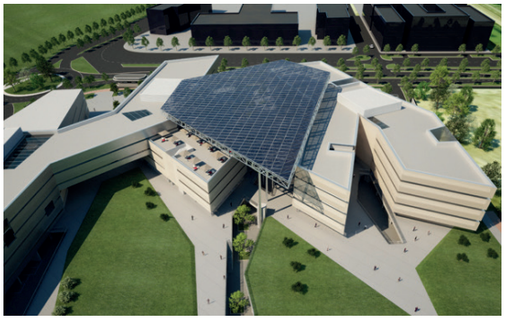
5



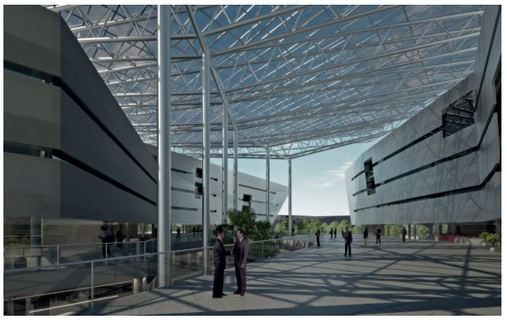
6



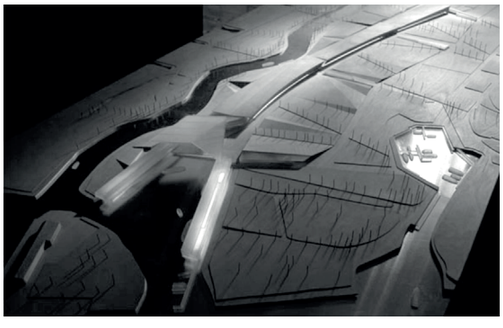
7



8



9



10



In this page:
1, 2 Lumiere Tower, project render, 2012
3 Reconvertion of ex Montecatini hangar in a public makert, 2010 (source: NovaMarghera)
4 Reconvertion of ex Feltrificio Veneto factory in a public market, 2015
5,6 New Terminal Fusina, 2014 (source: Venice Port Autority)
7,8 Technologic park Vega 2, 1st industrial area, 2008 (source: http://www.studiocecchetto.com)
9 Terminal park for Venice in Fusina, 1998, (source: http://www.studiocecchetto.com)
10 Reconvertion of Enichem Agricoltura, ex Montecatini, (source: Immobiliare Complessi)

Nowadays the Fascist fantasy of a ruthless industrial revolution, explicitly idealized in the writings of the Futurist Marinetti as the destruction of Venice, has become reality.

In this page:
-View of the Lagoon with the ancient Marghera tower, Francesco Lazzaro Guardi, 1770
-Skyline of Marghera, W.A.V.E. (Summer Workshop IUAV), 2013





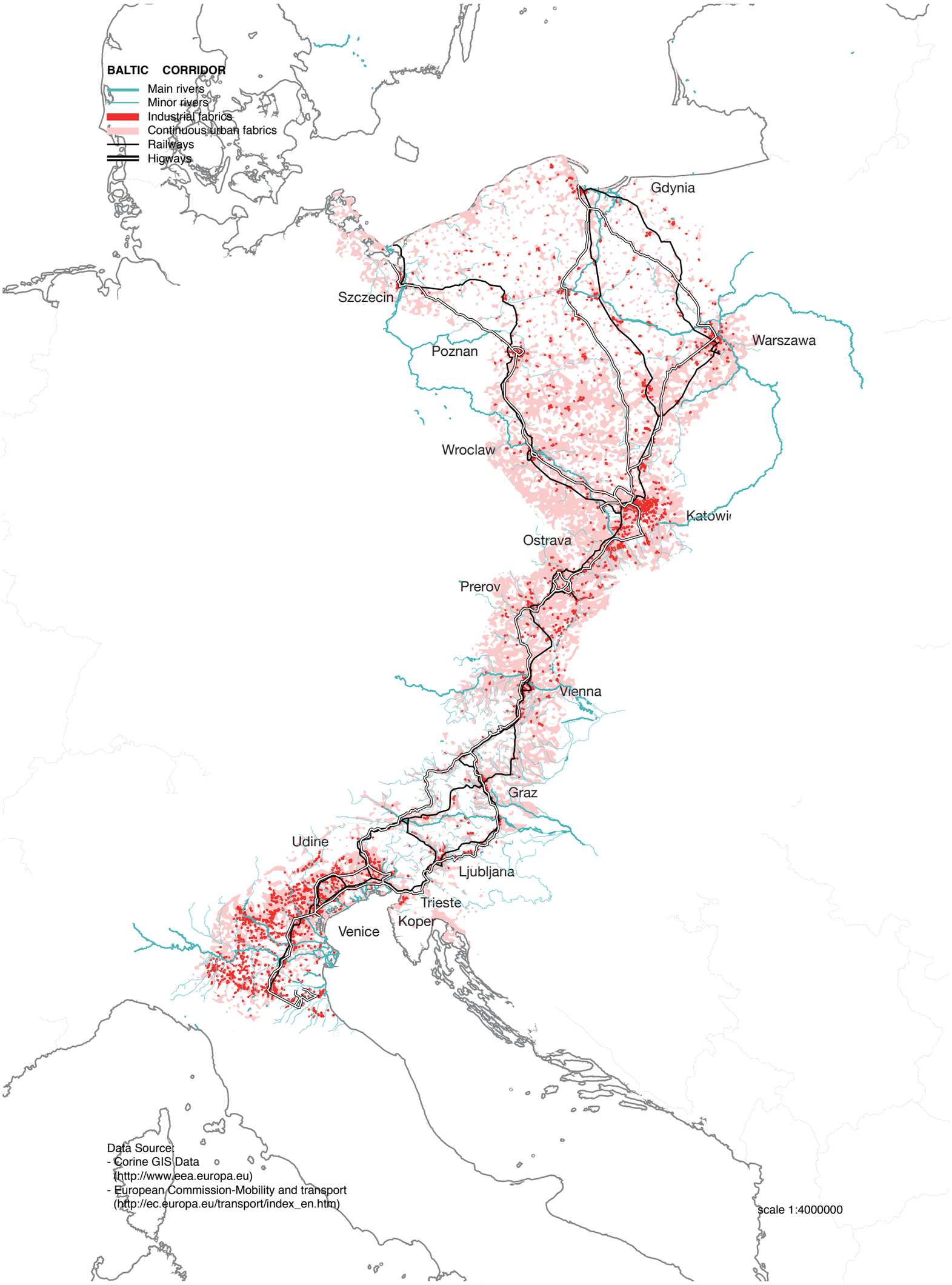
PART 3
READING THE SITE

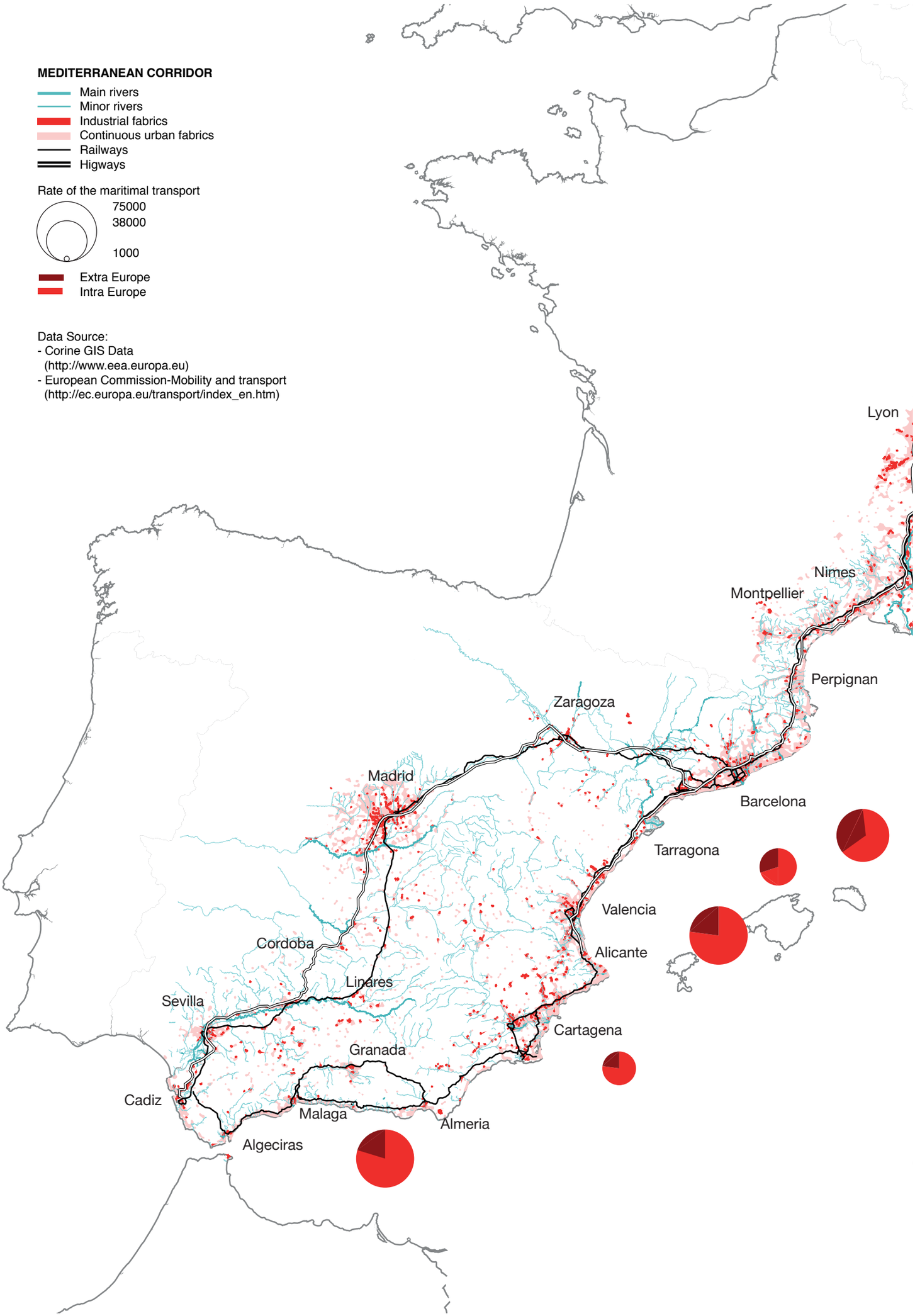


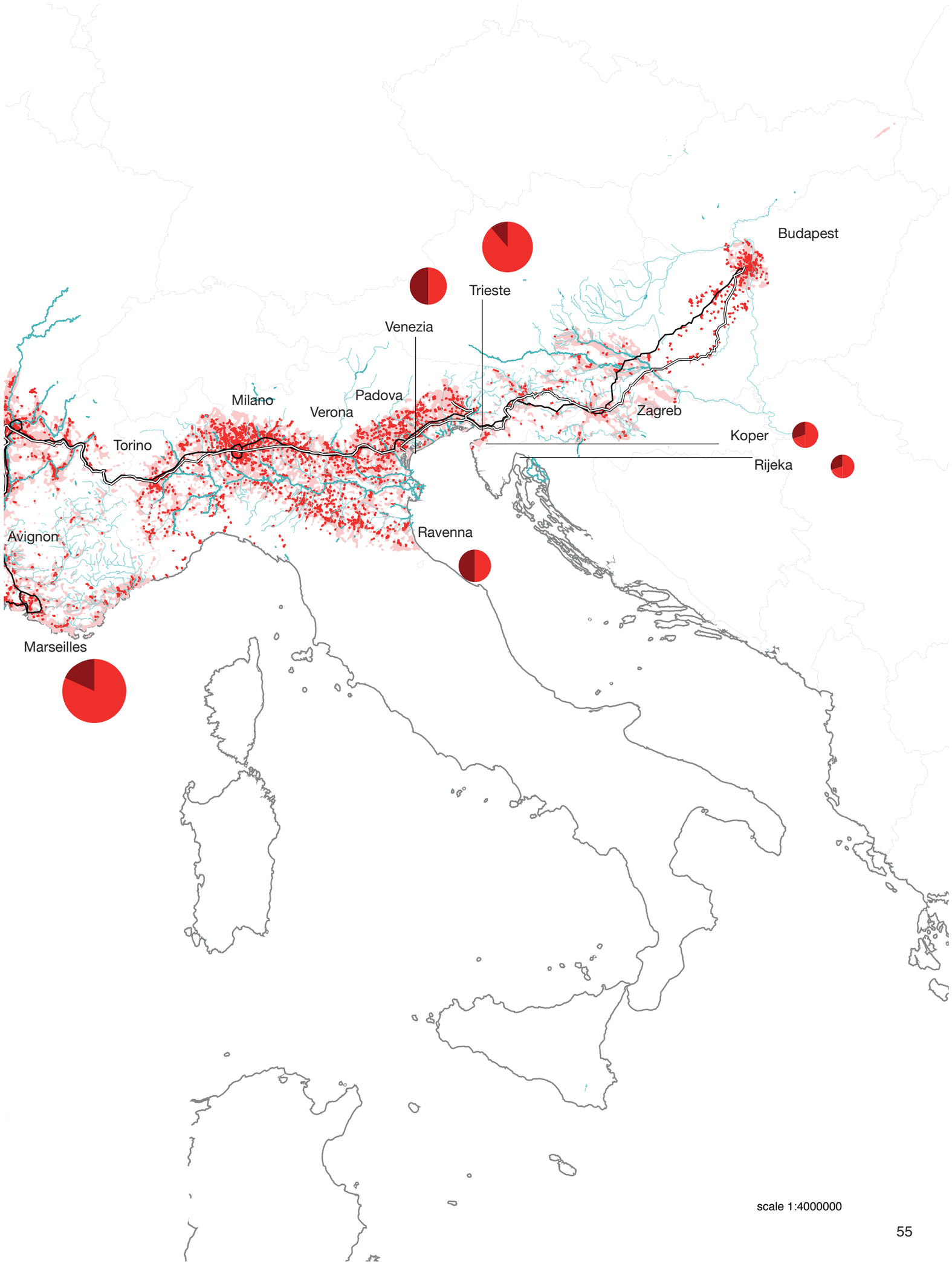
3.1 EUROPEAN CORRIDORS

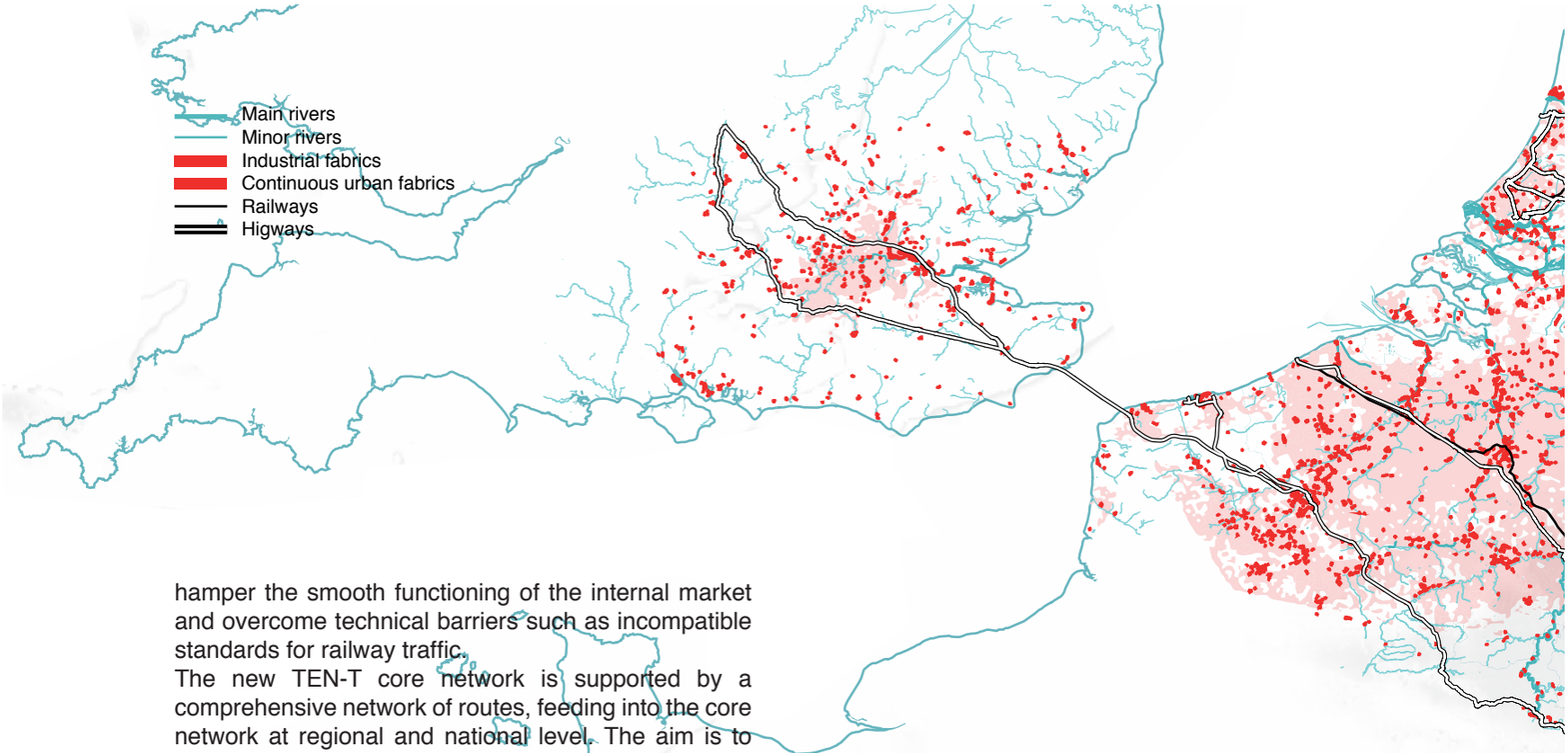
Marghera is famous as the industrial area of Venice but can also appear like an isolated industrial enclave. Actually Marghera has more relation with the mainland than with Venice and it is part of many physic and thematic regions in different scale.
Marghera and the surrounding areas (Mestre, Tessera, Chirignago) is one of the biggest infrastructural node of Europe. It represents the eastern extreme of the generic urban sprawl, the so called blu banana, that from the north-east of Italy goes until the south of England. Inside the macro-region blu banana can be distinguished several areas: Marghera is part of the vast valley around Po river and between the Alps and the Appenines, the so called Pianura Padana. This area, one of the most productive of Europe, is characterized by a diffuse industrialization and by a dense energy network.
Marghera is also an important pole in two economic corridors: the baltic corridor and the mediterranean corridor that guarantee fast and continuous import/ export relations with other countries.
Porto Marghera industrial area host also port activities and one of the most important ship yard. For this reason the pole is also part of NAPA, the economic association of the North Adriatic Port, together with Trieste, Rijeka, Koper and Ravenna.
Marghera, is the most important brown area of Veneto Region, where the most important companies are settled (oppure keep setteled their activities) with their heavy industry. Finally Marghera is part of the fragile and delicate eco-system of the lagoon. During the years Marghera seriously damaged the surrounding environment with pollution and degradation. The conflictual relationship between the industrial area a and the lagoon is not anymore acceptable and now a solution can not be more postponed.

BALTIC CORRIDOR AND MEDITERRANEAN CORRIDOR
European Union adopted a transport infrastructure policy, called TEN-T, that connects the continent between East and West, North and South. This policy aims to close the gaps between Member States' transport networks, remove bottlenecks that still


BALTIC CORRIDOR
Main rivers
Minor rivers
Industrial fabrics
Continuous urban fabrics
Railways
Highways
Gdynia
Szczecin
Poznan
Warszawa
Wroclaw
Katowi
Ostrava
Prerov
Vienna
Graz
Udine
Ljubljana
Trieste
Koper
Venice
Data Source:
- Corine GIS Data
(http://www.eea.europa.eu)
- European Commission-Mobility and transport
(http://ec.europa.eu/transport/index_en.htm)
scale 1:4000000


MEDITERRANEAN CORRIDOR
Main rivers
Minor rivers
Industrial fabrics
Continuous urban fabrics
Railways
Higways
Rate of the maritimal transport
75000
38000
1000
Extra Europe
Intra Europe
Data Source:
- Corine GIS Data
(http://www.eea.europa.eu)
- European Commission-Mobility and transport
(http://ec.europa.eu/transport/index_en.htm)
Lyon
Nimes
Montpellier
Perpignan
Zaragoza
Madrid
Barcelona
Tarragona
Valencia
Alicante
Cordoba
Linares
Sevilla
Cartagena
Granada
Cadiz
Malaga
Almeria
Algeciras


Budapest
Trieste
Venezia
Milano
Padova
Verona
Zagreb
Koper
Rijeka
Torino
Ravenna
Avignon
Marseilles
scale 1:4000000



hamper the smooth functioning of the internal market and overcome technical barriers such as incompatible standards for railway traffic.

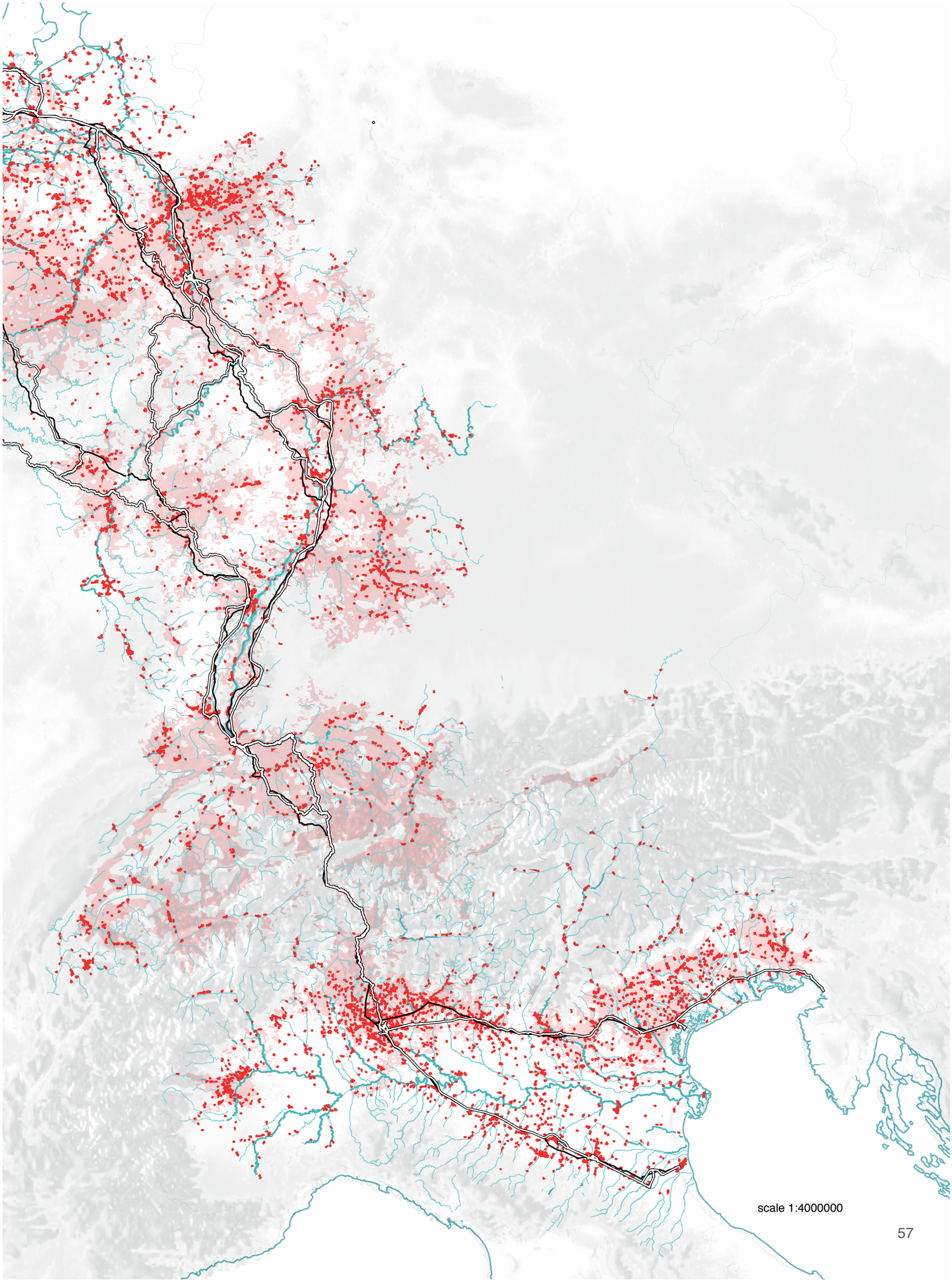
The new TEN-T core network is supported by a comprehensive network of routes, feeding into the core network at regional and national level. The aim is to ensure that progressively, throughout the entire EU, the TEN-T will contribute to enhancing internal market, industrial development, economic and social cohesion and reducing greenhouse gas emissions.

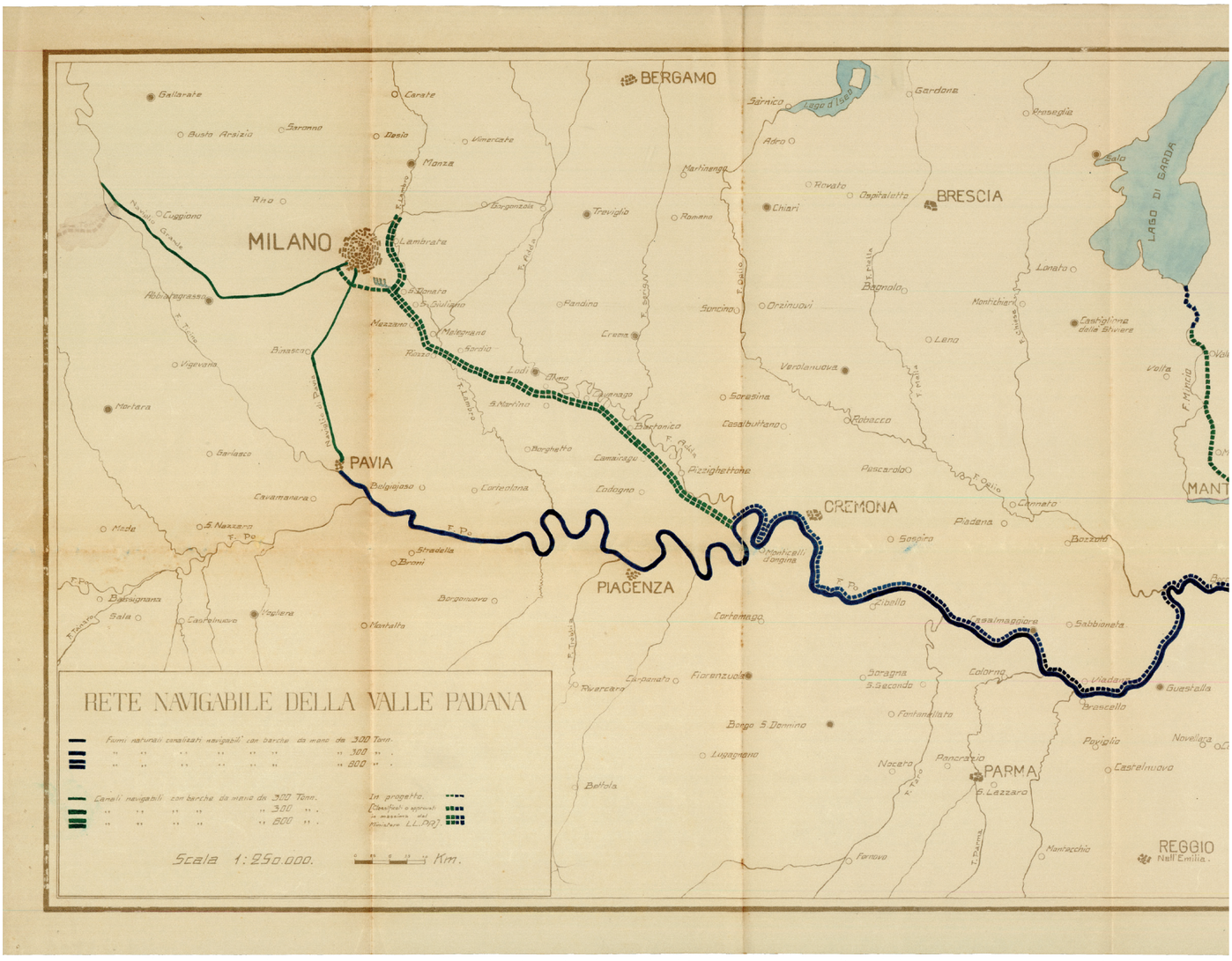
The Mediterranean Corridor links the Iberian ports of Algeciras, Cartagena, Valencia, Tarragona and Barcelona through Southern France, with link to Marseille, and Lyon to Northern Italy, Slovenia and a branch via Croatia to Hungary. It covers rail and road, airports, ports, RRT's and, in Northern Italy, also the Po river inland waterway. The key projects are UIC standard gauge railway lines in Spain, the Lyon —Turin railway tunnel and the Karst crossing Trieste/Koper — Ljubljana.

The Baltic-Adriatic Corridor extends from the Polish ports Gdansk and Gdynia and from Szczecin and Swinoujscie via Czech Republic or Slovakia and through eastern Austria to the Slovenian port of Koper and to the Italian ports of Trieste, Venice and Ravenna. It covers rail, road, airports, ports and RRT's. The key projects are Semmering base tunnel and Koralm railway Graz — Klagenfurt in Austria.

Blu Banana The mainland of Venice, and its condition of diffuse urbanity, shares some of the qualities of central European generic urban sprawl, called "Blue Banana". Such qualities could be described as dissonance and juxtaposition (the nearness of elements that bear no relational continuity with each other), a lack (or inexistence) of classical public space, contrasting densities, disparate speeds, an atmosphere of vague domesticity and an overbearing of the private over the public.

The Blue Banana is characterized by a diffuse industry, supported by larges infrastructures: the factories established not only in the big centers but also in the little villages and in the close rural area, linked to the main commercial routes trough railways or roads. The main commercial routes are located along the main rivers, Po and Ruhr.


scale 1:4000000



3.2 INDUSTRIAL PO VALLEY

Po valley is a macro-region, part of the generic urban sprawl of central Europe, the so called Blue Banana. It is included between Alps and the Appenines mountain chains. It is characterized by a morphological and hydrographic homogeneity. The Po River is the central axis of the waterway system in the valley: dense networks of rivers and canals comes down from the surrounding mountains to the valley and meets the Po river, finally flowing into the Adriatic sea.

Thanks to the diffuse hydrographic system, the valley represents a large reservoir for agriculture. Contrary to other big valley in the continent, so-called Pianura Padana is almost completely cultivated, leaving few spaces to forests.

But Po valley is also one of the most densely populated areas in Europe. Here the population density is the double of the national average. In addition to the major urban centres there are also many residential districts or single family houses scattered in the courtyard.

The industrial areas in Po valley established following the same logic of urban areas and can be distinguished two main types: the diffuse industry, that means micro-industrial districts scattered in the landscape, and enclaves, dense and compact. Milan, Turin and Genoa define an heavy industrial area, the so-called industrial triangle, but there are also other enclaves, such as Vicenza, Verona and Marghera.

The Po Valley industrial map shows two linear industrial areas along hilly sides, surrounding the agricultural lowland: the subAlpine industrial area and the subApennine industrial area. The subAlpine industrial area goes from Turin to Venice, passing trough Milan metropolitan area, the upland of Bergamo and Brescia and finally though Verona and Vicenza. Venice represent both the main port to the Adriatic sea and the eastern extreme of the industrial macro-region. In the Apennine side the industry is spread mainly along Emilia highway. The subApennine industrial area is less dense than the Alpine one but also here there is some important industrial sprawl: the one constituted by Bologna-Modena-Parma for example.

The diffuse industry spreads out in the Po valley tanks to the single initiative of entrepreneurs that established their small company close to their home without a precise masterplan.

Thanks to his morphology, Pianura Padana can host the major infrastructure of the country. Roadways and railways connect the two extremes of the valley without interruptions. This guarantee fast and continuous connections with distant regions or countries and the industries developed a predisposition to the export / import of goods or raw material.

Especially in the last century Po valley has been the theatre for important socio-economic transformation related to agricultural innovations, urban and industrial development. But this progress bring also many environmental problems: the difficult water drainage, the water and the soil pollution, the reduction of the permeable surface. The air and the soil pollution is due



to the chemical products used in agriculture but, most of all, to the substance reversed by factories in the environment.

PETROLCHEMICAL PO VALLEY

As already mentioned the main industrial area ares of Po Valley are placed along the subAlpine and the subAppenine area. On the contrary the urban sprawl of the cost, facing the Adriatic sea, is recognized like a tertiary area based mainly on tourism. But Po valley and Adriatic Sea are connected by a strong relationship on the industrial level.

Adriatic sea it's an important basins not only for commerce, but also for energy production. Because of its vast number of gas and oil deposit, the Adriatic sea represents a vast energy reservoir. There are 73 fixed platforms that are connected to the satellite facilities trough submarine infrastructures. The deposits present in this area provided the 50% of national energy production.

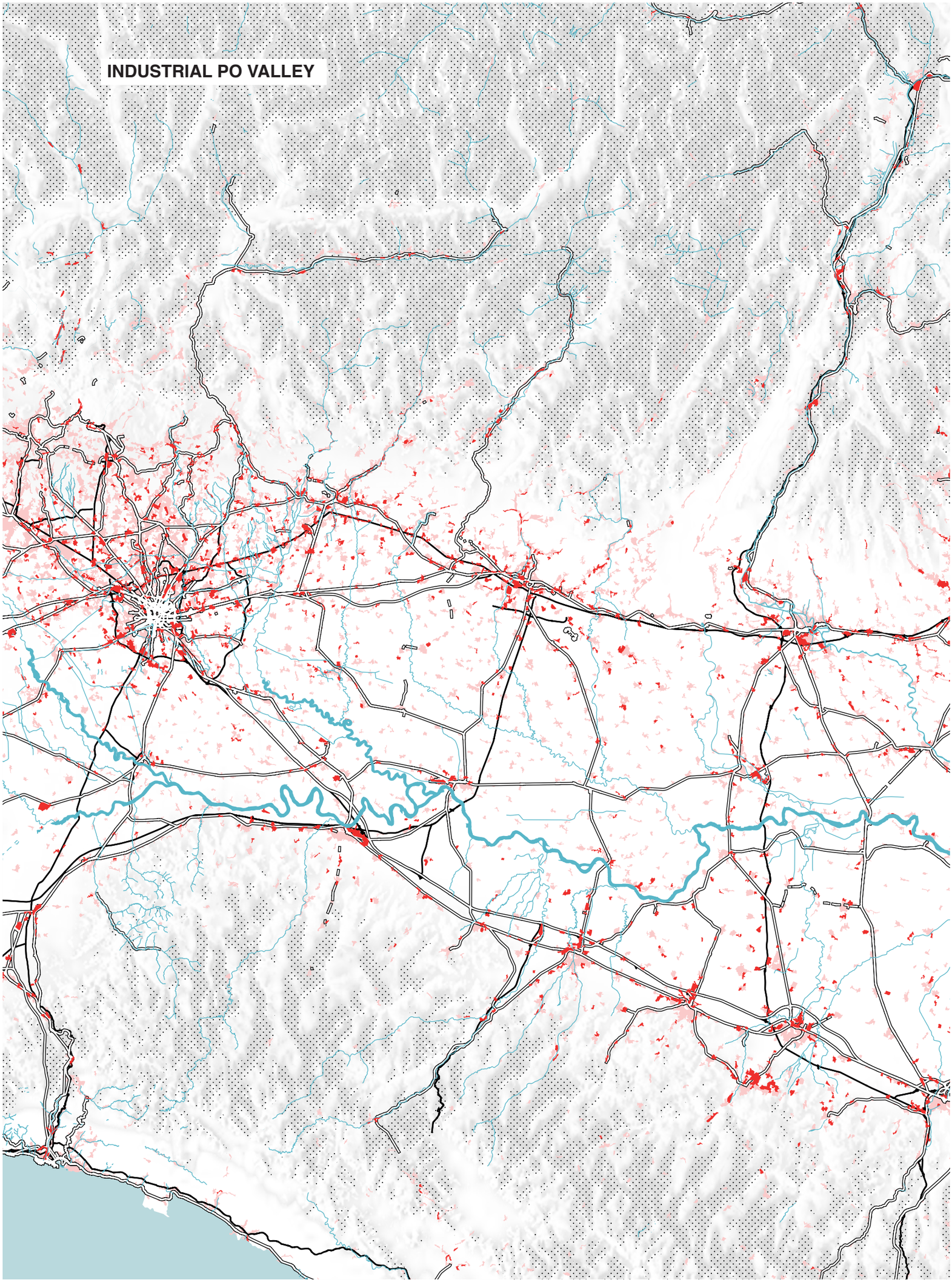
The sea platforms are connected through a series of infrastructure and facilities to the mainland. The raw material extracted from the deposit is transported from the platforms to the petrochemical compounds scattered in the coast trough a series of pipeline and tubes. Porto Margera recovers an importance position in this network because it's well served by both gas and oil pipeline and it's one of the mayor industrial port of the Adriatic basins.

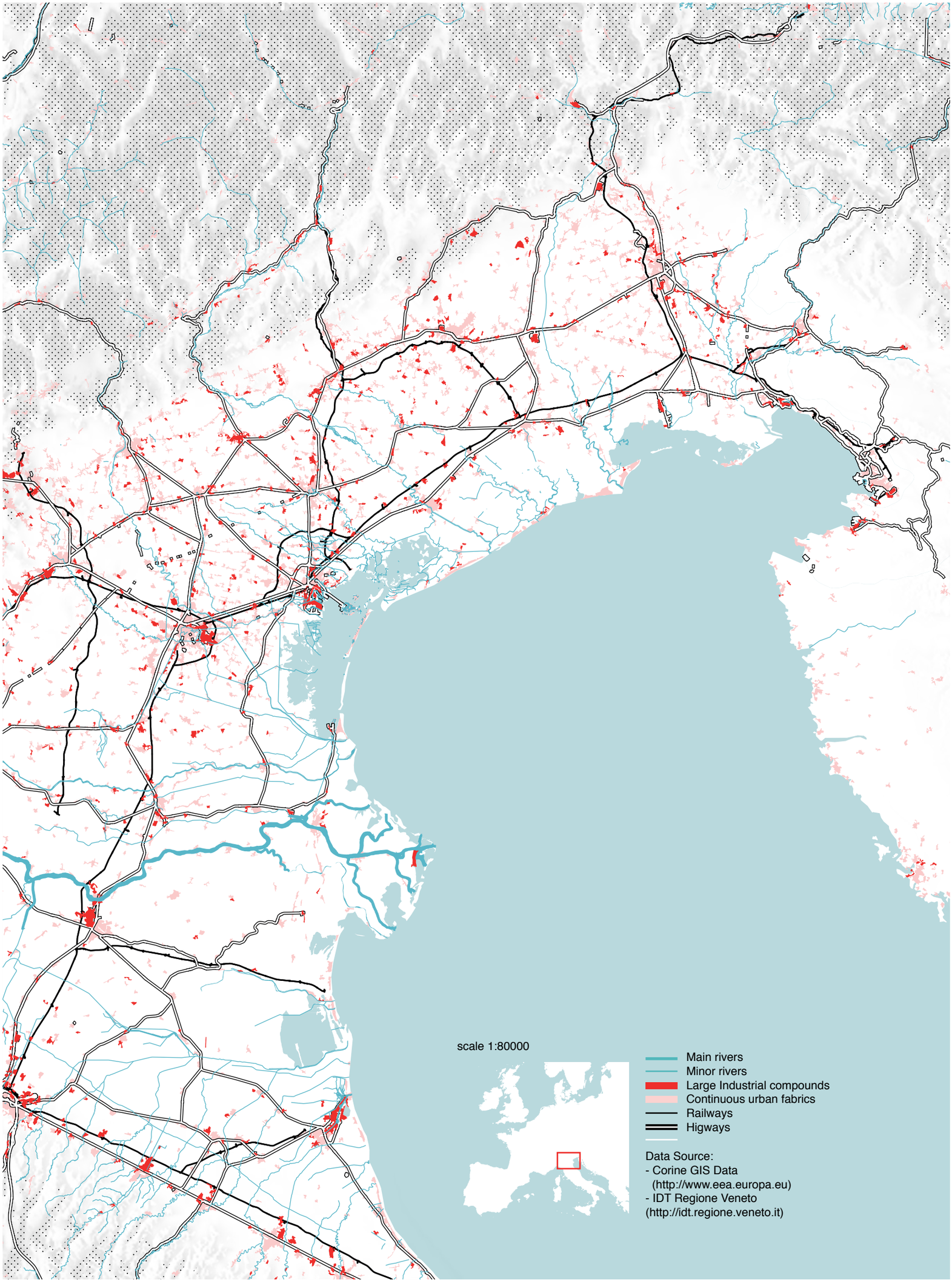
The excavation of the seabed to extract oil or natural gas caused also some consistent damage to the environment. Because of this operations in the 50's some mainland areas collapsed 4 meters down. The phenomenon of the soil decrease is called subsidence and it is strictly connected to the seabed excavation in Po Valley territories. The continuous excavations can represent nowadays a concrete danger for the coast cities, especially the lagoon city, such as Chioggia and most of all Venice.

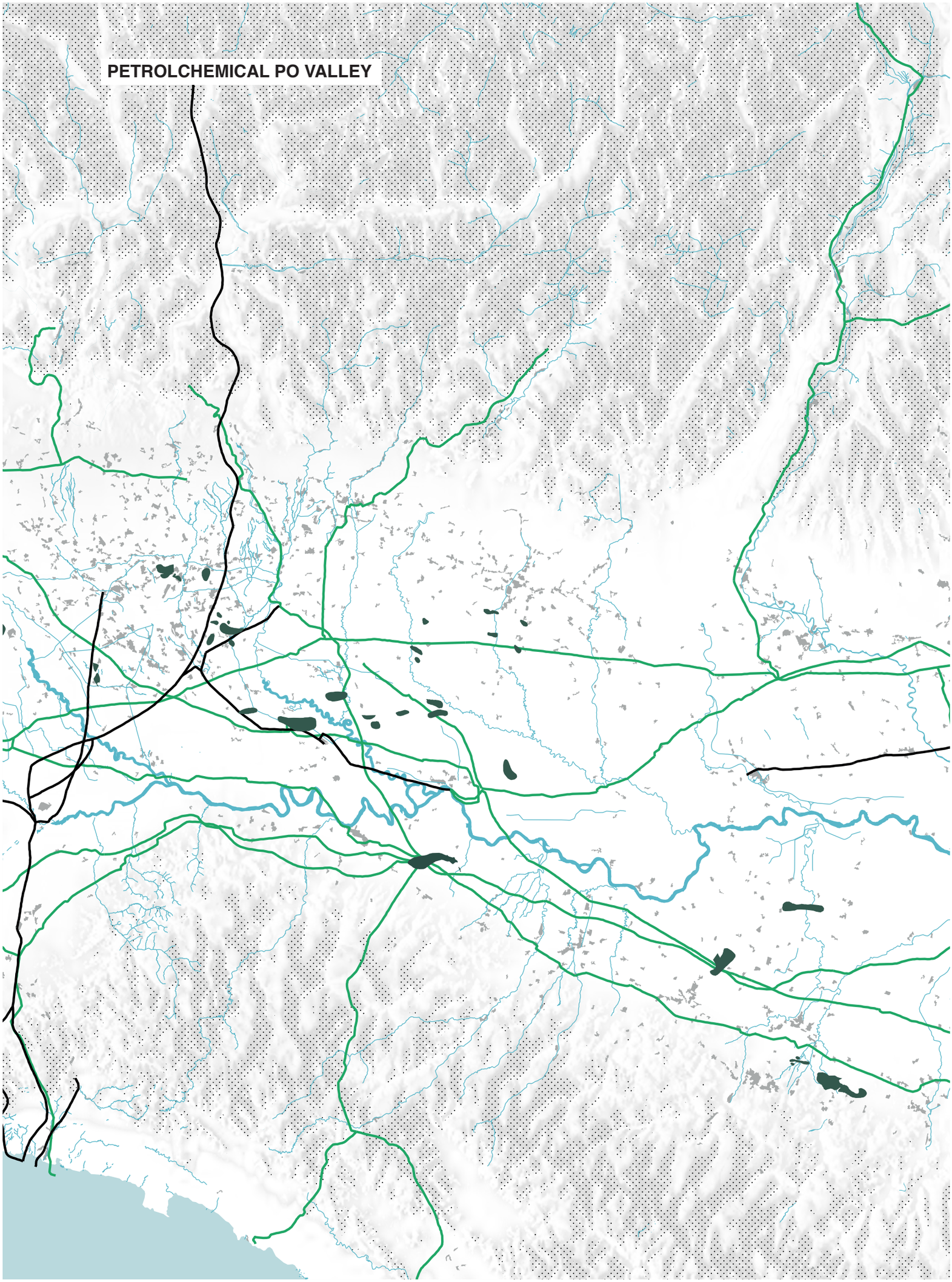
PO RIVER AS A INDUSTRIAL INFRASTRUCTURE

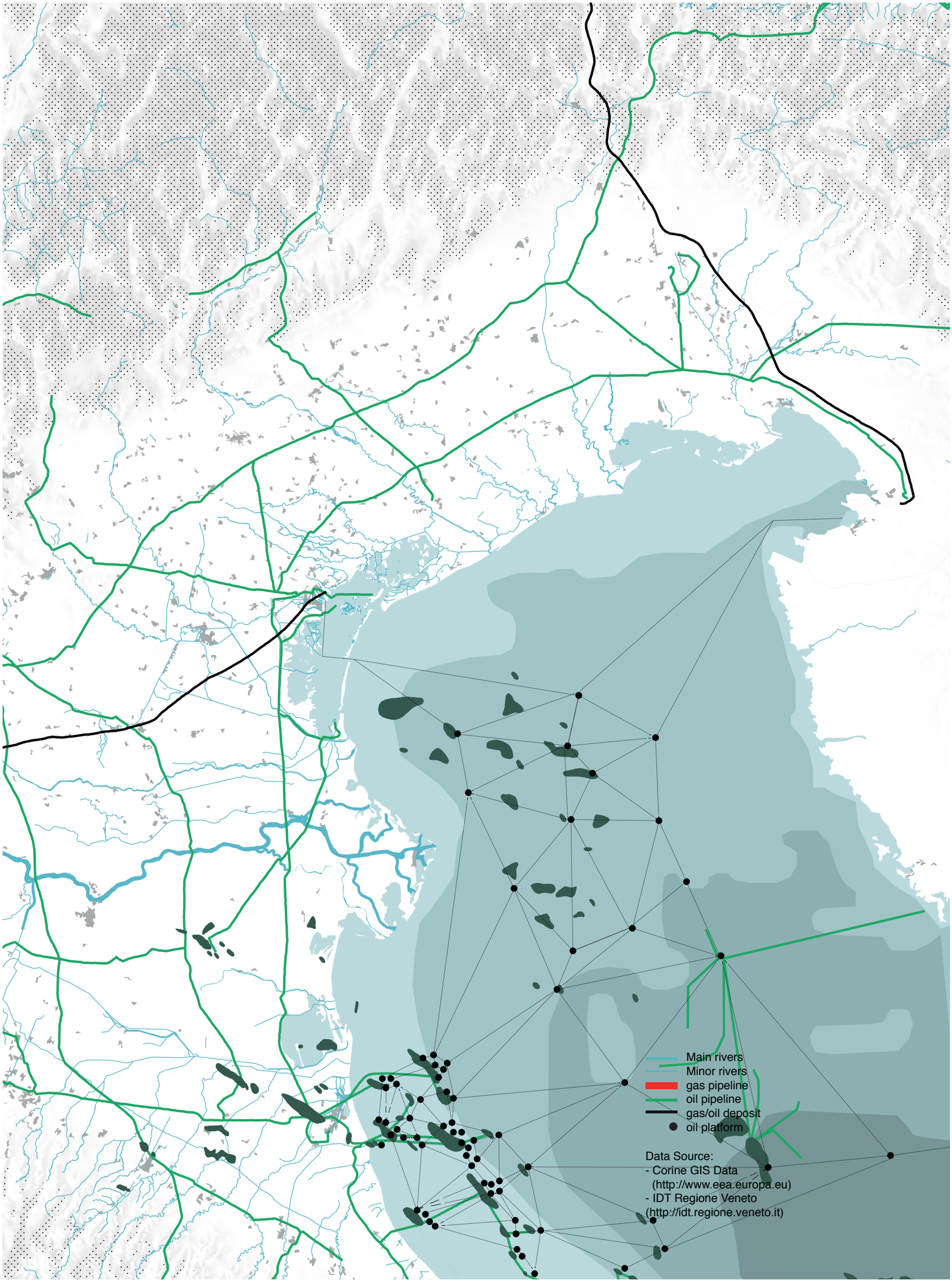
In Europe the large rivers are generally utilized as an alternative to the railway and roadway system in goods transports. Rhine river or Danube river are examples of this. Contrary to what happens in many European countries, in Italy, Po river is not equipped for what concern the transport of goods and industrial products: ports are distant from industrial areas, docks doesn't allow the berthing of large ships, loss of embankments. In the past, Italian governments have promoted the development of road infrastructures and the nowadays situation is the result of this policy: the majority of goods in Italy is transported by truck. While in Italy the maximum capacity is 1,000 tons of cargo ships, in the rest of Europe is 10,000 tons. But the Po river represent a underutilized resource: if equipped with appropriate infrastructures, it could offer a continuous navigation from Venicee/Marghera to Cremona.

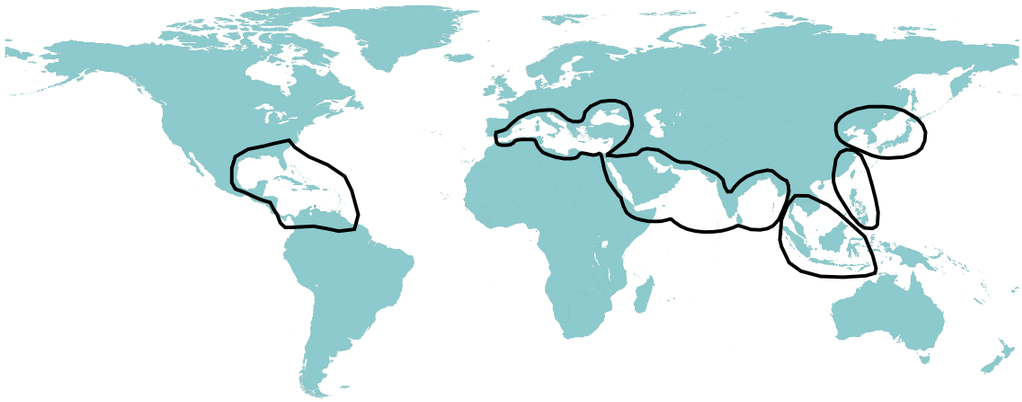
In this page:
Navigable system in Po Valley (source: Archivio di Stato di Venezia)


INDUSTRIAL PO VALLEY

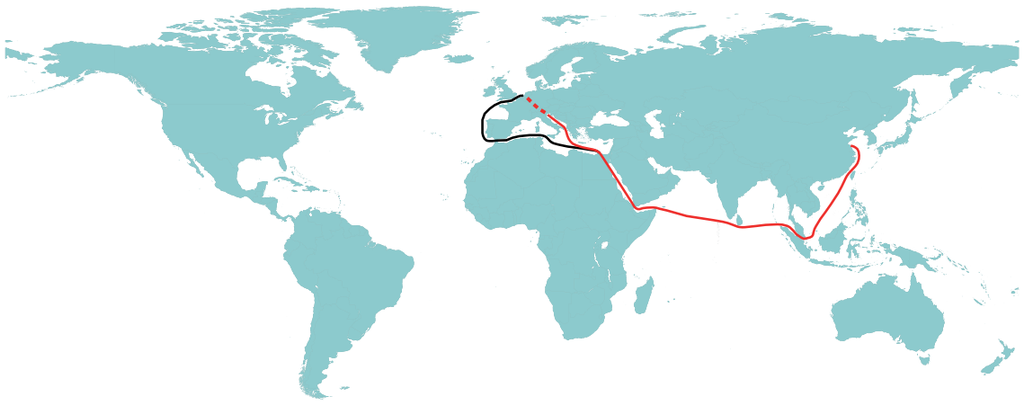

scale 1:80000
Main rivers
Minor rivers
Large Industrial compounds
Continuous urban fabrics
Railways
Higways
Data Source:
- Corine GIS Data
(http://www.eea.europa.eu)
- IDT Regione Veneto
(http://idt.regione.veneto.it)

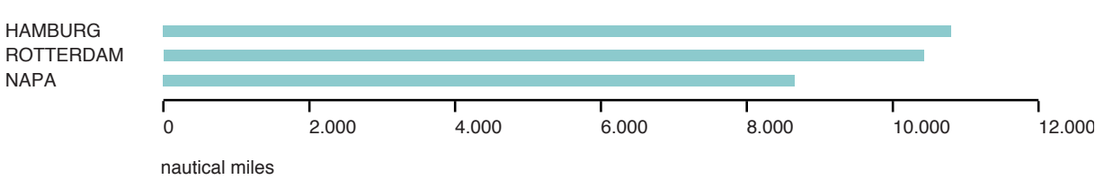

PETROLCHEMICAL PO VALLEY

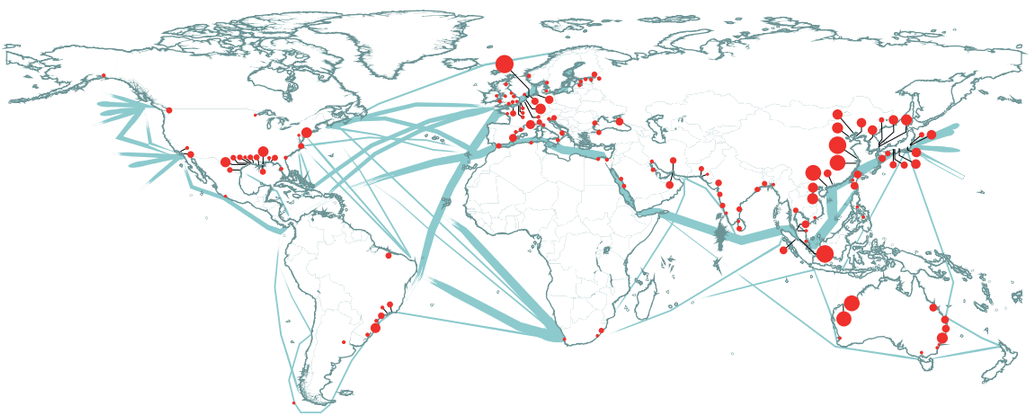

Main rivers
Minor rivers
gas pipeline
oil pipeline
gas/oil deposit
oil platform
Data Source:
- Corine GIS Data
(http://www.eea.europa.eu)
- IDT Regione Veneto
(http://idt.regione.veneto.it)



Principal global market where
transhipment ports are concentrated







Shipping routes at the global scale

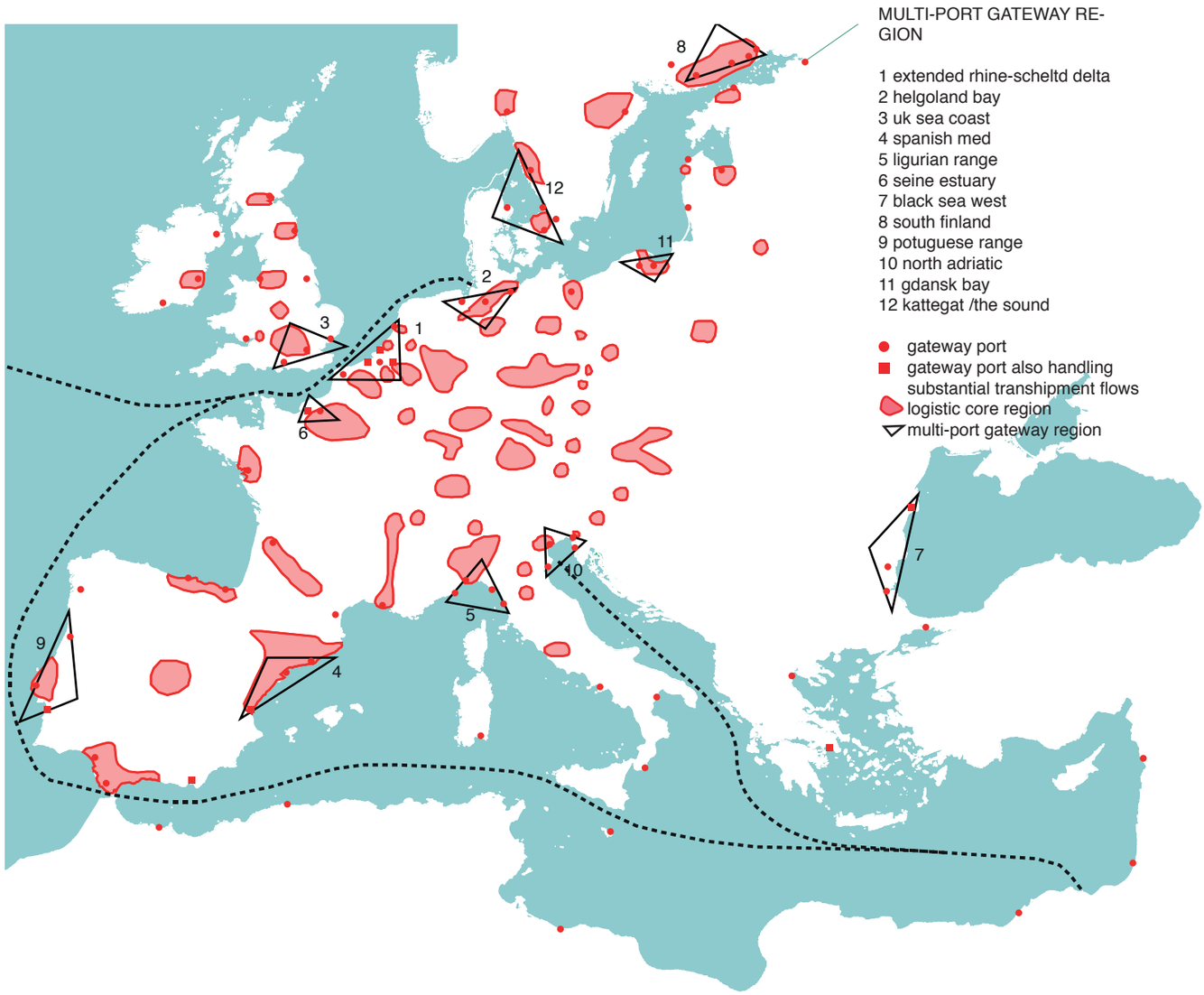
- 10 million tons
- 100
- 500

Data sources:
The european future of the Italian port system, Paolo Costa, Maurizio Maresca, Ed. Marsilio, 2014

3.4 NAPA PORTS

Geographically the North Adriatic basins constitute the northern-most point of the entire Mediterranean and, also because of this, the closest to the heart of post-enlargement Europe. As the Adriatic is very narrow, the port arc running from Rijeka to Ravenna serves a circular market sector with an angle at its centre of more than 180 degrees. This means that in a radius of between 300 and 500 kilometers from the sea the North Adriatic port facilities are simultaneously close to Rome, Turin and Basel from Ravenna and Venice; to Munich, Vienna and Bratislava from Venice, Trieste and Koper; and to Budapest, Zagreb, Belgrade and Sarajevo from Trieste, Koper and Rijeka. In other words, they are able to easily serve the rich markets of central-north Italy, east France, Switzerland, south Germany, Austria, the Czech Republic and Slovakia, and those of Hungary, Slovenia, Croatia, Serbia and Bosnia.

It follows that every ship ascending the Adriatic is able to serve more than one of these markets provided it makes at least one calls on each side This actually means working within a multi-port schema that has been taking shape by itself because of the obvious advantage created on both side, sea and land.





Picture taken from the movie *Deserto Rosso,*
Michelangelo Antonioni, 1965, Italy

A COMMON ADRIATIC INDUSTRIAL LANDSCAPE

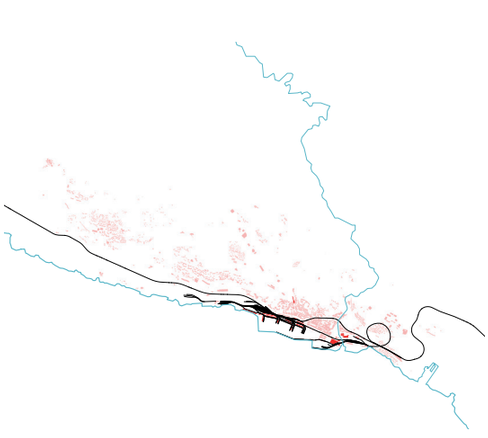
Napa ports have a common recent history: they were all involved in a process of heavy industrialization during the second part of the twentieth century and in the last few decades, they were all touched by the crisis of consumption, starting a process of de-industrialization. In all these areas the same kind of heavy industries settled: the petrochemical and gas compound, power plant, steel mills, shipyard. This led to a common industrial landscape made of infrastructures and factories (railways, roads, oil tanks, chimneys, tubes and warehouses) and involved in the same kind of social and environmental problems, masterfully described in the movie Deserto Rosso by Michelangelo Antonioni.
In addition to their common geographic location, there are others reasons that brought to NAPA ports heavy industrialization, specific for every case. The industrialization of Ravenna was linked to the discovery of large deposits of natural gas in the waterways close to the city; the one of Koper to the institution of a free zone; the one of Rijeka to his political role of main port in the socialist Yugoslavia.
The end of the Cold War, the transition from communism to capitalism, the redefinition of the markets and the lack of technological innovation, made many industries collapsing especially during the last two decades.

Division of the total traffic between the North Adriatic ports

	2006	2007	2008	2009	2010	2011	2012
Rijeka	9,3	11,6	11,6	10,0	9,3	8,3	9,6
Koper	21,6	24,4	24,4	26,3	32,5	32,6	31,9
Trieste	21,8	21,2	23,1	21,2	18,9	21,8	22,8
Venice	31,3	26,3	26,1	28,3	26,8	25,4	24,0
Ravenna	16,0	16,5	14,8	14,2	12,5	11,9	11,6
North Adriatic	100,0	100,0	100,0	100,0	100,0	100,0	100,0

Variation in container traffic at North Adriatic ports

	2007/ 2006	2008/ 2007	2009/ 2008	2010/ 2009	2011/ 2010	2012/ 2011	2012/ 2006
Rijeka	54	16	-23	5	10	14	182
Koper	40	16	-3	39	24	-3	261
Trieste	21	26	-28	0	42	4	185
Venice	4	15	-3	7	16	-6	136
Ravenna	28	4	-14	-1	18	-3	128
North Adriatic	24	16	-10	12	23	-1	177



Rijeka



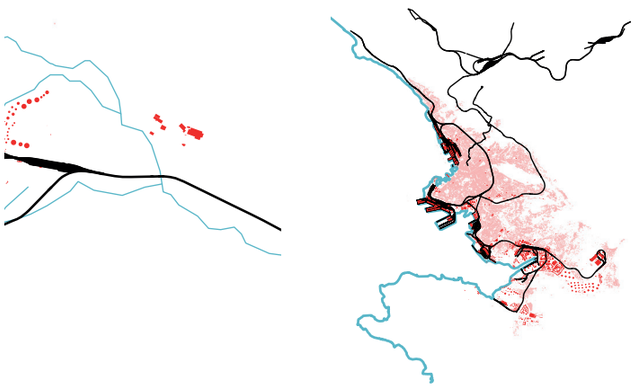
Ravenna



Koper

Data Source:
- Corine GIS Data
  (http://www.eea.europa.eu)
- IDT Regione Veneto (http://idt.regione.veneto.it)

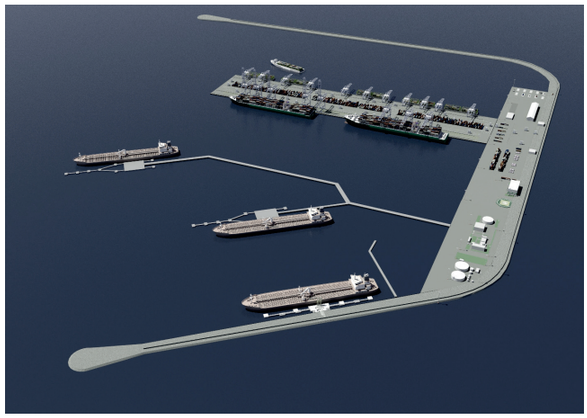
Main rivers
Minor rivers
Industrial fabrics
Continuous urban fabrics
Railways
Higways



Trieste



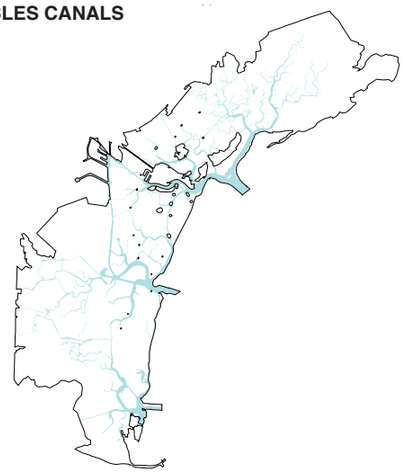
Venezia



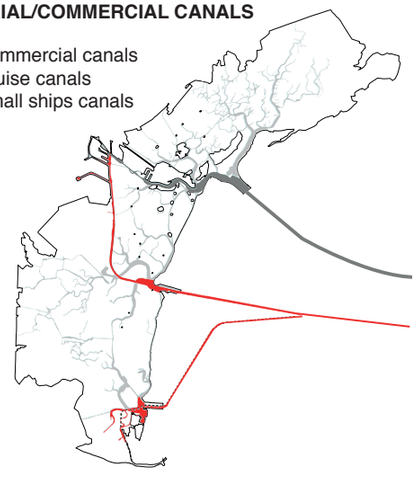
THE PORT OF MARGHERA

Porto Marghera was conceived to unify industrial and port activities. Since it was born, Porto Marghera hosted ships transporting goods and raw material for industries. In 1984, the high level of the pollution and the risk of a serious and irreversible environmental disaster led to the Special Law for the Protection of Venice that suggested the exclusion from the lagoon of oil tankers weighing more than 40,000 tons. In 2014 UNESCO requests to the Italian government to prohibit right now by law the largest cruise ships and tankers to go through the lagoon and to regulate medium and small size boats traffic. The port is now in a tricky situation: it wants to guarantee the dock of oil tanker and the commercial interest but at the same time it knows that traffics damage the lagoon. So in these last years it has tried to find compromises that reduce the impact of its activity on the environment while allowing it to grow. Huge projects have been engaged supported by the Italian government and Europe. For instance, an off shore platform has been planed outside the lagoon to increase the capacity of containers and liquids handling while reducing the traffic of high tonnage ships inside the lagoon. The port authority has already been founded for this project and has started in 2013 the construction of an on shore platform, in Porto Marghera to manage the flow of containers between mainland and offshore infrastructures. This transit flow should be done using “mama vessels”, which are small boats.
According to these plans, Marghera will become more a logistic and industrial platform, where the activities will be guarantee by a terminal outside the lagoon, while other ports in the atlantic region such as Trieste, will be improved as commercial ports.

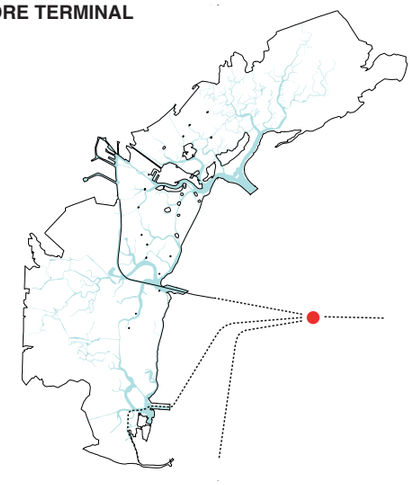
NAVIGABLES CANALS



INDUSTRIAL/COMMERCIAL CANALS



OFFSHORE TERMINAL

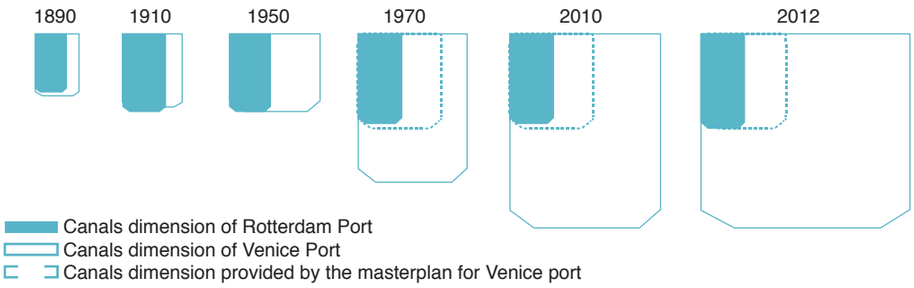


In this page:
- *View of the offshore terminal outside the Venice lagoon*
http://offshore.port.venice.it

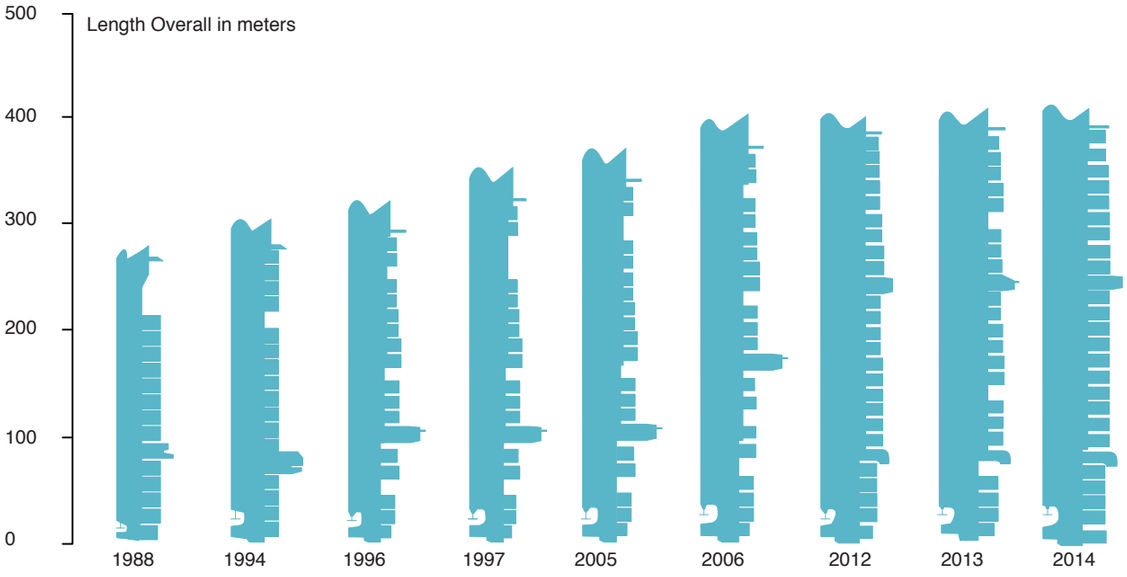
Schemes:
The big ship, such as the oil tanks (2) attrach outside the lagoon, in an off shore terminal (3). So called mama vessels (1)guarantee the transport of the goods from the offshore terminal to Porto Marghera. Mama vessels are clean, silent and don’t damage the sea bottom thanks to their small dimension

Schemes data sources: *Piano operativo triennale 2013-2015*, Venice Authority Port, 2013 (personal re-elaboration)

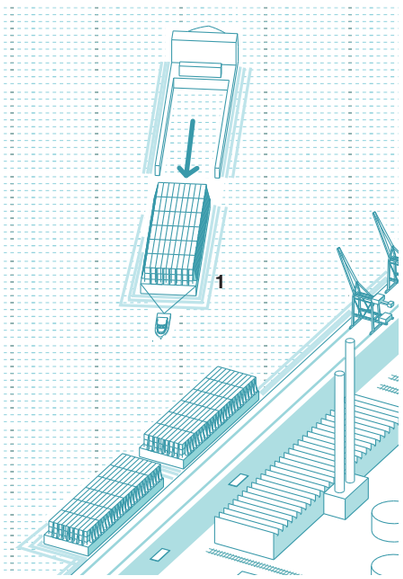
EVOLUTION OF THE COMMERCIAL CANALS



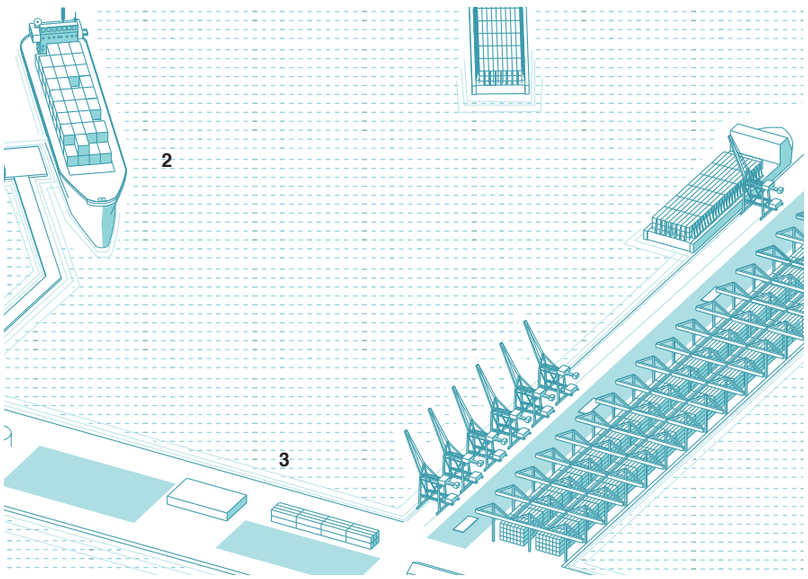
EVOLUTION OF THE COMMERCIAL SHIP

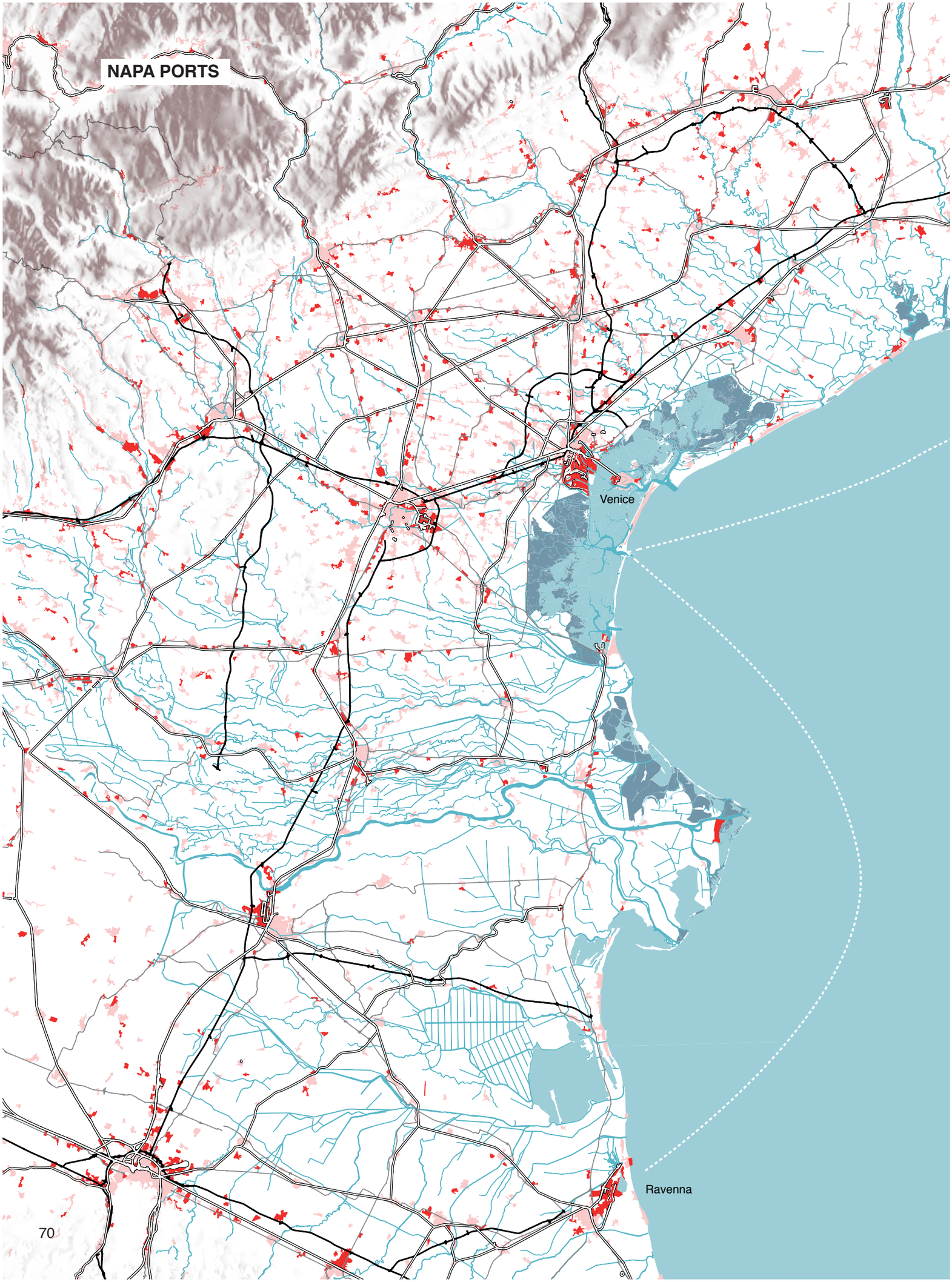


OFFSHORE TERMINAL: THE GOODS TRANSPORT INSIDE THE LAGOON



OFFSHORE TERMINAL: THE GOODS TRANSPORT OUTSIDE THE LAGOON




NAPA PORTS
Venice
Ravenna


Trieste
Koper
Rijeka
scale 1:50000
Main rivers
Minor rivers
Large Industrial compounds
Continuous urban fabrics
Railways
Higways
Data Source:
- Corine GIS Data
(http://www.eea.europa.eu)
- IDT Regione Veneto
(http://idt.regione.veneto.it)



In this page:
- *Agro-Indsutrial landscape*, December 2015
- *Nail, Pendulum, Tubes, Knot*, from Google maps

3.5 INDUSTRIAL VENETO REGION

AN AGRO-INDUSTRIAL LANDSCAPE

The isotropic landscape of central Veneto has been traditionally hybrid, an intertwinement of two ecosystems, the natural and the productive: an alluvial landscape structured by hydrography on one hand, and it's productive use since roman times on the other, in a constant process of remodeling.

In the last thirty years, the area has experienced a constant and unquestioned growth, which turned it into one of the largest manufacturing areas in Europe. Many independent craftsmen built their factories annexed to their private homes and with the exponential increasing of production they built also barns and warehouse in the nearest field, invading the countryside. This phenomenon is caused by a permissive legislation, a lack of a master plan, a diffuse and aggressive entrepreneurship.

But factories doesn't constitute isolated objects in the landscape: their settlement comport also the construction of water runoff tubes network, connections to the general electric mains, connections to the main roads.

This cause the break of the geometric division of the fields and the brutalization of the Veneto villas. These buildings was design by some of the most famous architects of all the time, Palladio, and represented a model for many other buildings in the world, such as the White House. Unfortunately Veneto villas attended, nearby, the massive production of industrial barns and warehouses in the last few decade . The juxtaposition of these two opposite buildings typology create a contradictory and embarrassing situations.

In the current moment of recession, the friction between systems becomes visible, forcing the area to deal with its inherent limits. The economic crises bring many industries to move to other country, where there are more favorable working conditions.

THE PARADOX OF THE DIFFUSE INDUSTRY

Città diffusa (diffuse city) development process was generally analyzed mainly as a typical urban/rural conflict, often criticized as a countryside destroyer and a farming land consumer. But, as observed by some researchers since the eighties (CNR-IPRA, 1988), in Italy, in areas where agriculture cohabits with industrial activity and the interaction between agriculture and urbanization is not necessarily negative.

It's obvious that the large number of industries has produced huge environmental problems like pollution and degradation of the landscape itself. But, unintentionally, diffuse industry fields have also produced a particular organization of the work and of the society: the factories are usually close to residential districts so the workers can easily move from one place to the other from home to work; the factories are usually merged with green areas or integrated with recreational spaces (nursery schools, schools, offices); these factories are usually family owned and annexed to the private house of the little entrepreneur so they are generally well preserved from abandon and degradation.

And, even if it is true that urban growth generally does not take into account any of the natural needs of the farm and instead promotes the fragmentation of farms and fields and favors precarious jobs, urbanized areas do not necessarily create the conditions for abandoning farming activities. On the other side agricultural space, in a certain way, can find "protection" in urban sprawl and agriculture marginalization.

These less evident aspects have to be mentioned to deeply understand the diffuse industry and, in general, the città diffusa, that can be seen as a concrete paradox. This paradox is even more evident if we compared the diffuse industry with the big industrial enclaves: completely divided from the rest of the urban space, barely reachable, anonymous.

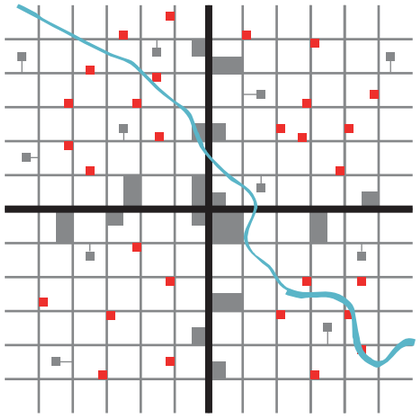
A HEAVY INDUSTRIAL LANDSCAPE

The diffuse industry, is not the only industrial system present in Veneto region, even if its maybe the most characterizing. It exist also the big industrial enclaves: Marghera, as it's already described, it's a famous example but it's not the most representative one. The other big industrial areas are Padova or Verona, are not at the same level of abandon and degradation of Porto Marghera. In the so called *Zona Industriale di Padova* (ZIP), one of the biggest Veneto region industrial area, there are more than 25.000 people employed and 14.000 companies settled.

The landscape of this areas is generally made by a dense flood of binaries, a grid of road and a dense settlement of industrial bar and warehouse. This places are anonymous, they don't have a real specificity and one of them resembles the others. In the big urban centers the industrial conglomerations in a specific

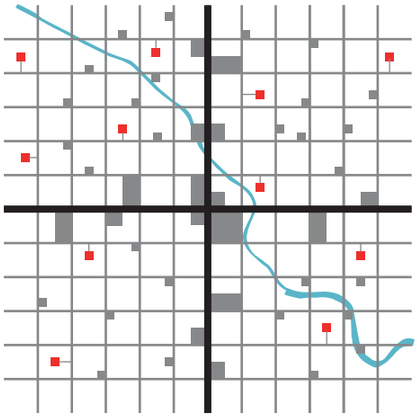
NAIL





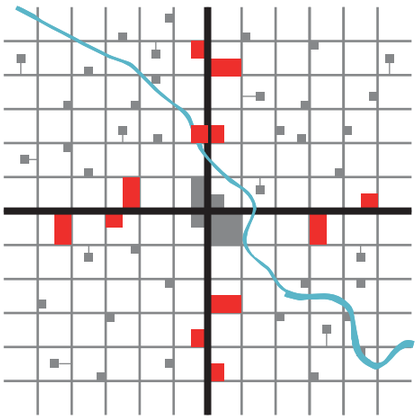
PENDULUM





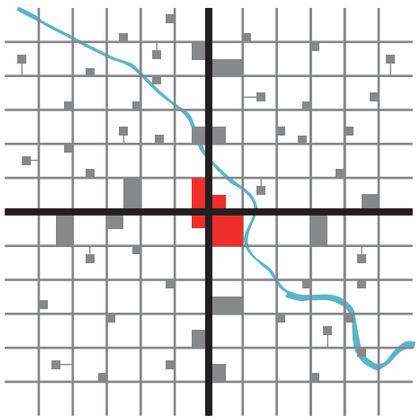
TUBES





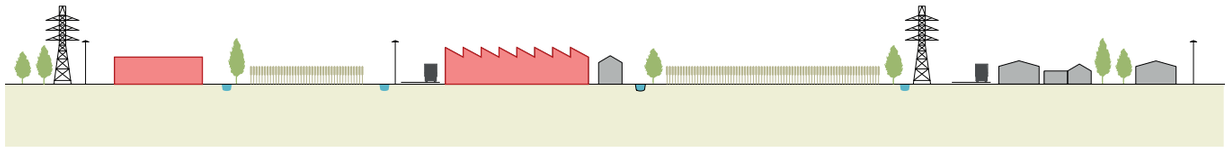
KNOT







Veneto region elevation


Mirano agro-industrial andscape

area are the product of a masterplan but don't have product a better result in term of landscape if compared with the diffuse industry. Maybe instead of spreading the industry all over the territory, it should be interesting to use the inverse operation: differentiate the big industrial enclaves integrating to them parks, public spaces, touristic facilities.

A POSSIBLE CLASSIFICATION

Can be distinguished different types of industrial landscape in Veneto region: the sponge landscape made by small factories diffused in the rural area, served by secondary roads; the tube landscape made by large industry compounds linked one to each others by big infrastructures, the european commercial corridors, that goes beyond the physical boundaries.

In turn, the sponge landscape can be distinguished two kind of industrial settlement: the nails, the factories directly attached to the secondary road system, and the pendulum, the factories settled in the middle of a field and connected to the secondary road system through a path.

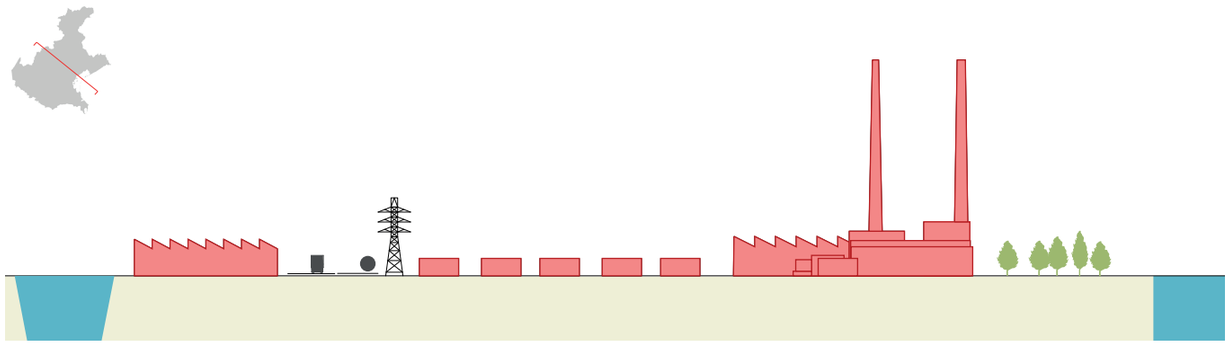
The tubes landscape can be distinguished by two kind of industrial settlement: the tubes, the factories settled along a main infrastructure, and the knots, the factories settled in correspondence of the intersection between two or more main infrastructures. Marghera, according to this classification constituted a knot.

Above in this page is transcribed a text by Steve Bisson already published in the book Recycling City by Lorenzo Fabian, Emanuel Giannotti and Paola Viganò. The author well explain the dimension of the diffuse industry phenomenon in Veneto Region and its consequences in the landscape. His lucid analysis does not constitute a general critic to the diffuse industrial system but differs case by case and found some reason for its preservation.

EVERY MAN FOR HIMSELF

Having spent the last 10 years studying and analyzing different areas and local production systems in the Veneto, particularly those of the provinces of Treviso, Padua and Vicenza, I like to claim that the challenge of land reclamation is not so much a possibility as the lead thread of all urbanism on the cutting edge. These "gray areas", with their belching twentieth-century smokestacks, represent more than 40% of what has been built. Whether we like them or not, as a matter of fact they constitute a landscape, if not an essential feature of the Veneto's territorial poeticism which we see every day through our car or train windows, at times with a certain bitterness. This endemic presence is evidenced by population fragmentation and dispersion statistics. Data gathered in 2008 (Confindustria Vicenza 2009) leave no room for doubt: in the area surrounding Vicenza, 1,150 zones, amounting to 85% of industrial use land, are located within 500 meters of an urban area with a population greater than 1,000 inhabitants. There's no question that the ubiquity of such a development model should motivate experts to carefully study the co-existence of these two systems, as a foundational element in any reclamation policy seeking a renewed urban balance. The aquifer recharge zone, which feeds the many springs located to the immediate north of Vicenza, is home to 70% of industrial land, equaling approximately 7,200 hectares subdivided into more than 900 zones. The re-organization of industrial areas is inextricably tied to their relationship with the landscape and culture systems, both of which are found throughout the region. More than half of industrial lands lie within 2 Km of a nature reserve, while 66% of industrial lands are less than 500 meters from one of the 700 Venetian villas kept on record by the Province of Vicenza. A third of industrial lands are located less than 500 meters from an area governed by landscape zoning restrictions. Only 27% of industrial lands are far away from any valued lands or buildings. This datum should prompt a reflection on the risks, but most importantly, on the opportunities for exploitation and interaction that can derive from the present urban context.

Data like these and more like them, make it clear that the solution lies beyond cosmetic surgery for industrial areas and sticking to topiary design manuals. At this point in time, the same skepticism is deserved by the aspirations of a considerable portion of the fantastical land use policies announced following the new regional law n.11 of 2004, which under the imposing figures of various acronyms theorize futuristic scenarios of moving industry to vast, highly eco-efficient zones. These scenarios are appealing but difficult to make reality, as we well know.' I would just like to recall on this topic the words of Domenico Luciani, who has dedicated himself scientifically to the problem in a way few others have: «We Veneti are - and have always been - made in such a way, anthropologically, culturally, as to remain "little" microcosms. Proof of this is found in the fact that this structure, this urban suit of armor, this teeming swarm



Marghera heavy indsutrial landscape

of little urban centers, was not thrown into crisis even by that great wave of transformation of the second half of the twentieth century. All the microcosms with between 1,000 and 25,000 inhabitants grew in parallel with numbers proportional to their size and at a higher rate than the larger cities. What has been recorded, basically, is an unwillingness on the part of our region to be sucked into or absorbed by large, compact urban organisms. This is a historic, demonstrated and irrefutable unwillingness. This is the real issue we are faced with. Therefore, if we wish to understand what kind of society we are to become, we must start with the society we are and have been» (Luciani 2009: 173). That said, it is in any case necessary to look for solutions, scrutinize proposals and assess scenarios, as was attempted in the "Re-cycling City" Intensive Programme. How can we create in those industrial areas a public town or city that reduces that sense of disorientation and displacement that we observe in so many? How can we restore dignity to these spaces through concrete actions that foster integration with the surrounding territory? How can we recover the ideal of factory design as territory or land design? To begin with, we must leave behind the fragmented vision of the territory or land as divided into zones and try to re-appropriate these zones, to colonize them with new ideas, and where laws and regulations prevent this, try to change those laws. The debate, if we still need it at all, needs to be re-oriented toward the definition of rules of the game set to foster rather than to prevent change (which doesn't necessarily always mean growth). This re-orientation is inevitable, as well-documented by various analyses on the 'latent' needs of businesses (Confindustria Padova 2007; Unindustria Treviso 2005). This is a phenomenon expressed in the need for kindergartens, recreational areas, public services, environmental and energy infrastructures, parking spaces, car parks and other demands that call attention to a need for synergy that threatens the foundations of the very concept of industrial area. In other words, these areas are suffering from a sickness whose cause is not to be found in the past but in their attitude toward the future. What is needed is a goal; that is to say, we all agree that these areas should undergo some kind of rejuvenation, that in a certain sense they must, but we don't know anything about what to do with them. The cause is the lack of any goal, a settlement spontaneism which today continues to manifest itself in various forms: from factories left to rot in the aftermath of predatory buyouts to squatting that ultimately ends with abandoning the occupied buildings and letting them fall into 'post-nuclear' type states of nature. These examples vividly exemplify the lack of any vision and thus an imminent crisis of thought.

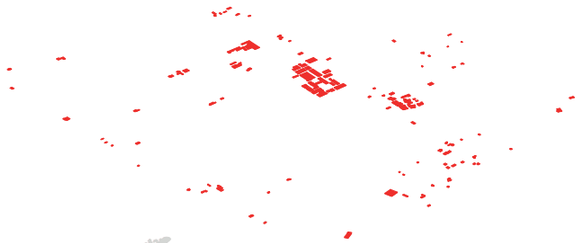
At times in industrial areas we observe the existence of a 'second life', almost surreal in terms of what is normally expected or allowed, real processes of disobedience that shake the foundations of conventional understandings of what industry is or should be. In these actions one should see not a disaster but signs of a development that has already begun. Finally, we have a problem that enables us to look beyond! These actions, when they are more innovative than local preservation systems (regulations that prevent observing what is actually happening), the various local territory-narcissisms (plans that identify districts, industrial zones etc...) and other paranoid forms of collective thought, offer us a chance for feeling optimistic because they can be so 'contagious' as to transform their immediate surroundings as well. We too, in the field of urbanism, should begin to use a language constructed like grapevine branches, with words that latch onto concrete things. This means that if we want to talk about the environment, accessibility, architecture, we need to clear the muck of dogma from the tools with which we set to work. This is demanded, for example, by research I have conducted on the environmental, safety and energy costs of businesses (Unindustria Treviso 2006). We need to lend substance to the words we use - and clarity, first of all. Waste management, water treatment, emissions, health risk assessment and energy saving, landscape and ecological networks represent just a few of the aspects that make sustainability an increasingly vast and costly objective. It is a goal that requires pursuing restrictive standards and the introduction of management solutions that include inter-business ones. Such requirements are as much a condition for buildings as they are for land, both during construction and once a facility is fully operational. Things like controlling conditions both inside (temperature, humidity) and outside (ventilation, noise) have an impact on the health and well-being of people. Attention to sustainable design models extends from the buildings themselves to their neighboring spaces, and to standards areas as well. These uncultivated, isolated spaces that mean nothing to anyone can be incorporated into recognizable, unified projects, open and useful spaces. Parks and gardens



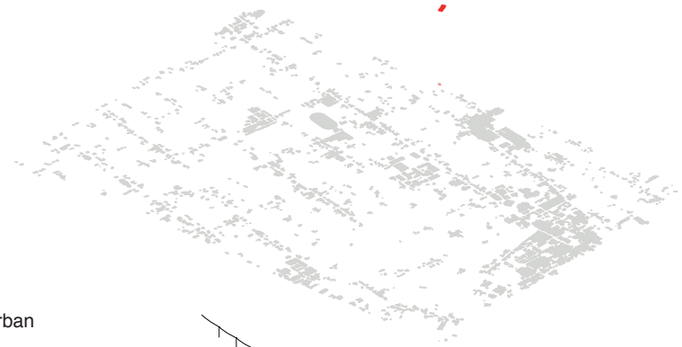
In this page:
- *Where are factories?*, December 2015
In the next pages:
Scheme: different layers of agroindustrial landscape

are considered a system that cuts across industrial zones, functioning as a space for recreation and fresh air and an alternative for traveling on foot or by bike. Those listed are all potentially valid hypotheses, but for some reason I can't find them in hundreds of industrial areas that I have documented. And so it is permissible to think that there is a risk for urban planning to trap itself within an elusive and strictly wishful model, and for designs to translate into so many simulacra. In order to avoid this derive, people dealing with industrial areas should think of them as objectively individual, each with its own unique problems and potentials. In the vast majority of cases the municipalities don't even know which businesses reside within their territorial boundaries, or what they produce and how. Industrial areas are considered en masse by those who live with them. In a situation like the current one, in which collective life is splintering, indifference is no longer possible, much less adapting to the reality and attempting to stay positive. We have to think differently. Improving the land's accessibility represents another fundamental priority for local development and well-being. The province of Padua, like much of central Veneto, is distributed in such a way that it virtually precludes the possibility of getting around without a car, leading to a chaotic flux of people and goods that negatively affects the environment as much as it does local concerns' competitiveness. This is compounded by an equally serious phenomenon of spontaneous and irrational urban development sprouting up around existing infrastructure, compromising efficiency, safety and possibilities for improvement. What can we do? We can expect to witness in future a re-organization of accessibility through an improved connection between urban centers and the network of transit hubs. Compared to the past, in which the land structured itself independently of considerations of location optimization, is it still possible to enhance the interaction between subject and space? I am convinced that the change is possible, if we are able to create the conditions for entrepreneurs to express themselves and in so doing enable an influx of benefits to their surroundings. And this happens when businesses are told what they can do, rather than what they cannot do.
Finally, in addition to the environment and accessibility, there is another lens through which to look: architecture. Still to this day in industrial areas the prestige of what is produced there does not reflect the image which these places project on their surroundings. There is a gap between the value contained and that of the container, on which it would in fact be quite easy to intervene. For this reason, one should not forget the good example set by concerns that have fostered the need to transmit their company image through a decisive and bold design, almost as if the entire architecture were an exercise in marketing through different means; new buildings and complexes capable of communicating a fresh and precise business identity by making use of technology and strong affinities with the product: spaces that, while preserving their original structure, are modified to be clean, protected and able to satisfy the growing demands of research and development; new choices that reflect the desire to re-organize a business's operations around a natural or familiar backdrop as an integral part of the employee experience and an inspiration for increasingly creative production» (Confindustria Vicenza 2009: 7). Again it occurs to me that the job of the planner is not to police but to think in terms of possibilities.
Environment, accessibility and architecture represent a few of the possibilities to confront in order to enhance the identity of industrial areas and remedy the faceless mass of factory walls. But what really matters is how to organize ourselves for what comes after, in a phase of change with respect to a system or a collective unconscious that is cracking at the seams. What can municipal governments do at a time of serious crisis? What good has outrage over industrial sprawl brought us? It's like a fat man who complains that he weighs over 100 Kg, forgetting about when he used to weigh 50. What we are witnessing in many governments is almost a sort of hysterical reaction to the feeling of collapse, like a spider that senses the storm and goes back into its hole. Prey to a collective fear, they begin to decry an industrial bulimia in which they themselves are accomplices. The point, however, is not who is responsible, but to understand whether these very same institutional figures have some idea of what these areas should look like after, and consequently whether they have the strength to intervene now. A benign tumor is one thing, but aggressive cancer is quite another. If there's still something to be done, then the words of Italo Calvino (1972) come in handy for assuaging the pain: «The first is easy for many: accept the inferno and become such a part of it that you can no longer see it. The second is risky and demands constant vigilance and apprehension: seek and learn to recognize who and what, in the midst of the inferno, are not inferno, then make them endure, give them space».

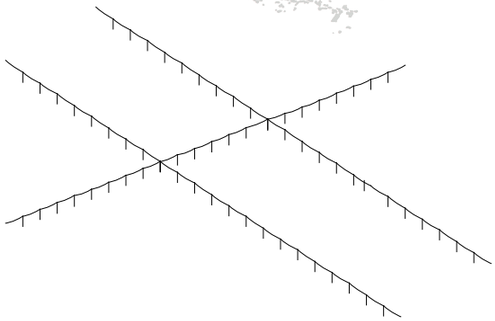
DIFFERENT LAYERS OF THE AGROINDUSTRIAL LANDSCAPE



Industry



Urban



Energy line



Roads

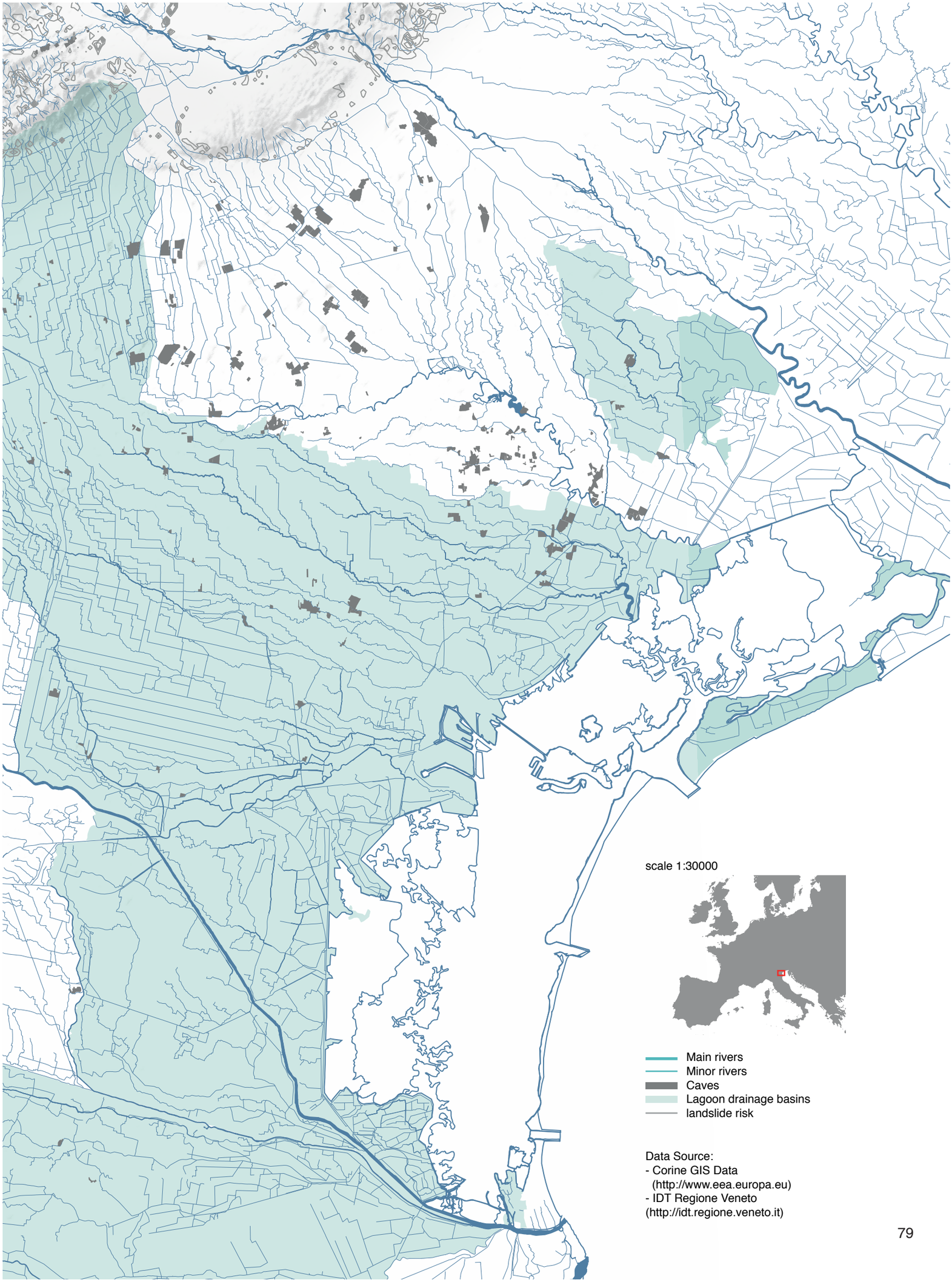


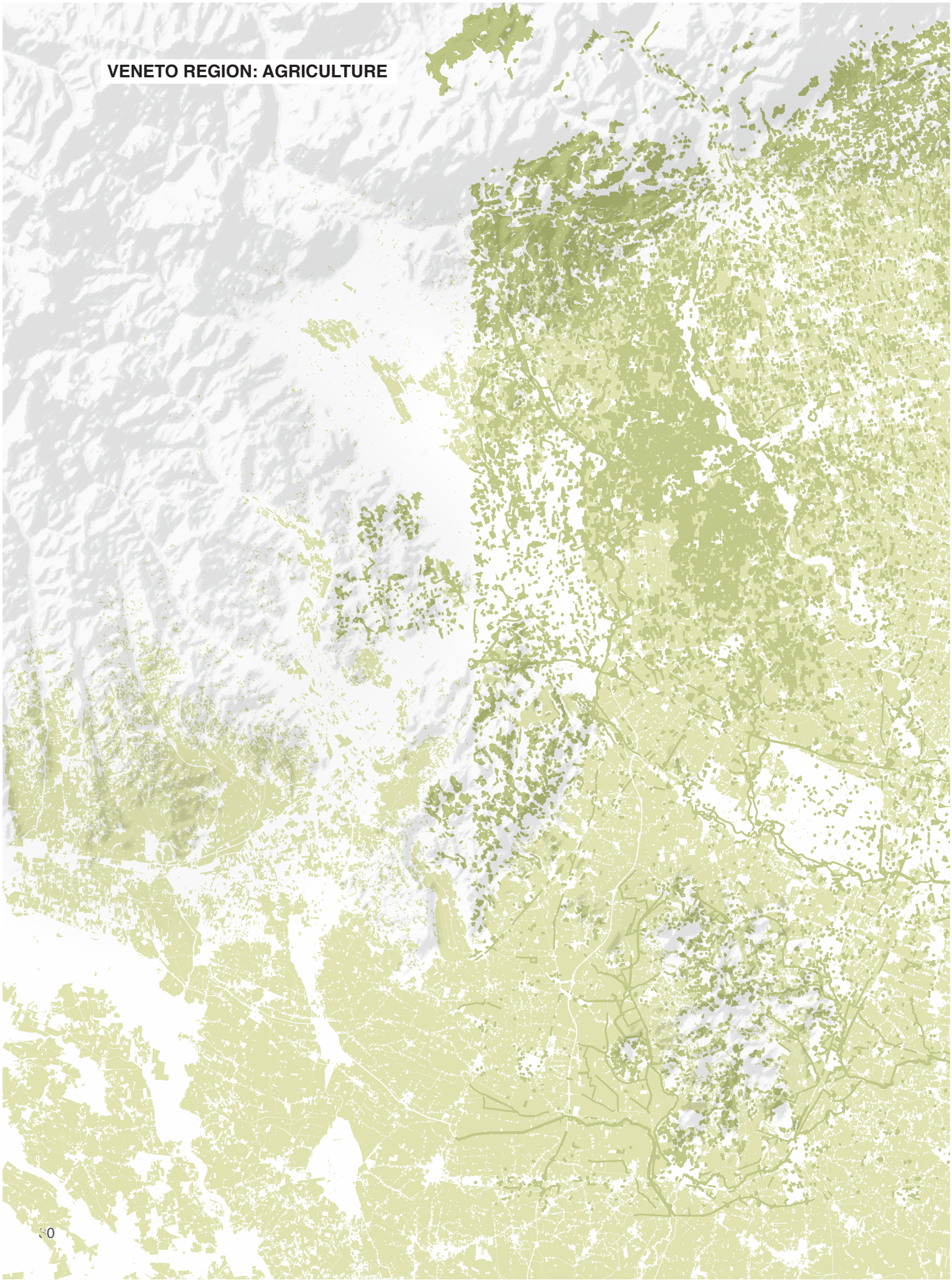
Canals

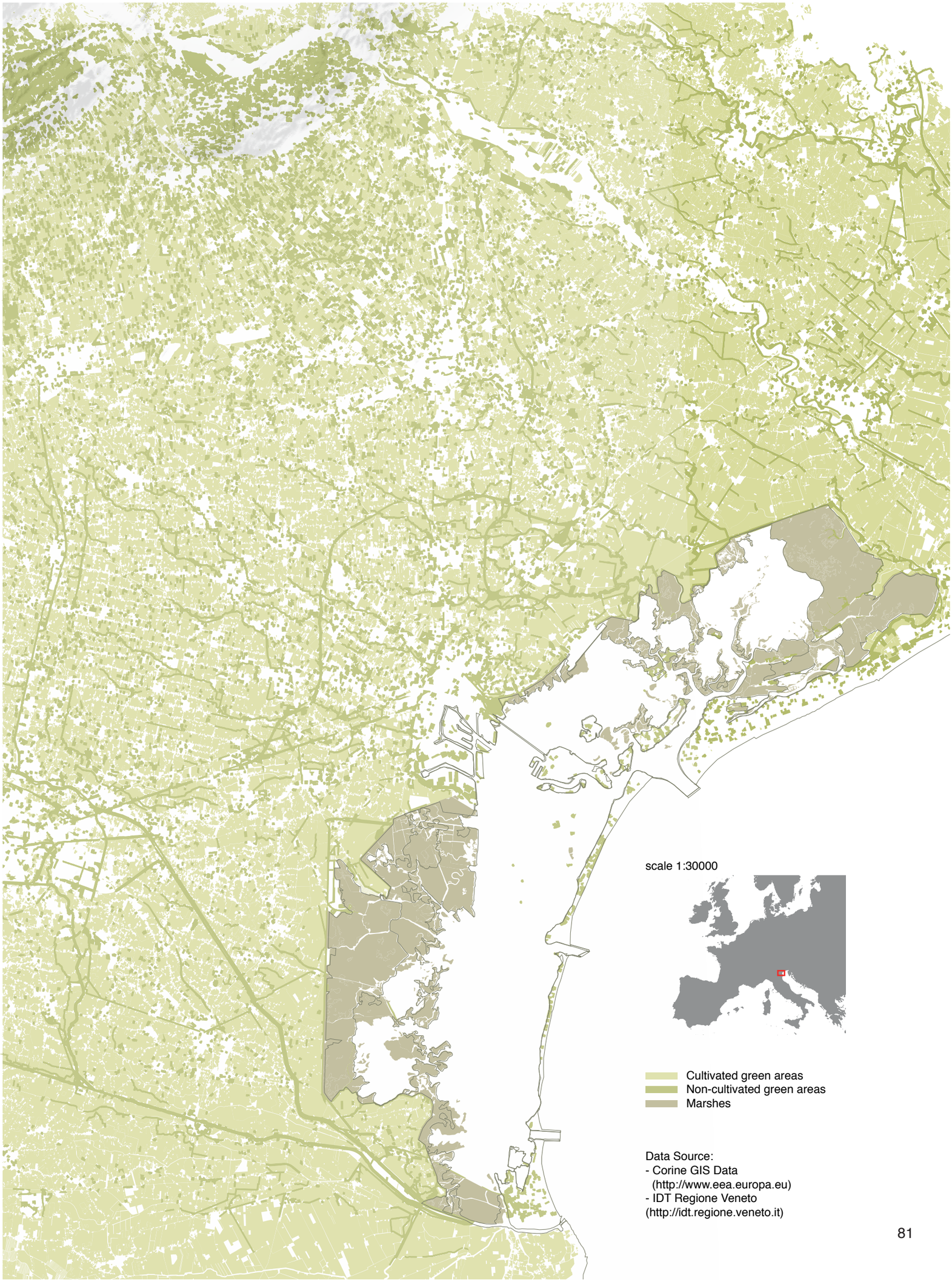


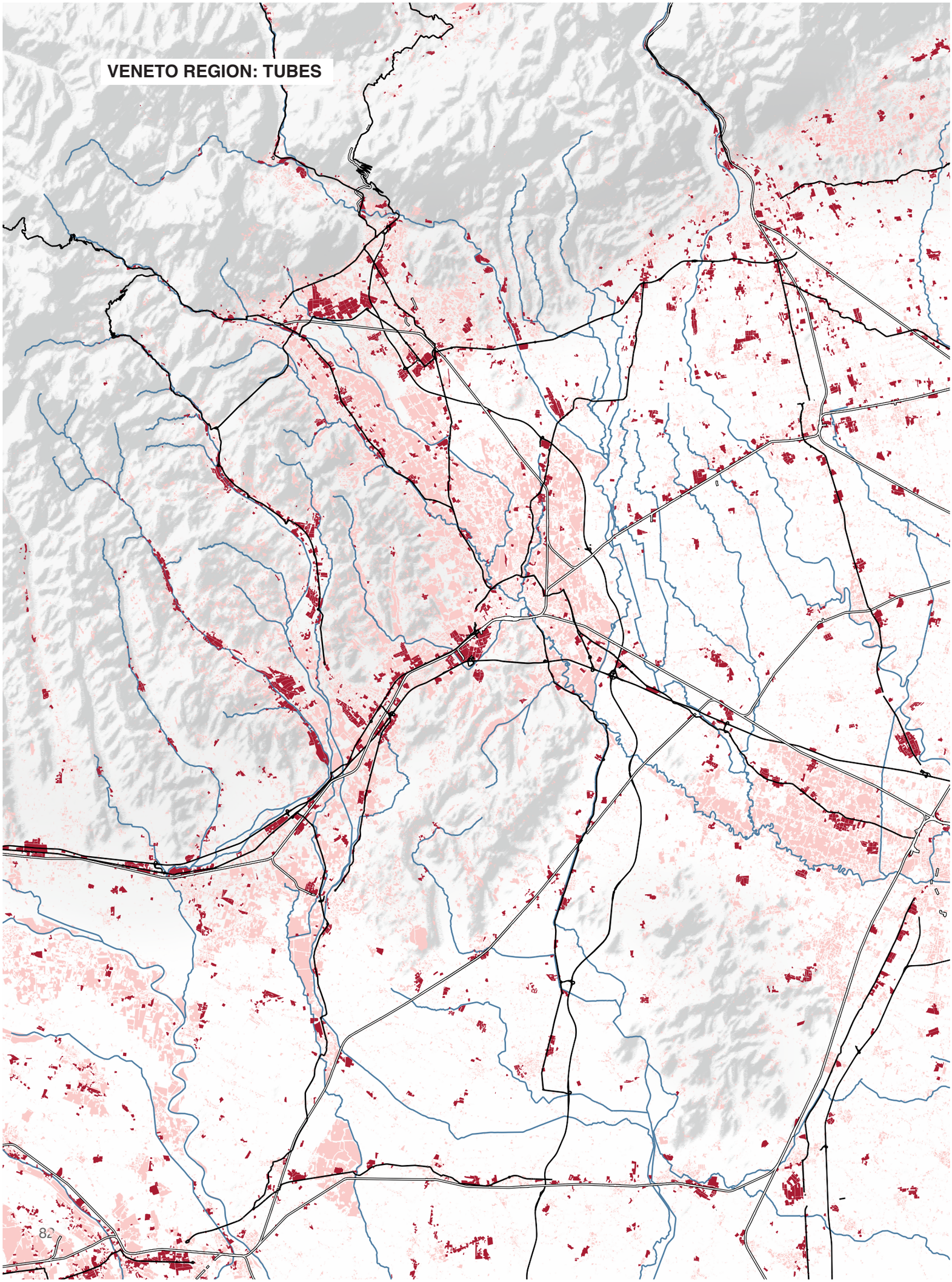
Countryside

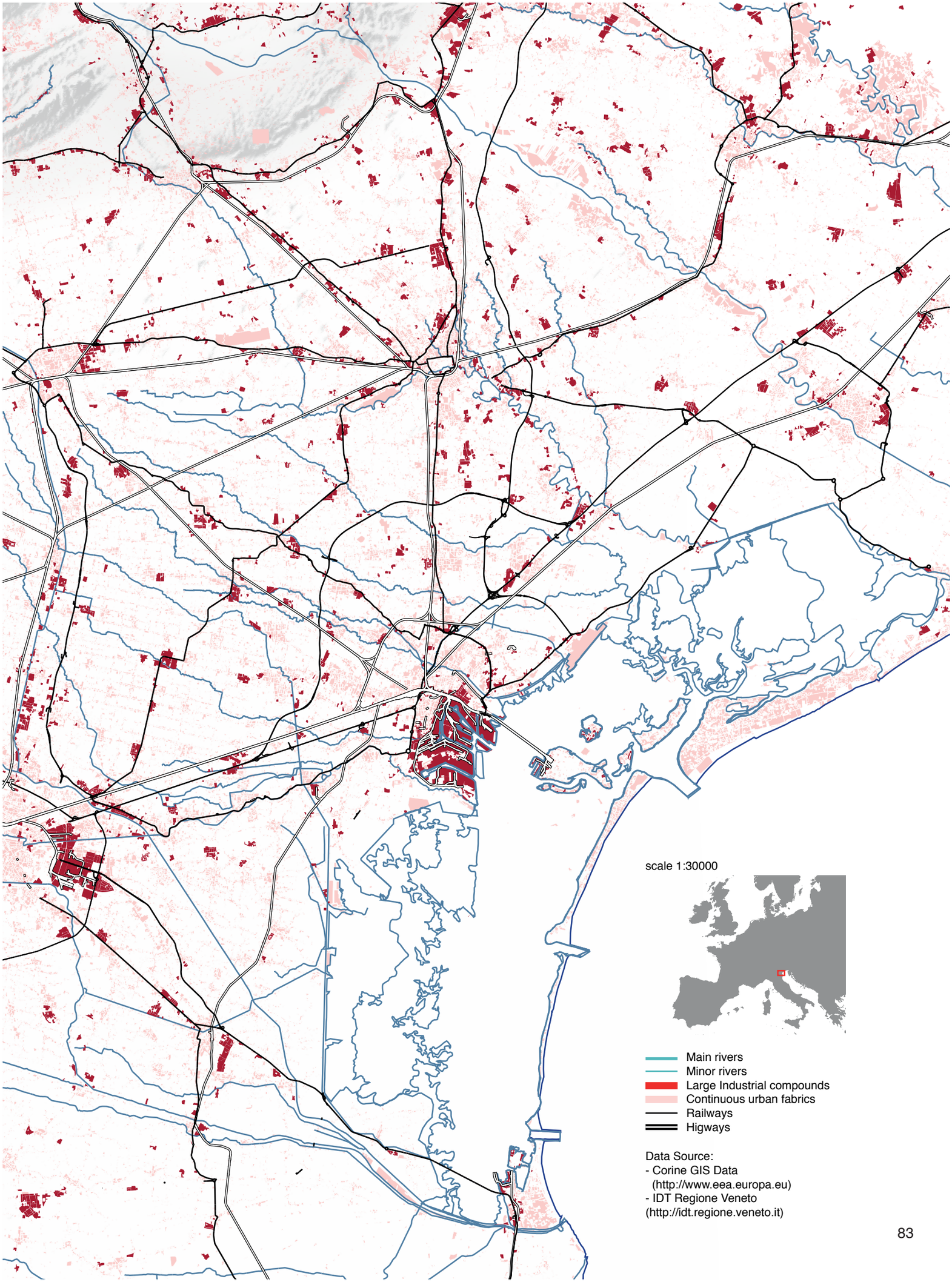

VENETO REGION: GEOLOGY

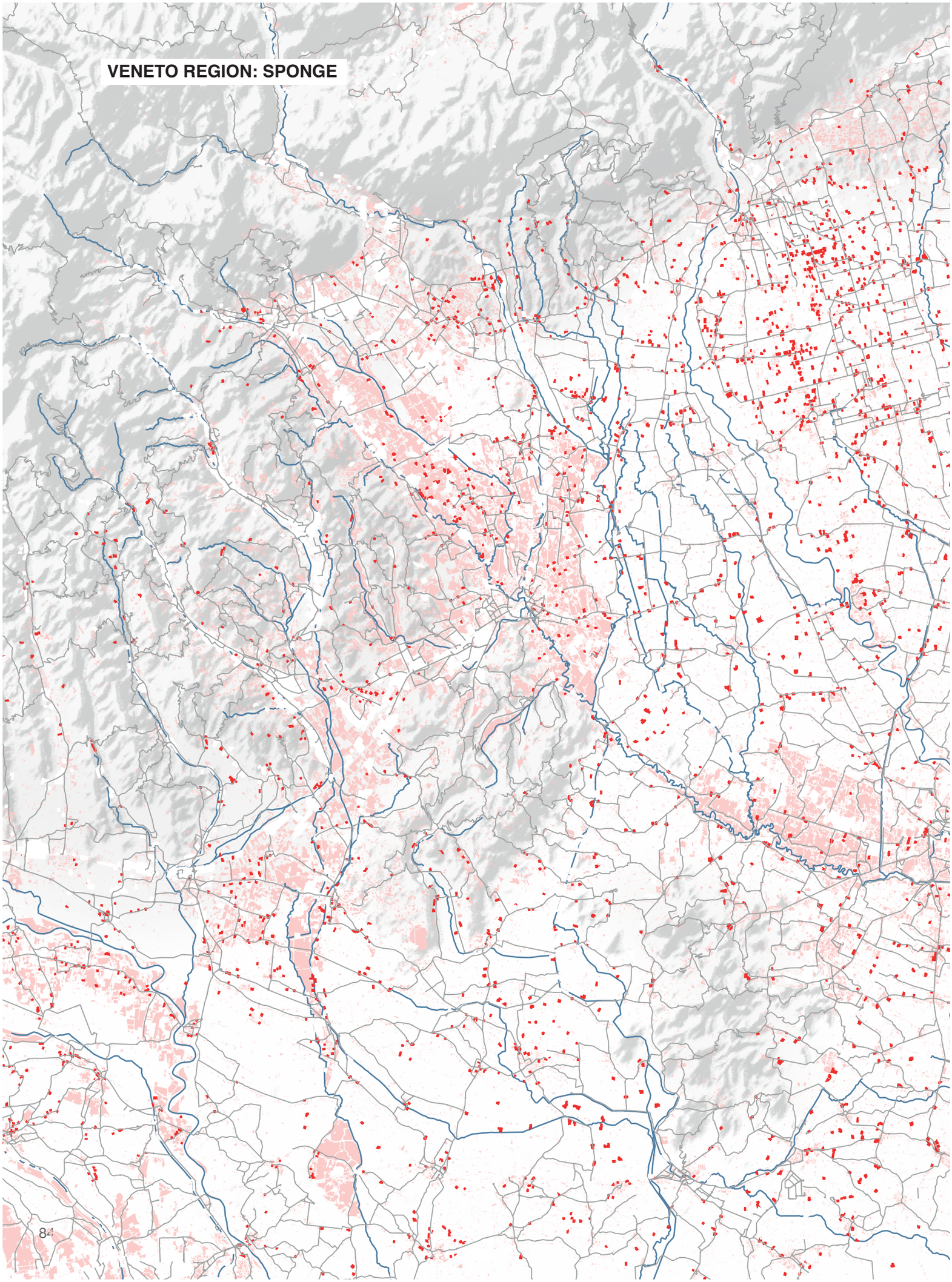

scale 1:30000
Main rivers
Minor rivers
Caves
Lagoon drainage basins
landslide risk
Data Source:
- Corine GIS Data
(http://www.eea.europa.eu)
- IDT Regione Veneto
(http://idt.regione.veneto.it)

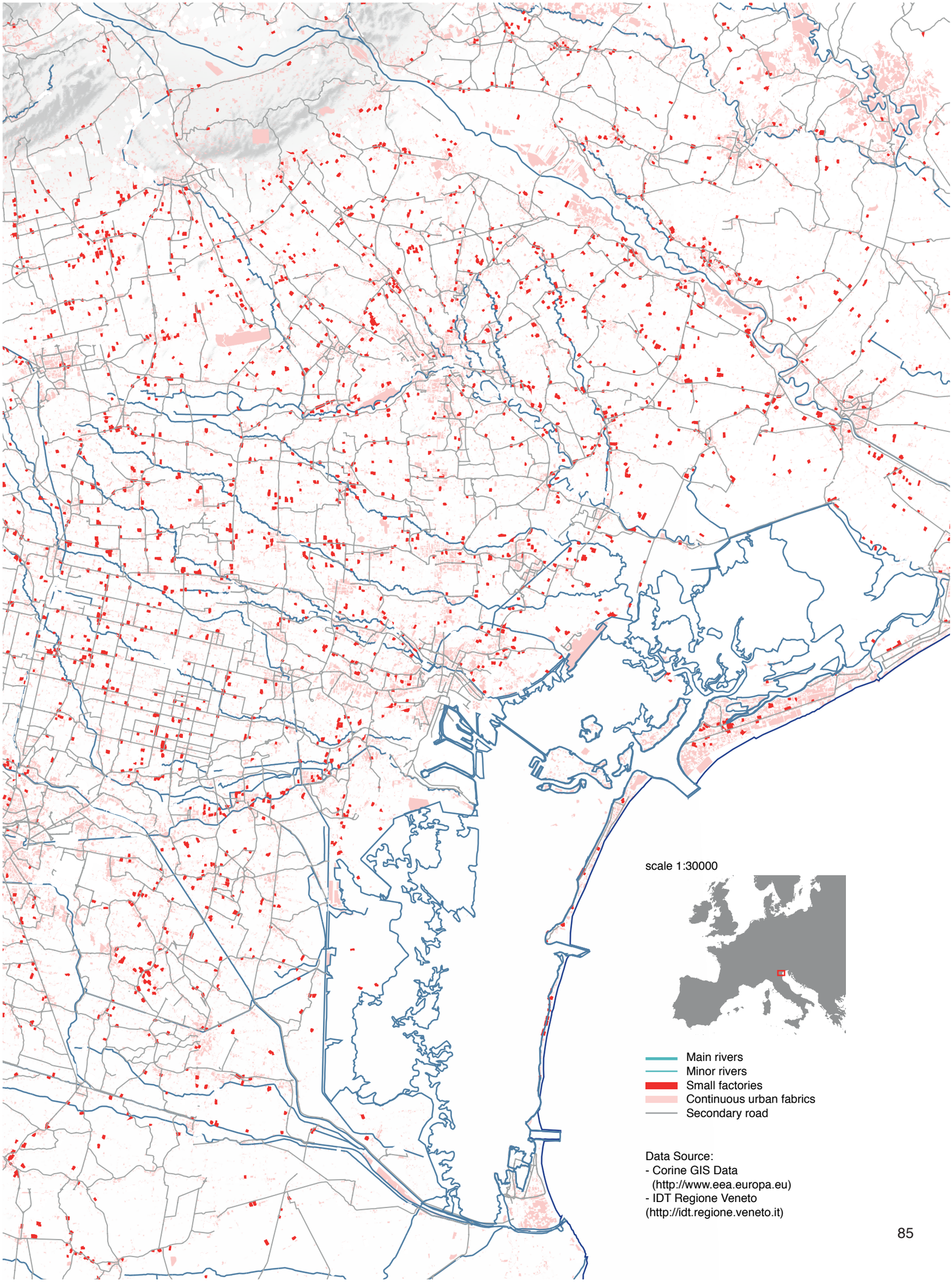

VENETO REGION: AGRICULTURE

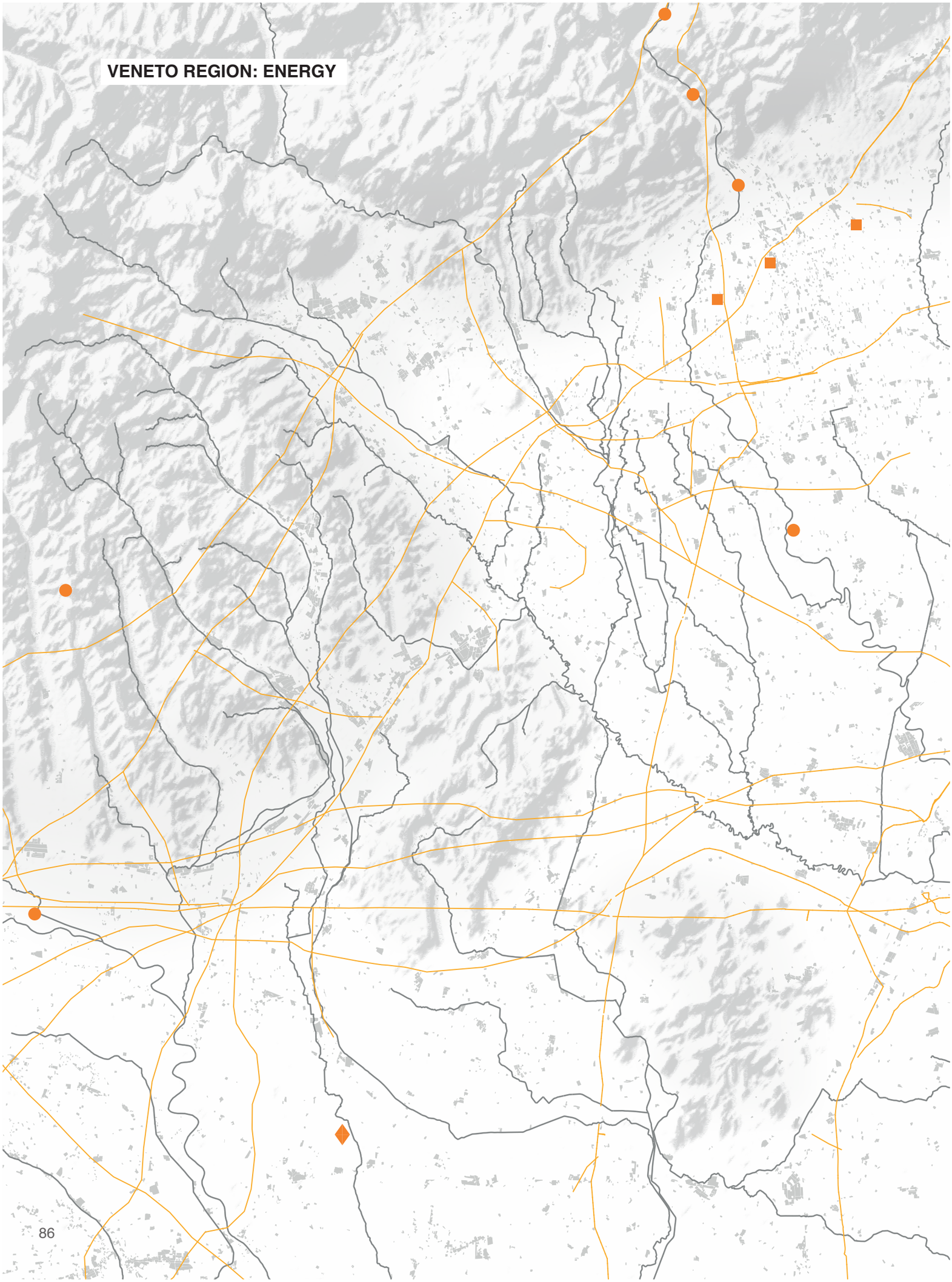

scale 1:30000
Cultivated green areas
Non-cultivated green areas
Marshes
Data Source:
- Corine GIS Data
(http://www.eea.europa.eu)
- IDT Regione Veneto
(http://idt.regione.veneto.it)

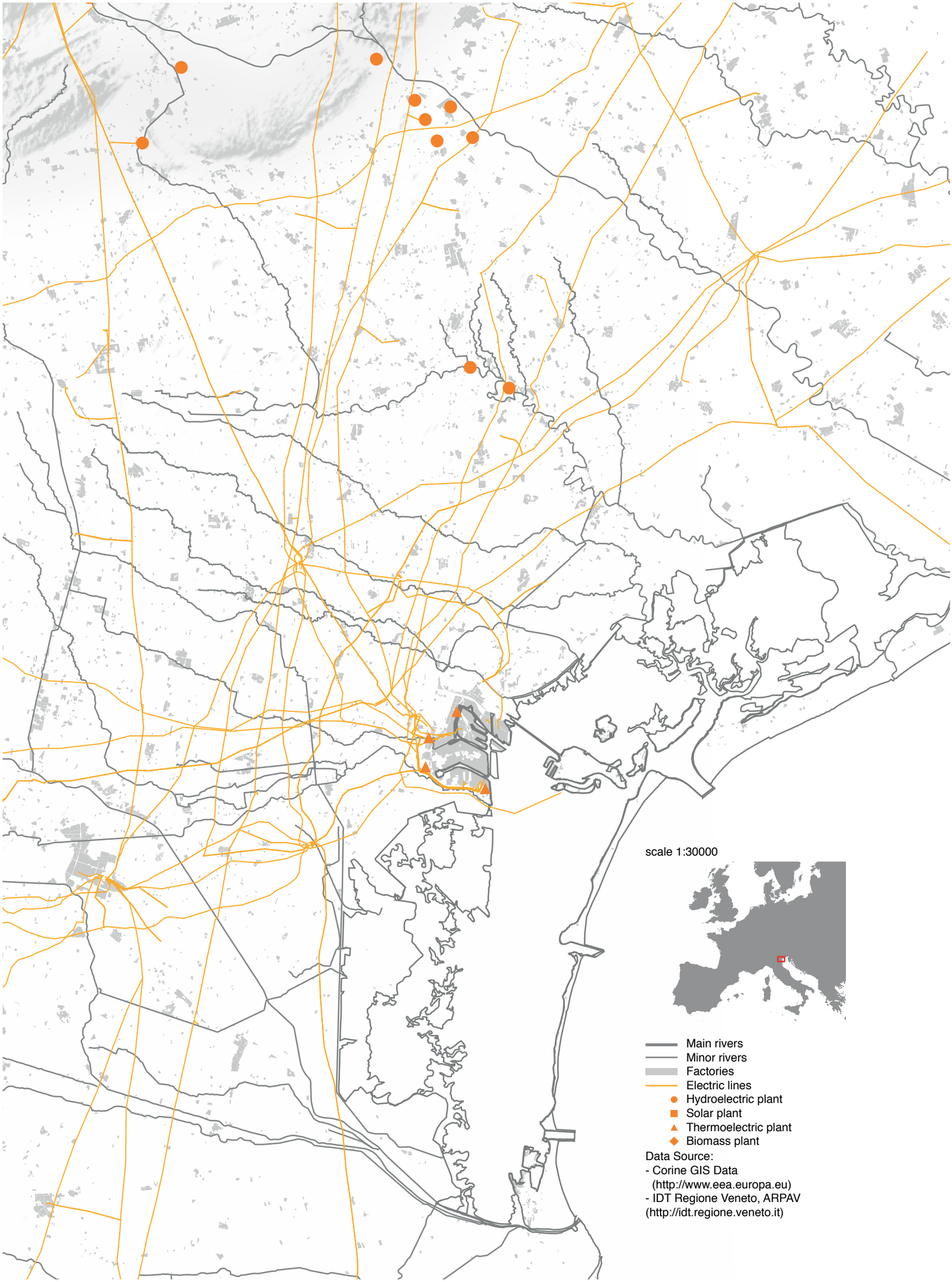

VENETO REGION: TUBES


scale 1:30000
Main rivers
Minor rivers
Large Industrial compounds
Continuous urban fabrics
Railways
Higways
Data Source:
- Corine GIS Data
(http://www.eea.europa.eu)
- IDT Regione Veneto
(http://idt.regione.veneto.it)

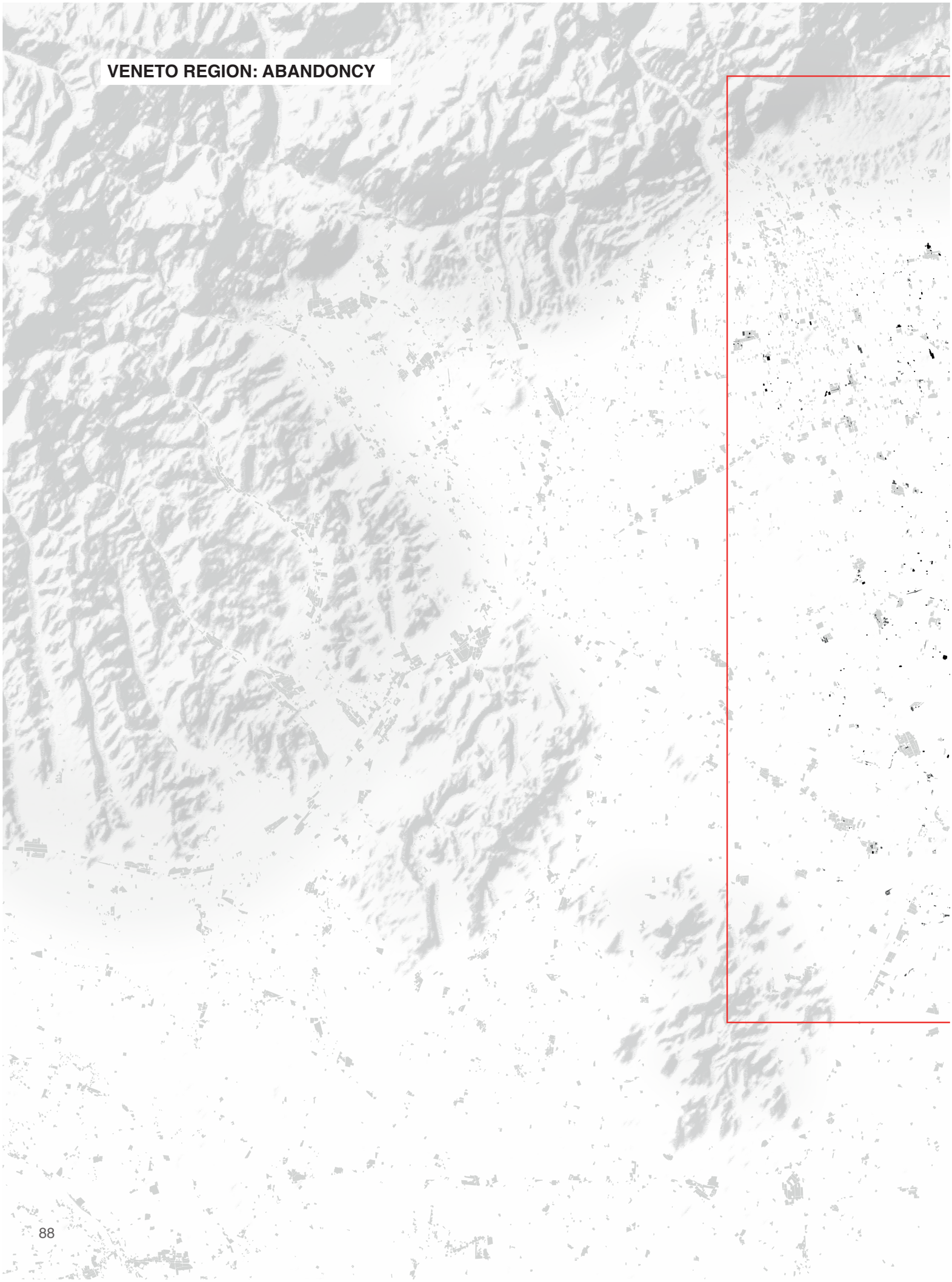

VENETO REGION: SPONGE

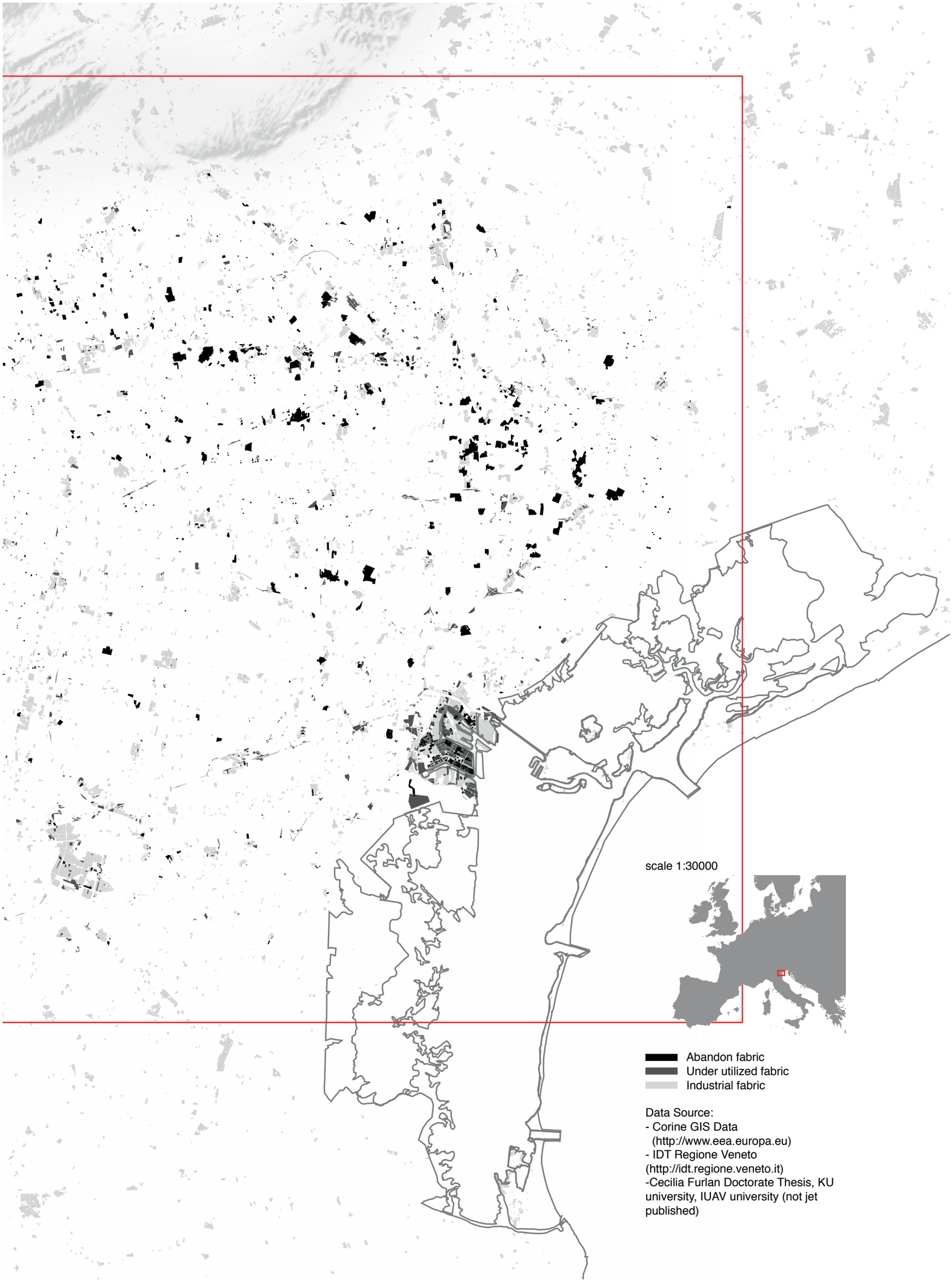

scale 1:30000
Main rivers
Minor rivers
Small factories
Continuous urban fabrics
Secondary road
Data Source:
- Corine GIS Data
(http://www.eea.europa.eu)
- IDT Regione Veneto
(http://idt.regione.veneto.it)


VENETO REGION: ENERGY


scale 1:30000
Main rivers
Minor rivers
Factories
Electric lines
Hydroelectric plant
Solar plant
Thermoelectric plant
Biomass plant
Data Source:
- Corine GIS Data
(http://www.eea.europa.eu)
- IDT Regione Veneto, ARPAV
(http://idt.regione.veneto.it)

VENETO REGION: ABANDONCY

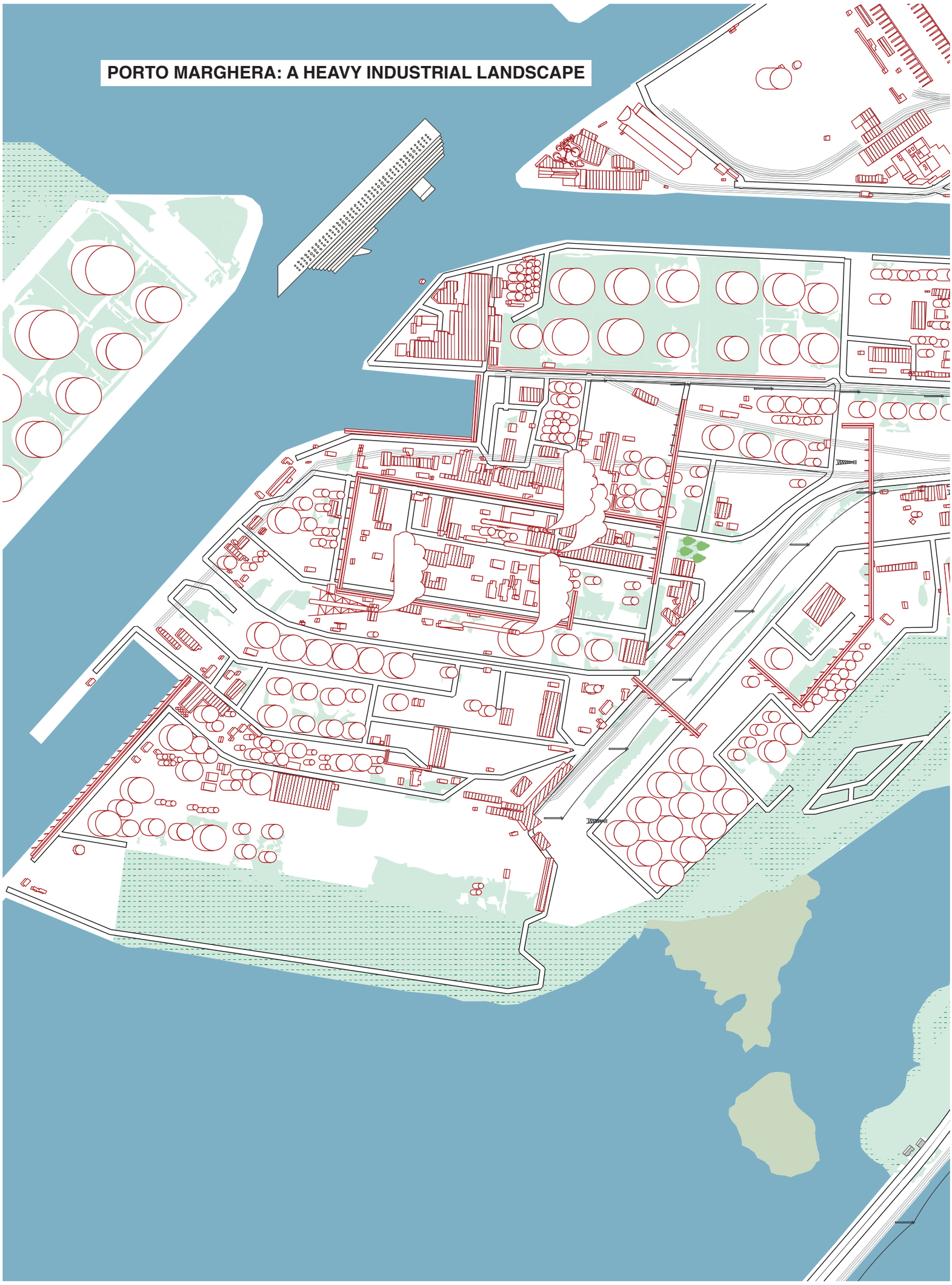


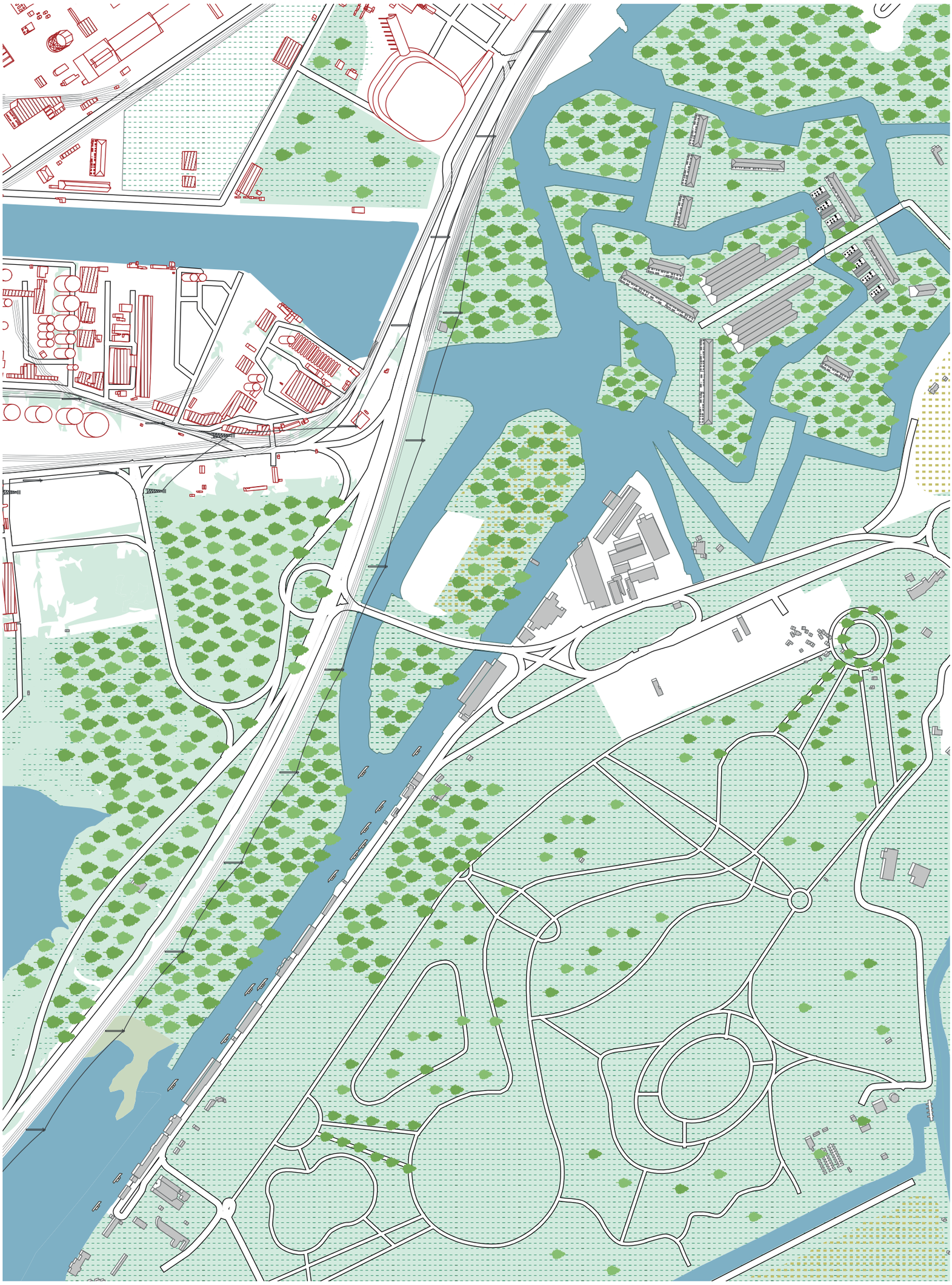

scale 1:30000
Abandon fabric
Under utilized fabric
Industrial fabric
Data Source:
- Corine GIS Data
(http://www.eea.europa.eu)
- IDT Regione Veneto
(http://idt.regione.veneto.it)
-Cecilia Furlan Doctorate Thesis, KU university, IUAV university (not jet published)





PORTO MARGHERA: A HEAVY INDUSTRIAL LANDSCAPE







In this page:
- *Heavy industrial landscape*, December 2015
In the next pages:
Scheme: different layers of agroindustrial landscape

3.6 MARGHERA INDUSTRIAL AREA

Porto Marghera is independent from the rest of the landscape. A wild capitalism and a productive aim have led to the constitution of an hard enclave of concrete and iron. what is the situation around Marghera? What is the surrounding environment?

The environment around Porto Marghera is not homogeneous and can be distinguish several specific elements that define its border. To the east Porto Marghera industrial area face Venetian lagoon. Here, the limit of the lagoon, slowly eroded by the action of tides and characterized by salt marshes was strongly transformed into a compact and geometrical enclave.

To the north there are the railway and the highway, the infrastructures that link Venice to the mainland, with their vaste flow of binaries, roads and electric cables. A spontaneous vegetation grown along these infrastructures: because of the dimension and the density of the plants, this green area can be considered a little forest. The infrastructure, a strong landmark, together with a canal, Canale San Giuliano, divides the industrial area from a big park, the so called Parco San Giuliano, results of a recent reclamation. This park have been used in the past for big social events, like concerts and festival but in some periods was also abandoned. Moving to the west, close to the city of Margera, there is a historic military fort, the so called Forte Marghera, built during the Napoleo's regime in a little archipelago, artificially shaped. Nowadays the fort reverse in a state of abandon and spontaneous nature has regrown all around.

To the north west, the railway dived the industrial area from the city of Marghera, the biggest infrastructures node of Veneto Region. This city represent the modern face of Venice, immobilized for its intrinsic morphology, and permit to the historic city to compete internationally with other metropolis. In Mestre there are all the comfort of an urban area: fast connection, facilities and services; but also many of the typical suburbs problems: immigration, poverty and disorder/disorganization.

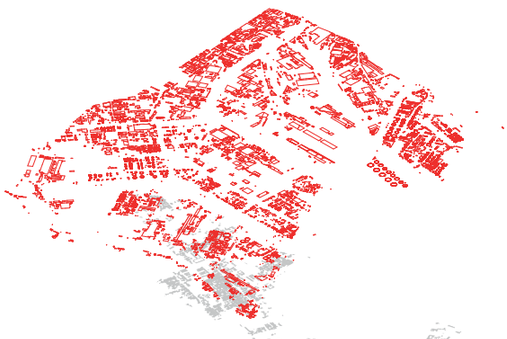
Moving to the west there is the suburbs of Marghera, the city-garden, as it was conceived at the beginning. In Marghera there are still visible some trace of the original masterplan: the large roads with trees, the green circles, parks and squares. But in the second half of the twentieth century brutal residential district were built: the workers moved to the apartment buildings and many houses was abandoned and now reverse in a state of degradation.

To the south Porto Marghera industrial area is limited by the Brenta river. This maybe the only natural border of the enclave: in the other sides the borders are geometrical and define but Brenta river maintain a windy shape. Brenta river has always represented a problem for Venice because it discharged in front of the city a large amount of debris collected during its course. For this reason The Republic of Venice, over the centuries, has made significant hydraulic interventions on Brenta river for the maintenance of the lagoon (embankments, dams and also a machine to allow boats pass from freshwater to seawater). In this area there is also the Camping Fusina Village with mobile homes, maxi caravans and the main facilities designed at the end of the 50's by the Venetian architect Carlo Scarpa.

Always to the south, beyond Brenta river there is a vast rural area made of salt marshes, cultivated field and a dense network of canals. The limit between the mainland and the lagoon here is not clear: sometimes cultivated field expand into the humid soil of the salt marshes.

The map presented in the following pages wants to represent these different territories: the wood, the city, the courtyard, the marshes and the lagoon. At the same time the most important and iconic industrial buildings are represented like autonomous architectures who bring to mind the monuments represented in the touristic maps. This is a provocation for prove that Porto Marghera industrial area, always seen as a negative part of the territory, can also become a virtuous pole, trough the integration with other activities and through new cycles/styles of production.

DIFFERENT LAYERS OF THE HEAVY INDUSTRIAL LANDSCAPE



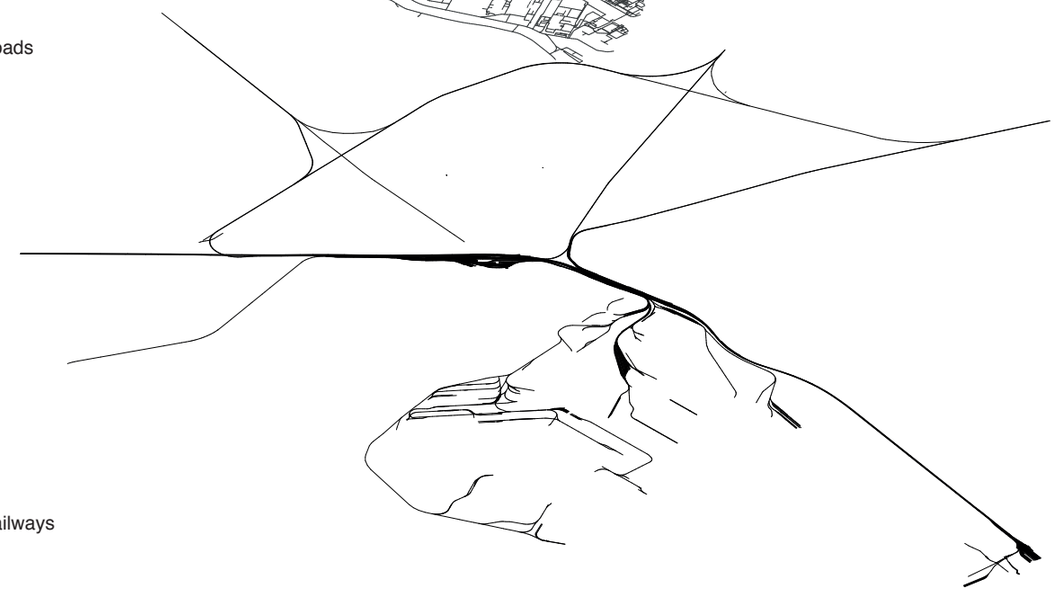
Industry



Urban



Electric lines

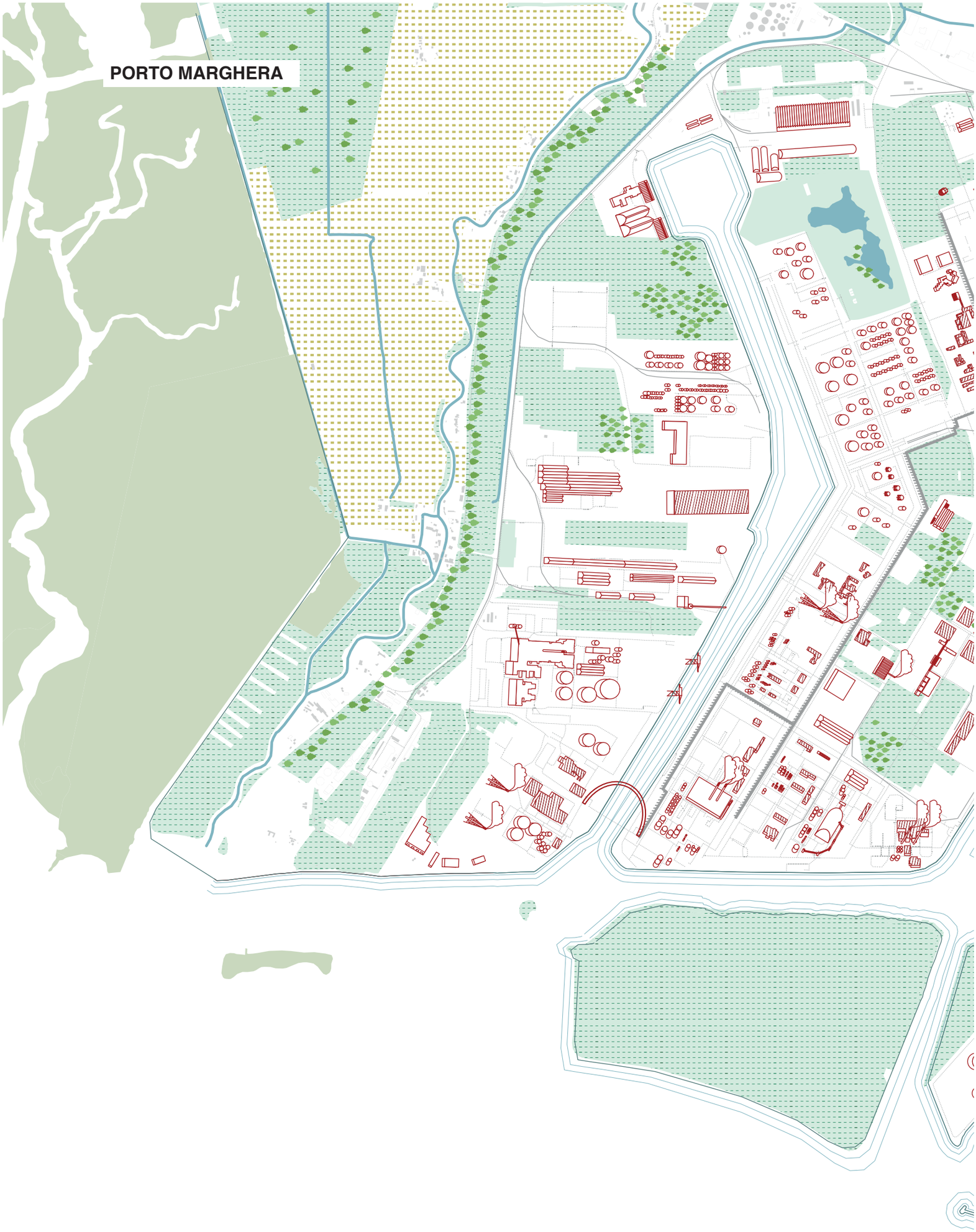


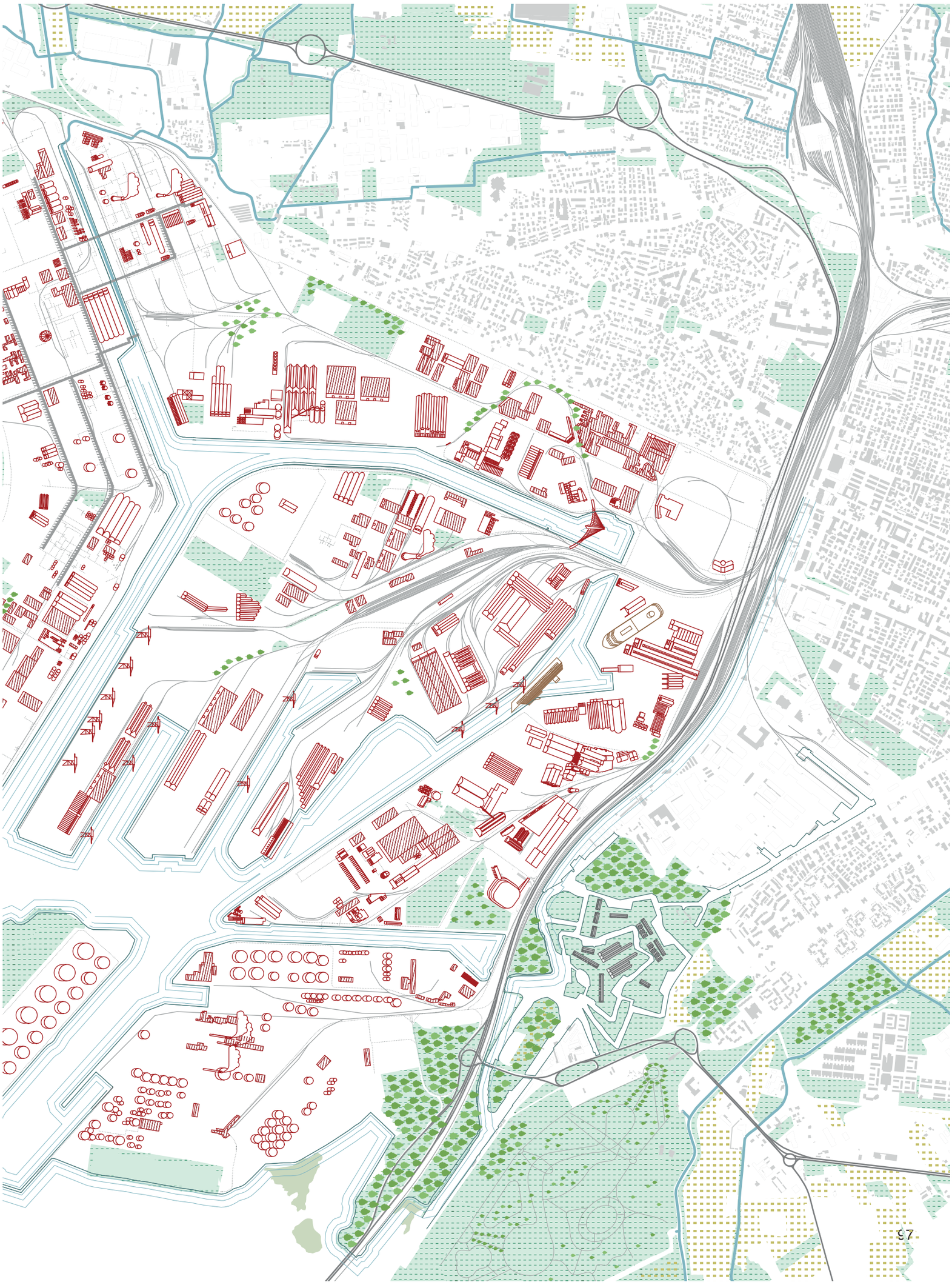
Roads

Railways



Residual vegetation


PORTO MARGHERA





POLLUTION:
A CHEMICAL LAGOON

Talking about Marghera industrial area the theme of pollution is the most relevant on a social level. On the collective imaginary the Petrochemical compound is the most representative factory in Porto Marghera and it is also the symbol of an industrialization that is destroying the environment. Part of the petrochemical complex in Porto Marghera was dedicated to the production of PVC, using chlorine to produce venial chloride by an already obsolete additive method. The waste of this kind of production caused the most important damages to the fragile eco-system of the lagoon: vinyl chloride, an explosive, carcinogenic and mutagenic gas was released into the environment as a by-product of PVC production; dioxins and organochlorine compounds were pumped directly into the lagoon.
For more than 25 years, over 500,000 tonnes of poisonous sludge containing arsenic. heavy metals, dioxins, mercury and ammonia were discharged into the lagoon. The unfathomable amount of 80 million cubic meters - twice the volume of the entire lagoon - was dumped into the Adriatic Sea. 15,000 tonnes of especially harmful vinyl chloride were released untreated into the air through smoke-stacks - the cheapest method of disposal.
When criticism became public, the firm started to transport the most dangerous toxic wastes to East Germany and Nigeria. Over 200 deaths and at least 500 further cases of cancer were attributed to cynical working conditions, such as cleaning the encrusted remains of PVC production from holding tanks.
According to what Greenpeace says, Brentella Canal, a concrete canal that connect the industrial area with the lagoon, is the most highly contaminated site in the world.
Nowadays pollution level is so high that can not to be handled by those companies that are still in the area. The cost of reclamation cannot be supported only by the private companies and it needs the help of the public institutions. So pollution represent a big obstacle to the establishment of public activities.

Picture taken from the movie *Yuppi Du,*
Adriano Clentano, 1975, Italy

Pollution datas source: Atlante della laguna di Venezia
http://www.atlantedellalaguna.it

Presence of Mercury in the shallow water sediments mg/kg

- 0,1-0,3
- 0,3-0,7
- 0,7-0,9
- 0,9-1,6
- 1,6-2,2
- 2,2-4,0



Presence of Nickel in the shallow water sediments mg/kg

- 5-17
- 17-21
- 21-26
- 26-36



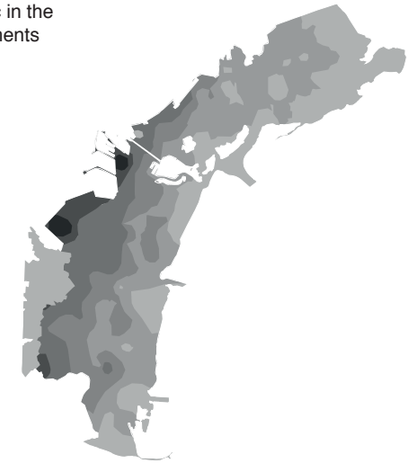
Presence of Zync in the shallow water sediments mg/kg

- 21-57
- 57-87
- 87-141
- 141-242
- 242-391
- 391-700
- 700-1661



Presence of Arsenic in the shallow water sediments mg/kg

- 2,5-8
- 8-10
- 10-13
- 13-20
- 20-28
- 28-30



LEVEL OF POLLUTION

1:1000



High polluted areas
Low polluted areas
Bonified areas



Spontaneous vegetation in Marghera, Marghera, August 2015

Spontaneus vegetation in Marghera
Datas source: Urban Design studio 2011/2012
IUAV University of Venice, prof. Paola Viganò
Stdents: A. Tamiazzo, N. Zanatta, A. Zotti

RESIDUAL NATURE: THE THIRD LANDSCAPE

Gilles Clément Quodlibet calls the Third Landscape an interstitial landscape, meaning what is neither light nor shadow: the remainder, separate both from the spaces never exploited (“primary ensembles”), and the protected spaces of human activity (“reserves”). A fragmentary Territory, imbued with great symbolic value but nevertheless residual, undecided, suspended. True fiche that clearly highlights the flaws in the logic of the appropriation, inclusion and exploitation of space. A place of refuge for natural diversity.
Marghera presents many residual spaces that Clement would call third landscape: marshy and stagnant areas not yet reclaimed; small spaces along the infrastructures, designed without a specific function; vegetation, grown in the abandoned areas, between the cracks of the cemented soil or between the steel industrial structures; large green areas excluded from the industrialization, where plants and organisms have grown wildly.

SPONTANEUS VEGETATION IN MARGHERA



aster tripolium | salicornia veneta | limonium serotinum | phragmites australis | juncus maritimus | typha angustifolia | thinopyrum pycnanthum | dactylis glomerata | tamarix gallica



salix alba | populus alba | ulmus minor | betula pendula | robinia pseudoacacia | sambucus nigria | rubus ulmifolius

RESIDUAL NATURE
1:1000



Dense vegetation
Sparse vegetation



THE BORDER:
UNDEFINE VERSUS GEOMETRIC

With the founding of Marghera, the Fascist fantasy of a ruthless industrial revolution was realized.
The limit of the lagoon, slowly eroded by the action of tides and characterized by salt marshes was strongly transformed into a compact and geometrical enclave.
During the 60's the two biggest company in Porto Marghera, Montecatini and Edison, was authorized to tranform part of the wetland in new industrial areas. For these operations the companies used waste product, damaging for the lagoon because when it rain the substances present in the soil are dispersed into the lagoon.
To limit this phenomenon some iron embankment was placed along the border of the Industrial area.

Marshes 1500



Marshes 1900



Marshes 2000



Iron embankment in Porto Marghera
http://www.lmdspa.it/index.php?area=107&menu=34

SOFT AND HARD EDGES

1:1000

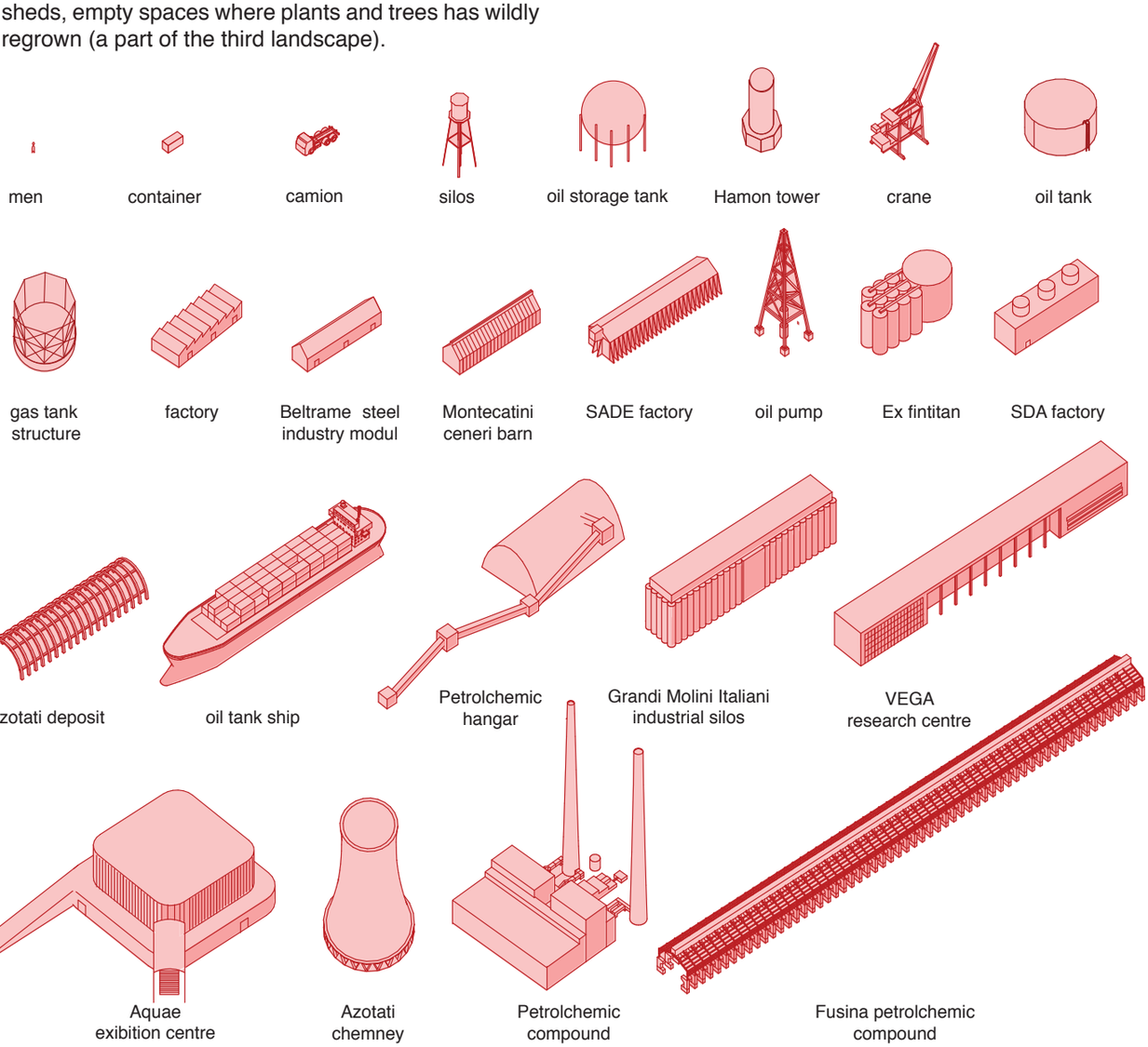


STRUCTURES AND INFRASTRUCUTRES

On a large scale, Marghera has good connections. With its dense flow of binaries, roads and electric cables, it is the main infrastructural node of Veneto region. It is part part of the so-called “blue banana”, a generic urban sprawl in central Europa, that goes from the north of Italy to England, passing along the Ruhr area. Finally, Marghera is also part of two important commercial corridors, the baltic corridor, that goes from the North Sea to the Adriatic Sea and the mediterranean corridor, that goes from Alegracias to Budapest.

On the small scale, Marghera is not well connected with the close areas. It is considered at the same time the industrial satelite of Venice and the suburbs of Mestre. The development of big scale infrastructures transform Marghera in a crossing area, where it is difficult to stop. Large road bridges, canals and docks, a grid of abandoned railways: they are all urban barriers that make difficult the crossing of the area, but they can also represent an opportunity to rethink mobility and accesses.

As regards the industrial structures and facilities, Nowadays in Porto Marghera can be observed several situations: there are companies that still have an intense industrial production (for example Petrochemical compound or Fincantieri shipyard or Molini Italiani industry); there are companies under-utilized or in decline; there are commercial activities; and then there is a large group of abandoned factories, abandoned sheds, empty spaces where plants and trees has wildly regrown (a part of the third landscape).



ABANDONCY
1:1000

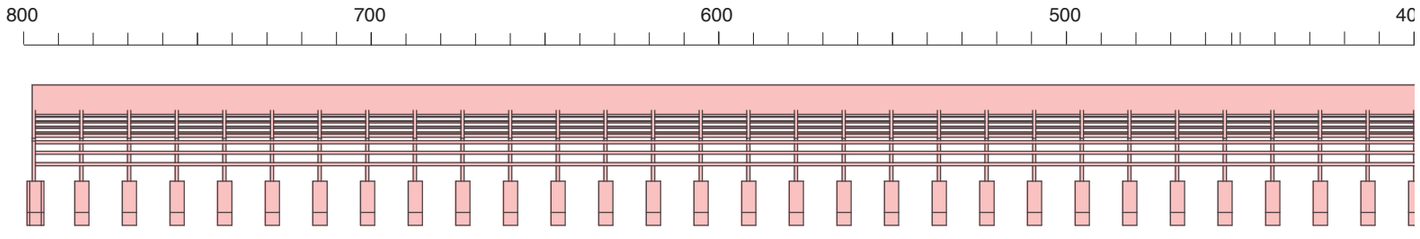


Abandoned
In decline
Active

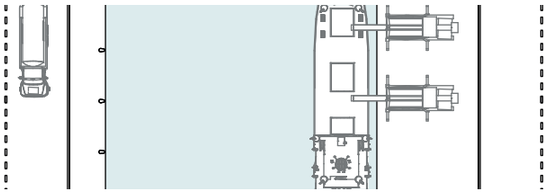
THE CITY OF THE MAN VERSUS THE CITY OF THE MACHINE

Porto Marghera industrial area represents the stereotype of the city made for the machines and where the men feel continuously lost and insignificant. This characteristic appears even more strong if compared with Venice historic centre that is, on the contrary, the stereotype of the city made for the man. With its narrow street and it dense network of canals, Venice has always oppose to modernization. Porto Marghera was the place where Venice could compete internationally with the other big industrial poles.

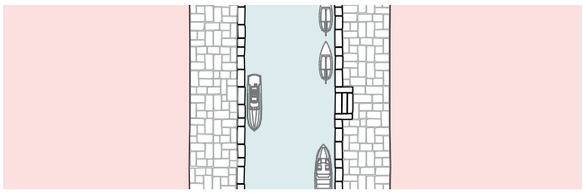
Continuous enormous structures form insuperable walls and obstacle the crossing of the area and the view of the surrounding landscape. Long straight streets shape the industrial factories and usually end with a blind curt. Some factories reach length of 800 meters length and the 100 meters high chimney are still highly visible from the lagoon and become a territorial landmark. Artificial canals are five times larger than those of the historic center in order to permit the passage of large oil tanks tracks and cruises. Modern bridges are supported by futuristic tensile structures in steel or iron.



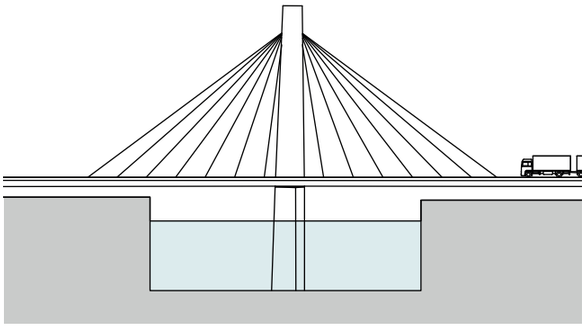
Fusina SADE factory, Porto Marghera



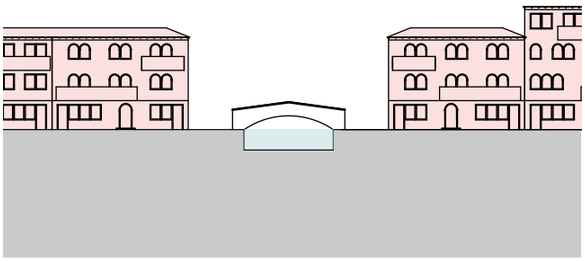
Roadways, Porto Marghera



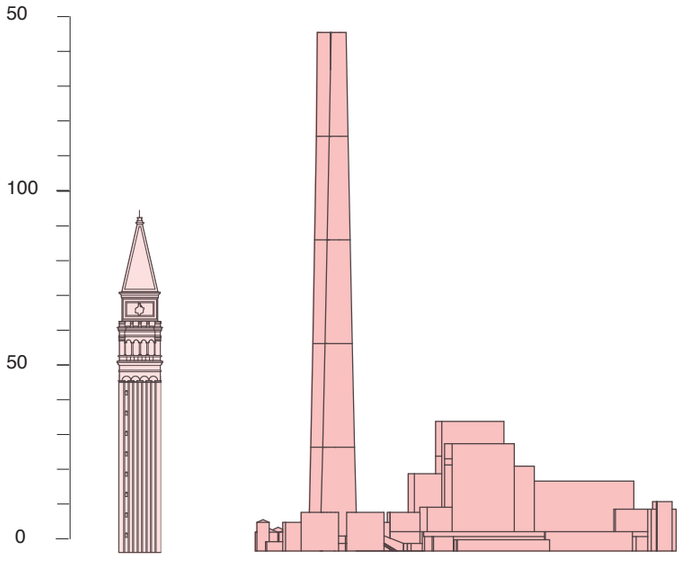
Roadways, Venice



Infrastructure, Porto Marghera

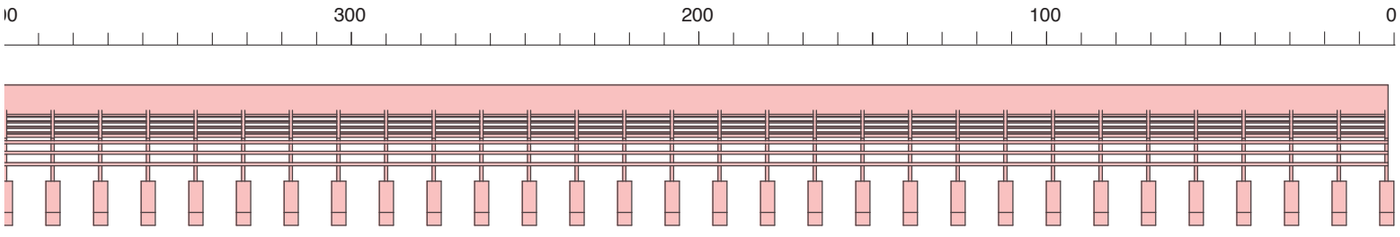


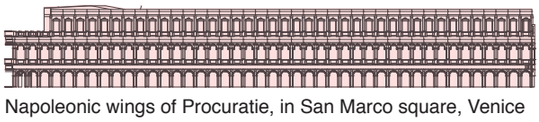
Infrastructure, Venice



San Marco bell tower, Venice

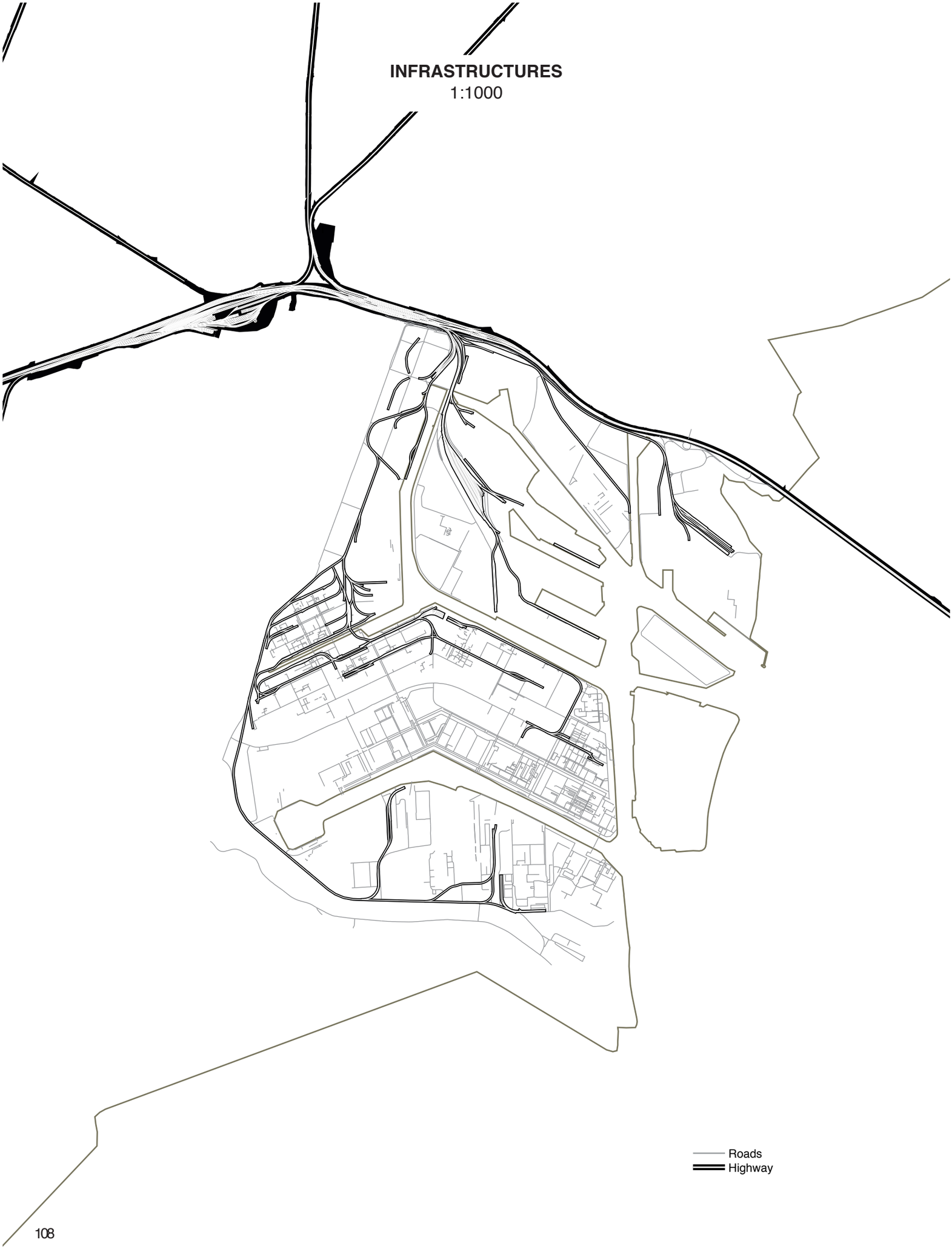
Petrolchemical compound, Porto Marghera





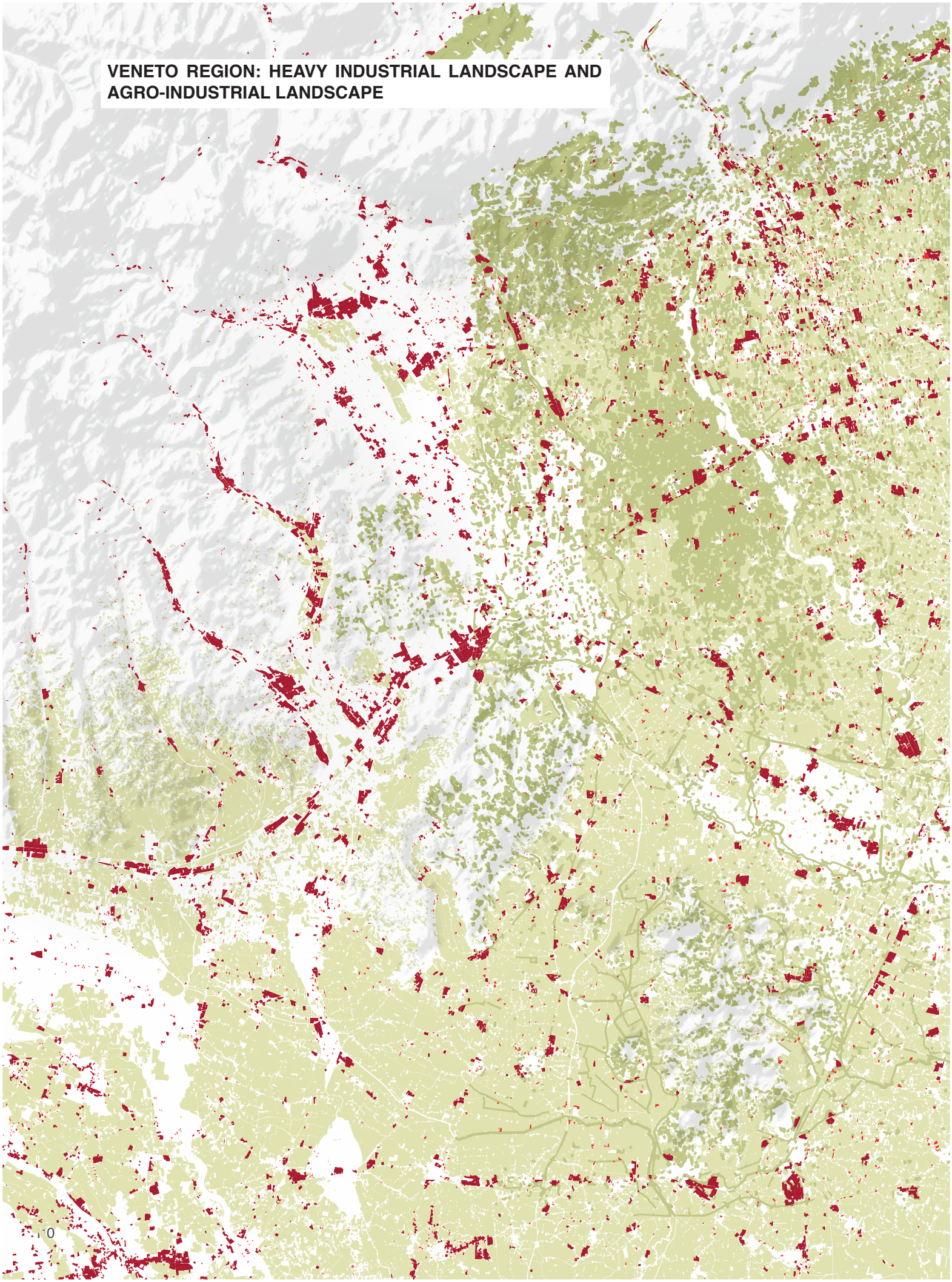
Napoleonic wings of Procuratie, in San Marco square, Venice

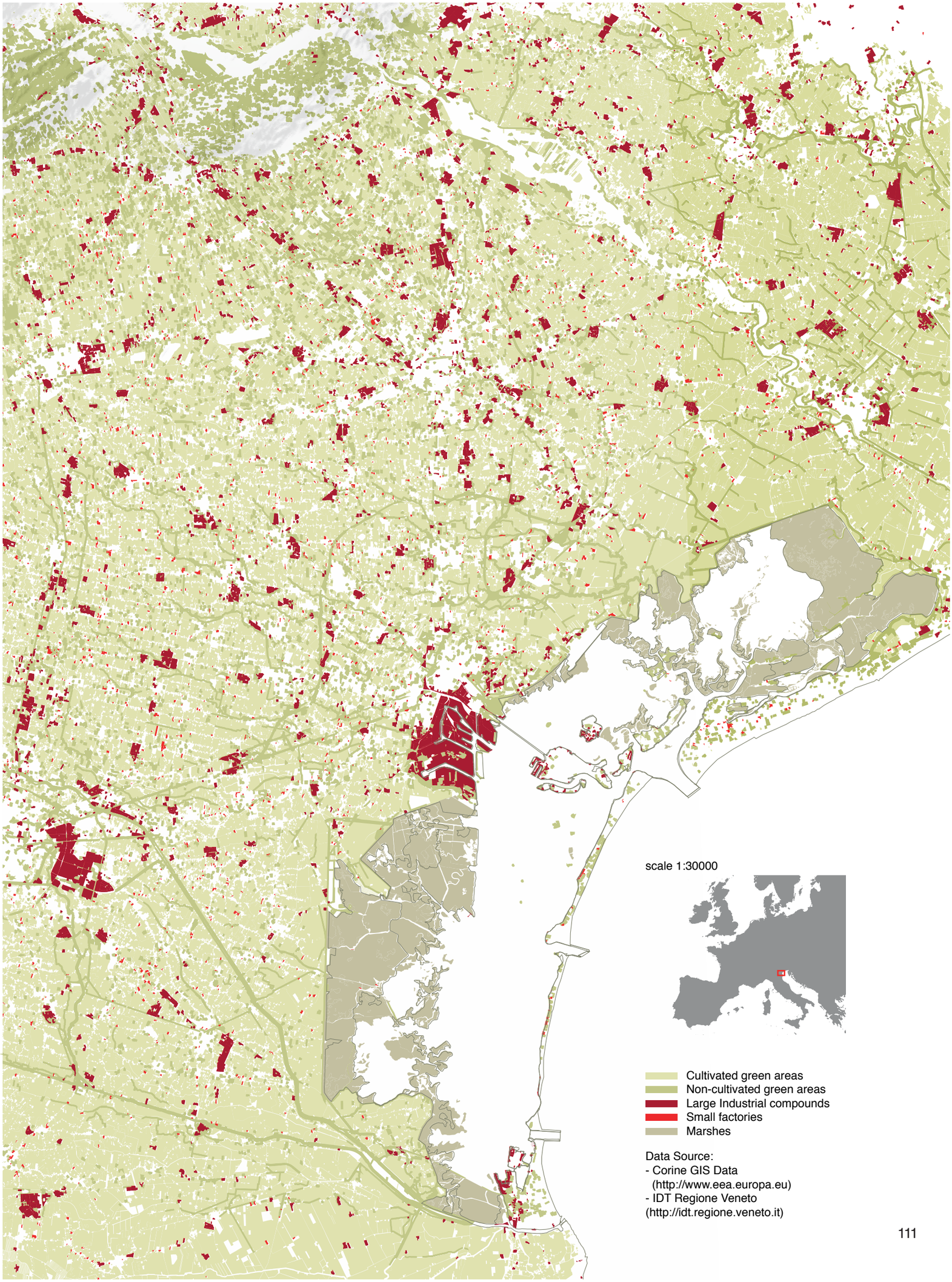
INFRASTRUCTURES
1:1000



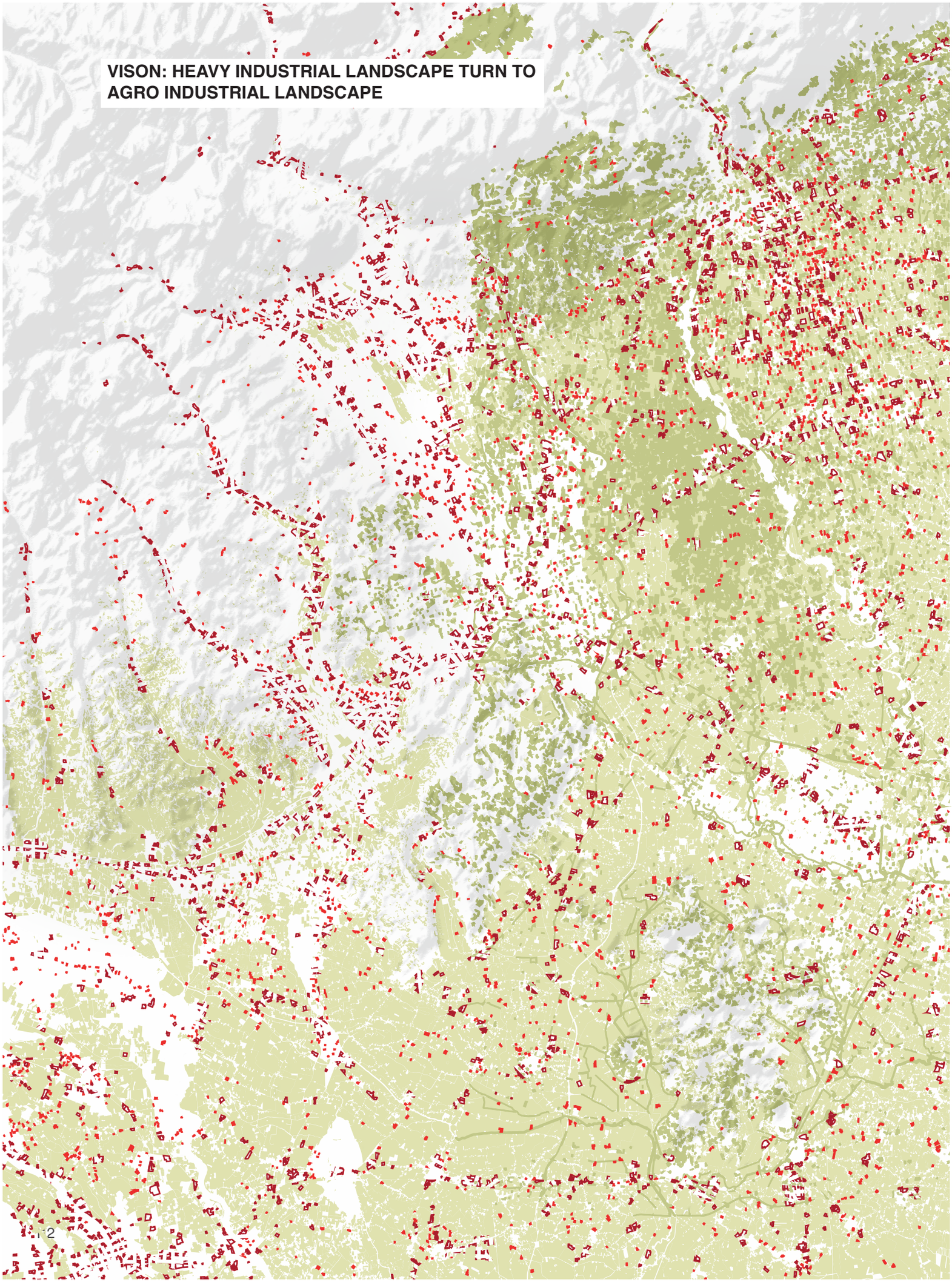
PART 4
VISIONS

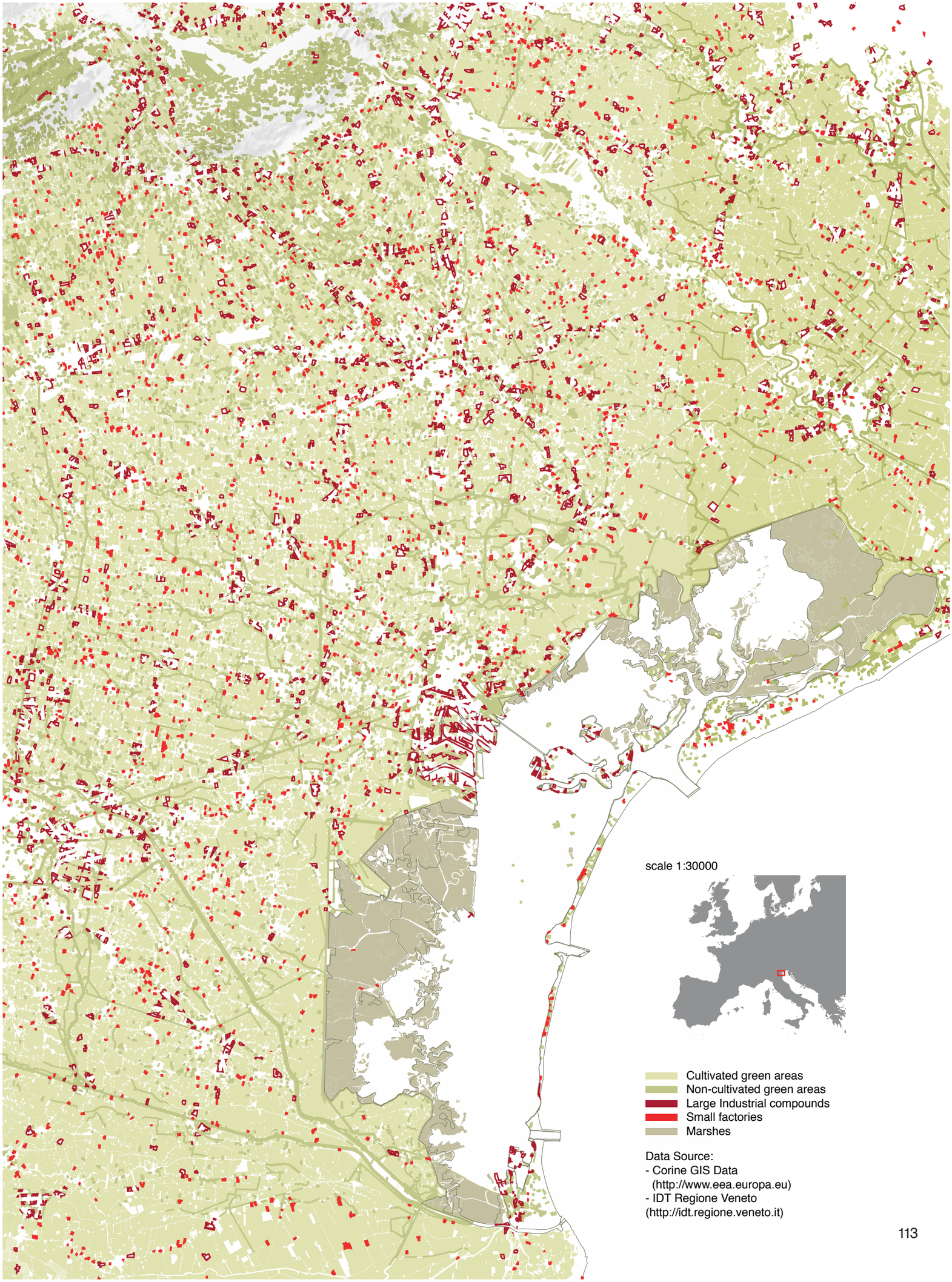
VENETO REGION: HEAVY INDUSTRIAL LANDSCAPE AND AGRO-INDUSTRIAL LANDSCAPE




scale 1:30000
Cultivated green areas
Non-cultivated green areas
Large Industrial compounds
Small factories
Marshes
Data Source:
- Corine GIS Data
(http://www.eea.europa.eu)
- IDT Regione Veneto
(http://idt.regione.veneto.it)

VISON: HEAVY INDUSTRIAL LANDSCAPE TURN TO AGRO INDUSTRIAL LANDSCAPE




scale 1:30000
Cultivated green areas
Non-cultivated green areas
Large Industrial compounds
Small factories
Marshes
Data Source:
- Corine GIS Data
(http://www.eea.europa.eu)
- IDT Regione Veneto
(http://idt.regione.veneto.it)

4.1 VISION

A POSSIBLE RE-INDUSTRIALIZATION

Recycling of industrial areas is a common theme nowadays: the crises bring to the abandon of many productive structures causing many environmental and social damages.

The majority of the answers to this problem consists in the change of the function of these abandoned areas from productive to public or residential.

The industrial waterfronts are an example of this tendency. Many port cities in Europe, such as London or Marseilles in the last few decades had understand the potential of their abandoned industrial areas in front of the see and they transform them in long public promenades or in large public squares.

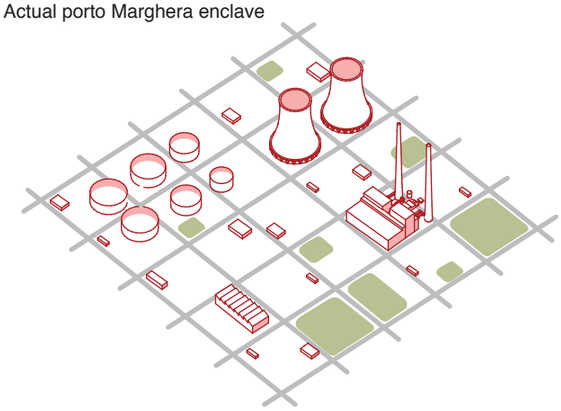
The case of Porto Marghera is a little bit different. In the majority of the port cities the waterfront looked directly at the sea; in the case of Marghera it looked at Venice. Contrary to what happen in the other european port cities, the establishment of a public space in the case of Porto Marghera is not so obvious: why the visitors should observe the landscape from Marghera, when they can go directly to Venice? The particular urban structure of Venice poses some complex question about the future of its industrial area.

The masterplans produced for Marghera until now seems to don't take in consideration the specificity of the site and follow the international tendency. Most of them proposed the settlement of residential districts or public spaces or the conservative renovation of industrial facilities.

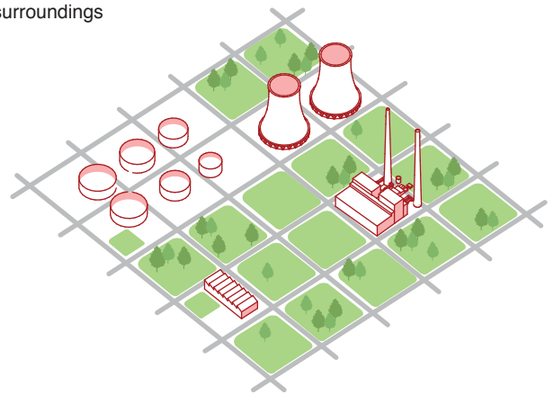
The recycle of the industrial area can be activated by a new production cycle. We don't have to exclude a priori the possibility to re-establish new factories or, in general, new productive spaces only because the last centuries experience was dramatic. It's not because has existed a damging industry that we have to condemn all the industries. Exist many virtuous industrial areas, not polluting and merged with the environment. The eco-industrial parks are an example. An eco-industrial park (EIP) is an industrial park in which businesses cooperate with each other and with the local community in an attempt to reduce waste and pollution, efficiently share resources, and help achieve sustainable development.

Based on the concepts of industrial ecology, collaborative strategies not only include by-product synergy ("waste-to-feed" exchanges), but can also take

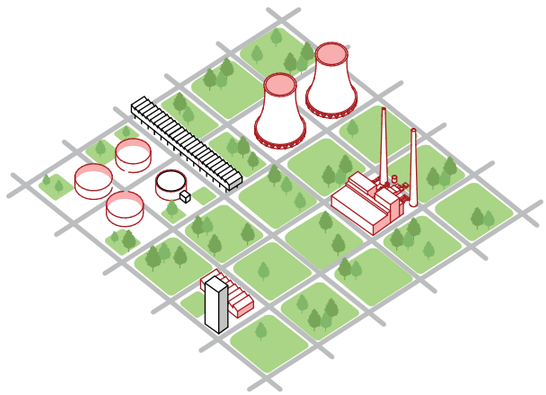
Actual porto Marghera enclave



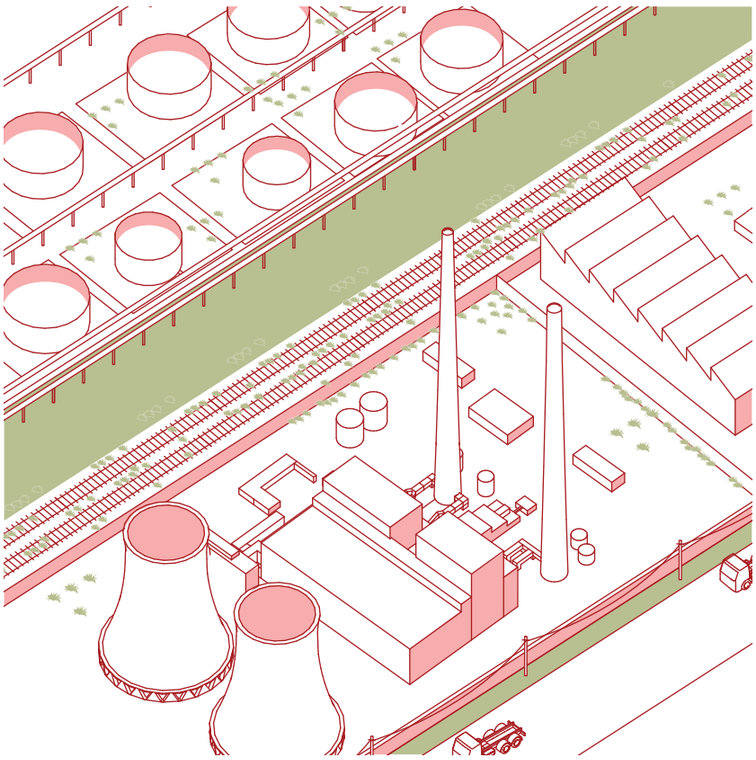
integration of Porto Marghera enclave with the urban and natural surroundings



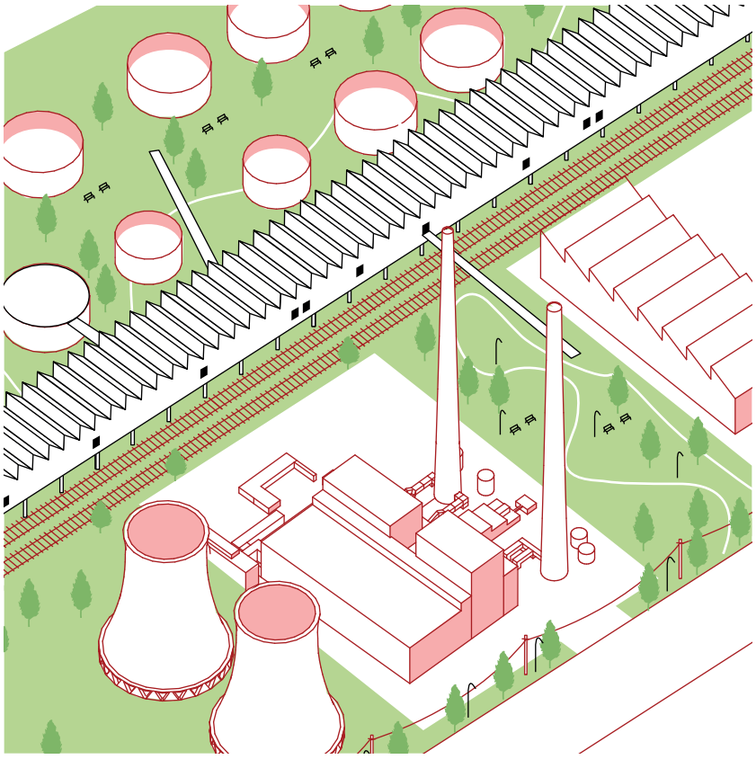
settlement of new industries non polluting, non damaging for the envirorment



Actual porto Marghera enclave



Vision

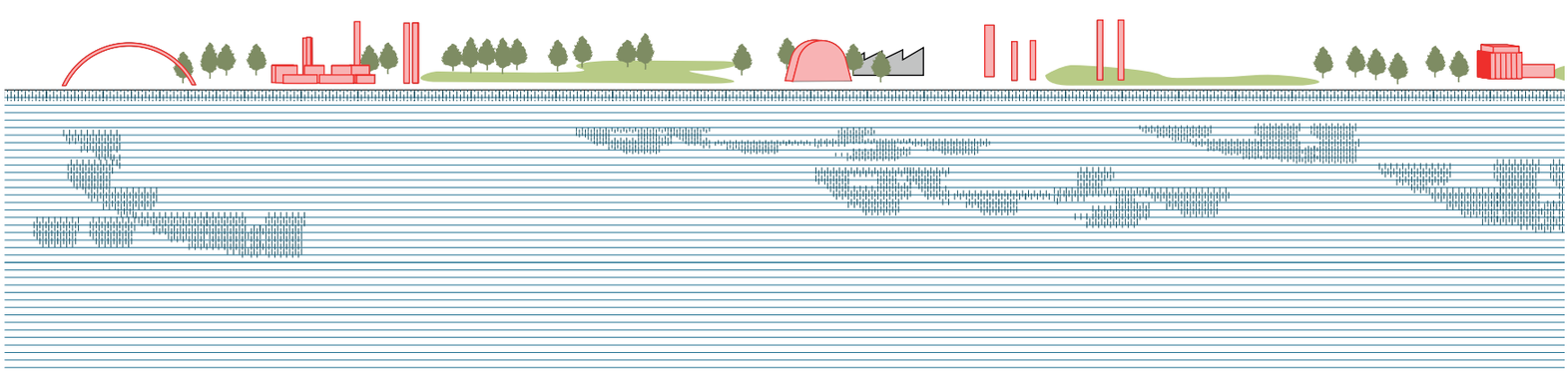


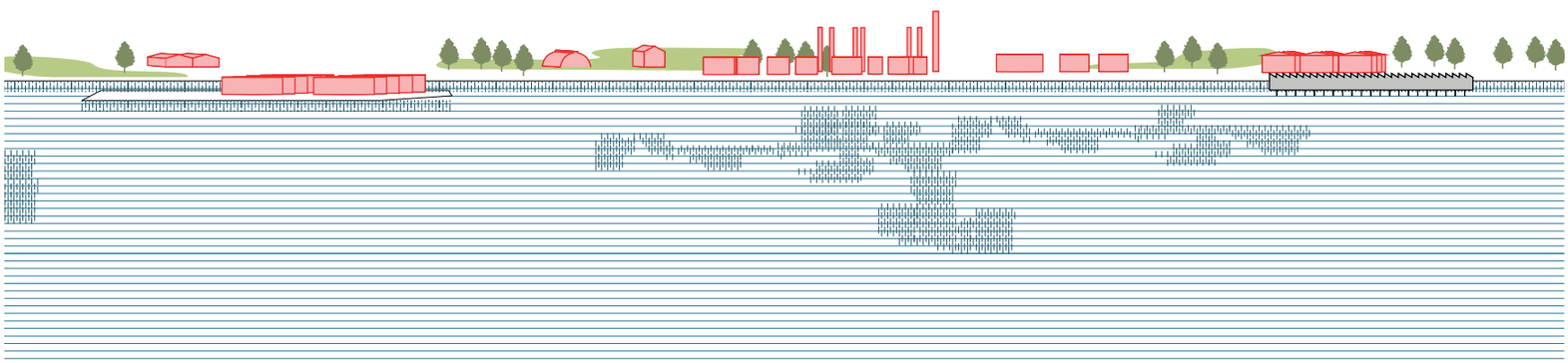
the form of wastewater cascading, shared logistics and shipping & receiving facilities, shared parking, green technology purchasing blocks, multi-partner green building retrofit, district energy systems, and local education & resource centres.
In the previous chapter I try to demonstrate that Porto Marghera is located in a strategic place, well served by big infrastructures: not only railways and roadways but also energy lines, gas and oil pipeline. Porto Marghera is one of the main infrastructural node of Europe, part of the main commercial corridors. It's hard to support the strategy of industrial delocalization when in Porto Marghera there are already all the facilities for the settlement of new industries.
So it's important to take the distance from the traditional idea that we have of the industries and start to consider them also as a part of the landscape that cannot be erase. As already told, an industry can be respectful of the environment but also much more: it can be integrated to depolluting and recycling activities.

A STRATEGY OF DIFFUSION
The birth and early development of Marghera was characterized by futuristic culture: the myth of machines, the destruction of the past and the faith in progress: the limit of the lagoon, slowly eroded by the action of tides and characterized by salt marshes, was strongly transformed into a compact and geometrical enclave; the rural landscape characterized by woods, campaign and isolated vernacular buildings turned into an industrial landscape characterized by infrastructures, factories, vapor and ash.
This type of settlement is the opposite of the one that has always characterized Veneto landscape: the so called "diffuse industry".
This kind of industry represent a paradox. On one hand can be found some positive aspects: proximity to the residential quarters, integration with green areas, proximity to public facilities. On the other hand the diffuse industry produce a diffuse pollution and degradation of the territory.
The paradox of the diffuse industry is even more evident if we compare it with the big industrial enclaves that does not produce better results. These areas are generally completely divided from the rest of the urban space, barely reachable and anonymous.
Maybe instead of spreading the industry all over the territory, it should be interesting to applicate the inverse operation: differentiate the big industrial enclaves integrating to them parks, public space and touristic facilities.
Through the integration of industrial quarters with public activities, of the factories with green areas, of strong infrastructures with salt marshes, Marghera finally can loose its appearance of inhospitable and sinister place and can re-discover a poetry of the industrial landscape in relation with the nature.

A STRATEGY OF MIXITY
The port of Venice is divided in two parts as the city itself: on the one hand there is Venice island and the terminal in Santa Marta, on the other hand Porto Marghera industrial area, in a state of abandon and degradation, the suburbs of Marghera: the city of Mestre.
As already mentioned, Marghera represent the possibility for Venice to compete internationally on a modern level. Big infrastructures and industrial facilities were established in the mainland to guarantee the survival of the historic city. However the industrial area was designed as a autonomous and independent part of the city.
Nowadays in the industrial hub of Marghera many basic industries have exhausted most of their productive capacity. Porto Marghera reveal many complex issues, interests and actors: the presence of big companies, such as the chemic and the aluminum one, big infrastructures, shipbuildings.
Port facilities, abandoned structures and diffuse pollution need to be face not only as an economic issue but also as an important opportunity to redefine the city, maintaining his memory and his character.
The excessive influx of cruise ship in the harbor of the historic city represent a conflict with the entire lagoon (there are many hypnotists to move the terminal in the marginal area of the lagoon or even outside the lagoon). All the big ports infrastructures are located inside the lagoon, in a fragile and delicate eco-system. This juxtaposition it's too dangerous for us to let it lasting more.
In the near future it will be necessary to take some important decisions. And that's why the abandon of Porto Marghera will be take into a new consideration from the arrival of new urban functions (also confirmed by the new plan of Mestre), the solution to the passenger terminal, the strengthening of the industrial and production-related energy present, the construction of new relations with Venice, the lagoon and Mestre. In a abandoned landscape, industrial neglect and recycling







SELECTED BIBLIOGRAPHY

ANALYSIS

Recicling City. Lifecycles, Embodied Energy, Inclusion.
Lorenzo Fabian, Emanuel Giannotti, Paola Viganò.
Giavedoni press. Pordenone. November 2012.

Sintesi: per un futuro possibile di Porto Marghera. Ipotesi, tesi, sintesi
Carnevale Gianfranco, Giani Esther
Officina press, Roma, 2004.

EMU- European Postgraduate Master
University IUAV of Venice prof. Paola Viganò
Students: Lucile Ado, Claudiu Forgaci, Meng Di Guo, Johanna Jacob

On mobility 2. Riconcettualizzazioni della mobilità nella città diffusa.
Lorenzo Fabian, Paola Pellegrini
Marsilio press, Venezia, 2012

Venice Authority Press. Piano operativo triennale. 2013-2015
Venice Authority Press
(https://www.port.venice.it)

Marghera, urban design studio, 2011/2012
University IUAV of Venice prof. Paola Viganò
students: A. Tamiazzo, N. Zanatta, A. Zotti

Migropolis: Venice / Atlas of a Global Situation
Wolfgang Scheppe
Hatje Cantz Verlag, 2009

The European Future of the Italian port System
Paolo Costa, Maurizio Maresca
Marcelo press, Venice, 2014

Corine GIS Data
http://www.eea.europa.eu

IDT Regione Veneto
http://idt.regione.veneto.it

HISTORY

Venice, the new masterplan
Leonardo Benevolo
Laterza press, Roma-Bari, 1996

Il petrolchimico
Zazzara Gilda
Il Poligrafo, Padova, 2009.

Marghera. La memoria divisa Cerasi Laura, Casarin Michele Il Poligrafo, Padova, 2007.
Perdonare Marghera. La città del lavoro nella memoria post-industriale Cerasi Laura
Franco Angeli, Milano, 2007.

Porto Marghera, 1902–1926: alle origini del "problema di Venezia"
Chinello Cesco
Marsilio, Venezia, 1979.

Porto Marghera. Il Novecento industriale a Venezia
Barrizza Sergio, Resini Daniele
Vianello Libri, Treviso, 2004.

Archeologia industriale nel veneto
Franco Mancuso
Amilcare Pizzi press, Cinisello Balsamo (Milan), 1990

At the Centre of the Old World:
Trade and Manufacturing in Venice and the Venetian Mainland, 1400-1800
Paola Lanaro
CRRS publications, Toronto, 2006

Acqua e cibo a Venezia. Storie della laguna e della città
Donated Calabi and Ludovica Galeazzo
Marsilio press, Venezia, 2016

Storia di Marghera
Alessandro Filippo Nappi,
Cited press, Mestre, 1994

L'eterno rilancio di Marghera è a un bivio
Pietro Minto
http://www.internazionale.it

History of Venice
M. Isnenghi & S. Woolf
Treccani press, Rome, 2002

History of Venice
Fredric C. Lane
Einaudi press, Torino, 1991

Mestre 1944
Sergio Barizza, Daniele Resini
il Cardo press, Venezia, 1994

MOVIE

Yuppi Du
Adriano Celentano
Italia, 1975

Io sono Li
Andrea Segre
Italia, 2011

Marghera
Eleonora Gasparotto
Italia, 2013

Porto Marghera. Un inganno letale.
Paolo Bonaldi
Italia / Spagna / Belgio, 2002

Molo K Marghera. L'altra Venezia
Giuseppe Dall'Arche
Terra Ferma Edizioni, Vicenza, 2007.

Venezia-Marghera, fotografia e trasformazioni nella città contemporanea
Costantini Paolo
Editora Charta, Milano, 1998.

Identificazione di un paesaggio: Venezia-Marghera, fotografia e trasformazioni nella città contemporanea
Mescola Sandro
Silvana, Cinisello Balsamo, 2000.

Venezia/Marghera/Mestre e ritorno: un viaggio quotidiano
Bettin Gianfranco
Marsilio, Venezia, 2005.