



**Urbanistica n. 122**

September-December 2003

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Received books

## A fascinating adventure *Augusto Cagnardi*

The competition for the design of a city is a rare event, indeed a very rare one. If the city is in China, the theme becomes extremely obscure, due to the enormous distance between their culture and our own. If, finally, the requirements, as well as the definition of the area and the measurement of a maximum of 100,000 inhabitants, are generic, or rather, incredibly free, demanding the best possible quality, Italian style, the highest ecological level, then the operation may seem too imprecise, highly risky, but at the same time madly fascinating, when they invite you and ask you for answers.

What is more, the time allowed is short: on 5 April 2001 delivery of the materials, on 7 May intermediate verification meeting, on 24 June delivery and the following day the result: 2 months and 20 days.

The content, on the other hand, is extensive, and includes the master plan of the whole city (approximately 3 x 5 km), the detailed plan (three-dimensional development) of 1 km<sup>2</sup>, the architectural project of a set of specimen buildings, the architectural characteristics and the most significant materials, plans, sections, views, landscapes, renderings and nocturnal views.

A test on the whole city, its spaces, architecture, a large diagonal slice of the structure, configuration and urban quality.

The quality of the area, a flat surface traversed by water just outside the built-up limits of today's Shanghai, the lack of contextual references, other than geographical ones, the delimitation between two parallel axes, the river on

one hand, the road and underground railway on the other, have prompted us to travel back freely over the founding process of the city: a central location, the axes, and to configure the urban fabric, the external limits.

The ancient founding principles have had two contemporary objectives superimposed upon them: to prevent the harmful effects of vehicle circulation, so far only perceived in that country, and to introduce ecological values not as a rearguard action, but as part of the project.

Finally, the whole process has taken place within our own interpretation of 'Italian style', which has translated above all into the quality of the public space, its relationship with the construction and the identification of a particular central system, subsequently denominated Palazzo Italia.

The competition documentation is not a project as such, this is in the study phase. Rather, it is a manifesto, a document of theses, suggestions, demonstrating a possible way of behaving, the fruit of an intense, controversial and exhausting internal debate. It plays with memory and the hope of a new future. It is akin to sowing seed. If the seed is good, if the growers are wise... time and history will be the true builders. In this phase it is DNA that counts, illusions are legitimate, hopes must prosper, efforts to promote are necessary and due.

The elaboration is complex, however, as it is necessary not only to put forward proposals but also to indicate the technical answers to the problems underlying them. The set of proposals regarding structure, image, landscape and of a more strictly technical type is extensive. And so it had to be, because we are dealing

with a whole, powerfully autonomous city, not a part of a city inserted into a fully formed urban fabric, as more frequently it happens in old Europe.

Yet certain basic questions emerge.

The city is concealed behind a rampart with respect to the exterior, it wishes to resolve the uncertain relationship between the new constructions and the countryside or the surrounding infrastructures and to highlight their surprise presence, at intentional, designed points, such as the lake onto which Palazzo Italia faces.

The centre has a linear development between the connecting road with Shanghai and the river. In a band 300 m wide and 3 km long, a large designed garden, in which are located the unique, unrepeatable functions, and towards the river the business centre and hotels. The Pujiang centre stretches from the Palazzo Italia to the port on the Huangpu River, the banks of which, today used for a 15-km-long river port, will be transformed into a leisure area for the whole city.

The urban fabric consists of 300 x 300 m blocks, inside which vehicles cannot enter, except to gain access to the underground car park.

Internally, the buildings generate a network of pedestrian roads, which widen at the intersections to form plazas, according to the Venetian model of the *ruga* and the *campo* (*ruga*, a variation of the French *rue*, is a Venetian street between houses, while *campo*, literally 'field', is a paved square).

In the heart of the block, a residential park and the minor services, at the edges, along the large grid, the buildings leave space for private gardens that determine the main road image with their enclosure

wall. The buildings, with garden terraces, face onto the inside of the block. An interpretation of ecological quality in planning terms has been fundamental in the configuration of the residential core of the city. Water is a privilege of the site. The canals existing today between the river and the ocean, created for irrigation and transportation, allow a new design and re-use for tourism sailing. Lakes and canals become a significant urban characteristic in forming an urban landscape rich in exceptional elements.

Banks and bridges enrich the urban experience of those walking in the parks and also those travelling by bike or car.

The presentation of a competition to a jury whose processes of judgement are unknown to us cannot be entrusted solely to the technical representation of the city and the architecture belonging to the European culture and historical tradition.

Both the transfigurations of buildings already constructed and the renderings of large measurements have been very useful.

With the competition we can state and suggest, we are not allowed to impose. Subsequently it remains to be seen to what extent the competition ideas will contribute to form the reality.

### Urban planning and landscape design town of Pujiang

In September 2001, the Shanghai City Administration proclaimed Gregotti Associati (partners: Augusto Cagnardi, Vittorio Gregotti, Michele Reginaldi) the winners of the Invited International Design Competition for the plan of an 'Italian City' in Pujiang New Town. This competition is part of a larger initiative, *One City and Nine Towns*,

aiming at selecting the best planning schemes for nine large urban developments. Each development is based upon a different Western tradition (French, American, Dutch...). Gregotti Associati was invited to participate, and went on to win the 'Italian City' category.

**The 'Italian character'**

When assigning an 'Italian character' to a new city, there are two facts to be considered: first of all that this character is based on an historic awareness as seen from a presentday angle, and second that this awareness is the reference for projects of the future which move away from it. The Italian city is a voluntary foundation act and it is based on the geography of the land as well as on its history, and on the concept of geometrical layout: mainly the very ancient European and Mediterranean tradition of the orthogonal grid (which is also part of the Chinese urban culture).

In the course of the centuries, events and lifestyle changes have modified this traditional way of urban founding, the concept of which has several times been exported afar, even to other continents.

The core of this tradition is the construction of an 'ideal city', able to receive the changes imposed by the experiences of history and mankind without losing its own cultural identity. It even suggests a structure able to foster the different and new needs of social living.

In order to do this we have tried to closely consider not only the Chinese culture, its history, its present conditions, its future targets but also and most precisely the geographical features of the site, its landscape and its prospect of integration in the new settlement and the relationships it will develop within the larger area of its district territory.

The presence of the large river, of a site rich of water, its orientation, its infrastructures and their chances of development and interconnection, its character of relative economic self sufficiency, the presence of the very large settlement of Shanghai, the distance from the ocean, the favourable location in relation to the intercontinental airport, are all important starting points for the layout of the new city. Its 'Italian character' therefore emerges also from the fact of having considered the site features as important elements of the design.

The way to describe our project is certainly also a part of that character. The historic tradition of the Italian city (unfortunately not of the present days) is that of a city surrounded by walls, of well-defined boundaries even if not traced by the old defensive walls, and with a structure clear in its main elements. A problem in itself is the request for districts with different typologies corresponding to various income levels. We reckon, in accordance with the tradition of the Italian historic cities, that such levels have to be mixed and that the different needs are taken into account within the context of the specific architecture: the 'palazzo' is an element of expression of the urban texture in the same way as the various house and apartment typologies. Despite these differences we have tried to meet the brief by structuring the urban complex in some parts which are socially distinct also in the houses them-selves.

### **Pujiang City**

The area configuration has very particular characteristics. The absolute horizontality, the canal system for navigation and transport, the capillary

network of irrigation canals, the small widespread rural settlements without relevant gatherings, the regularity of the existing settlements even outside the limits of the intervention, have not produced any historical or contextual elements strong enough to characterize the proposal. The only strong element to refer back to is the geographical one. The horizontal land and the abundant water are site conditions taken into account and revised in the proposal.

An important restraint is also present in the area: a band of high tension power lines. The most recent acknowledgments in scientific research on the dangerous effects of the electro-magnetic waves advise to place any human settlement well away from any power line. It has also been taken into account, again as a restraint, the main road in the east-west direction which connects the expressway to Shanghai (Puxing Road) with the ferryboat by means of which the Huang Pu river-sides are connected.

### **Structural Plan**

The east-west and north-south orientations are taken as the axes carrying the urban complex. According to the Italian tradition the two orthogonal axes differentiate and orientate the spaces of the foundation town. In this instance an act of town foundation is being performed since the existing elements, apart from the geographical ones, are insignificant when compared to the overall dimension of the foreseen intervention. The orientation of the river and the canals, through which the water of the river flows towards east, coincides with the chosen orientation. The whole area is 'measured' by a grid of 300 x 300 m. The city is defined on three sides by

roads and on the fourth one by the river. A green belt, a woodland, crosses the whole area from north to south masking the electric power lines.

In a zone 300 m long between the road to Shanghai (Puxing Road) and the river is located the system of the main functions and activities. The system of settlements is divided into four neighbourhoods: the 'top-grade neighbourhood' (located around the centre), the 'standard neighbourhood' (located southward), the 'ecological neighbourhood' (located northward and in the area between the woodland and the river).

The whole is surrounded by a green belt in order to mark its limits with a system characterized by earth ramparts towards the road to Shanghai and with systems less formally characterized along the east and west sides in view of future expansions. Waters runs through the whole area. Canals and lakes give to the city the look of a lagoon. A lake leads into the centre and is overlooked by the Palazzo Italia. A canal surrounds the whole central district. Canals and lakes characterize the various neighbourhoods. It has been planned for navigation on all the expanses of water.

The public and private gardens, the woodlands together with the water expanses ensure a very rich and varied urban landscape set into a landscape where the residences have heights comprised between two and four floors. There are only few buildings higher than this and they are all located in the central sector.

The accessibility to the whole area is ensured by the expressway to Shanghai (Puxing Road) and by the electronic railway planned along it. A road system moves away

from the expressway and penetrates into the area crossing it all the way to the riverside. From these roads branches off a network of vehicular streets which resumes the 300 x 300 m grid and borders the residential blocks. The road network has many typological variations derived from the various locations alongside the canals and the green areas, and it is always tree-lined. The cycling paths are always inside the blocks and coincide with the pedestrian routes. The system of public transport makes use of the main connection with Shanghai by means of the electronic railway which runs alongside the expressway and has three stops along the road frontage of the new city. From the main station a direct pedestrian access is possible towards the centre and the Palazzo Italia. Interchange car parks are going to be located by the two other stations. An electric transport system on wheels internal to the blocks has been allowed for. A second internal transport system by way of boats along the canals could be foreseen. The navigation on the canals and the various water expanses could also be driven by touristic and leisure reasons. The river bank could be reclaimed once and for all with the foreseen improvement of the Huang-Pu river water quality. The terminal part of the centre overlooks the river and its banks are turned into leisure areas, with moorings to serve the river and internal navigation. The system of services takes care of a whole range of activities. The most important services are located in the centre (the administrative activities, the university, the Palazzo Italia, the hospital, the multiplex, the big commercial functions). Inside the

residential texture are placed the educational services, the theatre, the museum, the library, the sports facilities in general. Integrated in the woodland are the main sports facilities, the stadium and the facilities for the university, the golf course, the riding facilities, the indoor and outdoor swimming pools, the arena for sports and musical events. The residential distribution is conceived as follows:

- Top grade neighbourhood. Building area surface 2,127,900 sm; inhabitants 25,000; building height three floors, four in exceptional circumstances; medium size units 200 sm; density 117 inh/ha.
- Standard neighbourhood. Building area surface 1,432,700 sm; inhabitants 45,000; building height four floors; medium size units 1,200 sm; density 314 inh/ha;
- Ecological neighbourhood. Building area surface 4,300,000 sm; inhabitants 15,000.

#### **Road and transport system**

The city is based on a 300 x 300 m road network. It is connected to the expressway to Shanghai by means of five exchangers and in a very similar way to the two bordering roads which reach the riverside. The primary roads starting from the exchanger all the way to the interior have a very unique shape. They take the form of wide tree-lined avenues with a 60 m cross section and have in their centre a green parterre or sometimes a canal. The whole of the special primary roads forms a circuit with water around the top grade neighbourhood, it projects towards the river with three axes and runs across the whole city with three axis in north-south direction. The road with the heavier traffic will be the main axes

because it runs along the principal public functions and private activities of the city.

The road grid is reduced to 300 x 150 m in the standard neighbourhood.

The overall cross section of the roads which shape the grid is 26 m (5 m footpath, 7 m road, 2 m central tree-lined bank, 7 m road, 5 m footpath). The road distributes the vehicular traffic and the transport on wheel to all the areas of the city and crosses over the canals at high level. The road level is 6 m above sea level, considered to be a safe level for flooding and ebb currents. In the special sections the road is 60 m wide with a 36 m parterre. The car parks both private and public are planned to be outside the road system. The road sections have uniform carriageways 7 m wide for each direction. The space allocated to pedestrian changes in relation to the distance between buildings gets wider wherever the roads become tree-lined avenues, where there is a canal, where it gets wider to include the urban parks.

#### **Water system**

The abundance of water in the site is extensively used and becomes a typical element of this proposal. The water of the river runs across the whole city without jeopardising its usage further down the valley, outside the area. In the city the water takes the shapes of canals of various width, of lakes overlooked by the main buildings, of lakes vast for their relationship with the urban area, of docks where boats can moor. The Venetian attribution of the new town has its origin in the widespread presence of water in terms of both quantity and quality. The Huang Pu river vouches for its quantity and quality, and as soon the quality of the

river water is improved, there won't be any problems.

#### **Public services**

The public services are placed in the new town following a principle of concentration and distribution. Concentrated along the central axis are the public services which are not repeatable, the ones of higher rank such as the administration buildings together with the congress centre, the hospital, the university and a religious building (a catholic church?). Next to these can be found the Palazzo Italia with the Italian Gardens, a commercial centre (a shopping mall with 500,000 sm of commercial activities), hotels, offices and a multiplex. All these functions are lined up in a garden 260 m wide and 1,500 m long. They are accessible from outside the city through the main communication axis and from the inside by means of the pedestrian route network and the two lines of public urban transport.

In the more densely populated urban texture are placed some other public services, the cultural ones such as the museum on the lake towards north while the theatre and the public library are located between the top grade and the standard neighbourhood. Spread around the whole city are the educational institutions. An important space of the city is assigned to the sports and show business activities. Along the vast woodland which includes the electric lines and reduces their impact on the urban skyline are lined up the main sports facilities. The riverside is completely allocated to leisure activities, to walks and navigation. This kind of service distribution generates the mixtures, the molteplicities

of uses, the gatherings of activities which, by overlooking the public pedestrian spaces, feed the liveliness of the exchanges which is one of the essential values of the city.

### Urban landscapes

Inside the complex of the city are proposed various landscapes at various scales, the urban, the neighbourhood, the great route and the block ones. With an overview from above, an aerial view, the new town is recognisable in its entirety as a magnificent garden rich of lakes and canals, crossed by great perspectives, with an extensive design where the tree-lined areas, the woodlands and the external perimeter mark the first grid, the tree lined boulevards the ordering network, the internal parks and the private gardens the minor grid. In the magnificent garden the coloured buildings and the roof gardens full of flowers reinforce the minute design almost as if it was a coloured carpet. A section of it stands out, as it happens with every garden, it is the central axis where some 'monuments' emerge as landmarks, the Palazzo Italia and the hotel with the offices on the opposite end along the river. From the ground, on the other hand, the various landscapes are perceived as a sequence: the walled landscape, the boulevard landscape, the woodland landscape, the water surrounding landscape, the blocks landscape, the riverside landscape.

### Central axis

A series of the main public and private elements of collective services is located from east to west along the central axis of the new city, that is from the expressway to Shanghai to the river. The city front towards the Puxing Road is contained within

green earth ramparts, which visibly mark the boundary and on top of which lies the electronic railway. An opening through the rampart marks the entrance of Pujiang City. When arriving from Shanghai, the arrival is at the central station of the electronic railway (one of three planned), if by car the arrival is in the same place, from where the central area of the city is then accessed. From this junction a vast expanse of water has as background the Palazzo Italia, which consists of buildings, Italian style gardens surrounded by water, where there are pavilions and fountains. The complex formed by the Palazzo Italia and the gardens spreads out for nearly 800 m along the central axis and is flanked on two sides by a wide tree-lined avenue and a canal. Along the axis various settlements are laid out all the way to the river bank. The second settlement is made up by the buildings which house the government with its offices and a congress centre open to both public and private shows. Following a crossing by a main pedestrian axis, a big commercial centre of nearly 50,000 sm can be found, which is made up by pavilions overlooking a gallery open onto a wide square with big water expanses. The second part of the central axis houses the hospital and the university, and the third an office complex, a trade and business centre and hotels which stretches out into the river to create a docking port for a possible commercial and touristic navigation along the river.

### Top-grade neighbourhood

The district is located at the heart of Pujiang City around the central axis and extends between the expressway to Shanghai (Puxing Road) and the vast woodland. It is

surrounded by the main canal which acts as a divider with the neighbouring settlements. The network which defines the district structure is based on a 300 x 300 m grid. The choice of this dimension originates from different considerations: the setting up of an organic unit of about 1,000 people; the possibility of creating inside the district routes of squares and roads to be arranged in succession with the other blocks with an identity of their own; the concept of separating the various levels of traffic both pedestrian and cycling, and of public and vehicular transport; the fact that all the blocks give shape to a district which is walkable across in about 15 minutes and therefore able to access the system of the main central functions. The general rules which according to the Italian tradition allow to assign the planned quality and to guarantee the necessary road network could be summed up as follows:

- *road system*. Each block is surrounded by vehicular roads. It is crossed by four pedestrian and cycling routes 12 m wide, all in a predetermined location to allow for continuity between neighbouring blocks. The internal roads when meeting each other form squares with various sizes and shapes;
- *building use*. Residential. Service activities and small trade are made possible at ground level along the streets and squares internal to the block which have been defined as commercial. Offices are also allowed in the floors above;
- *building heights*. Three floors. It is possible to place four storey buildings in certain locations in order to vary the extreme uniformity of heights;
- *building alignment*. Buildings have to be aligned along the four 12 m wide

internal roads and around the squares. They can't be placed parallel to the external roads;

- *private green spaces*. In the empty space at the centre of the block there is a garden for public use;
- *car parks*. They have to be placed underneath the buildings;
- *roof gardens*. The roof of the buildings are used as terraces housing a garden with a pergola. The surface of the buildable areas, leaving out the external vehicular roads, measures 1,500,000 sm. The buildable area of a single block is about 75,000 sm. If the number of people per flat is between 3 and 4 the whole area could house between 24,000 and 26,000 inhabitants. The surface of the green area inside each block is approximately 35% of the overall area.

### Standard neighbourhood

The block is located south of the central axis and is contained within the expressway to Shanghai and the vast park, between the top grade neighbourhood and the southern border of the area. Two intersecting canals run through it. Two wide tree lined avenues cross it in the north-south direction and a main pedestrian route, oriented along the same direction, connects the market square to the theatre square. The external border is surrounded by a green belt. Even in this case the network defining the structure is based on a 300 x 300 m grid. The higher density and the higher buildings require a road network double in size along the east-west direction. The wholly pedestrian block has then a size of 300 x 150 m. The buildings are mainly lined along the roads. Two wide public spaces are planned along the canals with a layout where the

green on the riverbank plays an important role in the urban landscape. A wide market square, where even an indoor market is feasible, is located in the area further south and ends the main pedestrian axis which reaches the administration building.

The general rules which, according to the Italian tradition, allow to carry out the planned project and to guarantee a good variety don't differ much from the ones applicable to the top grade neighbourhood, the only differences being found in the block size, the density and storey height.

The surface of the buildable blocks, with the exclusion of the external vehicular roads measures approximately 1,432,000 sm. The buildable area of a typical block measures approximately 34,250 sm. If the number of people per flat is between 3 and 4 the area could house between 45,000 and 50,000 inhabitants. The surface of the green area for both private and public use is approximately 35% of the overall area.

### **Ecological neighbourhood**

The areas pertaining to the ecological neighbourhood are located in two different sectors. One of them is north of the top-grade neighbourhood and includes a lake. The other area extends along the riverside. The latter is itself divided in two parts by a wide road oriented north south. For the area closer to the river it is possible to foresee a full development once the river is reclaimed. In the north sector an 18-hole golf course and a riding ground are in centre of the buildable areas. The whole area could be built with villas and small suburbs over-looking the water. The possibility of creating internal water basins connected to the river is taken into consideration. The houses around them

will have a mooring for the boats which can then navigate along the river towards Shanghai in the same way as they can navigate on the canals internal to the city.

Wide tree-lined avenues, through which it is possible to access the building plots, run across the area. Their size vary from the small to the bigger sites and even exceeds 200,000 sm.

The wide grid characterizes big blocks which can be subdivided into areas big or small according to the developers' needs. Inside the vast grid parks and water basins are conceived as elements which characterize the private housing projects.

### **Proposals**

*Phasing.* The construction of the New City poses various questions at the strictly operative level. The need to build the technological facilities on the whole area will lead to phasing the operations, especially the ones devoted to water systems such as canals and drains which will have an influence on the phasing of construction. The need to make the drain liquids flow by gravity with small intermediate lifting equipments makes it necessary to start from the ends and then go back up again to build the network. The work to be done on the existing canals and the tracing of the new ones imposes a sequencing of works which don't jeopardize the balanced continuity of the flows of water. The special devices to increase the water quality are located at the points of change from the river to the canals. Even when locating these equipments it is necessary to organize a phasing which keeps the already treated water separated from the rest. It has been proposed for the electric lines to be buried when crossing the main

axis. Everywhere else they can be placed side by side inside the planned woodland.

*Italian Style.* In the proposal the characters of Italian style have been introduced at various levels. They can be found in the planning of the New Town where the tradition of the city of new foundation is recognized.

They are in the image of the 'walled' city which suddenly discloses the 'castle' (the massive Palazzo Italia).

They are placed in the central axis where the Italian park with its 'monuments' marks the quality of the landscape.

They are also located in the use of water, the canals, in the Venetian relationship between road and canal, between building and canal.

It is in the buildings dominated by the masonry onto which windows are opened, where cornices and mouldings, loggias and covered roof terraces enrich the facades. It is found in the richness and continuity of squares and public spaces as place of life. It is above all found in the landmarks and particularly in the Palazzo Italia.

All these qualities marking the proposal should translate in tangible elements in the design. A straight way to do this could be by commissioning Italian architects with some parts or some buildings.

Particularly the buildings which are entrusted with the transmission of the image of the Italian city and architecture.