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Co-planning Pto in the Val Pescara

Raffaella Radoccia

In last years the Abruzzo Region worked on the living politics to support the social and economic development and the improvement of the quality of life of the small costal, mountain and metropolitan cities through the regional law n. 40/05 and then with the realization of the regional law n. 95 of 2000. Both laws have been formulated to better coordinate urban time and space to realise a better use of territorial services according with governance. In this scenery the Unica Pto have been proposed as a co-planning experience of individual times and collective services that are realised by some of the principal municipality of the metropolitan area between Chieti and Pescara.

A better quality of life

According with the european experiences of harmonization of the city times, the studies on the Abruzzo's territory carried out by the University and Cresa, social and economic analysis by Istat and Censis, other time-oriented projects (Equal Spazi e tempi nel lavoro) demonstrate as in val Pescara exist an increasing request of sustainable mobility and working time flexibility, especially regarding the gender equality. The Unica Pto considers the questions about organization of the commercial, productive, school and touristic services. Moreover, his aim is to make the val Pescara's territory pleasant to live for the people that work in small and medium concerns, go to the University or in the new law court or for, live in small cities or have to reach Pescara to have access to the main collective services or move from Chieti or Pescara to reach the shopping-mall and for those move in the night-time to have fun.

A long co-planning route

The municipalities of Unica carried out a co-planning route based on different and related elements: technical forums on public utilities, commerce and school, the decisions of the Unica board, the workshop Progettare insieme i Piani territoriali degli orari di Pescara e Unica. Co-planning has gone over the municipal borders questions. Those questions are related both the economic and social development target of the valley territory, and the roles and responsibilities supporting the renewal of the local welfare. Moreover those questions are related to the actual urban planning and to the provincial mobility planning as Pumav.

Elaboration of Unica Pto is placed into the settlement system between Chieti and Pescara, moving from the request of improving the access of the citizens to the public services, looking for the conditions for a possible consent between public administrations, syndicates, enterprises, workers, families, public authority, voluntary and professional associations.

Choices of Pto seems to be the result of a progressive exchange between the Unica municipalities and the other actors. During the planning route the municipality of Pescara, the provinces of Pescara and Chieti, labour unions, craft unions, citizens organizations and the authorities of public transports, expressed different necessities, expertise, evaluations, strategies of participation and method of communication.

Step by step direct participation

Unica Pto used an extended temporal approach in order to include change expectations and requests, coming from the territory, following as example other intervention of temporal politics realised or in progress in Abruzzo (Pescara, Chieti, Ortona, Roseto) or in other Italian regions (Bergamo, Bolzano). Unica Pto moved step by step, trying to improve the integration into the settlement system between Chieti and Pescara. Pto mobilized directly the economic and social actors, assumed the citizens daily problems looking for the collaboration of the stakeholders on the territory. Participation goes together with sperimentations, from technical board, through social and solidal instances, to observatory on metropolitan times, focusing on relevant questions with unexpected results and some paradoxes.

Between unexpected results and some paradoxes

On the basis of some observations, Unica Pto tries to define the timetables, that the different public or private services can use to organize opening and closure time, according to flexibility determined by citizens and authorities of public services, following the principles of open negotiation. Interventions are experimental and concerns specified fields. They are not only a temporal start up of the Plan but also an improvement of the open interaction, of the activated organization, negotiation in progress and relations of involved actors.

Temporal policies in the Abruzzo Region

Mariangela Virno

The Region of Abruzzo has passed an important and innovative regional law dated the 16th of december 2005, n. 40, entitled Regional policy for the coordination and administration of city times that promotes an initiative for temporal organization. These actions were activated by local communes to begin a project for the reconstruction of daily life for a new form of quality welfare. This law aims to provide support for citizen's daily life by improving the quality of work and social life.

Urban temporal policies in Italy were born in 1990 when the public local administration became one of the key instruments of renovation. It was also in those early years that the law of the 7th of april 1991, n. 125 came into being by promoting "positive actions for achieving equality between men and women in the workplace" beginning a process of gender equality for equal opportunities with the introduction of the balancing of work-life issue. The law is an innovative instrument of gender policies because it wants to promote, through a different organization of work, conditions and of leisure, the balance between family and professional responsibilities and a better distribution of these responsibilities of the sexes. The innovative institutional process initiated by the italian government intersects and continues with the enactment of the law 8 march 2000, n. 53 entitled Provisions for the support of motherhood and fatherhood, the right to care and training and the coordination of city times, which reads as art. 1, paragraph 1, lett. c, promoting the balance between work, care, training and relationships, also through the coordination of the operating time of the city and promoting the use of time for social solidarity leaving also, art. 22, to the Regions the task and the competence to enact rules to that effect.

The new regulatory framework turned to the public local administration calling for a greater efficiency of its action, both by the citizens-users, as well as the political center, promoter of legislative measures aimed at changing the organizational, the distribution of tasks and powers and the procedures themselves that are the basis of administrative actions.

There is a change in culture and behavior, with regards to the policies of reconciliation, giving rise to the development of synergies: insights on the one hand have been active in academia especially from the perspective of the sociology of everyday life and from urban temporal and, secondly, the demands of the women's movement in terms of hours and times of life.

The regional law 40/05) wants to promote the coordination and administration of the timing of cities and territories with the aim of:

- promoting the quality of life through the reconciliation of work, relationships, parental care, training and time itself and for persons living in the region or use it, also

temporary;

- support equal opportunities between men and women, the policies of reconciling and the distribution of family responsibilities.

The territorial timetable Plan is the instrument that harmonizes different actions with a different impact on the quality of life in cities and territories: time is a precious heritage and is invaluable and its quality very much depends on the quality of life of the modern citizen.

The territorial timetable Plan can be conceived as a 'mobility pact', can be designed as mobility or formal agreements, negotiated and cooperation between actors or producers of times urban mobility bound schedules to synchronize the start and end of work activities, for the improvement of traffic and to promote the use of public transport.

Urban policies of time acting on three spheres: social times, timing and the use of urban individual time by improving:

- the quality of life of persons by promoting the reconciliation of family time, working hours and time itself;
- the living of cities by or an organization that encourages hours of access to goods and services by all citizens as well as improved quality and safety of public spaces to encourage new practices of social life;
- the quality and availability of territory for sustainable economic development.

The Region Abruzzo gives subsidies for the predisposition and implementation of the territorial time-table Plan and the beneficiaries are the municipalities in single form or associated with each other. The municipalities in Abruzzo with more than 30.000 inhabitants are 8 of which the 4 main towns are: L'Aquila, Chieti, Pescara, Teramo, and the others are Avezzano, Lanciano, Vasto, Montesilvano. Only 50% of these communes have applied for admission to date.

Policy areas chosen in the plans are the following:

- projects for the harmonization of public and private working hours;
- projects that promote accessibility to information and public administration services;
- implementation of projects for the territorial timetable Plan;
- projects through time policies contribute to the reduction of emissions of polluting gases in transport.

The stakeholders are all citizens and especially those who commute to school or work, service users, women with families, the elderly, children, and the handicapped. The interest demonstrated by half of municipalities with a population of over 30.000 inhabitants does reflect on the opportunity to continue with this type of urban planning. With the implementation of regional legislation the programming should integrate with all development policies. It is important to reconsider the process of socially sustainable development which is able to create the conditions for a better quality of life not only from an economic point of view but also from the point of view of social relations.

Chronographic analysis of the Urban systems. The case of Pescara

Stefano Stabilini, Roberto Zedda

Multiscalarity, new proximities and the spaces of mobility of populations that inhabit the urban system, are the core of time-oriented urban analysis. This approach questions the ways how the spatial dispersion of settlements is accompanied and co-generated by a temporal dispersion of uses of the city, with mobility perceived as a value and non-accessibility to services as social exclusion: 'new uses of the individual time of inhabitants, freed from the standard and universal shape of working time, are the other face of an original use of urban accessibility devices, that is of the use of urban space' (Bonfiglioli 2007).

The displacements of citizens, goods and information increase and flows interfere according to complex calendars, requiring an integrated design of services, opening hours and infrastructures.

The urban system of Pescara-Chieti

In the methodology of urban time planning, the maps for the analysis of the urban system aim at surveying and interpreting the urban system, by reconstructing the space-time morphologies of use of the territory through:

- the morphology and dynamics of residential settlements, firms and tertiary activities during the 1990-2000 decade in the cities of Pescara and Chieti and in the bounding territories;
- the spaces of such territories that are used by the citizens of Pescara and Chieti for work and individual life reasons;
- the formation of the fabric of settlements and the plot of territorial relations through their historical reconstruction.

In this paper we address the first two issues and the presentation of the cartographic instruments.

Morphology of settlements

Pescara and Chieti are clearly identified as two consolidated nodes of urbanization, having the main role in structuring this territory: both the linear settlements of the coast and those of the valleys are organized around this double urban polarity, and partly weld themselves to it.

The characters of the surrounding nodes are more dynamic and several municipalities show the typical scattered pattern of the urban sprawl, with an increasing weight of residential and tertiary settlements: Montesilvano, San Giovanni Teatino, Spoltore and Francavilla. These municipalities define the only true metropolitan area of the region, not only because of its extension, but also with a view to the dynamic trends of demography and firms. This metropolitan area reaches north up to the system of Giulianova and Teramo, similar in nature but with less territorial density, while in the direction of the interior, it propagates its forms of inhabiting towards Sulmona.

Gravitations and mobility networks

The heart of the urban area, defined as the continuum formed by Pescara, Chieti, San Giovanni Teatino and Spoltore, is strongly attracting flows related to study and education. In this area the transition towards knowledge society is a driving force and a significant role is played by the main historical cities and towns.

By observing in detail the morphology of the territories that generate worker flows towards Pescara and Chieti, the urban system, as a result of the daily pattern of relations of its inhabitants, clearly appears as an archipelago extending all over the Region. We find a diffusive trend at work here, corresponding to the flexibility and freedom of choice of the individual life practices.

Space and populations of the city of flows

Commercial malls and other functions related to spare time are taken here as an indicator of a kind of mobility that is wandering in the infrastructural network in order to acquire services (Zedda 2009).

This kind of mobility pattern is the one denoting the movements of city users, based in all the territories of the urban system and choosing to acquire services on a vast area, by using private means of transportation.

Lines of flow of commuters mobility in the Abruzzo region

By using the cartographic technique of the tensor map, we can follow the lines of flows in the multipolar and multiscalar territory of the urban systems, highlighting shapes and structures that remain otherwise hidden.

The map, as the previous ones, is based on Istat data of 2001 concerning commuting and shows the tension lines and the magnets of systematic mobility for reasons of work and study. What is shown is the prevalent direction of flows generated by each municipality and some significant morphologies are thus made visible:

- the Pescara–Chieti–San Giovanni Teatino–Spoltore system, destination of important commuter flows;
- the confirmation of the comb-like structure of the Abruzzo region, connecting the coast to Ascoli Piceno, Teramo, Pescara–Chieti, Tessa;
- the inner centres of the region, building up relatively autonomous local urban systems, such as L'Aquila, Avezzano and to a lesser extent Sulmona;
- the relevance the coastal flows along the Adriatic corridor seems to be contradicted.

The sources

This interpretation is inspired to the scientific works produced in the 90s by the Itaten research (Clementi A., Dematteis G., Palermo P.C., 1996). A cartography of land use has been used here, in order to show the shapes of urbanization and sprawl, their relation with the main transport network and with the orographic features, the dynamics of functional transformation. The main source of data for these phenomena is the 2001 census. It is worth remarking that the great attractors of

uses connected with commerce and leisure lack a systematic survey on a national basis and with homogeneous criteria.

The european implementation of the Inspire directive and the Plan4all project

Simone Ombuen

Many interventions have focused on the importance of producing relevant and updated 'knowledge frameworks' for a more effective territorial government and a higher level of protection of limited territorial assets.

Several regional laws, approved in Italy since 1995, have started the establishment and the development of methods of construction and sharing of databases with the purpose of supporting the 'planning conferences', which are the places where an interinstitutional coordination among different territorial ad sector administrations take place.

According to the laws 142 and 241/90, and to the Constitutional act n. 3/01, this is how public authorities enact the concept of vertical subsidiarity.

When the multiplicity of public interests at stake (and their institutional representatives) happen to face each other, each territorial protection or transformation issue raises the question of setting priorities among the various public interests. These priorities are not always definable according to the law, and the widest, in conceptual and dimensional terms, are the public interests, the most difficult this task is.

This is because each institutional actor perceives the territorial assets as functional to certain purposes, and not in their entirety. So the river is essentially a hydraulic body for the basin authority, a source of risk for the civil defense, a transformative factor for the soil defense, an element of ecological reconnection for the environmental authority, an unavailable good to be protected for the landscape superintendence.

Each actor's point of view, in a legitimate manner and with scientific and administrative expertise, describes the individual territorial asset in a functional way according to its own institutional activities.

The public decision is therefore composed of very different inputs and contributions, each related to a different operational logic. Returning to the example, a biologist will not like the work of the dredge working on the bank protection on behalf of the basin authority.

In order to allow a good performance of territorial government, there is a need to preliminarily build a framework able to compare the values that each actor assigns to territorial assets.

This preliminary stage is essential, if we don't want to delay and make more difficult the reciprocal understanding of the different points of view, and to prevent the effectiveness of the public decision.

The specific problem is represented by the ability to achieve an alignment, integration and ability to be updated of the 'knowledge frameworks', using shared and certified methods and also systems able to integrate the used technologies.

In the mid-90s, the experience of the geographical infor-

mation systems has added a lot to this situation.

Geographical information in spatial planning

Cartography plays a key role in spatial planning. In an early phase, Gis systems were seen as tools for creating and managing digital mapping. But the development of Giss, which make possible to relate systems of signs representing spatial elements with an unlimited number of databases containing searchable information, has transformed the meaning of Gis in its relationship with planning.

Giss are now seen as multidimensional operational environments where planning can be practiced by producing algorithms that, when applied to databases, produce the definition of the decisions taken and the related mapping. They are real planning systems with computational support and geographic projection.

This has reinforced the role of assessment, which, thanks to the amount of processable information, can take place more effectively. But the size and abundance of information and methods of implementation in Giss has opened the question of the definition of methods of interoperability in the formation of the 'knowledge frameworks'. This problem has of course a highly multidisciplinary content. The experience of regional planning maps and their relationship with the municipal and provincial planning 'knowledge frameworks' With Gis systems, the assessment on the status of territory has become easier. A growing number of Italian Regions have started the formation of knowledge tools on a regional scale, under different names and with varying legal effects on planning activities.

There is a tendency to understand the production and distribution of information, necessary for planning at different scales, as part of the regional power to plan. Even within science-based processes, information is released in an indistinguishable manner from the expressed opinions, to which local authorities will have to adhere.

This is not the way to apply vertical subsidiarity to a system of knowledge and assessment. In such a system, each territorial authority produces both spatialised information, and assessments and judgments about it; but if information and assessments are not made available independently to each other, any confrontation among different, and potentially contradictory, public interests becomes impossible.

It is necessary that each actor, participating in the construction and management of the 'knowledge framework', makes separately available both the set of cognitive elements produced, and the logic criteria and the algorithms producing assessments and planning choices, so that even the assessments made are transparent.

The main hindrance to any attempt to increase relevance and effectiveness of the planning systems is precisely the difficulty for the separate institutions, responsible for the protection of public assets, to come up with shared solutions, despite the series of reforms of 1990, which have endowed public authorities with methods useful to

enact a decisional syncretism.

A point about which the reform proposal made by Inu in 1995, through the coplanning mechanism, finds some limits, especially today, when the diffusion of environmental assessment procedures is expanding and qualifying the evaluation of and participation to the planning processes.

The building of interoperability systems among databases and among Giss is an important field for the development of spatial planning in Italy, and for its harmonization within the European framework. And this concerns the experience of the implementation of the European Inspire directive.

The building of interoperability standards: from Inspire to Plan4all

Objective of the Inspire directive (2007/2/Ec) is to implement a common European 'infrastructure' able to make the spatial information of the different member states interoperable. Reference data are those relating to policies and activities which can have effects on the environment. This infrastructure will have to be based on the single national data infrastructures, already existing or to be implemented, which will have to dialogue on the basis of common norms.

The implementation process of the directive is based on a series of actions aimed at defining technical specifications, agreements, coordination measures, etc. The process entails also the establishment of different working groups on themes related to interoperability, and the collaboration of stakeholders at all levels, also through transnational research projects.

In implementation of the Community Programme eContentplus, the Plan4all project has been funded. Plan4all is a consortium of 25 partners coming from 15 nations, and it is developing proposals for conceptual data models and metadata profiles allowing for the interoperability among the participating data providers' spatial information systems. The products of this consortium will be among the reference material for Inspire and its technical specifications. In the consortium, there are both 'technological' partners active in the field of Gis, and spatial planners (Dipsu, Isocarp, the Ministère de l'écologie, de l'énergie, du développement durable et de l'aménagement du territoire (France), the International Society of City and Regional Planners (Netherlands)). This composition has allowed to investigate a field falling in between 'scientist' approaches on the one hand, and the planners' culture and methods on the other. The consortium has chosen seven themes among those listed by the Inspire directive, in order to deepen, for each of them, the questions of configuration of data and metadata models.

The seven themes are:

- land cover;
- land use;
- utility and governmental services;
- industrial and production facilities;

- agriculture and aquaculture facilities;
- area management, restriction, regulation zones and reporting units;
- natural risk zones.

The project is ambitious, and only at its end will it be possible to evaluate its actual results. However, some of its activities are already finished and have produced concrete results. In these pages, we illustrate both the metadata profile for spatial planning, and the conceptual data model for the theme which is of greatest interest to planners: land use.

Following, three articles illustrating some specific aspects of the results of the project.

Interoperability and spatial planners: a proposal for a land use 'data model'

Flavio Camerata, Simone Ombuen, Franco Vico

The Inspire directive adds to a series of previous Community initiatives dealing with digital data. There are, for example, directives on the public access to information, or initiatives for the environmental monitoring. Inspire intends to make them interoperable, on the basis of ongoing experiences, and avoiding to duplicate the work already done.

From the strictly technological point of view, Inspire is based on a set of existing technical norms, and integrates them with a complex series of 'implementing rules', set up through long processes of participation of practitioners and stakeholders. Among these norms, the most relevant concerning metadata, data and network services are the Iso norms of the 19100 series; as regards services, also relevant are those coming from the open Geospatial consortium.

All these specifications are the technological basis on which spatial data providers and users should base the construction, management and distribution of their databases and have access to them. These actors comprise also planners and those generally dealing with spatial planning, a discipline falling within the scope of Inspire. In fact, 'land use' which can more effectively be referred to as 'spatial planning', is among the 34 spatial themes listed in the annexes to the Directive.

Interoperability and the role of planners

Planners are among those who should actively participate in the implementation of Inspire. Indeed, interoperability is an issue that shouldn't be left only to IT engineers. It is not only about developing mechanisms able to automatically transform databases, but it is also about making agreements, developing methodologies and carrying out activities which fall in the range of the planners' competencies. Public administrations, and the planners working with them, are the first ones to face the problems of interoperability and they have the responsibility to try and solve them.

Switching from paper to digital has raised a number of questions earlier hidden by the smaller accuracy of paper itself, and by the fact that the exchange of data was somehow less necessary. Many of these questions are linked to the transcalar nature of planning. The same river, for example, can be represented with different reference systems or geometric primitives; its representation often needs the manual introduction of additional information when passing from a smaller scale to a larger one; moreover, coterminous authorities might give different risk values to the same buffer zones. Another example is when the spatial plans of all the municipalities belonging to a certain region need to be merged into a mosaic by the regional administration, and the diffe-

rent legends and databases don't match.

In order to extend the concept of interoperability, including all these questions in its meaning, we use the term 'semantic interoperability', which comprises both the technological issues and those relating to data perception and interpretation.

The Plan4all project and the land use 'data model'

The Plan4all project has implied a dialogue between IT engineers and spatial planners for the definition of a 'conceptual data model' of the Inspire theme land use. This dialogue between different disciplines has been crucial but also difficult: land use is not a theme of immediate comprehension and tends to be confused with land cover by IT experts.

This article illustrates the data model derived from this collaboration and the process that has led to its definition, making some considerations on the need to use such tools for contributing to the interoperability of land use databases.

What is a land use 'data model'?

Flavio Camerata, Simone Ombuen

A 'conceptual model' is a simple description of the concerned reality and the interactions occurring among objects and phenomena of the reality itself. Even a database can be described, in the initial phase of its development, by means of a conceptual model, which in this case is called 'conceptual data model'.

The language chosen for representing the Plan4all data models is the Uml, which graphically describes the structure of the data organised into 'classes', the relations occurring among them, their properties or 'attributes', the rules to which they are subject. Each attribute is connected to lists ('enumerations' and 'code lists') defining the values that it can assume.

Notes on the early considerations regarding the land use 'data model'

Among the seven Inspire themes chosen by Plan4all, land use is surely the one mostly being of interest to planners. Indeed, this theme has entailed a number of preliminary considerations and discussions within the project consortium.

Firstly, it is not always easy to understand the direct relationship between land use and the geographical objects. Land use is rather a legal statement concerning the current or future function or purpose of a spatial object: therefore, besides containing information of a purely geographical kind, an appropriate land use data model has necessarily to be connected to plans and the planning process, and to the norms and regulations that they entail.

The same Inspire definition of this theme shows some confusion on the matter. Inspire defines land use as the 'territory characterised according to its current and future planned functional dimension or socioeconomic purpose'. At the same time, it recommends to use the Isic classification in order to define classes and attributes of the data model; but this classification has been developed from a merely economic point of view, and therefore any planner would probably see it as incomplete, because it lacks of social and environmental information.

It has also to be considered that the planning process entails the coordination and involvement of different sectors. This means that much of the information that is essential to the definition of land use has to be collected from different actors, each having his own perception of reality, directly connected to his function and responsibilities. Talking in terms of data modelling, these different interpretations of reality lead to give different attributes to the same objects. A simple river, for example, can be seen in different ways by a river basin authority (responsible for the safety of human settlements) and by an environmental protection agency (responsible for nature conservation).

Furthermore, the locution 'land use' cannot be interpreted simply as 'zoning'. Traditional zoning is surely the first core information to be included in the model; however, the recent evolutions in the field have made planning a more complex activity, often introducing plans of different levels in the municipal planning process (generally, at least two levels such as a framework plan or policy statement, and an implementation plan). From the legal point of view, the exact definition of the allowed land use for the land parcel comes from the provisions of all these planning levels. Thus, a land use data model intending to be really useful for planners will necessarily have to include information relating to all of them.

Finally, we have to take into account the relationships with the upper level plans, the sector plans, and the constraints, many of which deriving from national-regional laws before being elaborated by plans.

The Department of urban studies (Roma Tre university), in collaboration with the french Ministry Meeddat, has taken charge of developing the land use data model for the Plan4all project. Once agreed with the other partners that, in order to be really useful, such model should necessarily include information about the planning process, the first step has been to propose a description of this process, able to fit the planning systems of all the countries involved. The following step has been to collect the data models already used in the european countries. The collected models come from Austria, Finland, France, Germany, Ireland, Italy, Norway, the Netherlands and Spain.

After having collected these models, their classes and attributes have been 'mapped', compared and classified. The aim of this activity was to try and group classes and attributes as much as possible, in order to have a common basis on which to work for creating the shared data model. This activity has shown the differences among the collected models. The first reason for these differences is of course the diversity of the national and regional planning systems and administrative procedures represented by the model themselves; secondly, the approaches to modeling are different, in particular as regards the way how the concept of 'land use data model' is conceived.

The french, dutch, german and italian models have proven to be the most useful for Plan4all, because they are in line with the preliminary considerations, made by the project consortium, about the possible ways how to conceive a land use data model and about its actual usefulness.

The classification of the collected materials has lead to the definition of four main groups of information, which are reflected into the structure of the final data model: procedural and administrative information; textual information; the actual land use information; graphical information.

This first classification has allowed to start a discussion among partners on the contents of the data model. Later, after a series of revisions and refinements of the draft

data model, the consortium has reached the final version, illustrated, in Uml format, in the figures.

The two main classes are 'Plan-Object' and 'PlanFeature'; all other information refer to these classes.

'PlanObject' bears information about the plan itself, including the geometry of its borders. Related to this class are the following:

- 'AdministrativeInformation': administrative and procedural information, such as name of the responsible authority, legal validity of the plan, step of the planning process, etc.;

- graphical specifications for the paper-based outputs ('GraphicalInformation');

- files containing the textual parts of the plan ('TextualInformation' and 'TextualRegulation');

- raster files referring to old plans in paper form ('Raster');

'PlanFeature' contains the geometry of the actual land use provision (i.e. the geographic area to which the provision applies). Specialisations of this class are the following:

- 'FunctionIndications', comprising all kinds of land use information, from the most general classification of the - municipal land (e.g. urbanised, to be urbanised, rural), down to the specific function for the single land parcel.

These pieces of information can be about dimensions ('DimensioningIndications'; e.g. indexes, maximum heights), type of construction ('ConstructionIndications'; e.g. type of building or roof shape allowed), and-or indirectly executable ('IndirectExecution', in the case that the task of specifying in detail the function of a certain area is entrusted to other plans);

- 'ConditionsAndConstraints' acting on urban development, both coming from outside the plan and generated by the plan itself.

- administrative information regarding the procedures for issuing building permits and other kinds of authorisations referring to the same plan ('DevelopmentApplications').

A possible convergence in the way planning data are described and managed.

The Eu doesn't have specific competencies on spatial policies and is still very divided on this issue in terms of legislation and procedures. Attempts have been made for creating a dialogue at least on the general strategies (see the Esdp, and the recent debate on territorial cohesion), and the Espon programme has been launched in order to support sector policies through research on the existing spatial data. However, a real convergence of the european planning systems is still far; in the meanwhile, we can try and work on the convergence of the ways how spatial planning data are organised, described and managed.

In Italy, even a dialogue among the different regional planning systems is a desirable, though ambitious, objective. Some regions and provinces are already working on basic planning data models to be used by their municipalities, so that the 'mosaics' of the spatial plan-

ning maps can be more easily built.

Some of the more advanced regional information systems are evolving towards being tools for managing and easing the administrative procedures. And Cisis (a specific interregional organisation) is working on the interoperability among the regional systems.

A tool such as the data model described here could be useful for these purposes. It could be a base for easing the work of the 'planning conferences', helping to take into account all the points of view of the different actors involved in the planning process.

Many planners could think that such an approach would be a limit to their 'creativity'; however, territorial information systems cannot be regarded as simple tools for digitising what has been already planned, but they have to be considered as part of the planning process itself. Planners' 'creativity' often goes against interoperability: in the digital era, it is no longer possible to draw up spatial plans independently from a specific system of technical norms, which should be the result of a continuous coordination among public authorities, participation of all actors and data users, definition of adequate rules. The Region of Sardinia, for example, provides its municipalities with technical guidelines and a standardised data model, so that all plans in the region are drafted in the same way. Also, municipalities are guided in their task to update the regional landscape Plan, originally drafted on a 25K scale, with more detailed information, compatible with the local scale.

Finally, another consideration about the legal validity of digital data. In the Netherlands, the work made on the national spatial planning data model is strongly supported by the fact that the last spatial planning law gives legal validity to plans in digital format. Among the Italian regions, Friuli-Venezia Giulia seems to be going in the same direction. Elsewhere, the hard work that many authorities carry out towards interoperability risks to be partially voided by the simple fact that the spatial planning data published in digital format are not legally valid. Not only the paper will always hide the inconsistencies deriving from the transcalar nature of planning activities, but if the data published in digital format don't have legal validity, the same data providers will never be urged to guarantee a minimum quality to the information they provide. And the difficulty in achieving this objective is not only due to technical reasons, but also to cultural ones: if planning data were unambiguously published and validated in digital format, some authorities and civil servants might feel a certain loss of discretionary power; at the same time, private citizens and professionals might be afraid of losing much of the possibility of interpreting the data and, therefore, of operating in a more 'flexible' way.

Interoperability and metadata catalogues

Giuseppe De Marco

The management and use of spatial data in Europe involves a relevant number of bodies and institutions, both public and private. The production of such data is carried out according to many different standards, formats and information management systems, generating a certain redundancy and, at the same time, making it difficult to find the data themselves.

In this context, metadata play an essential role in allowing the interoperability among management systems and in ensuring the reuse of spatial data.

Metadata are information regarding data and services, and are characterised by the following aspects: semantic, i.e. regarding the way how the meaning of the data is univocally determined, allowing for a coherent retrieval of the information; technical, i.e. regarding the use, authenticity and integrity of data on the basis of rights of access and conditions of use; structural, i.e. regarding the organisation of datasets, described through the definition of a shared conceptual metadata model, able to specify their components and relations.

In order to achieve interoperability, it is important to implement a searchable metadata catalogue, defined according to international standards; and to use protocols enabling many different metadata and data systems to communicate. Standards to be used can be based on common technologies (such as Ogc), or can be shared metadata models defined according to international norms.

In order for the spatial data to be found and used in an interoperable way, data providers can use standard services through which they can publish their data. The Web map service (Wms), for example, enables to represent spatially referenced data through a map dynamically produced from a series of information layers. Other standard services are Wfs (Web feature service) and CS-W (Catalog service for the web).

The sharing of data among spatial infrastructures is achieved through the implementation of a networking architecture, which allows managing data services and exchanging data.

The Inspire directive sets up norms and technical specifications ('Implementing rules') for the establishment of a spatial information infrastructure in the Eu, with the aim of allowing for the exchange, sharing, access to and use of spatial environmental data and connected services.

The scope of this directive is strictly connected to the concept of spatial information infrastructure, which is defined as: "metadata, spatial data sets, spatial data services; network services and technologies; agreements on sharing, access and use; coordination and monitoring mechanisms, process and procedures".

In this article, we describe the process for the definition

of a metadata conceptual model compliant with the directive. In particular, we describe the solution proposed by the Inspire working group, the Italian model, and the model proposed by Plan4all, which focuses specifically on spatial planning.

Metadata: conceptual model and conformity according to Inspire

The Inspire directive has provided for a Metadata Regulation: a general norm on metadata, obligatory for the Member States, which must then implement it at the national levels; in Italy, it has been implemented by the same decree implementing the Inspire directive.

The implementation of more detailed technical specifications at European level is entrusted to the specific Inspire drafting team 'Metadata'. This team has drafted the technical guidelines on the basis of the Iso/TC211 standards and of the open Geospatial consortium standards. These guidelines define a metadata model made of two levels, having a hierarchical relation: level 1 (series): list of basic elements generically describing the datum or the service; level 2 (dataset): list of elements describing the datum or the service in a detailed way.

Moreover, the Iso 19115 standard identifies elements that are mandatory ('core elements'), and those which are optional and conditional.

The diagrams illustrate the hierarchical relation between the meta-data levels, and the classes of spatial information (in Uml format) to which metadata can be applied according to the Inspire model.

Metadata: implementation of Inspire in Italy, National directory of spatial data (Rndt)

In Italy, the collection of metadata must be made through the National directory of spatial data (Rndt), which sets the bases of the Italian Spatial data infrastructure.

The Directory acknowledges the Inspire regulation with a metadata model having three hierarchical levels, specifying their relations and the subset of Iso elements which are necessary for describing every dataset.

The Rndt model adds a third level ('tile') to the two levels provided for by Inspire, and therefore each piece of metadata is structured in three levels (series, dataset and tile) defining its domain. The choice on how to organise the hierarchical levels of spatial metadata is up to the single authority providing the data.

Metadata: the Plan4all European spatial planning metadata profile

Among the objectives of the Plan4all project, particularly important is the implementation of a European platform for the standardisation of metadata regarding spatial planning, according to a model complying with the Inspire directive and the Iso 19115 model.

The work has produced a 'European spatial planning metadata profile' organised in two levels: Spatial plan metadata and Dataset metadata.

The Inspire requirements about mandatory elements

have been met, and other additional elements specifically related to spatial planning have been defined, with the aim of having a European model generally applicable to spatial planning. The figure shows, in Uml format, the structure of the classes of spatial information of the Plan4all metadata model.

The European spatial planning metadata profile

The spatial planning data model has to take into account all the information useful for evaluating the characteristics of cartographic data, their quality and availability, and the limitations to their use.

In the European context, it is essential to have a common structure for the technical aspects related to interoperability, dissemination and the respect of national legislations. These aspects have been faced and solved by the Plan4all project by means of an approach containing an initial analysis and the preliminary definition of the user requirements by the project partners.

The result of this initial phase has highlighted that the Inspire profile doesn't meet the needs of spatial planning, making it necessary to single out specific additional elements, required by the national legislations. Once the elements meeting the needs of all partners have been identified, there has been a normalisation phase during which the language inconsistencies have been resolved; the result is the logical model of the European spatial planning metadata profile.

In order to define the service for cataloguing and searching metadata, Plan4all has used the Ogc-compliant Cs-w protocol. Metadata will have then to be published through a specific Geoportal, which will allow to search and visualise, through a single 'access point', the georeferenced spatial data provided by the project partners.

Relationships among regional planning laws, 'knowledge frameworks' and Territorial information systems in Italy

Stefano Magaudo

The research that this article relates to was aimed at analysing the relationships among 'planning conferences' (the involvement of all concerned territorial actors around the same table before and during the drafting of a spatial plan), 'knowledge frameworks' (the databases set up with the involvement of these actors), environmental evaluations and Territorial information systems (Tis). The research has shown that all Regions and autonomous Provinces are currently setting up or implementing Tis for managing and sharing their spatial data, and that many regional planning laws state that the regional Tis have to be the base of the 'knowledge system' shared by the institutions participating in the 'planning conferences'. Some regions have introduced the obligation for municipalities to set up and deliver the databases of their spatial plans in order for them to be approved by the competent authorities; in a few cases, specific guidelines have followed these planning laws, providing instructions on how to set up the local spatial planning databases.

In the following paragraphs, we illustrate some of the regional laws where Tis play a central role in the planning process, and the norms regarding the management, sharing and updating of knowledge frameworks and spatial databases.

Region of Lombardy. Law n. 12/05 states that the Region has to take care of the implementation of its Tis, for the purpose of the definition of programmes, spatial plans and projects. The Tis is based on norms shared by the local bodies, and continuously updated. Plans adopted by the local bodies have to be delivered in digital format through the Tis. Also, all territorial studies preliminary to planning activities have to be based on coherent and shared cartographic bases.

The publication and the same legal effectiveness of the local plans are subject to their delivery in digital format, for which the Region has also prepared specific guidelines.

Region of Friuli-Venezia Giulia. Law n. 5/07 states that the Region has to implement a database gathering all territorial data. The local bodies have to deliver to the Region their plans in digital format; and all public territorial bodies have to periodically deliver territorial information for updating the common database, according to common technical specifications. The delivery of spatial plans and their inclusion in the regional Tis is equivalent to certification of conformity to the original document.

Region of Emilia-Romagna. Law n. 6/09 states that spatial plans, projects of public works and other territorial information have to be elaborated also in digital form and transmitted through the regional technological tools.

The Region, Provinces and Municipalities have to make available and easily usable the 'knowledge framework' and the environmental assessment concerning their plans, and the related analyses, studies and information used for their elaboration.

As regards the role of Tis in the environmental assessment processes, this is one of the few regional laws making reference to such an issue: the law states that the data referring to the territorial environmental assessment are represented according to standard formats defined by the Region.

Region of Puglia. Law n. 20/01 states that the regional Tis is aimed at the elaboration of a common and accessible 'knowledge framework', functional to the elaboration and management of the spatial plans and the tools for territorial protection. With a later decree, Puglia has also defined the logical and physical models for the digitising of local spatial plans, which have to be delivered in digital format at the end of each phase of the planning process.

Region of Sardinia. The regional planning law doesn't make any reference to the Tis, even if the Tis implemented for the regional landscape Plan is detailed, rich in information and continuously updated. The guidelines for the updating of the local spatial plans according to the provision of the landscape Plan have de facto defined the rules for the exchange of spatial data. These guidelines specify that it is mandatory to deliver spatial plans in shapefile format and metadata in xml format.

Conclusions

From a normative point of view, many regions have given Tis a key role in the spatial planning processes, and many have acknowledged the European directives and national laws relating to the production, sharing and update of geographical information. There are regional spatial and environmental databases used both for building the 'knowledge frameworks' and for drafting landscape plans, and many Regions are implementing geographic web services.

However, the information flow is mainly only from Regions to local bodies, and also when local detailed local territorial studies exist, the reverse flow of information from local to regional is made difficult by the lack of interoperability standards and data validation procedures. Only in a few cases, municipal spatial planning databases have legal value in their digital form, and are permanently shared by all territorial institutions.

In this context, Provinces can play a central role in the management of environmental and spatial data and in the implementation and updating of shared 'knowledge frameworks' connecting the regional and the local levels. Some of the experiences analysed by the Plan4all project show that the provincial level is essential for strengthening the sharing of spatial data and fostering cooperation among public authorities.

The research has also highlighted that Italian authorities and planners usually don't take the best advantage

ges from the use of Tiss. Still today, Giss are used almost exclusively for carrying out territorial analyses and for representing the spatial plans, but they could more extensively be used for effectively supporting territorial government in all its phases, from planning to environmental assessment to monitoring.

A cultural change is necessary: public authorities, besides sharing their information, should work in a coordinated way in order to improve the overall quality of geographical information. Regions should promote experimental cooperation and coplanning projects, where planners and all public authorities could face the issues related to the interoperability of spatial data.

Towards a national Plan. Shaping cuban planning during the fifties

Gaia Caramellino

After WWII the Cuban press mirrored the increasing influence of north-American planning concepts and the circulation of the functional approach in Cuba during the 1940s and the 1950s and the specialized journal *Arquitectura*, official publication of the Institute of architects in Havana, played a key-role in the diffusion of this conceptual framework. From the second half of the 1940s Cuban professionals started to look towards the United States, abandoning the beaux-arts thought which characterized the Plan de ensanche y embellecimiento de La Habana drawn up by J-C. Nicolas Forestier in collaboration with Labatut e Beaudoin in 1926. During these years many young cuban students attended american universities and in particular the Harvard University graduate school of design, while many began to study at the Havana University of architecture, where a new course of urban planning was introduced in 1952 alongside the already existing architecture of the city. In the 1940s and 1950s private contractors carried out numerous projects in order to solve the housing problem due to an increase in the Havana population and cuban institutions embraced New deal housing models and programs inaugurated by F. Delano Roosevelt's government in the United States through federal agencies such as the Public works administration (Pwa), the New York city housing authority (Nycha) and the United States housing authority (Usha).

The need to implement new planning concepts to lead a balanced growth in the city, as well as the absence of a Masterplan became a public issue, strongly felt in the Faculty of architecture and among local planners and state officials. During these years professionals, technicians, and students started to take measures to face the need of a comprehensive planning based on integrative approach (planificaciòn integràl) and of the shaping of new laws and institutions, advocating international models that circulated like never before in Cuba during these years. Among them Alberto Prieto, Eduardo Montoulieu, Manuel Tapia Ruano, Eduardo Cañas Abril and Nicolás Quintana, members of the cuban branch of Ciam, the Atec (Agrupaciòn tectònica de expresiòn contemporanea), founded in Havana in 1943.

In 1943 the Minister for public works set up some work groups and committees to update planning laws and to define the limits of growth of the city of Havana. While urban problems started to be intensely debated in a series of encounters such as the Panamerican conferences of architects, the post-war Ciam (Cuban professionals attended the Congress held in Bridgewater in 1947, in Hoddesdon in 1951 and in Aix-en-Provence in 1953) and the Latin-American national planning conferences, new urban laws arose, such as the Carta de La Habana. The document, drawn up by the cuban architect Pe-

dro Martínez Inclán in 1948 on the basis of the contents of the Athens Charter, highlighted some characteristics of the caribbean cities, which had not been taken into consideration before. As far back as 1942 Inclán set up the Patronato pro urbanismo, an agency concerned with planning and urban issues, considered as the 'forefather' of the future national planning board.

The presence in Cuba of foreign architects, planners and firms, such as Mies van der Rohe, Marcel Breuer, Richard Neutra, S.O.M., Harrison and Abramovitz, Philip Johnson, Walter Gropius, José Luis Sert and Paul Lester Wiener, played a fundamental role in the circulation of foreign models and radically influenced the local debate on drawing up the first national Plan for Cuba.

In Havana, on January 27, 1955, a National planning law was finally approved by the decree-law 2018, for the creation of a new Cuban Junta nacional de planificación headed by the Minister of public works Nicolás Arroyo (local professionals have advocated an organization of this kind for years). He appointed E. Montoulieu director of the national regulatory Plan, while M. Romañach was assigned the equivalent Plan for Havana, N. Quintana was entrusted with Varadero and Trinidad and J. Mantilla with Isla de Pinos.

The Tpa, founded by the catalan architect José Luis Sert, Paul Lester Wiener and Paul Schulz in New York in 1942 to implement Latin American planning on the basis of the Ciam pre-war concepts, were appointed as consultants within the national Planning board on 1 July 1955, with a three-year contract. Their task was to put into operation the law, to provide methodological guidelines and schemes for the analysis of the city and the region, which could then be applied to other Cuban cities, and to reorganize the technical bureaucracy of the national Planning board. The work to be carried out by consultants was made up of two different types of interventions: they were expected to draw up, with the collaboration of Mario Romañach, the Pilot Plan for Havana and to supervise the shaping of the Masterplan, which was to be carried out within two years by the Cuban technicians members of the Junta nacional de planificación.

The introduction of this particular case is of interest because of the methods the Tpa adopted in drawing up the Pilot Plan (skills and guidelines taken from American planning theories); however references to the concepts of functional city, new monumentality and city core, strongly debated within the Ciam, are also evident in the Plan. The attempt to implement the zoning layout of the functional city and other post-war Ciam recurring features was explicitly confirmed by the Tpa in the introduction to the report they drew up for the Havana Pilot Plan in 1956. The proposals put forward by Sert, Wiener and Schulz followed the theory of the separation of functions and the insertion of open spaces in central areas of the city in an orthodox way: the city was divided into zones, each having a different population density and linked to each other by a park system and public green areas.

The transfer of the Neighborhood unit model to Havana

during the 1950s offers another interesting opportunity to trace the adoption of foreign planning theories in Cuba in the field of low-cost housing. The Nu was first introduced in Cuba by Sert through his article 'The human scale in city planning', while a national Commission of low-cost housing was especially set up in Cuba in May 1950. However, the case of the Reparto Catalina, the Nu designed by the Tpa with Cuban architects Del Junco, Romañach and Arroyo and Menéndez in 1958, mirrored the conflict between the original model and the interests of the landowners and the central government's plans.

Cuban professionals and even the members of the national Planning board began to lose faith in the Havana Plan at the end of the decade; the Tpa stopped working on the Plan in July 1958 and the whole process of preparing the Masterplan came to a halt with the advent of revolution in 1959. The Masterplan was never carried out but it represents a paradigmatic example of the gap between theory and practice, as well as of the deformation of original models when applied to a different context. Apparently Tpa played a key-role in the shaping of a Cuban urban discourse and in the diffusion of new planning concepts, although we cannot talk about regional planning in this case. The Plan of the city and of the region should have analyzed all the Cuban territory, but in fact only Havana and a number of large-scale tourist settlements such as Varadero, Trinidad and Isla de Pinos were taken into consideration in the national Plan, clearly mirroring the program that Batista envisaged for Havana, i.e. to transform the capital city and its region into a network of resorts for north-American tourism.

On the other side, the case of Havana planning during the 1950s shows the limitations and represents the paradox of the experience of the Functional city based on the principle of zoning. In fact, the result was a 'mono-functional' city, entirely devoted to tourism, leisure and entertainment. The deformation of the original model, when introduced into the Cuban context, was provoked by the conflict with local interests in Havana at that time: economic and political forces stood in the way of the planning theories introduced by the Tpa, creating a paradoxical effect on the urban transformation. In fact, the development of Cuban planning and the adoption of foreign urban concepts were not mirrored during the 1950s in the configuration of Havana's cityscape, which was created in practice by the encounter with local city's circumstances.

Waterfrontstory

Rosario Pavia

The element that profoundly revolutionised port systems, beginning an unstoppable process of globalisation of markets and systems of transport, was the introduction of shipping containers. This new method of assembling goods in standardised containers, first tested during the second world War by the American Army, rapidly took hold thanks to the intuition of a truck driver (Malcolm McLean), among the first to understand the advantages of intermodal transport. In 1961, Iso defined the dimensions of the new cargo shipping unit using the acronym Teu (Twentyfoot equivalent unit). In 1966, the first containerised service was already operating between Rotterdam and New York.

The affirmation of the container was the step that determined the last great transformation of the port system and maritime transport: even larger ships (in some cases over 300 meters), longer wharves, deeper harbours (at least 14 meters for a large container ship), vaster open spaces for loading-unloading manoeuvres. Within this new context traditional dockside warehouses quickly became obsolete.

The introduction of the container, by favouring intermodal transport, promoted the connection of port areas with rail and highway networks. This also accelerated the search for more suitable spaces for the new functions of the port, including expansions and delocalisation.

Processes of decommissioning and delocalisation involving port areas have led to consistent operations of urban redevelopment. The phenomenon soon assumed a planetary dimension. In the United States of America, programmes of urban recovery involving decommissioned port areas in Boston, Baltimore, San Francisco, New York and Seattle soon became models of reference. This led to the affirmation of the English term and the diffusion of recurring urban planning issues (tied to recreational activities, nautical tourism, culture, commerce, hospitality, residential settlement and real estate valorisation) and an international architectural style, eclectic and simultaneously open to local influences.

The first interventions of harbourfront redevelopment took place in the 1970s-80s, often tied to programmes for the development of public space, operations of real estate valorisation and, in some cases, for example in the United Kingdom and the Netherlands, to vast initiatives of social housing. In Barcelona, the waterfront project became both political and urban. Oriol Bohigas, initially a consultant to the mayor Maragali, and later the compiler of the Plan especial for the urban reorganisation of the coast, defined a procedure by which the city can be structurally transformed through strategic urban projects. The waterfront is one of these. The Plan is implemented in phases and parts, tied to important events in the city, the 1992 Olympics and the Forum universal

de las culturas in 2000.

The process, still underway, has mobilised interventions of great importance, such as the Moli de la Fusta designed by Manuel Solà Morales who, using a road section articulated on different levels, connects the public space of the historical centre with the pedestrian paths along the waterfront; the gigantic fish sculpture by Frank Gehry, which provides the urban façade with its unmistakable icon; the tourist port by Mbm architects; the residential interventions of Enric Miralles; the bathing park by Beth Gali; and, finally, the congress Centre by Herzog and de Meuron and the large photovoltaic pergola by Martínez Lapeña and Elías Torres along the Esplanade of the Forum.

In Italy, the theme of the waterfront arrived with a greater delay at the end of the 1980s, immediately characterised as an urban strategy that was extremely difficult and complex in operative terms. Unlike other European contexts, Italian ports were not subject to important processes of decentring (consistent works to delocalise port activities were made only in Genoa, Savona and Trieste). Ports remained operative in the heart of the city, rendering difficult and conflictual any project of urban recovery involving harbour areas. Italian law n. 84/94 governing the Reorganisation of legislation governing port areas, which instituted the Port authorities and renewed the instruments of planning and management, did not resolve the conflict between the city and the port. Notwithstanding the numerous competitions and initiatives organised by both municipal governments and port authorities, only Genoa and Savona, to a limited degree, have managed to concretely implement waterfront projects. In Genoa, in occasion of the International exhibition Genoa '92 Colombo '92, Renzo Piano redeveloped a vast portion of the old port, as well as recovering the Cotton warehouses, the complex of the Aquarium, the Biosphere and the panoramic machine of the Grande Bigo. The Genoese operation would not have been possible without the decentring of port activities traditionally located in the old harbour. The success of the intervention, managed with attention by Bruno Gabrielli, at the time councillor of urban planning, contributed enormously to the transformation of the port areas in a vast urban centrality, capable of positively influencing the city.

The recovery of the old port restores to the general population a vast public space (notwithstanding the presence of the imposing viaduct that runs above the port) and was determinant to the implementation of the renewal of the nearby historical centre. Genoa represents the most advanced Italian experience of how the city can reintegrate itself with its port area and waterfront. Even here, all the same, the conflict between the port and the city has not been resolved. When Renzo Piano attempted, as part of his affresco for the new waterfront in Genoa, to reinsert the port within a comprehensive urban and landscape plan, his proposal, favourably welcomed by the city, met with decisive opposition from port

operators.

The difficulty in Italy in promoting consistent interventions of harbourfront redevelopment has become, over the course of the years, even more complex and difficult in relation to the growth of maritime transport between Europe and the Far east, which has transformed the Mediterranean into a central space of global commerce. In the Mediterranean, large ports are renovated or expanded, simultaneously giving rise to many programmes of waterfront redevelopment: this is the case in Valencia, a city that, in occasion of the America's Cup (2010), opened up a portion of its harbour to the city; or in Alexandria, in Egypt, which began the redevelopment of its waterfront with the new Library designed by the norwegian office Snøhetta; or in Tangiers, a city that, in the wake of the decentring of its port to the Strait of Gibraltar, some 45 km from the city, began the recovery of its historical harbourfront; or Istanbul, currently witness to programmes of urban renewal in the areas of Hayyaparda in Haliç and in Galata.

In the Far east, prior to the irresistible growth of the chinese economy, Tokyo was the port of reference for international commercial trading. Tokyo is a city profoundly connected with the water: in its immense bay the city coexists with a plurality of ports, continuously multiplying its artificial islands. Kenzo Tange, in the wake of the 1960 famous study of Tokyo bay, prepared a general Masterplan in 1986, developing the theme of the waterfront across vast areas of Odaiba Island. The distinctive symbol of this new waterfront is the Fuji TV building, designed by Tange himself.

Singapore, Shanghai, Hong Kong and Shenzhen are now the largest ports in the world, and together they move some 90.000.000 containers, exceeding by great lengths the quantity moving through all european and mediterranean ports.

The globalisation of markets and the economic power of the Far east are emblematically represented in the rapid transformation of these port metropolises. Situated in strategic areas (Hong Kong and Shenzhen in the vast basin of the Pearl River delta; Singapore in an archipelago in front of the Malaysian peninsula; Shanghai on the Chiang Jiang delta) they have multiplied their port infrastructures through new works and new works of delocalisation (Shanghai has created a deep port on the islands of Xiao Yangshan and Da Yangshan, connecting them to the mainland with a 32 km long bridge).

New projects follow one another with rapid succession, in some cases the object of international competitions, for example the recent competitions in Hong Kong for the new cultural district, awarded to the proposal by Rem Koolhaas-Oma; or the infrastructural commercial corridor (the Hong Kong-Zhuhai-Macao bridge) in the Pearl river delta, won by the group composed of Paul Mui, Benni Lee and Agnes Hung. Shenzhen hosted a competition for the Qianhai Harbour, attracting internationally renowned offices, amongst which the proposal by James Corner-Field Operation stands out for its landscape

contribution.

Between the far east and the west, Dubai ranks as the seventh port in global classifications of container movement. In reality, Dubai features a port system articulated in three ports: Al Hamriya, the smallest, is located in the city of Daira; Port Rashid, further to the south, just beyond the natural inlet that enters into the heart of the ancient city; Port Jebel Ali, the largest, at a distance of some 30 km from the central urban nucleus.

All of the ports, realised some time near the end of the 1970s, feature highly advanced infrastructures and layouts, articulated based on functional specialisations. Port Rashid and Port Jebel Ali, completely artificial, were designed for large container traffic. In Dubai there is no process of decommissioning, nor is there any recovery of under-utilised port areas. In Port Rashid, the port closest to the city centre, there is no search for a view over the harbour. In Dubai, the waterfronts, like its ports, are wholly artificial, all extremely recent, and all projected towards our contemporary era and the future, pursuing a frenetic race towards real estate valorisation. The waterfront is now already a central space of 21st century urban design. The reasons for this growing role in the development of the city are tied to the continuous transformation of port systems and their relationship with consistently more urbanised coastal territories. Port megalopolises will only grow (over half of the 30 largest metropolitan areas in the world

are on the sea), their ports will expand, separating even further from the city. Vast port systems will become complex logistics platforms, strongly tied to land-based infrastructural networks.

Many port areas will be decommissioned. While many ports will be forced to expand, constructing artificial islands and maritime infrastructures (in the end, the japanese and chinese model), many others, in all likelihood italian, will continue to remain blocked inside the urban fabric.

In these terms, how will the theme of the waterfront be presented, in its intention as the integration between the city and its harbour? One possible working scheme may be the following.

Decommissioned port areas will become the most suitable for integrations (we are speaking of the development of a practice and a tradition initiated some time around 1970), while the realisation of waterfronts in operative port areas will undoubtedly be more difficult and conflictual (this is the theme of the waterfront in Italy). Even more complex will be the integration, within the territory and the landscape, of large delocalised ports.

Far from the city, these large logistics machines are separate and extraneous bodies. Their distance allows their presence within the territory to be forgotten, impeding their real comprehension and cultural fruition. The quality of new territories, their recognisability and sustainability, always depend more on the capacity of design to interpret the spatial relations between large infrastructures and the landscape and the environment.

Will design be able to render these silent machines a cultural resource, an important and sustainable centrality within the planning of the territory?

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Brasilia, the city of the future is 50 years old.

The urban design and the challenges of the Brazilian national capital

Carlos Smaniotto Costa, Monica Bocci

Brasília has turned 50. The city is a landmark in the history of town planning and one of the most significant urban achievements of the 20th century. It was designed in line with the principles of the Modern movement and inaugurated as Brazil's national capital on april 21st 1960.

In Brazil, a country with a continuously growing population, ex nihilo cities that are built from scratch are nothing new. The list of planned cities before and after Brasília is long, but Brasília remains unique due to its urban concept, architecture and urban landscape. The new city has always provoked controversy: some like the visionary and progressive urban plan and share the futuristic vision; others dislike the wide expanse and openness of its spaces, the symmetry and boldness of its architecture. It is due to this uniqueness, which also includes the largest collection of Oscar Niemeyer works, that Brasília was included on the World Heritage list in 1987.

Nowadays with a population of 2,6 million inhabitants the Distrito federal (Federal District) where Brasília is located emerged already as the 4th largest city in Brazil (Ibge 2010). After 50 years Brasília must be understood and further developed now in another dimension: as the economic centre in central Brazil, its influence extends over several cities and town in three states.

Despite its youth Brasília has a long history. Plans to build a settlement in central Brazil have existed since the portuguese colonial period. These plans were never followed through until the president Juscelino Kubitschek made it come true in 1956. He created a commission for the planning, construction and relocation of the capital and appointed the architect Oscar Niemeyer as director of architecture and urban planning. Niemeyer coordinated the national competition for the masterplan in 1957, reserving for himself the design of the official buildings.

The masterplan (Plano piloto)

Lúcio Costa's proposal won the competition. Brasília's aesthetic success largely results from the complete accord between Costa's Masterplan and Niemeyer's architecture. Costa shaped Brasília by applying the ideals of the functional city with schematic clarity; his Masterplan, called the Plano piloto, conflated the approaches of the linear city by Soria y Mata with Ebenezer Howard's garden city and the Athens Charter. Costa adopted from the Charter a land use concept based upon functional zones with separate zones for housing, work, retail, recreation and transport into a symmetric and rigid geometry. The city's macrostructure was defined by two intersecting axes forming a cross, some see it as a bird,

others as an airplane.

Reinforcing the metaphor of a plane, the two main residential areas are located along the wings, each 6 km long and slightly bent, a reminiscence of the linear city. The body of the plane is made up of a monumental axis, a 16 km long avenue flanked by administrative and cultural buildings.

The urban landscape and cityscape

Brasília was designed as a polycentric city and the Plano piloto should be first urban cell and the central one. Further urban cells should be developed nearby on a concentric pattern and as the garden city surrounded by green belts and in the case of Brasilia connected instead the railway by freeways. These further urban cells were indeed being vaguely considered, but were never planned. Landscape took a connecting function; it is the link between the functional zones. Modelled on the concept of the garden city and Le Corbusier's Villa contemporaine, Brasília was to be embedded in an open and generous landscape. However, Costa neglected the design of the landscape in the original documents. The plan leaves much room for interpretation and without palpable proposals the authorities were unable to realise its connecting function. But the road network is that defines the cityscape. It has taken on more than a linking function. The network is monumental and was designed for a smooth flow of traffic. Today, due to the high volume of traffic it is a severing and almost insurmountable obstacle for pedestrians. Although planned as a car-friendly city, Brasília does not have sufficient parking facilities; several open spaces and green areas are now used as car parks.

The planned utopia and the reality

Planned to house 500,000 people, the city's population numbers have seen explosive growth right from the start. Brasília should have been a city for government authorities, parliamentarians and civil servants, but imposed by the inequalities in Brazil it became a centre of migration. Supposed job opportunities and hopes for a better life attracted many Brazilians from all over the country.

Despite the good intentions of the designers from the very begin Brasilia became spatially segregated with two types of urbanised areas: the Plano piloto, with the best urban services and strong image, and in its periphery the several informal settlements (satellite cities) consisting mainly of low-income households lacking infrastructure and urban services.

This calls into question the sustainability of a city that should never have grown so large and polarised. Today, only 10% of the population of the federal District lives in the Plano piloto, but 70% of the jobs are concentrated there.

The unanswered question

Brasília was planned to be an example of a balanced urban, modern lifestyle. Indeed the result is social and

spatial segregation and inequalities, with the majority of the population living in the periphery, far from a healthy environment and employment opportunities. Despite of this planned title, Brasília is not completely different than other Brazilian cities, so it cannot be understood separated from the urbanisation process in the whole country. The Plano piloto is unique in its form, but as old as Brazil with its poor peripheries without the presence of public administration and inadequate urban services. Nevertheless, Brasília is still a reason of national pride and a symbol of hope, because it reconciles within a strong capital image, the diversity Brazil's in itself.

This all brings up the question if Brasilia can be considered a success or not. The experience in Brasília has been never properly evaluated; probably because the city cannot be explained in a black-and-white point of view. Brasilia is diverse, manifold and paradoxical, such as Brazil. Like the country it is still a young entity. The next 50 years will show whether both will be in a position to pave the social inequalities in an ecological friendly development.