Urban regeneration with large neighborhoods to achieve a decrease in sprawl: educational experiments

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Introduction

Four didactic experiments, recently conducted at the Laboratorio Integrato di Progettazione Urbanistica of the University of Udine, coordinated and conducted for the teaching of Urban Planning by the author of this essay, conducted for the teaching of Architecture by the architect Elena Olivo and for the teaching of Hydraulics by the engineer Giorgio Verri, they have developed projects for large urban districts destined to rebalance distorted settlements or to mend up little or badly developed parts of cities, along peripheral axes poorly integrated with each other. A fifth experiment is currently underway.
Behind these experiments there are some attempts and hypotheses that can be briefly summarized as follows: a) to find urban development models coherent with the history of our Country and of the European context of the compact city[1], b) to hypothesize to reduce the consumption of soil not only through constraints of difficult application[2] but through a reborns culture of the city that attracts the dispersions of twentieth-century urbanism with secular transmigration, c) produce useful models for good practices in the case of restarting inflationary development[3], d) rethinking Italian urbanism starting from a planivolumetric project that guides the entire neighborhood on which to superimpose local, operational and prescriptive Plans, which with this guiding planivolumetric project must confront, e) use the methods of integrated public-private planning and complex planning[4] to implement both recovery and expansion, for regeneration and reconfiguration of settlements, parts of the city, or the entire city.

Project areas, such as large urban renewal districts

Until now we have operated on three cities: Venice and its Lagoon, Udine and Treviso with provocative and utopian tones in the first two, but necessary for teaching and to overturn stale visions of apparently unchangeable situations. The fourth experiment, still going on, was carried out on the peripheral districts of the North-West quadrant of Treviso, precisely to verify the feasibility of our methods even with respect to the current legislation. In this case there is the purpose of verifying the law and finding solutions to the long-standing issue of the landing of volumetric “credits”, promoted by authority to improve urban refurbishment and reduce sprawl and buildings sprinkling. This should derive from good practices of re-naturalization of extra-urban areas, requalified for naturalistic purposes. In the while a fifth experiment

[1] There is obviously a vast literature on the theme of the compact city. Here we only mention Jane Jacobs, *The Death and Life of Great American Cities*, Random House, New York, 1961.
[2] Reference to the legislative debate taking place at national level and to the Veneto Regional Law 14/2017: Provisions for the containment of land consumption and changes to the regional law of 23 April 2004, n. 11 "Rules for the government of the territory and in matters of landscape".
[3] This refers to the spring of Kondratiev cycles, not to contingent phenomena produced by financial cycles.
[4] Programmi di riqualificazione urbana, Programmi di riqualificazione urbana per lo sviluppo sostenibile del territorio, European Urban Programs, Contratti di Quartiere, Programmi Integrati di Intervento.

is imagined on Chioggia for the Laboratory of 2020, starting from a thesis[5] developed in 2018-2019 on a part of this town.
On Venice the 2015-2016 and 2017-2018 laboratories were dedicated, in an attempt to find new equilibriums in its urban layout, now all turned towards the new "mainland" neighborhoods (Mestre, Marghera and the Hinterland), with slow abandonment of the islands and lagoon parts.
In the first experiment a large neighborhood was hypothesized on the island of Sant'Erasmo[6], precisely to rebalance the urban masses compared to Mestre, Marghera and the mainland district and bring residents back to the lagoon, regenerating habitability even for the northern part of the Lagoon itself, so as to involve the declining historical centers of Burano, Tre Porti and Lido, as well as a different relationship between the city and the Cavallino peninsula which in summer has 6 million tourist presences. The textures of the insular city and the typical dimensions of its palaces, of its streets, of its bridges and of its canals have been at the center of the students' design attention, for a contemporary neighborhood made up of multiple parts, 15 as the groups of students involved, so with different patterns and shapes, as was the case for traditional cities over time. This Borough is intended as entirely pedestrian and served by water buses (steamboats or *vaporetti* as Venetians call them) and a subway that connects it to the rest of the islands and mainland city.
Also the third experiment, on the Porto Marghera Waterfront[7], has investigated the theme of the lagoon canals, bridges and pedestrian areas, but has placed itself in relation with the large dimensions of the Venetian mainland, the industries and the commercial port, almost wanting to surround them and mitigate, to reduce them to healthy industries, of future generation, inside the vast city straddling land and sea. A phenomenon that we imagine, however, that should take place in the coming decades. Here the waterfront is played as a new architectural backdrop of the city of Venice, which overlooks the Lagoon from a perspective now considered by numerous movies, documentaries and various kinds of exhibitions for its state of industrial area with a very high visual and environmental impact. It is assumed that there are numerous tower buildings, even 250-300 meters high, with groups of towers deliberately out of scale, such as gothic cathedrals of a city in formation, capable of reproducing pieces of Venetian fabric at high altitudes, on terraces, and relating, overcoming them, to the size of the large chimneys of the chemical pole and to the large engineering and naval

[5] Laura Vazzoler, *Progetto per la riqualificazione dell'Isola dei Saloni – Chioggia*, Università degli Studi di Udine, Dipartimento Politecnico di Ingegneria e Architettura, Master's Degree Thesis in Architecture, A.Y. 2017/2018, 2019.
[6] Work Groups for each Urban Planning Area, 2016, Sant'Erasmo, Venice: A.1) Jacopo Nicoli, Emanuele Trevisan, Simone Zambon, A.2) Paolo Marcer, Matteo Specogna, Luca Zamuner, A.3) Maurizia Degano, Peyman Nazary, Jacopo Santarossa, A.4) Matteo Mizzaro, Jacopo Romanin, Marco Roveredo, A.5) Nicola De Odorico, Ambra Pecile, Serena Maria Verderame, A.6) Erica Bortolotti, Marco Giacò, Francesca Pappalardo, A.7) Gianmarco Mattiola, Chiara Pietrini, Andrea Raffaelli, A.8) Sandra Florio, Martina Gasparini, Elena Gullion, Erika Zampa, A.9) Francesco Cattarino, Gianluca Ferrari, Davide Lauretano, A.10) Giulia Cao, Cristina Suber, Claudia Tiveron, A.11) Alessandra Cugini, Marco Luchin, Massimo Petri, A.12) Ilaria Nioi, Simona Simcic, A.13) Marta Amador Lopez, Natalia Janinne Devia Sarmiento, Guillermo Fernàndez, Alberto Yanes Hidalgo, Andres Huerta Ontoso, A.14) Mara Bertoni, Giulia Cristofoli, Federico Smedile, A.15) Annunziata Balzano.
[7] Work Groups for each Urban Planning Area, 2018, Waterfront Marghera, Venice: A.1) Kelti Ago, Francesco De Cillia, Andreea Mihai, Matteo Piva, A.2) Giulia Carini, Francesca Dorigo, Stefano Toneatto, A.3) Nicoletta Di Plotti, Cristina Galluzzo, Sveva Toppano, A.4) Martina Danielis, Ilenia Iuri, Andrea Measso, Teresa Sambrotta, A.5) Cinzia Buttò, Karin Drosghig, Beatrice Lesa, A.6) Federica Brancaleone, Jaqueline Caissutti, Valentina Ciroi, Cristina Marzullo, Ana Paola Rocca Vera, A.7) Mara Damiani, Giulia Di Ronco, Noemi Ulian, A.8) Cristian Burelli, Monica Campagnol, Gianluca Menardi, A.9) Sara Benati, Lisa Bosco, Michela Romana Fini, Giulia Narsilio, A.10) Giada Benedetta Bilancia, Giulia Cuffolo, Natasha Masuli, Damiano Mesaglio, Jessica Ponte, Caterina Tonizzo, A.11) Rachele Candusso, Maxime Tutino, Valentina Versolatto, A.12) Federico Bonfarnuzzo, Andrea Brichese, Matteo Cunegatti, Andrea Stefano Nardo. Work Group of Territorial Engineering: Tawab Mushtaq, Ina Steinhauer, Lara Teutsch.

structures, which insist on the largest concentrated industrial area of the Country and one of the largest in Europe with its 2200 hectares. But it is the urban fabric that in reality is at the center of the greatest attention of the project. Divided into 12 areas straddling the new Grand Canal, which is artificial for water buses, built parallel to the Canale dei Petroli or the Malamocco-Marghera Industrial Canal, the urban fabric shows different structural choices, assigned to different groups of students. It presents 6 peninsular areas, which originate from the Pili of the railway bridge that crosses the Lagoon and 6 insular and entirely pedestrian areas, on the Petroli island and on the Tresse island. The project is conceived with a dimensional progression from land to water. This dimensional progression leads from higher densities to houses on stilts and on floating barges or boat houses. And this means the transition between land and water, of which Venice, as a whole, has represented a formidable transport, environmental, architectural, social and cultural filter for centuries, even with its parts behind and with the historic landings of the hinterland.

The 2016-2017 Laboratory was dedicated to Udine[8], with the typical problems of urban voids and brownfields, in a medium-sized city, also in need of finding new balance between the center and the suburbs and above all new connections and relations between East and West through the southern suburbs. Here it was fundamental the problem of join the periphery with the historical center of the city and with other peripheral districts, through the pedestrian crossing of bundles of railway tracks and high-speed roads. Together with this it was the problem of regenerating the contact between the southern industrial periphery of the city and the green areas of the district. The theme of rainwater recovery, of their conduction in aquifer to reduce the waterproofing of urban surfaces, and of their general use, has been treated both in this case and in the Venetian ones. In the case of Udine the problem of the limit, which in the Venetian islands is evident and natural, has been faced thanks to the introduction of an intermediate ring road, necessary to pass from east to west of the city but also to limit the spread and create greater social density and housing continuity in the neighborhoods. The breaking of the limit, on the contrary, takes place not only in the pedestrian and bicycle bypasses of the streets, but also in the suspended commercial department stores on the railway and even in the gradual introduction of a market from the center of the district towards the historical center of the city, passing under the railway station, where it is exploited to the maximum, increasing it, a gradient of 2 or 3 meters between the tracks and the perimeter roads south of the railway. The project for Udine Sud certainly does not lack the techniques of urban densification, from infilling to the completion of frayed edges of the city, from the redevelopment of brownfields, to compaction after demolition and reconstruction, up to the restoration and renovation of existing buildings of residences and services. The result was a scale model, with a 1:1000 scale of four meters by three, a plan that precedes the resulting Local Plan, which can be implemented with special and complex planning methods capable of combining

[8] Work Groups for each Urban Planning Area, 2017, Udine South: A.1) Elizabeta Cifliku, Francesco Di Donna, Mirco Varutti, Kimia Akbar Zadeh Vishkaei Seyedeh, A.2) Mario Gonzalez Olanga, Pablo Soto Carrion, A.3) Enrico Marcon, Giorgio De Negri, Giacomo Pantò, Massimo Cremona, A.4) Federico Patat, Marco Peresani, A.5) Franco Rigoni, Cinzia Dal Bianco, A.6) Giuditta Petozzi, Stefano Murello, Lorenzo Gaio, A.7) Claudia Cocchetto, Marco Burino, Andrea Cason, A.8) Antonio Gaggiano, Stefano Mossenta, Pavel Moretto Cheptene, Marina Ferro, A.9) Rocco Felline, Simone Rizzetto, Luca Tonon, A.10) Jacopo Bonat, Andrea Fabbro, Cristina Fabro, Marta Somma, A.11) Giorgio Paccagnella, A.12) Chiara Madrisotti, Esmeralda Kresina, Laura Tomadin, Laura Vazzoler, A.13) Andi Driza, Giulia Franzolini, Sofia Mattioni, Nicole Turbian, A.14) Daniel Negrín Suárez, David Darias Rodríguez, Marcel Abdallah Martín, Francisco Augusto Najera Neyva, A.15) Federico Benedet, Mattia Pauletto, Andrea Soravia Mosson, A.16) Luigina Gressani, Alice Olivier, Gianpietro Venturini. Work Group of Territorial Engineering: Davide Bortot, Matteo Dall'Anese, Alessia Di Lenardo, Mario Gonzalez Olanga, Teresa Pessa.

the efforts of the administration and private investors and with direct implementations.
The course of this year, 2018-2019, fourth experiment, was aimed at Treviso[9], where we tried, just like in the case of Udine, which was preparatory and paradigmatic, to tackle the rebalancing of some areas of the periphery with the city center. The presence of green roofs, with numerous variations, is common to all projects and will also be decisive in the fifth. Even in the case of Treviso, more realistic than the others, the design had an unprofessional character, but aimed at teaching. It acted through the introduction of pedestrian paths and traditional urban textures, which can, however, host a contemporary architecture. Cycle and pedestrian paths for “green” and “blue” infrastructures are imagined together with dense urban areas, with traditional spaces, as a borough, to mend popular districts of the second half of the twentieth century, characterized mostly by dwellings of social housing, with the presence of few public utilities and poor trade and crafts. These new boroughs are also hypothesized as possible landing areas for building credits introduced since the law 11/2004 in the planning legislation of the Veneto Region, a very delicate passage to be verified also with the most recent laws 14/2017 and 14/2019. Here the choice to generate a compact city through the "densification" of free areas goes hand in hand with the hypothesis we formulated, even in other cases, of an increase in the mixture of functions and building types, just like in the Renaissance city and in the city of the late Middle Ages, for a better urban and social variability of the area[10]. In this case, moreover, the involvement of the City Council, thanks to the presence of the new Councilor (Assessore) for Urban Planning, engineer Linda Tassinari, who is a very active member of the Centro Regionale di Studi Urbanistici in the Veneto region, appears fundamental to verify the same potential of the method adopted. And this in relation to both the current planning, recently developed by a professional of great fame and respect as the national President of the Council of Architects, Planners, Landscapers and Conservatives, architect Giuseppe Cappochin, both in relation to the Venetian laws, and above all to the already cited laws 11/2004, 14/2017 and 14/2019. This, finally, we hope will satisfy the expectations of the new Mayor of the Municipality of Treviso, the surveyor Mario Conte who, besides being a technician himself, was born in San Paolo, which is one of the districts on which we base the educational experiment . On April 12, 2019, together with the councilor Tassinari and other members of the council and the municipality, including members of the opposition, the Mayor personally accompanied us on an inspection with the students, to expound some of his interpretations of the area and followed us in the first debates on setting the theme at the municipal office.

The Applied Method

In all the case studies, with small variations, we followed the method prepared since the project on Sant'Erasmo. The projects that have so far been developed and are

[9] Work Groups for each Urban Planning Area, 2019, San Paolo, Monigo and San Liberale, Treviso: A.1) Oleksandra Blyzniuk, Sara Magris, Manuel Merlini, A.2) Sarah Osazee Omorodion, Bruna Patti, Federico Pressacco, A.3) Samuele Canzian, Ismaele Nodale, Alessandra Pittaro Truant, A.4) Thomas Gon, Lodovico Lorenzini, Silvia Missera, A.5) Gianbruno Boel, Mattia Casonato, Chiara Monculli, A.6) Mattia Del Fabbro, Isabel Midena, Daniel Rodriguez, A.7) Valentina Bisiacchi, Francesca Bonanni, Irene Mansi.
[10] We are guided more by the rediscovery of the Vitruvian man than Le Corbusier's "modulor", but it is also the works of Victor Gruen and Gordon Cullen that are the background to our reasoning, along with many others, including Italians: Gianfranco Caniggia, Elio Piroddi , Antonio Cappuccitti, Eugenio Radice Fossati, Roberto Morassut, just to name a few at random.

developing, all have in common an experimental approach that we could describe step by step.
Step 1) At the beginning of the course, groups of students are formed, containing at least one person, at most, five or six. However, groups of three or four people are suggested by the teachers.
Step 2) To develop territorial urban analysis (large area) and urban analysis groups are joined in larger groups.
Step 3) In parallel or through another course (Territorial Engineering) or within the same, a group is entrusted with dealing with the Theory of the Economic Base and searching for rare and basic functions to be included in the project.
Step 4) In order to analyze the historical centers and the traditional ancient architecture the groups are kept divided and each of them is entrusted with a task, generally the same for all the groups but carried out on different areas (Treviso was acted differently, on choice of students, by topic, but we are not convinced that this serves to make the information circulate well). In particular, the following are measured: a) the dimensions of the squares, of the *campi* (typical of Venice), of the *campielli* (typical of Venice), of the streets, of the sidewalks, of the courtyards, of the alleys, of the *calli* (small streets typical of Venice), of the *salizade* (areas of Venice recently paved, in an open space), of the *rii terà* (underground canals in Venice), of the canals, of the banks, of the foundations, of the arcaded fronts, of the arcades, of the loggias, of the gates, of the windows, of the balconies, of the buildings in height, length and width, of completed gardens, flower beds, etc., b) types of holes such as windows, doors, balconies, mullioned windows, three-light windows, four-light windows, ... etc., c) residential building types of the nobility, of citizenship and small people , d) the particular public building types, e) the building types for worship such as churches, synagogues and more, f) pedestrian and vehicular or water routes, g) vertical paths, h) particular visual cones, worthy of attention , i) the prospects, l) the building masses and their distribution.
Step 5) We analyze, all together or in groups, the area of intervention, as a matter of fact: roads, canals, squares, public and private green, pedestrian paths, agricultural green, etc.
Step 6) A Key Diagram of the intervention area is drawn up with a group made up of several groups that unite about half of the students. This Diagram will contain the Urban Planning Areas in which the district (neighborhood) is divided, the primary and secondary roads, the main pedestrian and cycle paths, the central pedestrian areas (shaded and to be specified in the detailed project), possible channels as general indications (blurred) or specified when necessary for the separation of several urban project areas, any urban park areas, even shaded and the main historical-architectural and environmental-naturalistic invariants of the same district, as well as some areas indicative of densification of the district or remodeling and “urban regeneration”. The diagram shows the fundamental functions that, based on the analysis of the entire city, the province and the region, will be introduced in the district (neighborhood) that is being planned.
Step 7) The other half of the students produce the Technical standards of implementation (Regulations) to develop the projects of the Key Diagram on the Urban Planning Areas.
Step 8) The Urban Planning Areas of the Diagram are drawn by lot among the groups of students. If there were disappointments, disagreements or other conveniences, these areas would be put back on the bargaining market between the groups. In this way the best ones generally take the hardest things to show off and get higher grades.

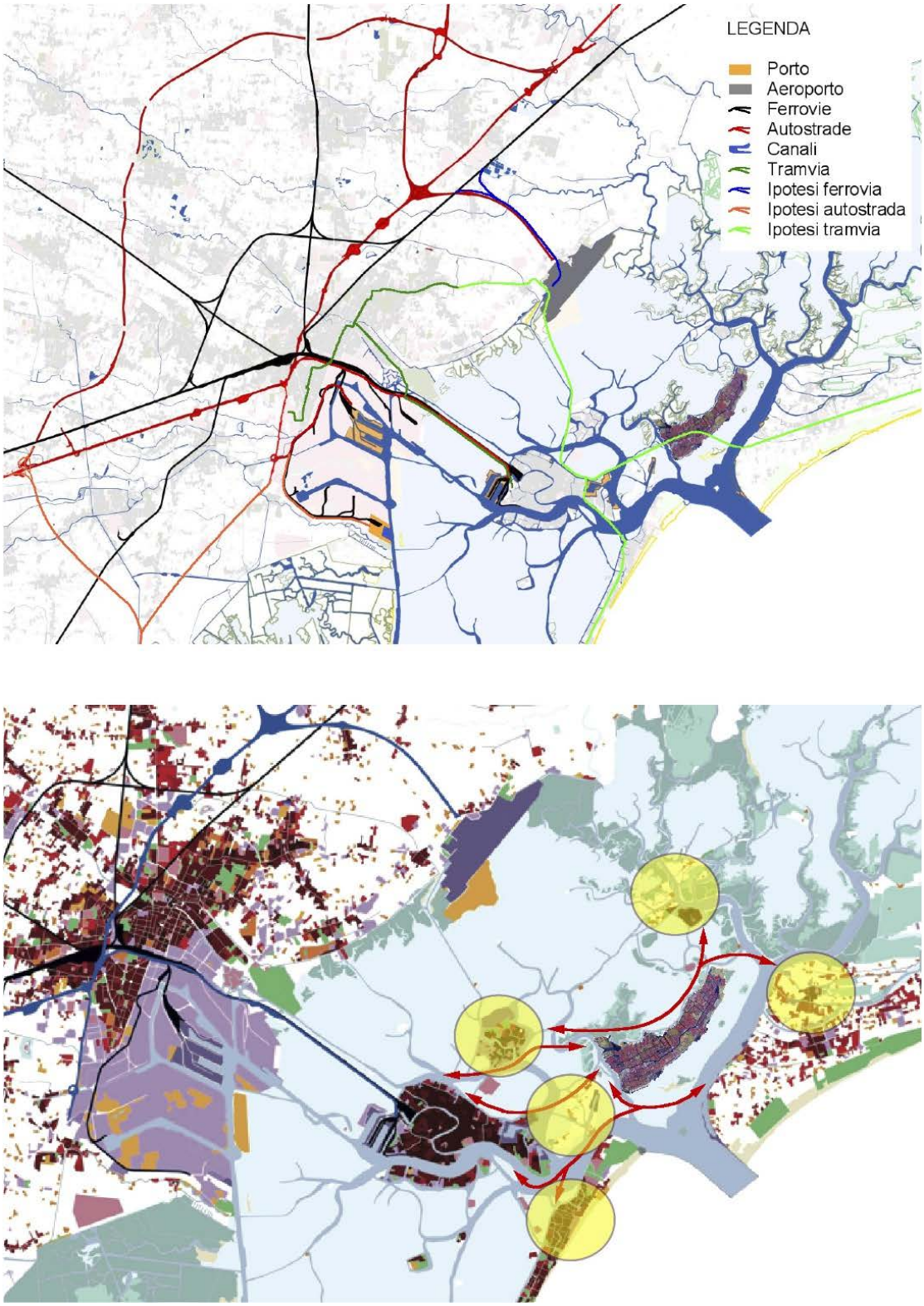


Figure 1: Venice, urban scale analysis for transport networks and the inclusion of the Sant'Erasmo district in the Northern Lagoon. Step 2.

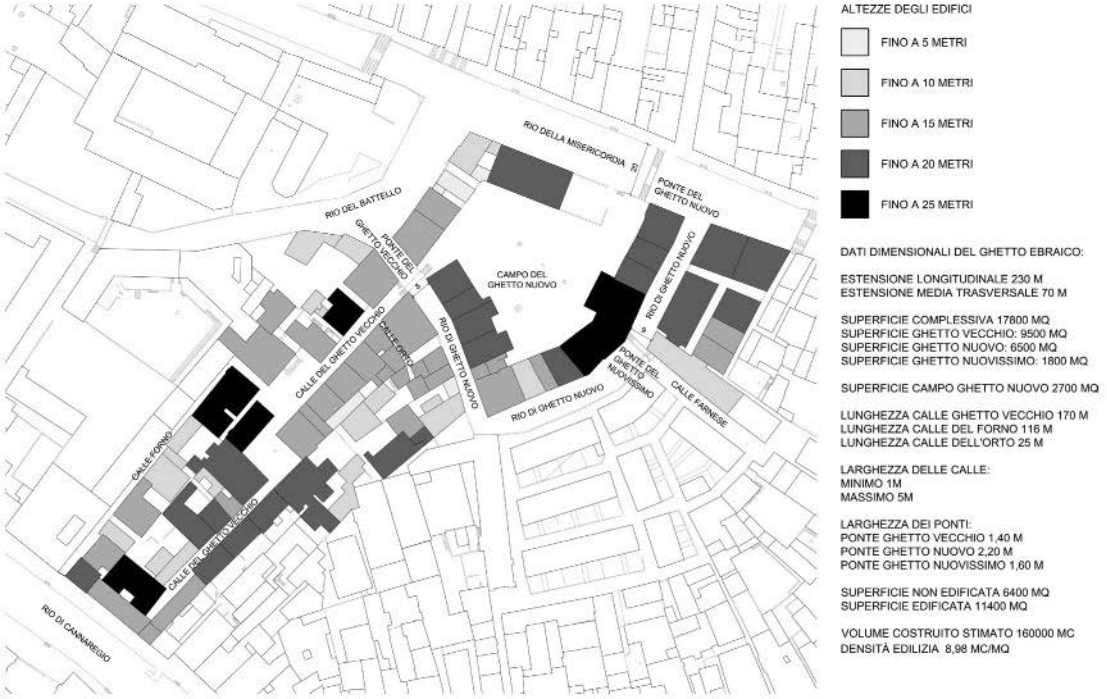


Figure 2: Sant'Erasmo, synthesis of the analysis of the actual state. Treviso, abacus of the size of the Historical Center at Santa Caterina (G. Boel, M. Casonato, C. Monculli). W. Marghera, analysis of the "campi" of Venice, average heights in the Ghetto (K. Ago, F. De Cillia, A. Mihai, M. Piva). Step 4 and Step 5.

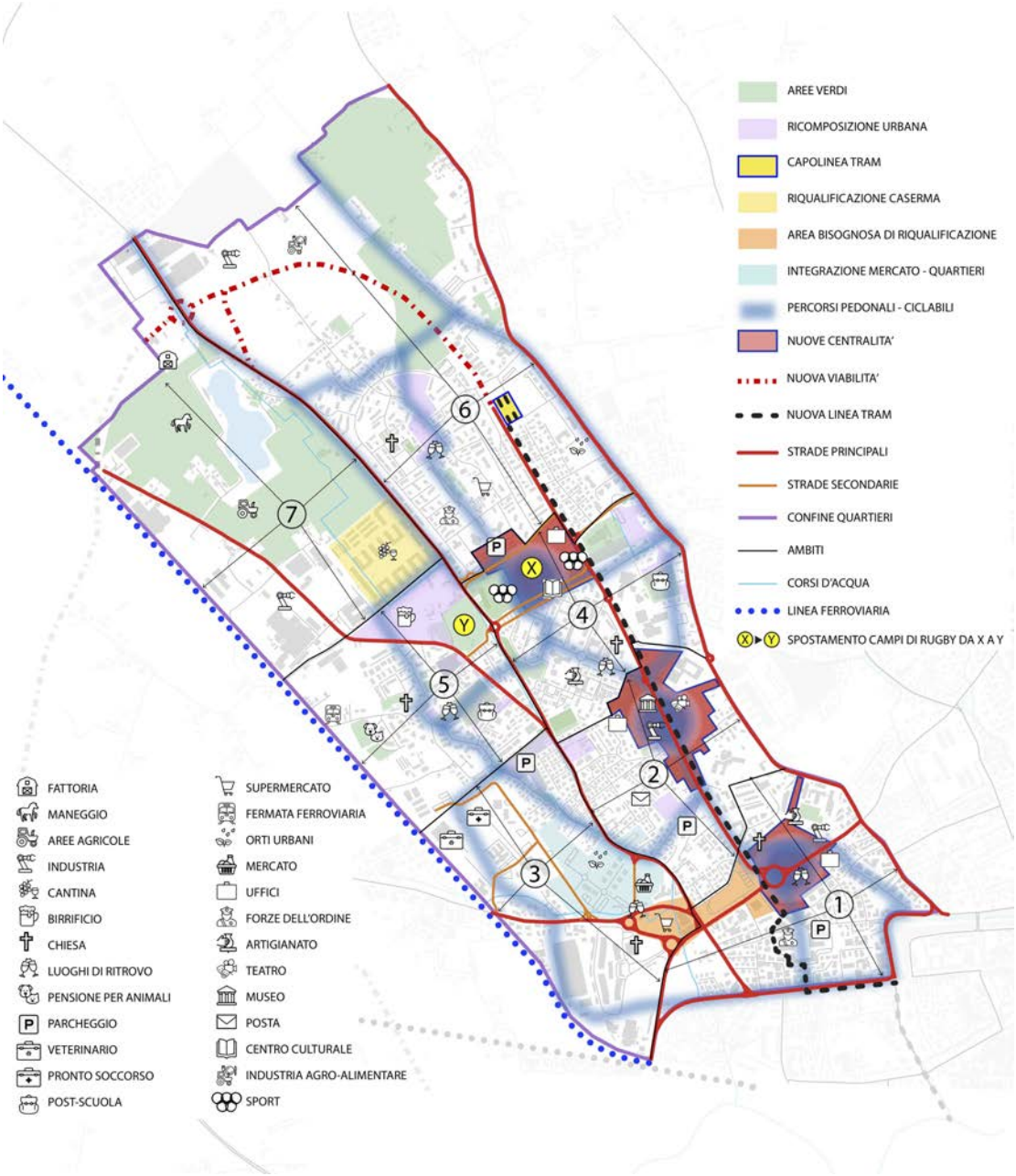


Figure 3: Treviso, Key Diagram for the North West district, with definition of 7 urban planning areas (draft O. Blyzniuk, S. Magris, M. Merlini, S. Canzian, I. Nodale, A. Pittaro Truant, final design of S. Canzian and A. Pittaro Truant). Step 6.

Step 9) The groups begin to develop the Urban Planning Area of the district that was assigned to them on a 1:1000 scale. First in plan and then also in volume. Colors and symbols are standardized. All groups are forced to work alongside groups that design neighboring areas, in order to integrate their projects and match squares, streets and canals that are in common.

Step 10) As soon as the drafts of the plans of the ambits are developed on a scale of 1:1000, the students begin to design some buildings or some public and private areas in larger scales, 1:200, 1:100, up to the plan, to the elevations and to the sections of the same. Naturally they cannot design architecturally the whole project area assigned to the group, but only some example or particular elements.

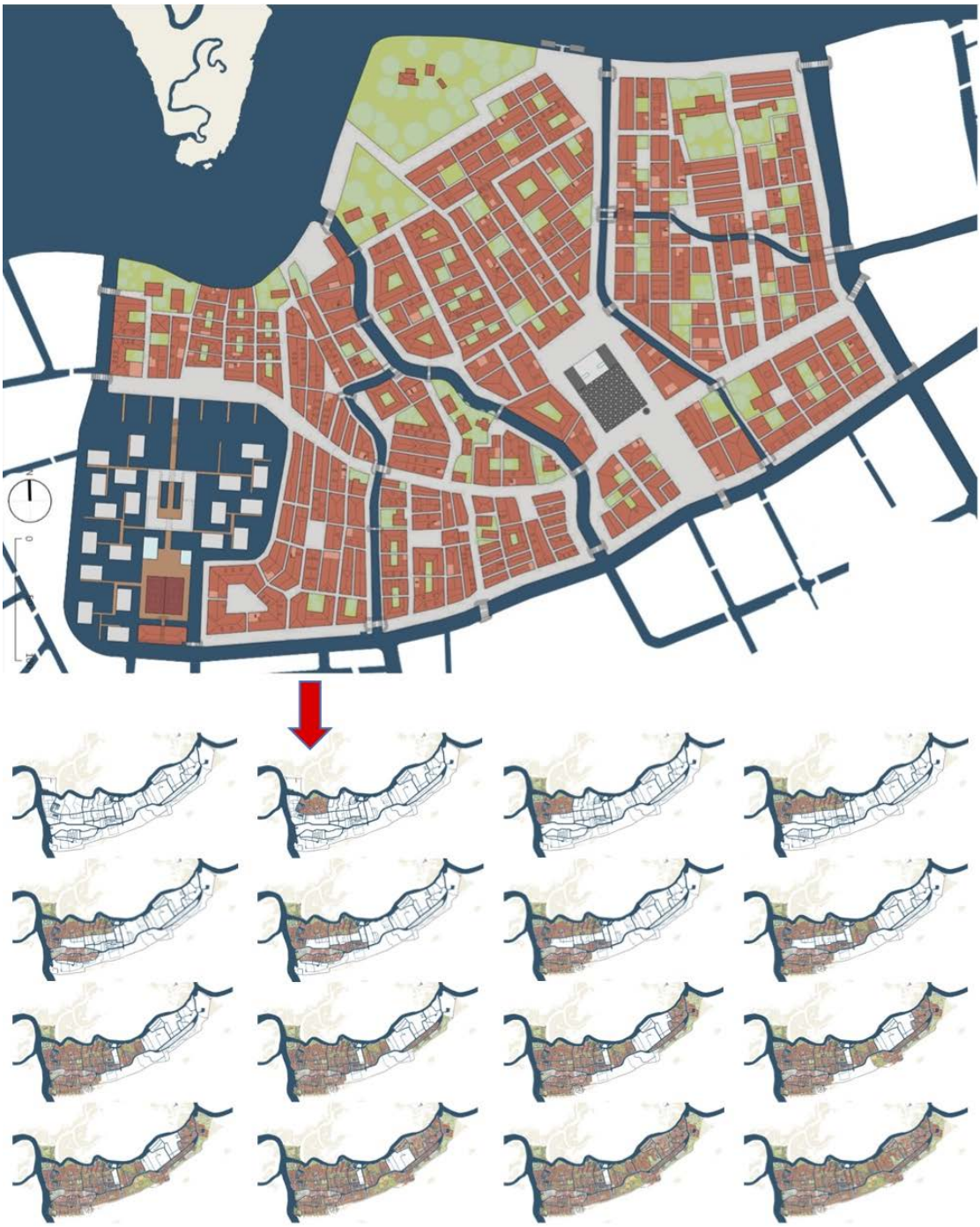


Figure 4: Sant'Erasmo, simulation of the aggregation of Urban Planning Areas on a 1:1000 scale that make up the overall plan of the project starting from the area 1. Step 9 and Step 11.

Step 11) The project areas are brought together in a unique project of the district, on a scale of 1:1000 and 1:5000. Some rendering of this is also produced.
Step 12) At this point each group builds its own part of the model, which is standardized for the bases and assembled together.
Step 13) The terminal phase of the "Tibetan mandala" is triggered: each group, comparing itself with the others, draws its part of the Local Plan that will question

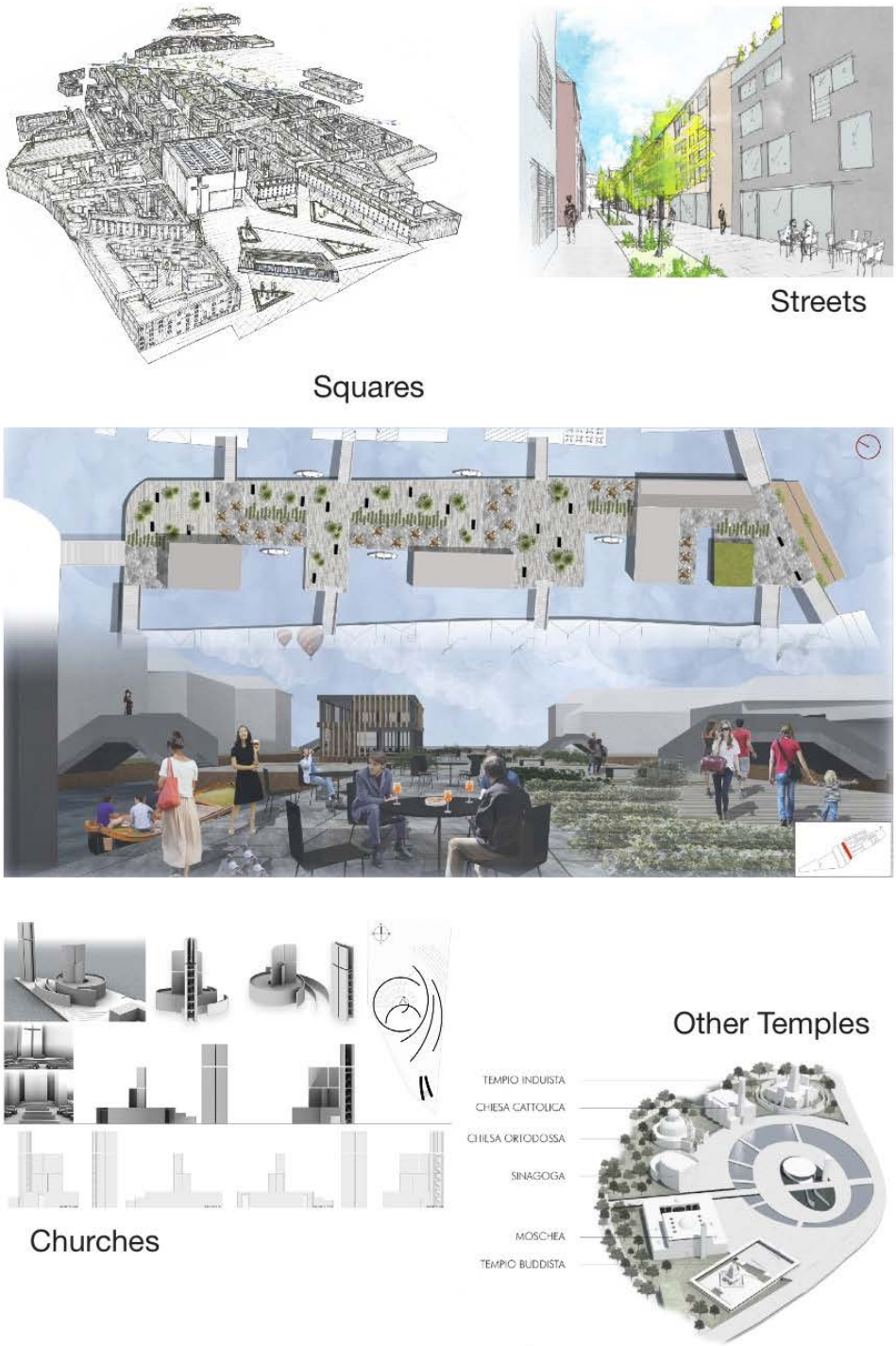


Figure 5: Examples of details of Squares (Udine: F. Patat, M. Peresani; St'Erasmo-Spritzeria: N. De Odorico, A. Pecile, S.M. Verderame), Streets (St'Erasmo: S. Florio, M. Gasparini, E. Gullion, E. Zampa), Churches and Other Temples (W. Marghera, Cathedral: M. Damiani, G. Di Ronco, N. Ulian; Sq. of religions: G.B. Bilancia, G. Cuffolo, N. Masuli, D. Mesaglio, J. Ponte, C. Tonizzo). Step 10.

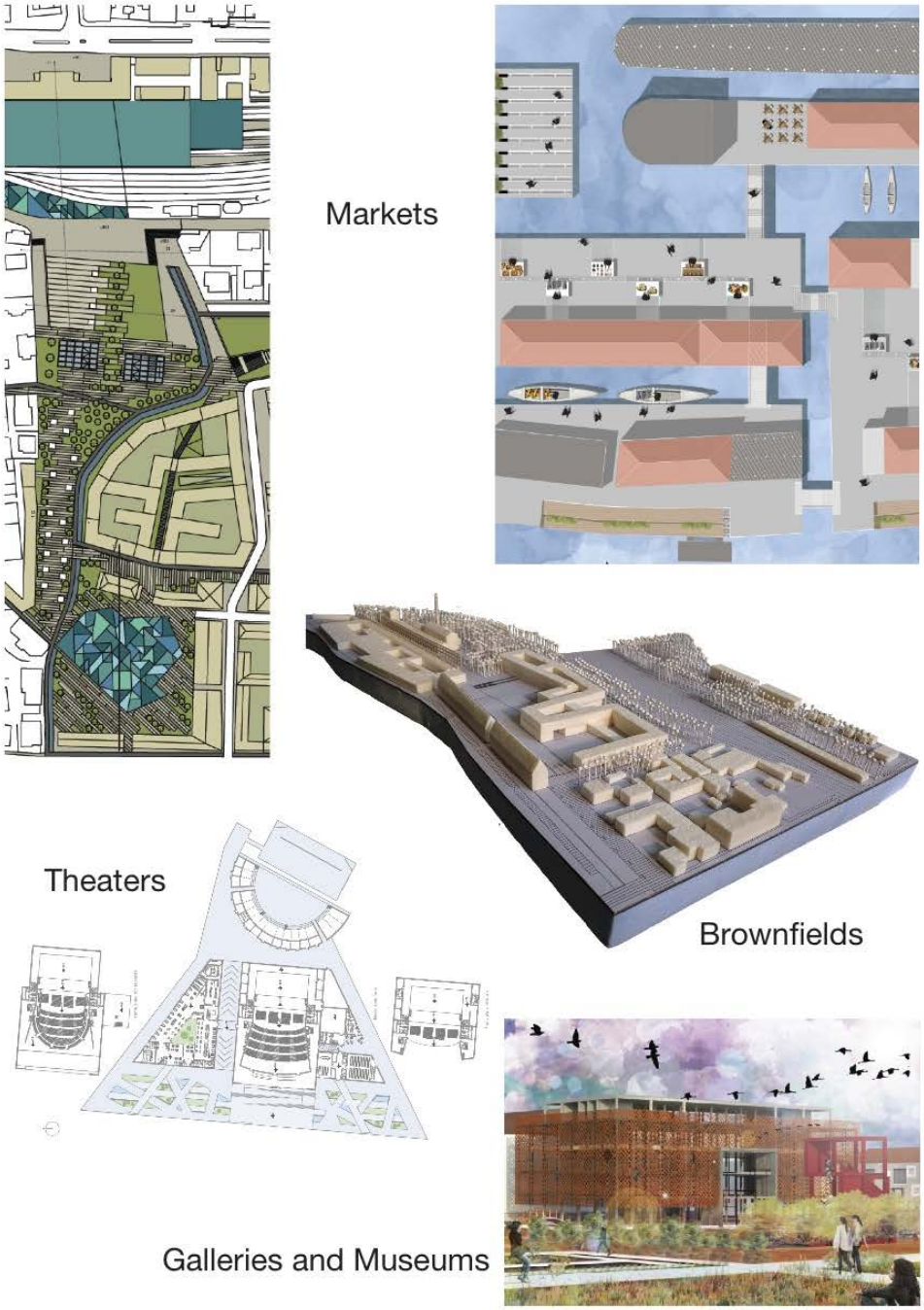
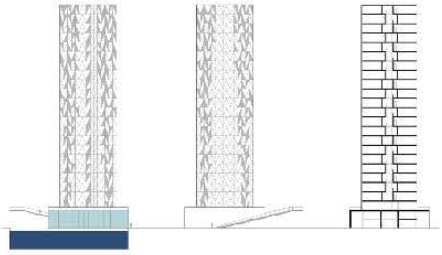


Figure 6: Examples of detail of Markets (Udine: C. Madrisotti, E. Kresina, L. Tomadin, L. Vazzoler; Sant'Erasmo: N. De Odorico, A. Pecile, S.M. Verderame), Brownfields (Udine: F. Benedet, M. Pauletto, A. Soravia Mosson), Theaters (W. Marghera: F. Brancaleone, J. Caissutti, V. Ciroi, C. Marzullo, A.P. Rocca Vera), Galleries and Museums (Sant'Erasmo: G. Mattiola , C. Pietrini, A. Raffaelli). Step 10.



Hotels

Stations of the Underground

Luna Park and Discos

Aquariums

Parks and Gardens

Figure 7: Examples of detail of Hotels (W. Marghera: N. Di Plotti, C. Galluzzo, S. Toppano; Sant'Erasmo: J. Nicoli, E. Trevisan, S. Zambon), Stations of the Underground (Sant'Erasmo: P. Marcer, M. Specogna, L. Zamuner), Luna Park and Discos (W. Marghera: C. Buttò, K. Drosghig, B. Lesa), Aquariums (Sant'Erasmo: E. Bortolotti, M. Giacò, F. Pappalardo), Parks and Gardens (Udine: L. Gressani, A. Olivier, G. Venturini). Step 10.

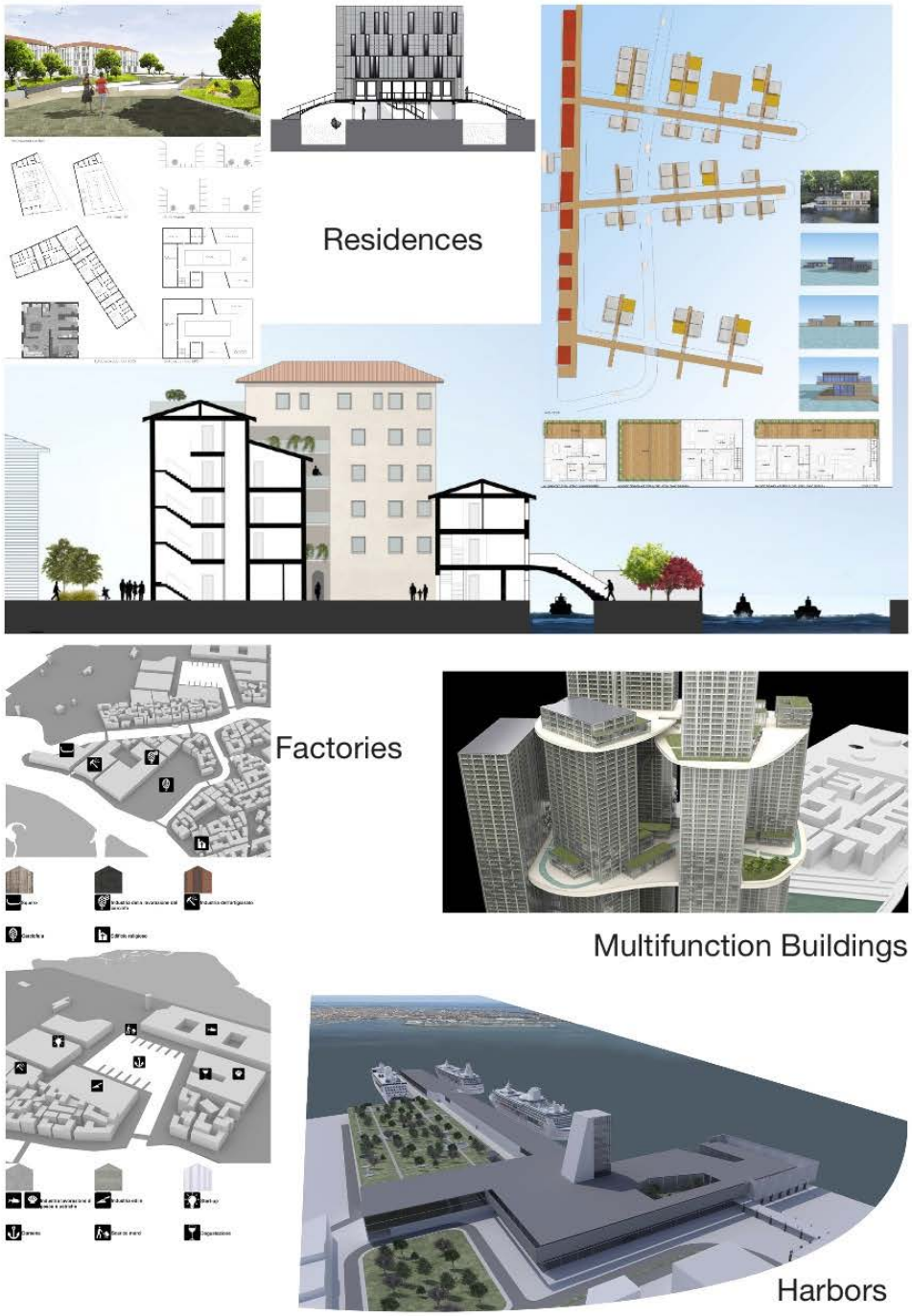


Figure 8: Examples of details of Residences (right, Udine: D. Negrín Suárez, D. Darias Rodríguez, M. Abdallah Martín, F.A. Najera Neyva; Sant'Erasmo, top: M. Mizzaro, J. Romanin, M. Roveredo, below: S. Florio, M. Gasparini, E. Gullion, E. Zampa; left, W. Marghera: K. Ago, F. De Cillia, A. Mihai, M. Piva), Factories (Sant'Erasmo: G. Cao, C. Suber, C, Tiberon), Multifunction Buildings (W. Marghera: S. Benati, L. Bosco, M.R. Fini, G. Narsilio), Harbors (W. Marghera: C. Burelli, M. Campagnol, G. Menardi). Step 10.

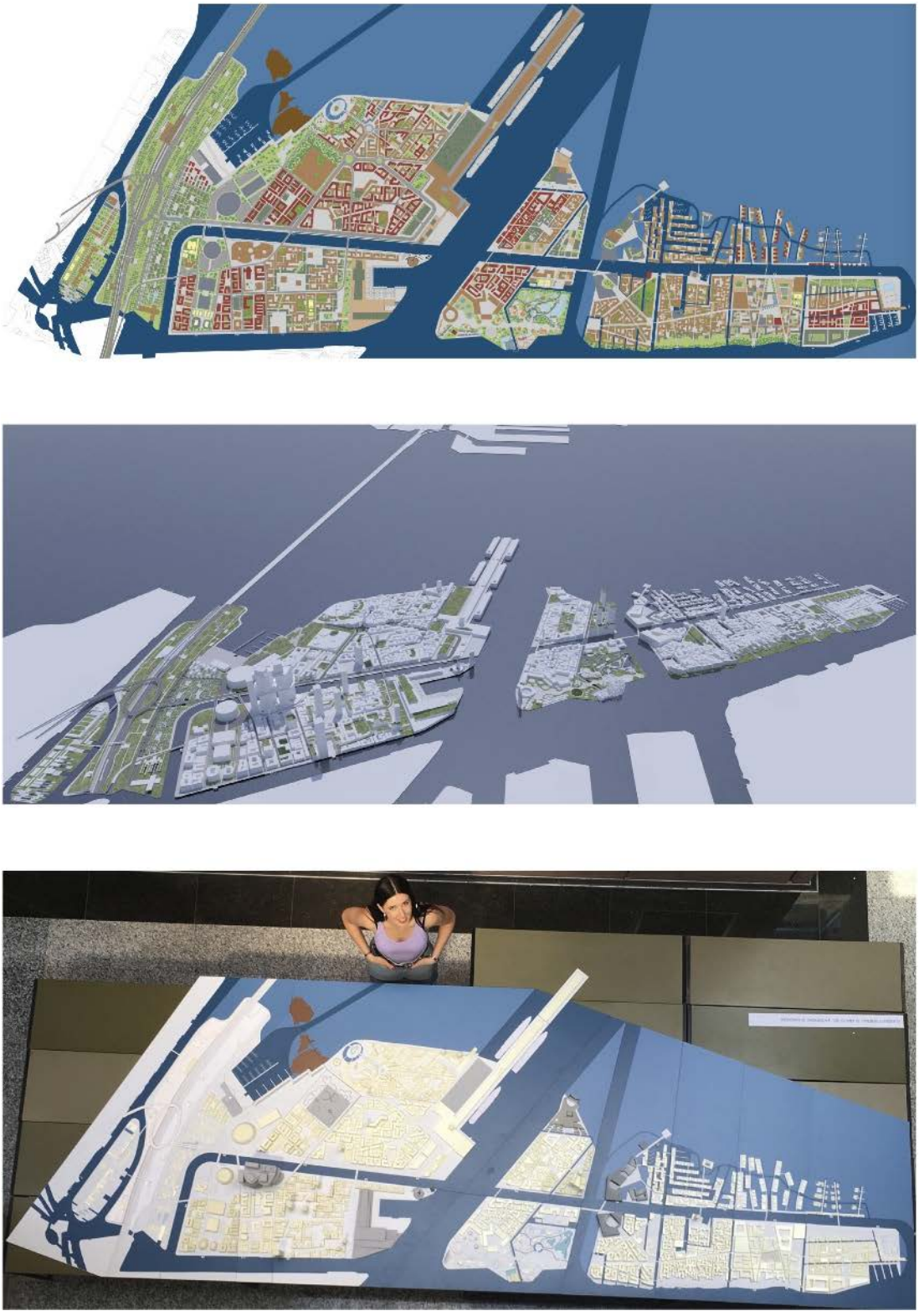


Figure 9: Waterfront of Porto Marghera, Venice, 2018, overall Plan of the project, Rendering towards Venice Historic Center (C. Burelli, M. Campagnol, G. Menardi) and Model of the neighborhood, scale 1:1000. Step 11 and Step 12.

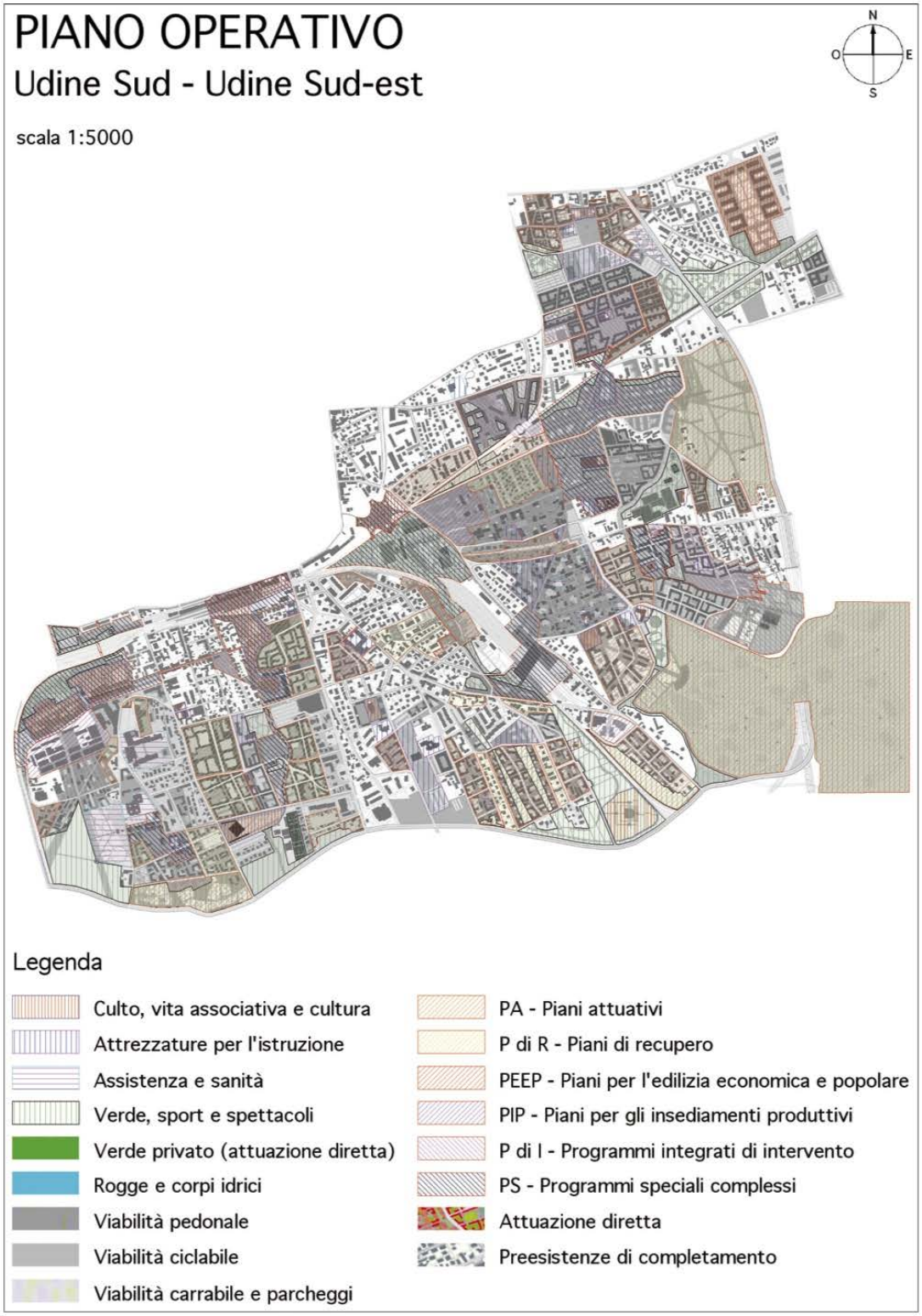


Figure 10: Udine, 2017, Local Plan for Udine South - Udine South East deriving from the Planimetry and the Model. Step 13.

much of the entire project, making it compulsory and mandatory with state and regional laws. But a large part of it, the one for which it is believed that it has reached a sufficient design or that does not require transformations having already been built,

will be implemented directly or maintained, without the need for further implementation plans.
At present, the experiments and method described here have been published in two books, with Aracne Editrice in Rome[11]. They are also touted in some Conferences[12].
However, none of these experiments can be considered conclusive of a process and a planning method that we are looking for and elaborating. Also the conclusions of this contribution will require checks and adjustments both for the opinions expressed on the architecture and for the regional and national law on land use. It is not even certain and taken for granted that, to act through this method, the Italian urban planning regulations and land use laws must undergo profound changes. And this also regardless of the fact that in all these writings it seems important to overturn the traditional urban planning process, bringing urban design to the forefront of the urban plan. However, there are some aspects of our way of designing that in this historical period deserve to be emphasized more than others. Let's see some of them in the next paragraphs.

The reasons for a pedestrian propensity

The pedestrianization of paths inside the periphery is one of the most interesting aspects in these educational experiments. Unlike all the twentieth century, here we start from the pedestrian and not from the car. The city is not adapted to the car, rather the car is oriented to what is extra-urban. It is therefore not a question of creating banal walks in the countryside, regenerating the spirit and physical form of those who live in the city. Of course, there are also these naturalistic, health and environmental aspects that push us in this direction, like the concept of therapeutic device given by plants and their relationship with space in park areas or in the pedestrian cycle paths imagined for Treviso. But there is something else. Slow mobility does not interest us as a healthy element. Of course, there are also these naturalistic, health and environmental aspects that push us in this direction, like the concept of therapeutic device given by plants and their relationship with space in park areas or in the pedestrian cycle paths imagined for Treviso. But there is something else. Slow mobility does not interest us as a healthy element. Rather, it interests us as a reduced space on a human dimension from which to take inspiration to rebuild parts of the city. It is the paradigmatic beginning of every spatial project and not a result of the combination of public spaces around and in front of the facades of buildings. Nor do we pursue a nineteenth-century need for public hygiene in the slums and in the working-class suburbs of the industrial city, which no longer exists, except as a legacy of a recent past. Slow mobility is not the paradigm of the slow city and well-being, which become almost secondary, but the main element of measurement of human space. A space that we would like to bring back to the human dimension of the

[11] Piero Pedrocco, Elena Olivo, Giorgio Verri, *Un quartiere sperimentale a Sant'Erasmo. Studi per una progettazione integrata*, in book necklace PIU-Infrastrutture, urbanistica e paesaggio, vol. 6, Aracne Editrice, Roma, 2017. P. Pedrocco, E. Olivo, G. Verri, *Dal Diagramma al Progetto, dal Progetto al Piano. Studi metodologici per Udine Sud*, in book necklace PIU-Infrastrutture, urbanistica e paesaggio, vol. 13, Aracne Editrice, Roma, 2019.

[12] Centro Nazionale di Studi Urbanistici, International Annual Symposium 2019, Research, Technics & Planning, Urban Density & Sustainability, Dipartimento di Architettura, Università degli Studi di Napoli Federico II, 3 may 2019. IPSAPA, XXIII International Interdisciplinary Conference, Incompleteness and wandering in the landscape-cultural mosaic. Time, Place, Action, Università degli Studi di Napoli Federico II, July 4-5, 2019. European Regional Science Association, 59th ERSA Congress, Cities, regions and digital transformations: opportunities, risks and challenges, Lyon, France, August 27–30, 2019. Associazione italiana di scienze regionali, XL Conferenza scientifica annuale, L'Aquila, Gran Sasso Science Institute, 16-18 settembre 2019.

Vitruvian and Renaissance tradition, but for the space-time of contemporary man. For the functions that once did not exist, this human space would also be invented for the first time, based on the limited size provided by the pedestrian movement.
We do not know how grateful we must be for a city like Venice for this interpretation. In fact, with a project in the Venice Lagoon we started in 2016. In this city the various islands have been functioning for centuries as many centers of a complex and polycentric system that gathers around the squares (*campi*), originally spaces of the markets of each of these agglomerations. If we want to summarize, by exaggerating the very reason for the formation of Venice, we could say that the city was formed in the High Middle Ages in a long time. The early Venetians, who had not wanted to mix with the Romans or the Latins, who also like them came from Anatolia, perhaps fabulously on the run after the Trojan War, did not want to mingle with the barbarian peoples. And mainly the Venetians did not want to mix with the Huns of Asia. Attila, king of the Huns, was actually instructed in Rome, the Oxford for the principles of the time. He wanted to rebuild the Roman Empire. The early Venetians, who retreated towards the marshy territories of the coast, where probably there was still no real lagoon, maintained their original differences between sub-tribes. When the lagoon was formed, with medieval marine transgressions, these groups gathered on nearby islands. Each group (coming from Padua, from Altino, from Grado, from Equilio, from Eraclea Veneta, from Adria, etc.) kept his dominant aristocratic families in an almost Greek-type social structure, looking like a "refugee camp of refugee camps", or a set of separate island villages. These different islands will have had their center of trade (the current *campi*) and power (the fondaco-palace). These different families will also have had their influence in the general context. Thus, the city that formed could only be polycentric, oligarchic and thickened, due to the lagoon waters that lapped the *insulae* of the Civitas Rivoalti first and of the Civitas Venetiarum then. At that time the mobility between the various islands was aquatic rather than pedestrian. But it was certainly pedestrian within each island.
The polycentrism of Venice, born in critical conditions, seems incredibly to respond to some needs of the contemporary city. Especially in medium or large cities, where Transport Oriented Development, that is large urban transport systems, can serve the movement of people between different neighborhoods or cities, which together generate a polycentric system. In it the various poles or centers, can more or less respond to different specializations.
The separation of the pedestrian from the traffic should not then be traced back to the considerations, although interesting, of the Modern Movement. Rather, the separation we propose derives from the natural propensity for slow self-organization of urban centers or neighborhood centers that agglomerate, as was often the case in the larger medieval cities and as seems to happen in many contemporary metropolises, but with greater naturalness than in industrial and modern city, which is too rigid and defined in size and too studied in the dimensional and transport relationships between home and work, as if nothing else existed in human life.
The imagined dimension for pedestrian areas, brought back to the spaces of its most immediate relevance, to its neighborhood, thus tends to surpass the concept of the periphery. And the periphery is what almost happens to be around and far from something that matters. This real or apparent randomness of the peripheries and of the nineteenth and twentieth century suburbs depended on the speed of development of the industrial society, which did not allow any other form of agglomeration if not the accumulation of individuals to be transported to the production areas. With a rationality and rigidity of the social housing districts that often recalls the military

type, for the foundation of colonies. Make it quick to conquer space. No matter how, better in a simple, rational, rigid way. But "God does not build straight roads"[13].
But to understand the reasons for a method of urban planning, one must understand the reasons of the society to which that method is applied. A fundamental question should therefore be that which links the form, in the making, of the settlements to the society and economy that determines it. But it has never been easy to understand urban morphogenesis in advance, because economic and social revolutions, and above all inventions able to change the structure of our cities, are revealed either through conflicts (J. A, Schumpeter) or in a creeping way. If the material city (*urbs*) grows slowly, the society that composes it (*civitas*) can change rapidly. Thus in the movie Blade Runner of 1982, directed by Ridley Scott, the hunter of androids Rick Deckard (Harrison Ford), in a Los Angeles of 2019, stratified and multiethnic city which seems taken from a comic strip by Moebius and the French magazine Metal Hurlant, with flying cars or spinner, when he has to call a colleague, he does it from a phone booth, now virtually disappeared, while flying cars are still only prototypes which NASA has been planning for decades.

For whom do we build the cities of tomorrow?

Definitely not for the androids. Certainly, for our children and grandchildren. But also, for a mixed global and local dimension.
The theme is obvious. But its behavioral and spatial repercussions are not yet obvious. These will be very demanding.
In my essay on "Erratic and permanent urban users and conformation of the contemporary city"[14], I asked a few questions:
«At a time when forma urbis seems controversial between localism and globalization both internationally and in Italy, who really are the city users, or users of our urbanized areas, able to modify their future assets? Where could they agglomerate into complex and unexpected shapes? What are the tools that urban planning has or should have at its disposal to guide the development of new centralities and new territorial transformations that these new and old users generate and will generate? And again, what are the phenomena of transformation on the economy and urban society that different groups of users of the city could raise?»
The answers to these questions were not easy then and they are not easy today.
In that essay I started from a previous consideration, on tourism, which I had drawn up at a conference[15] in 2012, and which had led me to identify first 29 types of tourists, to then add others 4. Of these 33 types of tourists, at least 22 are present in our cities, the others are in the mountains or at the sea or elsewhere. These groups can dictate rules to cities, especially tourist ones, and undermine their administrations. They will also come into conflict with other categories of city users. And these categories of city users are also many, and they are also increasing. In the essay quoted, on erratic and permanent urban users, I identified 22 categories of city users, but there could be many others that I cannot recognize at the moment, and tourism, for example, is just a voice among them, composed in turn from 33 types of which 22 urban.

[13] Prometheus, Ridley Scott, "prequel" of Alien, UK, USA, 2012, in the initial landing scenes of the spaceship.
[14] P. Pedrocco, "Utilizzatori urbani erratici e stanziali e conformazione della città contemporanea", in *Agribusiness Paesaggio & Ambiente* -- Vol. XX- n. 1, June 2017.
[15] P. Pedrocco, "Riqualificazione urbana e territoriale attraverso la conservazione dinamica degli ambiti sanmicheliani", in Custoza G. C. (ed. by), Giornate di studi sanmicheliani…, Knemesi, Verona, 2013, pp. 205-227.

Certainly we will build the cities of tomorrow and we will modify those of today for all these users: families, singles, religious, other residents, non-resident domiciled military, non-resident domiciled students, non-resident domiciled workers, not declared abusive and non-abusive, occasional residents recurrent, recurrent occasional domiciled, unreported recurrent commuters, daily metropolitan commuters, weekly commuters, monthly commuters, annual commuters, tourists, temporary as casual workers, wayfarers, vagrant migrants, hospitalized, visitors to cemeteries.
What spaces do these people require with their activities? What spaces will the new production models require, which will be characterized by personalized products and globalized *local* units?

Closed space and open space, static space and dynamic space

Countless authors have written about the crisis of the city and space. Tidal waves, counterurbanizations, rururbanization, edge cities, defeated cities, brownfields and darkfields, are just some of the endless new words used by urban planners in recent decades to make visible the problems of human settlements today and the preservation of traditional city space. I will limit myself here to mention a few brief passages by Elena Olivo to recall the theme.
«Our urbanized territory, in which it is increasingly difficult to distinguish the real limit of the "cities", is characterized by physical and conceptual mobility. Our cities appear to us as a fragmented set of objects all the more isolated, as they are no longer united by any form.
We know that the contrast between city and country has long since been overcome; in its place the opposition between the center and the periphery took over and, now, we are talking about "urbanized territory", "Urban Nebula", "Soft City", "Liqiud City", "Overposed City", etc., whatever its definition, we must note that the contemporary condition has profoundly changed. We are in fact in the presence of a vast urbanized territory consisting of a large "void" in which, according to rules far from architectural / urbanistic issues, large objects are placed, visible points in an invisible network of flows.»[16]
These considerations are obviously analytical. It is then necessary, starting from them, to imagine a diagnostic passage that has speculative presuppositions about the near future, even if the effort to imagine it almost never pays off.
«The redefinition of the concept of space in the contemporary city is desirable through a new way of looking at reality (including cultural), in order to assume the "Complexity" that characterizes it, in a positive and active way. It is a matter of working with "systems", which, in an experimental way, overlapping and intersecting each other, will give rise to new strategies of intervention ... The concept of space, today inseparably linked to that of time, is increasingly articulated and complex.»[17]
Of course, we cannot be satisfied by this. In an uncertain time like the one after the Modern, which was "right over time", postmodern uncertainty dominates the cultural, political and social scene. It is not right over time, but out of phase.
«Complexity, vagueness, multiplicity... require a design approach characterized by a high degree of flexibility (spatial and temporal). But how can flexibility be represented?»[18]

[16] P. Pedrocco, E. Olivo, G. Verri, Dal Diagramma..., cit., p. 70.
[17] P. Pedrocco, E. Olivo, G. Verri, Dal Diagramma..., cit., p. 71.
[18] P. Pedrocco, E. Olivo, G. Verri, Dal Diagramma..., cit., p. 72.

Logically the answer is not simple. I refer to the quoted book to deepen the author's thought on these issues. However, it seems interesting to note here also the following passage.
«Our space is a summation of contrasts and complementarity, there is no exclusion. Space is enriched, it is articulated, but it is no longer possible, as has happened in past ages, to consider some spatiality: we must increasingly get used to complexity and have to combine different types of spatiality.»[19]
A great challenge for movements like the New Urbanism should start by asking questions of this kind, precisely to avoid obtaining Disneyland instead of continuous and resistant cities over time. But it is not enough: the answers are also necessary and increasingly urgent. And the answers can only come from research applied to practice, just as we are trying to do in our small experiments. A fact, however, difficult to obtain in the absence of power. And in this sense, what Giulio Romano already said in the 16th century could once again be valid: "we are dwarfs on the shoulders of giants".

Conclusions

Obviously, in a period like the one we are going through, with a long economic cycle still stalled and with low inflation, projects such as those experimentally sketched by us cannot be taken into consideration to be implemented in a short time. This aspect is clarified and agreed with the students of our courses. Today, neither investors nor public administrations can venture into such enterprises in Italy, in a society in total contraction, both economic and social, and with the pyramids of age that are reduced in size for the younger age groups. The fact remains that in a certain future, that we do not know how far it is in time, in the absence of credible development models and that they maintain compact cities, we may find ourselves in great difficulty. This is why, by studying the ancient cities, we aim to find useful models for the cities of the future, trying to find a typically Italian dimension of space and environment for them, without betraying the experimentations of architecture in progress and trying to link old historical centers together with peripheral parts or with new neighborhoods. In fact this type of experimentation, with the hypothesis of long implementation times in the background, mostly implemented by multiple subjects and not homogeneous in terms of spending capacity and intervention, follows typical patterns of urban development traditionally occurred for centuries. Moreover, given the fragmentary dimension of the city system that derives from these design experiments, both in space and in the time of realization and modification, it is believed that models like this can well respond to the demand of small and medium-sized enterprises characteristic of our country and characteristics of our lifestyle. And this without disturbing phantasmagorical promoters, stakeholders (not by chance from overseas derivation), industrialized construction and anything else that could reasonably belong to a logic of rapid expansion and undifferentiated space condition, which in our society does not find full correspondence. Also in this sense, the idea of producing or regenerating and restoring large or medium-sized neighborhoods, which in itself can be modified gradually by the needs of the market, through the work of small and medium-sized enterprises, would perhaps find good correspondence not only in our major cities, all characterized by the massive presence of historical centers and villages incorporated by the industrial city, but also in the cities of medium and small

[19] Chapter III written by Elena Olivo, p. 75, in P. Pedrocco, E. Olivo, G. Verri, *Dal Diagramma*…, cit., 2019.

dimensions, variously scattered throughout the country. Our cities all seem in need of an integration with the new forms of recent urbanism. They require a compaction of contemporary dispersions and recent textures: spread, sprawl or sprinkling, universally so defined with usual English-speaking diction even when there would be the corresponding Italian words (diffusione, dispersione, aspersione). To do this you do not need large planning deeds from a single hand (i.e. an archistar), but precisely, as also happened in the past with perhaps less awareness, "big projects" for "small building enterprises".

Bibliography

Aa.Vv., Ministero dei Lavori Pubblici (1997), *I Programmi di riqualificazione urbana*, INU Edizioni, Roma.

Aa.Vv., Ministero dei Lavori Pubblici, DiCoTer (1999), *Programmi di riqualificazione urbana. Azioni di programmazione integrata nelle città italiane. (vol. I e II)*, INU Edizioni, Roma.

Acuto F., Stellario d'Angiolini L. (2012), *Un'altra prassi urbanistica*, Maggioli Editore, Santarcangelo di Romagna (Rimini).

Alexander C. (1967), *Note sulla sintesi della forma*, Il Saggiatore, Milano.

Alexander C., Neis H., Anninou A., King I. (1987), *A new Theory of Urban Design*, Oxford University Press, New York - Oxford.

Capuccitti A., Piroddi E. (2004), "Morfogenesi dello spazio urbano: profilo di una ricerca", *Urbanistica*, 123, INU Edizioni, Roma.

Castells M. (2004), *La città delle reti*, Rizzo C. (ed. by), Marsilio, Venezia.

Cullen G. (1961), *The Concise Townscape*, Routledge, Architectural Press, London & New York.

Cullen G. (1978), *Paesaggio urbano*, Calderini, Bologna.

Gregotti V. (1993), *La città visibile*, Einaudi, Torino.

Jane Jacobs, *The Death and Life of Great American Cities*, Random House, New York, 1961.

Pedrocco P., Olivo E., Verri G. (2017), *Un quartiere sperimentale a Sant'Erasmo. Studi per una progettazione integrata*, in book necklace PIU-Infrastrutture, urbanistica e paesaggio, vol. 6, Aracne Editrice, Roma.

Pedrocco P., Olivo E., Verri G. (2019), *Dal Diagramma al Progetto, dal Progetto al Piano. Studi metodologici per Udine Sud*, in book necklace PIU-Infrastrutture, urbanistica e paesaggio, vol. 13, Aracne Editrice, Roma.

Perulli P. (2009), *Visioni di città. Le forme del mondo spaziale*, Giulio Einaudi, Torino.

Piroddi E. (2000), *Le regole della ricomposizione urbana*, FrancoAngeli, Milano.

Pistocchi A., Zani O. (2004), "L'invarianza idraulica delle trasformazioni urbanistiche: il metodo dell'Autorità dei bacini romagnoli", in *Atti del XXIX Convegno nazionale di idraulica e costruzioni idrauliche*, Trento.

Rimoli P. (2010), *Ingegneria idraulica urbana*, Maggioli Editore, Santarcangelo di Romagna (RN).

Unwin R. (1909), *Town planning in practice. An Introduction to the art of designing cities and suburbs*, T. Fisher Unwin, London- Leipsic.

Vazzoler L. (2019), *Progetto per la riqualificazione dell'Isola dei Saloni – Chioggia*, Università degli Studi di Udine, Dipartimento Politecnico di Ingegneria e Architettura, Master's Degree Thesis in Architecture, A.Y. 2017/2018.

Virilio P. (1988), *Lo spazio critico*, Dedalo, Bari.

Zardini M. (2002), *Paesaggi ibridi, un viaggio nella città contemporanea*, Skira, Milano.
Zumthor P. (2003), *Pensare architettura*, Electa, Firenze.