Across Waters - The river redesigned

Belgrade, Serbia

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Abstract: This essay presents a significant selection of town and architecture design models developed on-and-for the Danube during the scientific cooperation held in the years 2008-2012 in the University of Belgrade and Sapienza University of Rome[2]. The subject of this modeling action on Belgrade and the Danube river is design along the banks of a river of continental size as it flows through a city that has, historically, and in fact, the rank of a capital town. The complete report of the action was published by the same author of this essay in Rome with the title "Across Waters – Il fiume riprogettato" in the year 2012.[3] The cooperation is still working today, nearly ten years after its establishment, on further pilot areas along the Danube.

Key words: Urban Waterways, Canal-City, Fluvial neiborghoods, artificial archipelagos of artificial deltas.

Belgrade and the Danube beyond the riverbank directly facing the old town - subject of a first design step of the action published in the book "Città, fiumi, margini fluviali " in 2008[4] and exposed in the Italian Centre of Belgrade[5] - are in this final step in the spotlight of an horizon extended to the dimension of the metropolitan area, to the contemporary fragmented and cluttered urban sprawl, out of the boundaries of the compact town. In this context the presence of the water, the presence of the river with its banks and embankments, represents a strong reference, while issues such as urban and landscape design, architecture and building, are necessarily linked in a specific and completely original relation. A direct, although not always linear, relationship which has to be fully described and clarified by design operations according to a process of inevitable complexity. Here, a pseudo feedback methodology – repeatedly re-

1. Professor of Architecture and town design. Sapienza University of Rome
2. First Established in the year 2006, the Scientific protocol of cooperation between the Faculty of Architecture of Belgrade and the Department of Architecture and Design (DIAP) of Sapienza University of Rome is today still working under the direction of Roberto A. Cherubini and Zoran Djukanovic, both professors of architecture and town planning design in their respective universities.
3. Roberto A. Cherubini (with an introduction by Zoran Djukanovic and Jelena Zivkovic). AW-Across Waters. Il fiume riprogettato. Orienta Edizioni, Roma 2012. ISBN 9788896467190.
4. Roberto Cherubini, Zoran Djukanovic, Jelena Zivkovic. Città, Fiumi, Margini Fluviali. Roma/Belgrado. IIC, Belgrado 2008. ISBN 9788690792924.
5. The exhibition took place in the Italian Cultural Institute (IIC) of Belgrade in spring 2008 and in Sapienza University of Rome in the further summer.

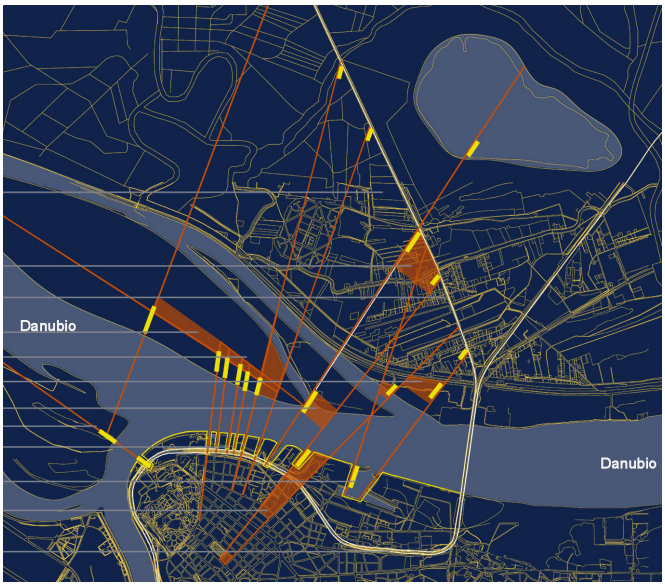

Fig.1. CSIAA Masterplan for Belgrade/North Danube (Cherubini, Esposito, Fabiani, Lanna, Menghini Calderon) 2006

verting on the same design areas but from time to time with different attitudes although aware of the previous partial conclusions – has proven to be a investigation instrument undoubtedly able to produce valid models. Likewise undoubtedly instrumental valid seems to be the progressive review of the complete sequence of sites front of, along, and just beyond the river embankment. Trying to transform the sequence in a meaningful and comprehensive system of sites. A system of sites built as a reasoning on river- related design. *Downtown on the river, The floodplain area, Living the riverbank, Sluices and ditches in-between, The Big Pond* are the names of the five chapters of this reasoning. The design action was only possible by creating a permanent structure: a workshop platform called LabMed[6], involving young and less young designers with different responsibilities and roles. Independent researchers, graduates, PhD students and professors of the partner universities cooperated to a shared research. The direct outcome of the action is in the experimental design modelling displayed in this essay. The younger who worked to each project were constantly supported in a delicate role of mentorship by Jelena Zivkovic of the Faculty of Architecture of Belgrade, and by Anna Esposito, PhD. Architect in the Department of Architecture of Sapienza University of Rome, together with Andrea Lanna, architect in Rome who already took part in the first step of this work with the direct function of designer. To shuttle between Rome and Belgrade as scientific coordinators the entire work, have been Zoran Djukanovic and the author of this essay. In the early 2006, during a long meeting with the chief architect in the town hall of Belgrade, the opportunity was introduced to work in medium-long term to shape the identity of the uncertain urban area recently settled on the left riverbank of the Danube, north of the

6. LabMed is the design modeling laboratory for Mediterranean directed by Roberto A. Cherubini in the Department of Architecture and Design (DIAP) of Sapienza University of Rome.

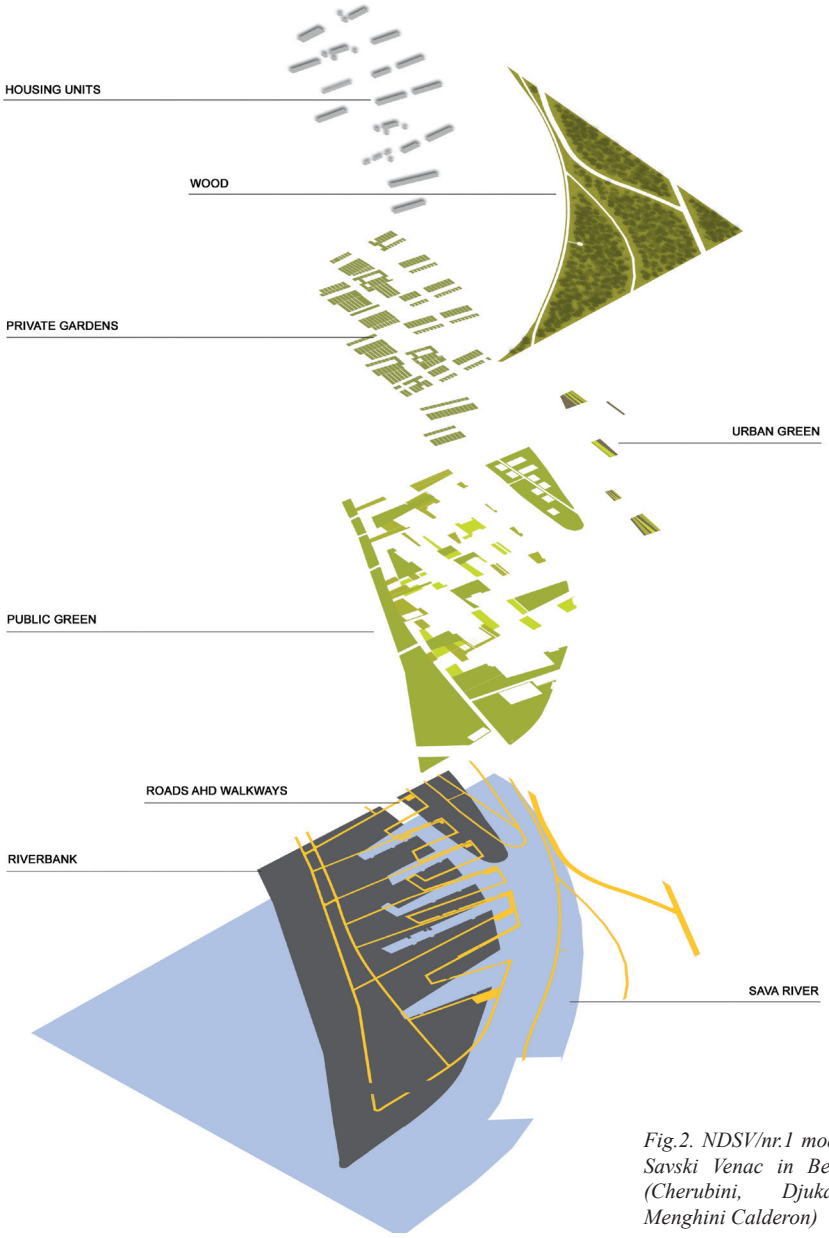

Fig.2. NDSV/nr.1 model for Savski Venac in Belgrade (Cherubini, Djukanovic, Menghini Calderon)

old town. Belgrade, as it is known, stands on a narrow plateau at the confluence of Sava and Danube rivers and it has always suspiciously looked from above to the other side of the main river, without ever going to do it right in urban terms. Sometimes the rivers produce on their opposite banks twin cities: different twins, of course. The Danube gives a good example just a little further upstream where Buda, Óbuda and Pest became a great capital on both sides of the water. But more often the towns on the

waterways prefer one of the sides. There is always a place across the river characterized by its own "otherness". Oltrarno in Florence and Trastevere in Rome share this same meaning with Rive Gauce in Paris (and we wonder the bank in Paris to be Gauce - left - not only for the river but because different) or with Sachsenhausen , the Saxon village on the opposite bank of the imperial town on the ford of the Franks (Frankfurt) on the river Main. It is unusual instead that this otherness is so radically manifested up to contemporary times as in Belgrade. On the one side the White City (Beograd, Serbian) on the hill, on the other side, a poor rural settlement and trees, ponds and clearings as far as the eye until a few years ago. Concerning the town design and architectural scale: on the one side aligned docks and buildings ordered to define collective spaces and public areas, on the other side alluvial areas, embankments, irrigation ditches and canals essentially untouched until the recent invasion of out of control buildings which gave rise to the informal settlement across the Danube. Historical reasons exist and are meaningful, but it would be too much just to summarize. That morning at the town hall in Belgrade we were interested mainly by the actual fact: this side of the river is a well-developed town with town and architectural forms and proportions, beyond the Danube is a melting-pot of informal and mostly illegal constructions irregularly raising along and side of the suburban roads that running through the plain to other towns of Serbia. In the middle, only one bridge on the Danube, survivor of the 1990s war. And specially distinguishing the two riversides an almost irreducible diversity of scales, of materials, of culture and community identity. The richness of values and meanings on the one hand, a kind of primitive and aphonic materialism on the other. It seemed linear, as well as relatively easy, in the immediately following days, to answer the submitted request by proposing, through a direct mechanism of projection, a translation of some alignments, singular points and sizes of the hold town to the other side of the river. This produced our first masterplan across the Danube, independently designed in the year 2006 by CSIAA[7]. It was a first attempt to convey some values of the existing urban form to the chaotic contemporary context. Working on however altered and adapted to the larger size of the plain, proportions. We were wondering about the sense of centrality giving value to the buildings on one side of the Danube. This sense could redeem the irremediable marginality of the settlement beyond the Danube once inserted in a certain quality – even if just for fragments - on the other. The architecture was still missing across the river, along the alignments and in the space between. We didn't know it yet, but we'd been involved in this work for a long time: a direct confront with the elements of the river reality, able to stress our architectural capacity in signifying the notions of building "near the water", "on the water", "over the water". Our capacity of intending the presence of the water as a design opportunity more than as a risk for the town. We immediately realized that the hastiest river problem solving was by cancelling its presence. We found out that the poverty of the self-generated urban context on the plain behind the riverbank of the Danube was right in its denying to architecture any relation with the water. We noticed that, in order to pursue a different attitude, we needed to point out

7. CSIAA. Think Tank for Architecture established in Rome by Roberto A. Cherubini in the year 1999. cfr. http://www.csiaa.it/belgrado2006.php

and to reproduce the urban characters that the authentic towns on the water developed from their origin, in a long process of genetic mutation. We needed to redefine natural principles such as unicity of the building levels or solidity of the ground floor, such as practicability of the roads network or safety of the connections. We had to reckon with different absolutely unexpected questions in which concepts, apparently not related with architecture, such as ambiguity, uncertainty, unbalance and entropy became key-words of our design activity. These are all concepts having undeniably to deal with liquidity rather than with the solidity of the construction. This is ultimately the paradox of the town on the river, built to complete and not to delete the presence of water. In its construction is inevitable to combine liquidity with solidity. But if the Modern applied to order and to safety, also demonstrating the limits of its perspective, the Contemporary has accustomed us to coexist with other paradoxes. Consequently Belgrade, North of the Danube, is a design workshop on the town across the water of the river but it is also a workshop on the present of the town: an experiment of temporary balance in a place of paradoxes.

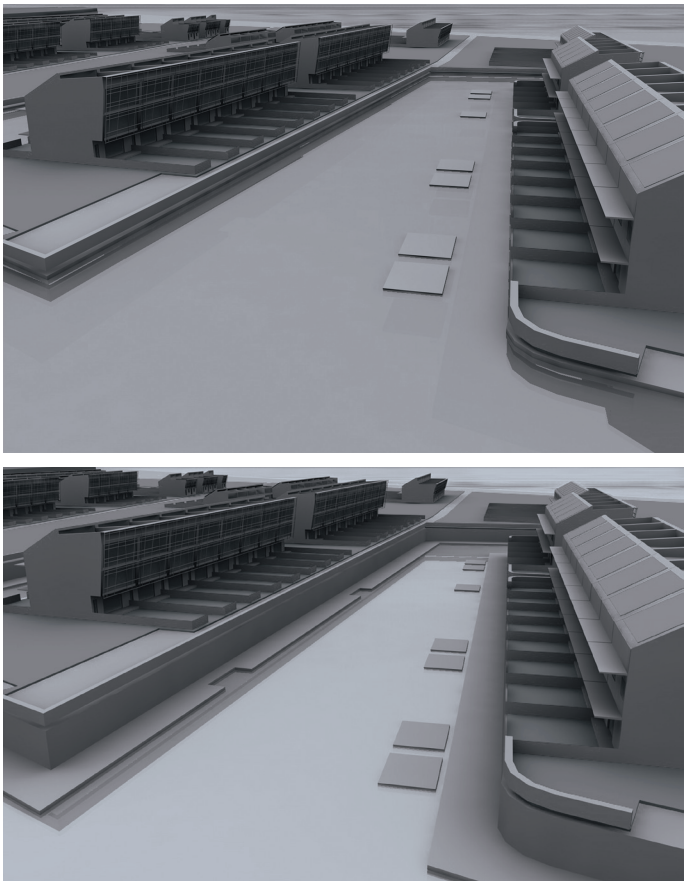

Fig.3. Flood and low river level/NDSV/nr.2 model for Savski Venac in Belgrade (Cherubini, Djukanovic, Menghini Calderon)

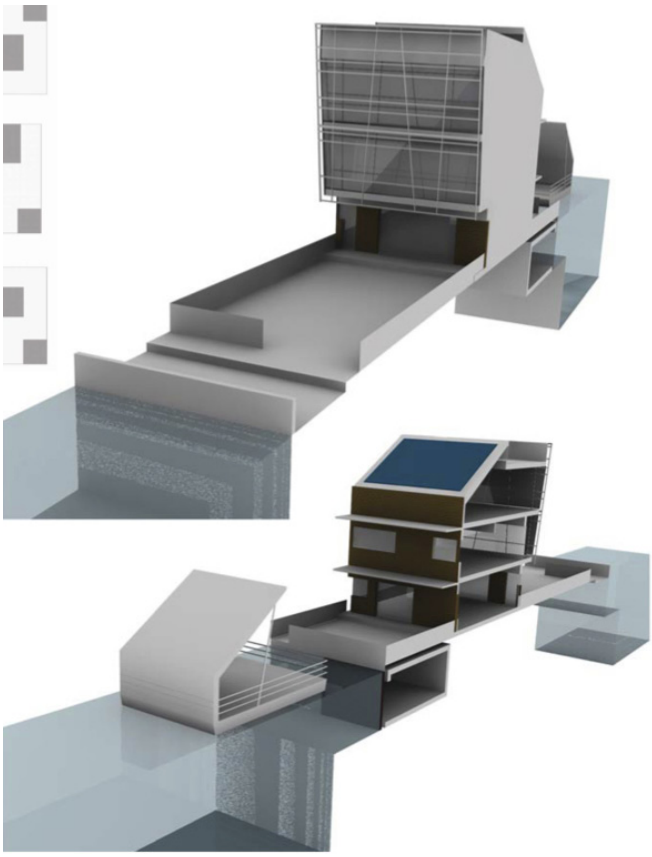

Fig.4. Housing Unit/ NDSV/nr.3 model for Savski Venac in Belgrade (Cherubini, Djukanovic, Menghini Calderon)

Downtown on the river

The Saxon fortified settlement of Hom-burg was founded around the ninth century A.D. almost one hundred kilometers into the estuary of the Elbe river in Northern Germany. The reason seems to be that the site was the first firmly emerged sandbar from there to the sea that the memory of generations would record as. The name of the site is today Hamburg. Despite its distance from the open sea it is the first (with its traditional competitor Rotterdam) European harbur on intercontinental trade routes. No one still suspects that the two lakes in the city center – the Innen and the Aussen Alster – work in reality as drainage system for the inhabited surrounding. Probably excluding just Venice, where even there the problem is currently attacked with such titanic works to earn biblical name: the Moses, water in the city is always enrolled in the register of disasters: Dresden old town flooded in 2005, New Orleans flooded after breaking the banks of its river by hurricane Katrina. No water in the town is always considered to be a progress for urbanized humanity, a fundamental right for citizens able to move and to use their urban space at will. But if instead of that we tried to flip the question and ask for a moment if this progress – like many others unconditionally celebrated progresses – had however did miss something?

Fig.4.1 Housing Unit/cross section on the water/NDSV/nr.4 model for Savski Venac in Belgrade (Cherubini, Djukanovic, Menghini Calderon)

The design modeling beyond the Danube moves – unavoidable paradox – from this side of the river. From a site that suffers from the flood of the Sava river, shortly before it flows into the Danube. In Belgrade, the so-called amphitheater district Savski Venac is one of the sites with the highest potential in terms of new urban architecture.

If "water as a resource" is the town and architectural design main line for modeling on the Danube. If the applied design philosophy is changing mind about the banks – from defensive works to opportunity for alternative living on the water – checking first this opportunity in the urban heart of Belgrade has the value of an advance confirmation.

NDSV/nr.1 model relies on two factors in order to redefine the relation between the site and the river. The model minimizes the river banks in their identity of protection works from flood, strengthening the link between town and water and it multiplies their function operating on different urban layers. An experimental housing settlement is organized side of an urban park along strips of land defining riverdocks between them. On the waterfront, the river bank has two different levels corresponding to river Sava flood and minimum flow. The lower level is a long pedestrian promenade planted with willows and connected to the upper level by ramps and elevators. The housing units share a great flexibility in space organization and architectural aspect, mainly shake by wooden facades and pitched roofs. They reflect simplicity of the Sojenica and Splav, the traditional typologies of the existing river and floating houses on the Danube. Northwards large greenrooms, sheltered by double glass skin, provide in winter diffuse environmental light and optimal solar radiation. Where the housing units are direrctly facing the water, each house is featured by a private raft, a floating yard right on the river that ideally extends the living room of the house according with the different levels of the water. Each house is also featured by a sealed boat garage, completed by an automated opening system, able to be submerged by the flood.

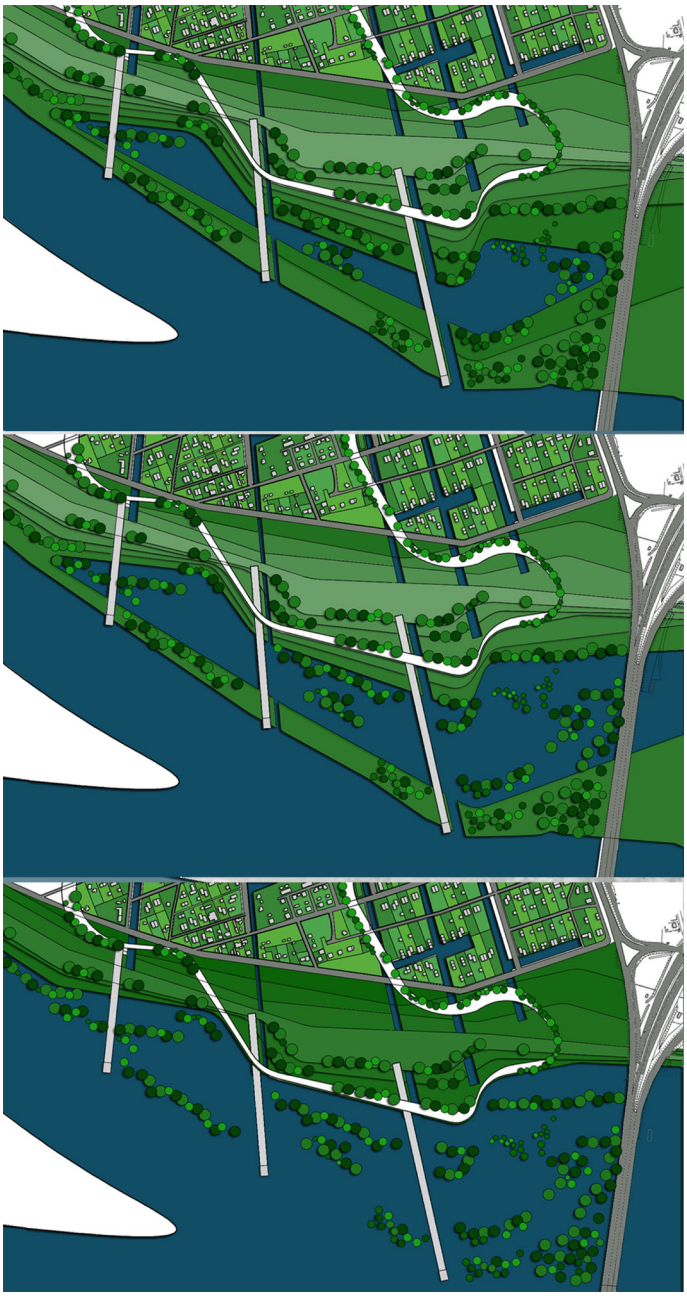

Fig.5. NDFpl/ nr.1 model for the Danube floodplain area (Cherubini, Djukanovic, Ghezzi, Zivkovic)

The park is mainly composed by public green on the water equipped by river trees and urban services, partially by private gardens, both bordered by low walls in order not to obstruct any continuity between land and water.

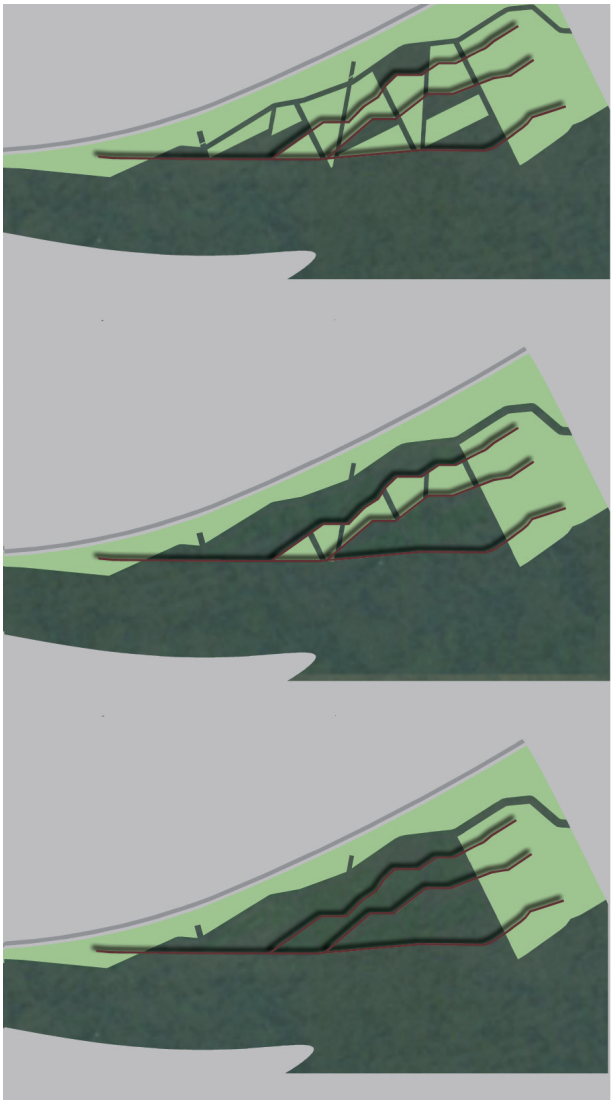

Fig.6. NDFpl/ nr.2 model for the Danube floodplain area (Cherubini, Djukanovic, Melfi, Zivkovic)

The floodplain area

Technologies evolve, information flows. What few generations ago was considered unpredictable, today it is well known in advance by warning lights, sensors, and even satellite systems of detection. If the river rises, there is usually today time enough precisely to programm where to direct the excess of water and how to lead the flood safe under control to the estuary. So the floodplain out of the riverbank becomes a resource of at least seasonal space for the surrounding town. Especially when, as North of the Danube in Belgrade, the profile of the riverbank and the range of the water gap are such to leave by minimum water flow customarily hundred meters dry.

It does not mean that the floodplain will permanently loose its natural function. It means just that the town , once won the atavistic fear of the flood, could discover in the floodplain new opportunities to rearrange its waterfront in a less monotonous way than by traditional banks, in earth or stone but a work of pure hydraulic engineering anyway. This implies three types of design problems. First: Elements of the floodplain design, including buildings, if possible to set up. Second: Sense and meanings to attribute to the elements of the floodplain and real functions to support these meanings. Third: organisation, distribution, constructive precaution to respect , in dry times such as in time of riverflood, by design elements of the natural or built up landscape of the floodplain. Three dedicated models for floodplain design in Belgrade, North of the Danube. NDFpl/nr.1 model and NDFpl/nr.2 model carefully study the river rise while it gradually overwhelms the ground , progressively drawing a natural profiles of mixed ponds and woods. They build landscapes evolving in the opposite and occurring on the river with different frequency. Seldom, at the time of flood, just punctual or linear layouts of trees and sospended walkways emerge, marking as pickets a submerged landscape. More often, by dry, the entire design is present. Limited and well conformed water basins remain in a low hills, greens, woods and gardens landscape, free to be walked in all directions. To temper extremes, an intermediate series of mutations, where the landscape architecture itself gives form from time to time a peculiar identity to the site, in a continuous sequence according to the seasons in-between. Both models discretely add the landscape design some buildings having a double proportioning and signal function. Linear elements perpendicular to the river and connected by the winding course of a bank line (NDFpl/nr.1). Light and transparent buildings on compact and submergible or floodable basements having large bright screens on top as signals along the waterfront (NDFpl/nr.2). NDFpl/nr.3 model works on the design idea of a “shrewd building endurance” to pressure of flood. The floodplain is for this model urban space at all. The river level has an absolute value for the buildings on the floodplain. It defines and establishes the outstanding characters of their architecture.

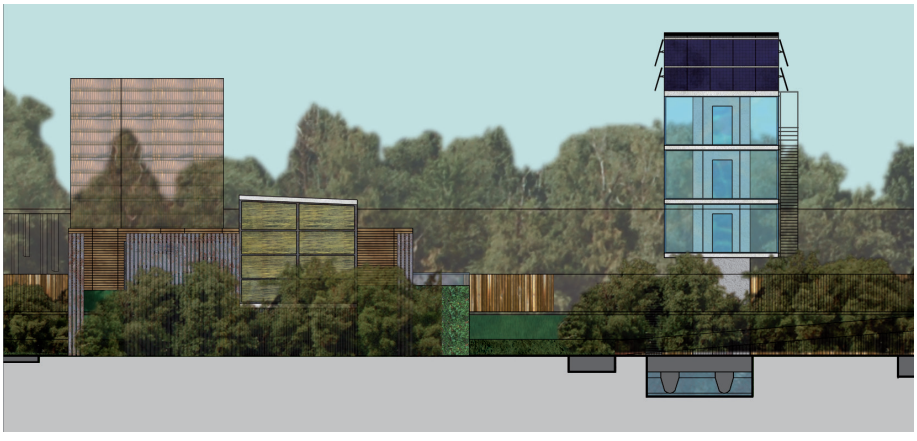

Fig.7. Riverfront /NDFpl/nr.2 model for the Danube floodplain area (Cherubini, Djukanovic, Melfi, Zivkovic)

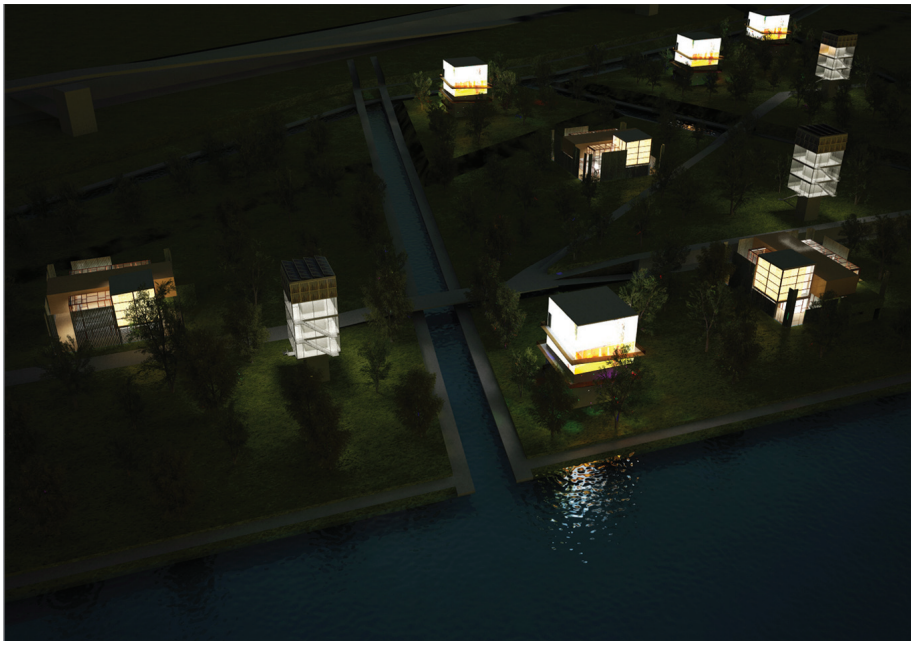

Fig.8. NDFpl/nr.2 model for the Danube floodplain area (Cherubini, Djukanovic, Melfi, Zivkovic)

The floodplain is proposed as the site of a fair on the river, played between green areas and exhibition halls spread across four orders on the minimum water flow level. The model materializes a unique place in which, depending on the season, the the multiplicity of the walkable levels and the uncertainty of the dry ground level of the buildings become respectively quality of the open space and quality of architecture. The first order of pavilions is located just two meters above the lower river level. Here the pavillopns are compact concrete constructions, watertight bulkhead and shatterproof glass. Like tidal islands, they are closed or only reachable by overhead walkways for a maximum period of 70 days a year . Two further orders, while maintaining strong characters submersibility, progressively increase their permeability to outer space which is acquired for open air fair functions. The higher order is actually an extension of the riverbank. The entire set of pavilions is connected by a system of swing bridges on a flood-safe level. A network of fast connections even when the floodplain is dry. This, as the previous models, show how the floodplain design is a matrix for the town staying behind the riverbank in between sluices, ditches, ponds and canals.

Living the riverbank

The embankment is an element of urban and territorial scale whose implementation over the centuries has led, due to the long period, the social and financial investment of the past seeming irrelevant to our eyes. That's why we nearly always overlook the enormous potential offered by rethinking a work of hydraulic engineering not only from the functional point of view but for the identity of the site. The

bank – the river dam – is not only a work but an available and underutilized structure. It is there, inert, to oppose the energy of the flood. The model (RB/nr.1) tries to exploit that energy, tries to flip that inertia. That the river linearly flows is a fact, that the river bank alongside can be a vehicle for urban traffic is a design choice. An innovative but conceivable choise. The model proposes that the riverbank , suitably shaped and reinforced, guests in its body a light railway line as a mobility service for the entire new linear settlement across the Danube. The stations are placed at a proper distance from each other. Eachone is intendend as a terminal for converging local mobility. They emerge on the crest of the embankment making the mobility system

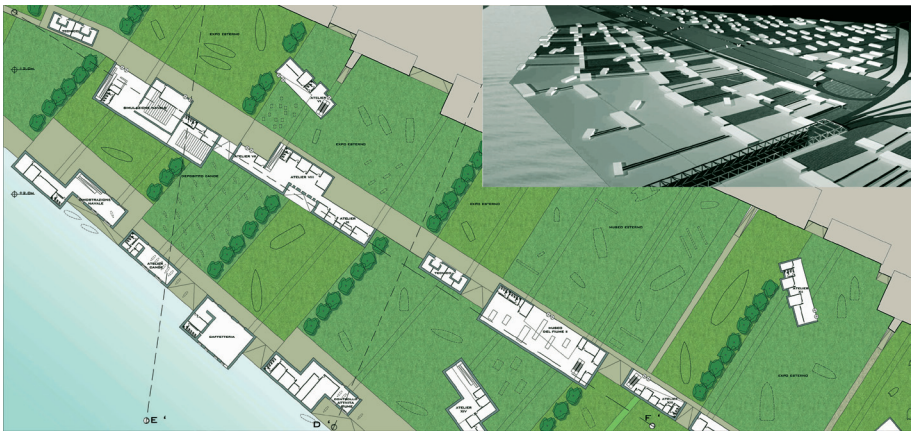

Fig.9. NDFpl/nr.3 model for the Danube floodplain area (Cherubini, De Marco, Esposito, Lanna)

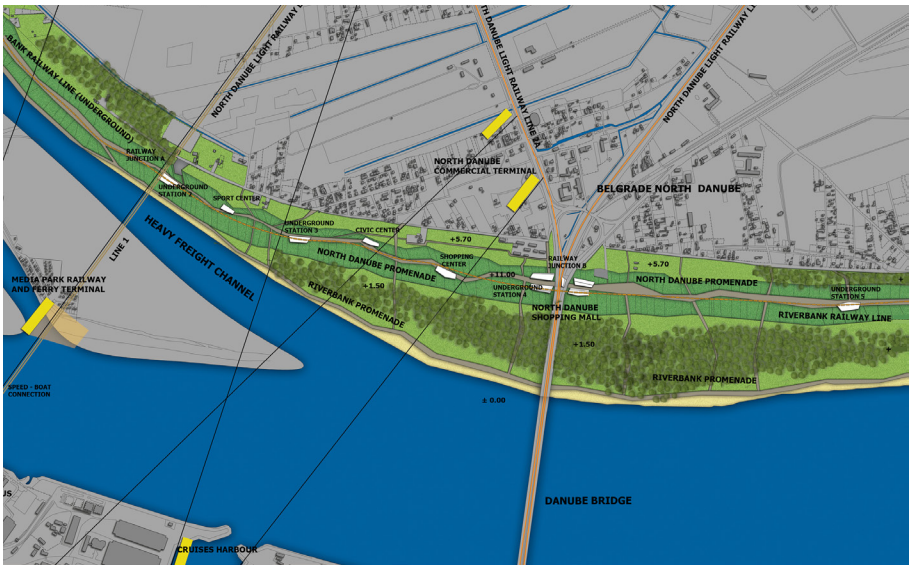

Fig.10. RB/nr.1 model for the Danube Northern riverbank (Cherubini, Esposito, Ingegneri, Lanna)

and the series of the new districts visible from the river and from the other side. The architecture of the station could even give formal identity to the district. Side of the station, the body of the riverbank hosts commercial and entertainment services, opened to the housing beyond. The crest of the riverbank is a natural park covered by a network of pedestrian and bike paths, with the opportunity to transform much of the town along the riverbank-railway in a prevailing vehicles-free neighborhood. The proposed riverbank-railway has its main station near the bridge on the Danube connecting to Belgade city centre. This is a central point for the whole metropolitan area. Here the architecture of the building rises over the riverbank crest to compete with the huge scale of the bridge. A second design model for the riverbank (RB/nr.2) explores the opportunities of shaping the riverbank according to the urban identity of the staying-behind housing. The embankment is transformed from inert mass in dynamic system of walls and sluices, canals and docks. This way the settlement behind the riverbank lives on a controlled floodable surfaces where the water periodically appears between the houses to report of the level of the water just beyond the dam without sharing the violence of the flood. That's living on the river flow.

Fig.11. RB/nr.2 model for the Danube Northern riverbank (Cherubini, Esposito, Lanna, Mannelli)

Fig.12. NDP/nr.1 model for Belgrade North Danube (Cherubini, Esposito, Lanna, Pecoraro)

Sluices and ditches in-between

Today, going up- or downsteam the river and watching the sides, the bank is often a strong visual barrier that hides the absolute solid and dry hinterland we imagine beyond. We must look from another point of view to realize that beyond it is anything but absolute solid and dry. Landscape historians is quite clear as it tends to escape the contemporary look. The clear cut between land and water along the stream of great rivers is anything but a fact of nature. It is rather a work of centuries by hydraulic engineering applied with dams, culverts, sluices and ditches that brought a rule in a relation as problematic as ever. The more the river bed is broad and wide is its water flow, the more is wide the area around, where water reappears with different evidence. The water appears in the almost lacustrine landscape of a dense network of canals and ponds surfaces arranged as drainage of the surrounding land. The flat traditional landscape of Lower Saxony, Northern Germany, hides a duality of levels. Building plots , roads, and public spaces are on a higher level than wet ground. It is a prudent old legacy of the days when the long dam was not yet there. It is an old legacy recalling a modern design topic. A layers project is the model NDS&D/nr.1. Ground morphology, green, water, roads network and architecture are the five levels of a construction including the presence of the river by means of an extension , as it were, of the reasons of the wetlands to low density sprawled but nevertheless civil settlements. Where the instinct of the builder would level, the model digs, moves and strategically accumulates land. Where customarily the hydraulic engineer would proceed by water removal, the model establish a net of ponds and canals. Where green could be reasonably reduced to pure urban park design, it is planned after a complex meander layout closely related to the presence of water. The roads network, which the urban logic would hierarchical and linearly ordered, accept a dialogue with the topography of the site, rejecting the principle of the direct and shortest connection between two points.

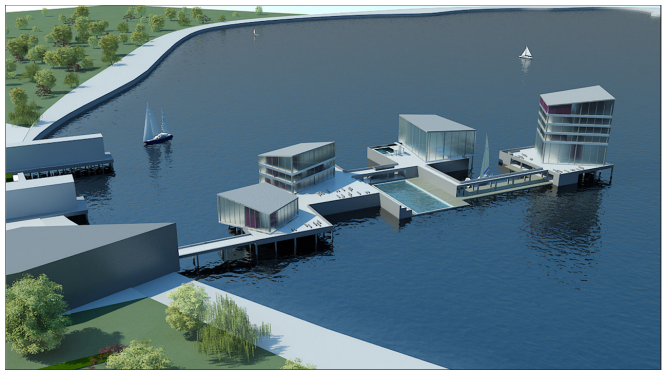

Fig.13. NDP/nr.1 model for Belgrade North Danube (Cherubini, Esposito, Lanna, Pecoraro)

Architecture is the upper layer that finalize the previous by single-family housing units and gardens completely compatible with the exhisting surrounding settlement. The layout of the units appears - without being – random. Rather, it seeks an indirect, translated order. Never vernacular, the formal universe of the model rather refers to a domestic culture. It is a revaluation of the low density settlement planning no waiver urban civilization but rather a subtle interpretation of the anti-urban reasons at the root of contemporary failure of urban suburbs.

The Big Pond

The North of the Danube in Belgrade, just beyond the banks of the river, is shaped by a network of drainage canals. The centre – and the lower site – of the network is a large pond, hidden among the reeds, called in Serbian “Big Pond”. The urban sprawl of Belgrade is gradually and erratically approaching the shore of the pond. The water of the pond is low but anyway sufficient to keep itself healthy and to act as climate mitigator for the surrounding areas. The shores are uncertain and muddy but the land around is fertile, suitable for quick reforestation actions. The present roads and railways present are running over embankments but they are a good premise to local infrastructure. The landscape is flat – beyond the Limes on the Danube plain extends boundless to Hungarian Puszta – but the hills and towers of Belgrade are still a clearly visible urban landmark behind. The Big Pond is an opportunity for the new settlement North of the Danube if town design is able to colonize the water, not

only carefully arranging housing on the shores but going above the water, accepting its presence since inside the buildings. The first design subject is the skyline. Which profile for this new settlement next and above the water? Horizontal to agree with the horizon of the plain, with the profile of the quiet waters of the pond, or vertical to recall Belgrade in the background with its fortress and its modernist towers?

A second design subject. The building density. Not a numeric matter but a question of identity. Which pattern for the location of the buildings? Which model for the art of living of the inhabitants? Is it the vision of a world of domestic-family houses on the water front, or rather the vision must move towards a multi-storey building structure from which the pond can be watched from above? Third. The relation with the water when this becomes ground of the construction. The pond is not subject to excursions of its level. The wind, which also violent blows on the water, does not generate , for its low depht, waves can worry. Fourth. The shoreline. While it is just an uncertain line, why being dependent on it? The design models around the pond – to be precise on the side of his nearest shore to the advancing front of the surrounding informal settlement – give alternative answers to the same questions. After model NDP/nr.1 the pond is a magnet, the site where building acts a an attractor, concentrating architecture in an urban linear form. It is the oxymoron of a marginal urban centraliy, an arm of a light railway line coming from Belgrade becoming the backbone of a system of public buildings combined on the water with squares, piers and boardwalks, including a large artificial water basin, big enough to accommodate a traditional river sailing boat of the region. After model NDP/nr.2 the settlement is pulverized bestride the shore over a network of pedestran and vehicular roads running through the water surface and the solid ground in a plurality of directions. The network separate housing units mixed of one family and collective buildings. Wooded strips cross the settlement parallel to the shore deviding it into sectors of different proximity to the water. The multi-storey blocks have different heights but use the same distribution system of ramps and boardwalks and stairs. A system that builts an internal vertical way to the top opening progressively larger views on the pond. Model NDP/nr.5 also proposes a network of paths and roads to develop the pattern of the settlement. Even with an apparent prevailing involvement of the solid ground, except the fact that the latter, as

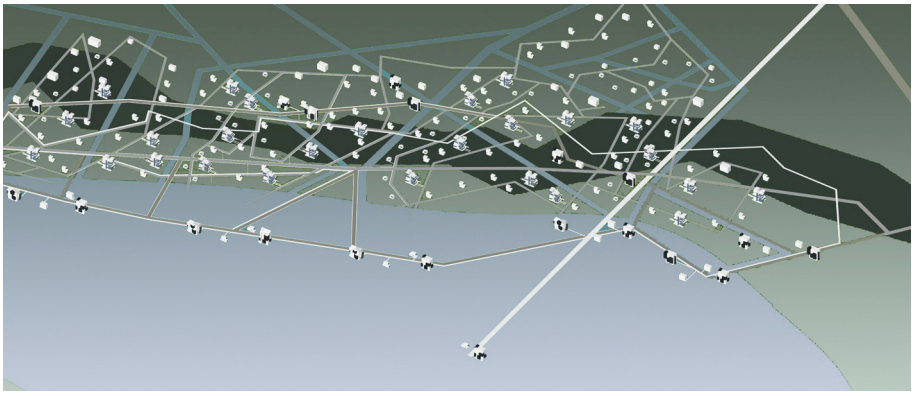

Fig.14. NDP/nr.2 model for Belgrade North Danube (Cherubini, Esposito, Lanna, Pappalardo)

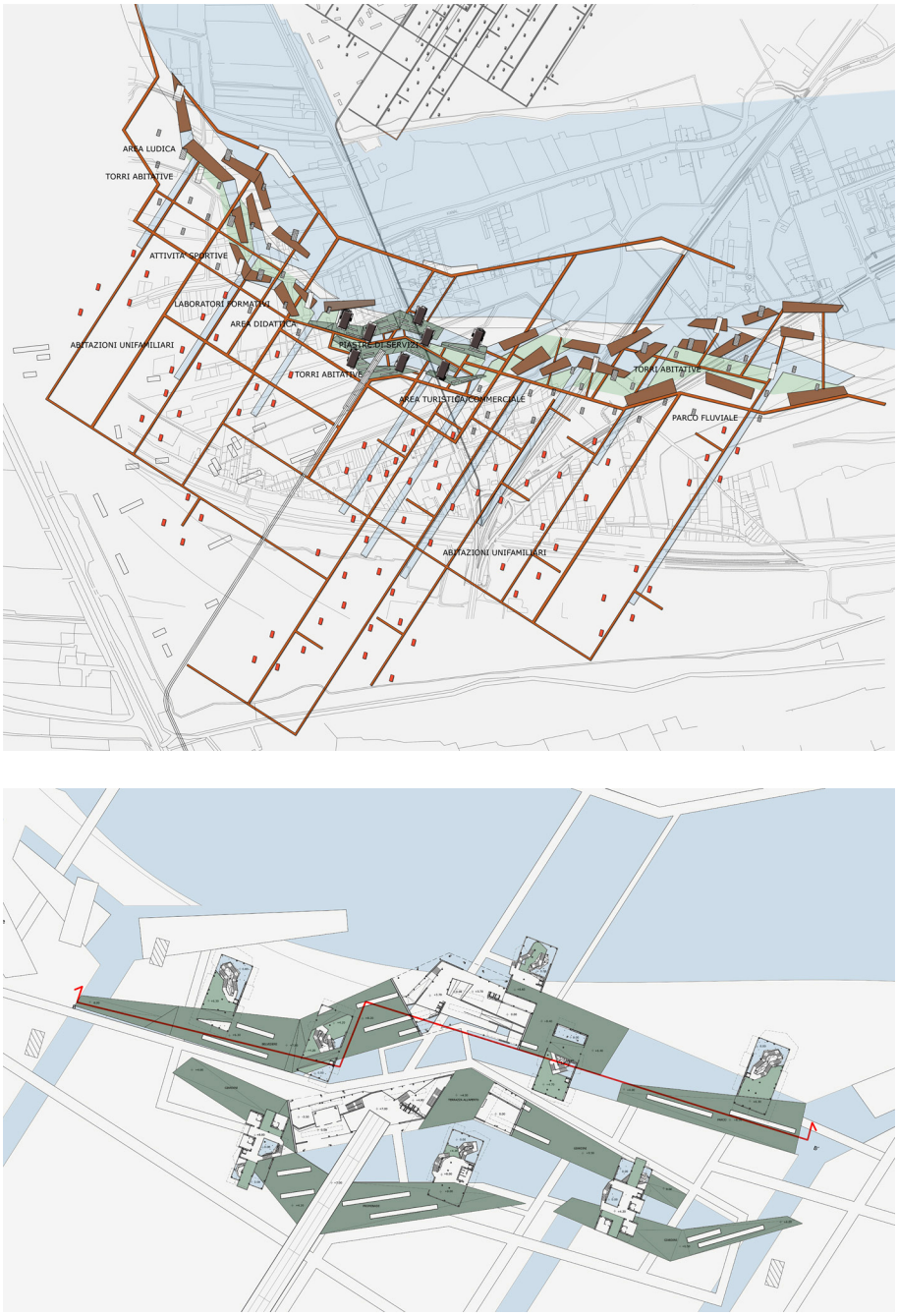

Fig.14.15. NDP/nr.5 model for Belgrade North Danube (Cherubini, Esposito, Lanna, Spanò)

indeed the architecture to a smaller scale, includes water as an essential element of his plan. The model deliberately replicates the water not only in the basement or on the top but each floor of the building. The distribution is wound around and above the water basins, protruding in crystal shells from the perimeter. As signals from outside of the liquid heart of the building. Models NDP/nr.3 and NDP/nr.4 are different variation of an experiment on building density in order to check different profiles on the waterfront. In both models the shore is deeply engraved by creating a system of artificial docks – narrow and rithmically tighten in the case of NDP/nr.4, wider in the case of NDP/nr.3 – and strips of buildings oriented towards the water as liquid and solid sectors of the same central site. NDP/nr.3 model organizes the buildings according to an articulated skyline where a sort of horizontal tower is located at the end of each strip. While a fragmented system of small buildings complete the settlement along the dock. NDP/nr.4 model moves a strip of vegetal soil from the ground of its system of piers and turns it into a linear public open space. The strip becomes a green band that drives the building plot until the end of the system on the water. Here the band rears, vertical, and it is transformed into the green back front of high, crystal transparent tower overlooking the water, dedicated to departments, laboratories, collective functions and special housing for a new university research center out of the town of Belgrade.

A (temporary) conclusion

The modeling materializes across the river a peculiar vision of town design and architecture where flowing water connotes the shape of the settlement and the form of the building. For centuries water in the town – outcropping, stagnant or transported from the riverflow – was a threat to urban life. Still today, the settlement and the building generally refuse a substantial presence of water in their plot, or only accept to confine it in strictly defined sectors. Basically for denaturalize it. Fountains and pools are the opposite of the river, the polar opposite of the reality of the pond. Chlorine-based dead and crystalline waters, however limited to the strict extent necessary for decoration or pure bathing pleasure. But water can find in architecture and town design – or has already found – new citizenship between the materials of the contemporary. Vaporized or flowing, as a presence of bioclimatic or identity value. The attitude towards the liquid element is in this way inclusive. The riverfront is the suitable site for design experiments. The exorcism against water in the town is thereby finally consumed.

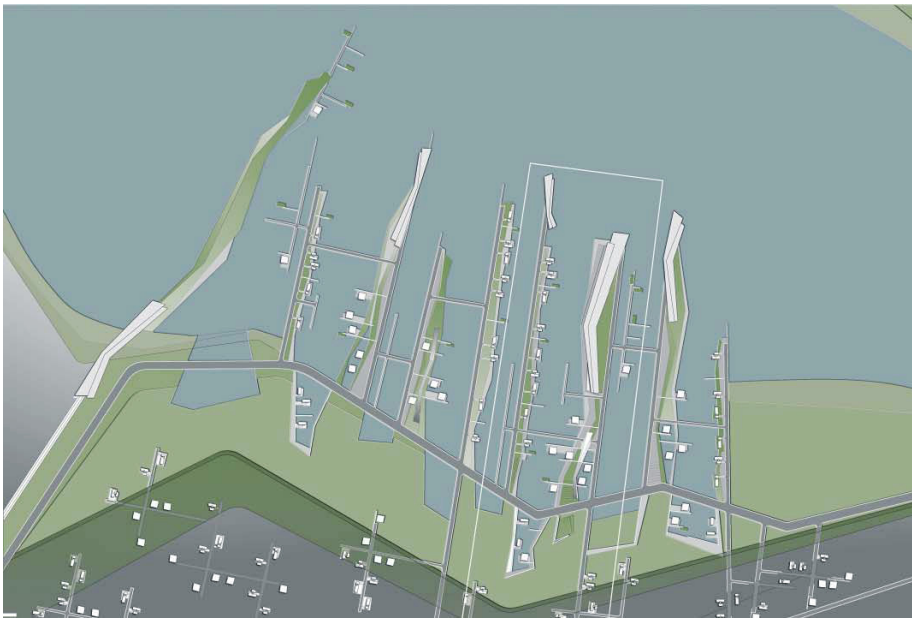

Fig.16,17. NDP/nr.3 model for Belgrade North Danube (Cherubini, Esposito, Iamartino, Lanna)

Fig.20. NDP/nr.4 model for Belgrade North Danube (Cherubini, Esposito, Giannetta, Lanna)