This special issue collects a selection of peer-review papers presented at the 8th International Conference INPUT 2014 titled “Smart City: planning for energy, transportation and sustainability of urban systems”, held on 4-6 June in Naples, Italy. The issue includes recent developments on the theme of relationship between innovation and city management and planning.

TeMA is the Journal of Land use, Mobility and Environment and offers papers with a unified approach to planning and mobility. TeMA Journal has also received the Sparc Europe Seal of Open Access Journals released by Scholarly Publishing and Academic Resources Coalition (SPARC Europe) and the Directory of Open Access Journals (DOAJ).
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This special issue of TeMA collects the papers presented at the 8th International Conference INPUT 2014 which will take place in Naples from 4th to 6th June. The Conference focuses on one of the central topics within the urban studies debate and combines, in a new perspective, researches concerning the relationship between innovation and management of city changing.

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EIGHTH INTERNATIONAL CONFERENCE INPUT 2014

SMART CITY. PLANNING FOR ENERGY, TRANSPORTATION AND SUSTAINABILITY OF THE URBAN SYSTEM

This special issue of TeMA collects the papers presented at the Eighth International Conference INPUT, 2014, titled "Smart City. Planning for energy, transportation and sustainability of the urban system" that takes place in Naples from 4 to 6 of June 2014.

INPUT (Innovation in Urban Planning and Territorial) consists of an informal group/network of academic researchers Italians and foreigners working in several areas related to urban and territorial planning. Starting from the first conference, held in Venice in 1999, INPUT has represented an opportunity to reflect on the use of Information and Communication Technologies (ICTs) as key planning support tools. The theme of the eighth conference focuses on one of the most topical debate of urban studies that combines, in a new perspective, researches concerning the relationship between innovation (technological, methodological, of process etc..) and the management of the changes of the city. The Smart City is also currently the most investigated subject by TeMA that with this number is intended to provide a broad overview of the research activities currently in place in Italy and a number of European countries. Naples, with its tradition of studies in this particular research field, represents the best place to review progress on what is being done and try to identify some structural elements of a planning approach.

Furthermore the conference has represented the ideal space of mind comparison and ideas exchanging about a number of topics like: planning support systems, models to geo-design, qualitative cognitive models and formal ontologies, smart mobility and urban transport, Visualization and spatial perception in urban planning innovative processes for urban regeneration, smart city and smart citizen, the Smart Energy Master project, urban entropy and evaluation in urban planning, etc..

The conference INPUT Naples 2014 were sent 84 papers, through a computerized procedure using the website www.input2014.it. The papers were subjected to a series of monitoring and control operations. The first fundamental phase saw the submission of the papers to reviewers. To enable a blind procedure the papers have been checked in advance, in order to eliminate any reference to the authors. The review was carried out on a form set up by the local scientific committee. The review forms received were sent to the authors who have adapted the papers, in a more or less extensive way, on the base of the received comments. At this point (third stage), the new version of the paper was subjected to control for to standardize the content to the layout required for the publication within TeMA. In parallel, the Local Scientific Committee, along with the Editorial Board of the magazine, has provided to the technical operation on the site TeMA (insertion of data for the indexing and insertion of pdf version of the papers). In the light of the time’s shortness and of the high number of contributions the Local Scientific Committee decided to publish the papers by applying some simplifies compared with the normal procedures used by TeMA. Specifically:

- Each paper was equipped with cover, TeMA Editorial Advisory Board, INPUT Scientific Committee, introductory page of INPUT 2014 and summary;
- Summary and sorting of the papers are in alphabetical order, based on the surname of the first author;
- Each paper is indexed with own DOI codex which can be found in the electronic version on TeMA website (www.tema.unina.it). The codex is not present on the pdf version of the papers.
SMART CITY
PLANNING FOR ENERGY, TRANSPORTATION AND SUSTAINABILITY OF THE URBAN SYSTEM
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ABSTRACT
As an endless melting pot of experimentation and innovation, cities must reorganize and retrain compared to the growing new needs. In the light of the actual urban debate, it can be useful to do an in-depth study. In fact, the quality of urban life and collective well-being cannot be separated from the identification of a network of public services and facilities, that organizes and structures the city. That network is not resolved in the themes of pre-school and compulsory education, public interest, green spaces, car parks and public interest, but rather has a wider variety of types.
Noting the failure of attempts to define, a priori, a quantity of universally valid services, it is necessary to rethink the ways and criteria of most of the infrastructural facilities.
The "Piano dei Servizi" is the tool for the implementation of a concrete policy of services for public interest, and it means the transition between a planning standard, in terms of quantity, in a standard that meets quality requirements. It represents a specific section of the urban development plan, which has to consider problems and shortcomings, and try to solve them by finding opportunities which physical locations offer. In this way a planning standard is not configured as an abstract quantity, but as the material composition of the urban plan, which results in a land use and land development proposal.

KEYWORDS
Facilities plan, Services plan, Performance standards, Urban quality
1 INTRODUCTION

In recent times and sometimes, in some contexts, planning standards have undergone a process of profound revision, both in planning practice and in the legislative codification. There is a need to move from a administrative and trivialized use of the instrument, which completely dried up it and transformed it in a mere accounting mechanism, towards a perspective of programming services, directed to the location and the actual performance. This turnaround has been caused by a number of changes, which can be ascribed mainly to the phenomena of both endogenous and exogenous type.

The endogenous phenomenon concerns the transformation processes of urban settlements. The problem of the expansion of the city gives way to the redevelopment and enhancement of the existing urban settlement, and the balance and the sustainable use of resources are new objectives of town planning, with particular attention to environmental and social aspects.

In parallel with the urban context, the exogenous phenomenon, instead, concerns the profound changes in society, economy and culture. A new articulation of social classes corresponds to a change in the way of living in the city, so it can be observed a strongly articulated framework of the demand for services. The services of public use and public interest, in the broadest sense, related to “facilities for habitability” of a settlement, are not resolved in the range of public services, identified by the planning standard, but it is necessary to add the private services for public use, the commercial services, the networks, and a demand for innovative services of different types: social housing, slow mobility, ecological and environmental green spaces, prevention and emergency services, a-spatial services (that don't consume land surface and are related to the social needs).

In such changed context, the inadequacy and ineffectiveness of the standards as defined by the national current legislation, take on greater importance. On the one hand, the planning standards have the merit of having allowed the establishment of a substantial reserve of surfaces, in a particular historical period, on the other hand, their limits are rigidity and abstraction in relation to local diversities and social and demographic evolution, to the forms of urban development and to the type and mode of management.

In fact, the efficiency of the standard endowment doesn't appear disconnected from:

- "spatial distribution": it means that the supply of services is possible only with reference to their concrete articulation in shaping an urban settlement;
- "evaluation of the services actually provided," that is the real efficiency of the endowments to services;
- "accessibility", which is a prerequisite that is structured on several levels: physical, temporal and economic. Physical accessibility means the ability to reach the service, considering the mobility devices that allow accessibility. Temporal accessibility considers the schedules, times and multi-functionality of infrastructures. Economic accessibility or affordability indicates the possibility of economic access to the service.

This picture, briefly outlined, sketches out that there is a transition in planning standard, and generally in town planning. There is a shift from a quantitative approach to an approach directed to performance and quality, depending on other detailed aspects of the specific urban context. Quality is a goal to be pursued when planning; while being an inseparable link between quantity and quality, quantity must be a prerequisite or give aid to quality.

2 EXPERIENCES OF PLANNING SERVICES

In legislative matters, the reforms undertaken since the mid-70s are further strengthened in 2001 with the amendment of art. 117 of the Constitution, so that the government of the territory becomes a matter of
"concurrent legislation", since the State is responsible for the determination of the fundamental principles, while Regions have to legislate about the discipline of detail. Looking at the different regional urban planning laws, it is possible to identify two different approaches to the standard:

- quantitative: the endowment of areas to the standard per capita is different and variable, and depends on the total number of inhabitants of the municipalities, their capacity of settlement, the average rate of population growth over the last decade;
- qualitative: some regional urban planning laws ("Lur") encourage the formation of the plan of municipal services, and dealing with urban and environmental quality standards.

Fig. 1 “Lur” analysis about planning standards
It is necessary to distinguish regions in which planning laws explicitly refer to Inter-ministerial Decree (DI) no. 1444/1968 (Veneto, Tuscany, Marche, Puglia, Sicily, Sardinia, Prov. Aut. of Trento) from those that give their quantitative requirements (Piedmont, Lombardy, Veneto, Campania).

Quality standards or planning standards suitable to meet new needs and social demands, which at one time were not taken into account in the DI 1444, are readable, here and there, in the regional laws as claims for benefits that areas and services should give. The regions have not exercised a great “fantasy” about the project, so we can say that the regional legislation, even the most recent legislation, is "old", which in one way or another follows the trail laid down in 1968 by the national legislation.

The only autonomous region of Valle d’Aosta has explicitly declared its lack of interest in the definition of quantitative standards, stating clearly that its goal is to define quality. The concept of quality and the definition of how quality should be considered and evaluated, also appears in the law of Emilia, as well as in the law of Calabria, as well as in the law of Emilia, and in the last two zoning laws of the Lombardy Region. Moreover, in Lombardy, Umbria, Marche and Puglia, regional laws invite to the preparation of services plans, with a view to efficiency of the same.

The Lombardy Region is an administrative context which has been always characterized by a strong tendency towards experimentation and legislative innovation.

The concept of performance standards appears for the first time in Lombard legislation with the regional law no. 9/1999 on Integrated Planning Intervention (PII).

The Lombard Piano dei Servizi has undergone an evolution over time and a transformation of its role in the planning instruments: from a "residual role" in the general plan set up by the Planning Law no. 1150/1942, in the DI no. 1444/1968, in the regional laws no. 51/1975 and subsequent no. 01/2001, to a "central role" in the recent regional law no. 12/2005.

In 2005, Lombardy introduced the Piano dei Servizi (PS), i.e. a thematic planning instrument which legislates in matters of local services to the municipal scale, it defines the operational criteria and implementing policies, as well as the quality objectives of settlements and welfare.

An important development is the new concept of the Plan of Services, that within the scope of municipal reference, obtains full autonomy, and plays a fundamental role for public facilities and public-general interest, both in terms of quantity and quality. In conjunction with the Piano delle Regole, it "materializes" the strategies contained within the (programmatic) Documento di Piano and, leaving the residual nature inherited from the past, it attempts to give concrete answers to the urban "necessities", either through interventions aimed at upgrading of the existing facilities or with actions to fill gaps in the urban fabric. Its objectives of the fund are promotion of quality and urban liveability.

In addition to radically innovate the spatial planning process, based on the principles of subsidiarity, responsibility, sharing and transparency, the "Legge per il Governo del Territorio" (LR 12/05) reinforces the idea that the effectiveness of government action, at various institutional levels, depends to a large extent by an in-depth knowledge of the spatial phenomena and of the quality of information available, as well as of the possibility of direct participation in decision-making processes of the various institutions and citizens.

2.1 SERVICES PLANNING IN SOME MUNICIPALITIES OF THE LOMBARDY REGION

Eight years ago the regional law of Lombardy Region about the territorial government was enacted, and nowadays the situation of implementing municipal planning instruments is moving towards completion. Among 1,546 municipalities in the region, 1,078 of those have passed their urban plan, 252 municipalities have adopted it and 216 are still in the start-up phase.
Exactly 30 municipalities of Lombardy were examined, 11 of which draw up a schedule of services in an associated manner, in accordance with paragraph 6 of art. 9 of L.R. 12/2005. All the examined plans emphasize the need to overcome the mere logic of only quantitative standards for quality of services and facilities, in the relationship between urban settlements and public facilities. However, as local governments have to respect some urban standards derived from national and regional laws, all the projects of surveyed plan are characterized by a careful analysis (quantitative) of the relationship between the size of settlements and urban activities and the extension of public facilities.

The Piano dei Servizi, that is one of the three instruments of the Piano di Governo del Territorio, has the task of building the "public city". Therefore it is an interpretation that goes beyond the explicit purpose of that tool. In fact, it should only "plan an overall endowment of areas for public facilities and those for public or general interest". However, the "public city" can be built only by planning and programming the transformation, through which local governments will capture the same areas through procedures of equal distribution and compensatory equalization.

In almost all examined cases, the system for public services is identified and defined in three different phases:

− the first one returns the picture of the actual state of the services, i.e. a mapping of the actual state of the services available, so as to incorporate all the functionality of the facilities;

− the second phase which aggregates the endowment of services, after the consolidation of the planned transformations, to the previous one;

− the third one, which also includes the new public services design.

A table of the examined services plans is following, where it can be highlighted the diversity of definition of territorial units of reference, and the discussion of new urban standards.
### 2.2 SERVICES AND INTERMUNICIPAL COOPERATION

Some issues continue to be the center of attention: strengthening of inter-municipal relationships, better use of available resources, a more rational process of planning / programming of urban, environmental, and infrastructural systems.

Sharing in the concrete implementation of services and facilities to different municipalities allows you to identify areas of coordination and to plan policies for services to supra-municipal level and, in general, to define quality parameters and location criteria in common.

With regard to the inter-municipal relationships, attention relates to a broader horizon than the "simple design" and will address issues such as:

- planning and management of the services system, taking into account both the facilities and the equipment, which impact on the area, and the a-spatial services, with regard to local and supra-municipal level;
ability to overcome the administrative boundaries in the environmental review and evaluation, promoting the involvement of other realities with reference, therefore, to larger territorial systems, which are more appropriate to the consideration of the subject matter;

− capacity of response to the issue of housing, especially social in nature, not only to local scale;

− management of the streamlining of the localization of productive sectors, that should aim to overcome the pulverization of the interventions;

− regulation of relations with regard to local realities with a different service level for mobility infrastructures, with apparent imbalance in the accessibility degree and not only.

There are several examples of associations of municipalities that converse on facilities and services. Three Unions of Municipalities of the Lombard area were examined. They are in the province of Pavia and they are characterized by very small towns, from the point of view of territorial surface and of the resident population.

The individual facilities are evaluated in relation with their actual area, except in the so called union Campospinoso-Albaredo, where a reduction factor is applied to the actual area of each facility, in order to consider a qualitative surface.

<table>
<thead>
<tr>
<th>UNION</th>
<th>PS [year]</th>
<th>TOTAL LAND AREA [Sq.km]</th>
<th>TOTAL POPULATION no.</th>
<th>POP. no.</th>
<th>MUNICIPALITIES title</th>
<th>LAND AREA [Sq.km]</th>
<th>NEW SERVICES AND FACILITIES en</th>
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<td>Unione Campospinoso Albaredo</td>
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<td>Volpara</td>
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<tr>
<td>Unione dei Comuni Lombarda dell'Oltrepò Centrale</td>
<td>2010</td>
<td>20,05</td>
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<td>Corvino San Quirico</td>
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<td>Oliva Gessi</td>
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<td></td>
<td>Torricella Verzate</td>
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</table>

* g= urban vegetable garden, b= bicycle path, bp = path for bikes and pedestrians, h= social housing, en= ecological network.

Tab. 1 Examined unions of Municipalities in Lombardy Region

2.3 SERVICES PLAN IN OTHER ITALIAN MUNICIPALITIES

In addition to the Lombard municipalities, which are forced to adopt the services plan, other Italian cities wonder about the issue of quality of its services and facilities, such as: Bologna, Parma, Modena, Rome, but also smaller municipalities.

Here are defined some of the issues which the cities of Bologna and Modena are trying to solve with the services plan.

The municipality of Bologna is divided into areas, which offer a response to the need to identify a limited size of the territory. In the identification of criticalities it was not considered appropriate to list in a predetermined manner a series of indispensable services for the different territorial levels. In relation to demand for services, the criticalities in the distribution of supply was highlighted, such as the imbalances in
different areas. Particular attention has been paid to the issue of accessibility, i.e.: a safe pedestrian mobility, the removal of architectural barriers, easier use of public transport, the continuity of bike paths, etc..

Within the strategic plan for services of Modena, services and facilities can have both public and private management. Because of their overriding public interest, however, they require a role of guidance (upstream) and control (downstream) by the institutionally competent entities, that is, an action of public governance that can only be on a "local" level. Each community, in fact, must be able to determine the specific answers to their significant common needs. The evaluation of the functional equipment of services has been referred to the zoning system. A specific equipment of multifunctional facilities, according to its role, is associated, to each territorial level. Services and facilities are identified with respect to the six issues: education, health/welfare, culture/society, trade green public facilities, sports/loisir.

In general, the analyzed services plans very often take the form of tools that reduce the activity of planning at a simple analytical-descriptive knowledge. In the practices, it becomes a management tool, necessary to the reorganization of the local services, possibly extended to the offer of the private sector, instead of a plan that has to build the development of the city according to a more solid mesh of facilities, with particular attention to environment.

3 GUIDELINES FOR SERVICES PLAN

A methodology must be set up, so that the services plan gets the character of an innovative tool for the design and management of the public city which, by the state of fact of existing services, defines strategies in the medium/long term and proceeds to identify areas to bind for the new realizations.

In a perspective view of quality of urban life, the strictly issue of services is blended with other themes, with the intent to represent and assess the set of elements that make good the quality of a part of the city, i.e.: centralities, meeting and socialization places, the network of pedestrian paths and bicycle trails, the presence of neighborhood trade. A framework of needs and objectives has been outlined, downstream of which the private contribution will insert. In this way private individuals, with their initiatives, will contribute to achieving concrete initiatives of retraining.

However, certain basic factors have to be considered for the real effectiveness of public action in the context of the services, i.e:

− the specificity of each single territory must be carefully evaluate, because it is a fundamental matrix of the collective identity;
− the needs must be considered globally and imply a variety of services and facilities, in order to give them an adequate response. The realizations have to be considered with their interdependencies and with all their possible relationships, considering public/private partnerships;
− the different actors in the process of delivery of services must be involved in a joint action in planning and managing services, which will be much more effective as it will be more respectful of the general interest, even in consideration of the individual interests;
− it is necessary to trigger a listening, participation, and promotion of voluntary initiatives process.

A Services Plan must be developed through the following steps:

− territorial articulation, i.e. the definition of territorial units of study and project, inside of which the presence of a minimum performance level of services can be assessed. In the perspective of the specificity of places, the municipal territory can be divided in relation to: fractions, municipal districts, cadastral sections defined by Istat, physical territorial barriers (presence of rivers, etc.), road infrastructures, catchment areas of certain services (for example, for educational facilities);
identification of existing services in the territory and their in-depth knowledge. It is necessary to define the unit of measure for the service and its performance and users taking advantage of the service, by taking into account the capacity of settlements and the floating population for reasons of study, work or tourist flows. Performance parameters are those for effectiveness, efficiency, and quality. For each type of service a cost-effective analysis of detail is necessary, taking into account considerations about management efficiency, in order to locate the threshold values, which are considered optimal values, with regard to the number of users, the usable surface area and the lot area. This performance analysis must be conducted for each type of service with reference to its specific characteristics, taking into account several elements, such as the cost of management, the amortization of the cost of investment, the characteristics of the users and the manner of use, and the consequent provision of equipment;

− estimation of the demand for services: each territory is unique and its needs for services are specifically characterized. In addition to the request of the resident population, the estimation must necessarily take into account the needs generated by the flow of people and stakeholders, who gravitate each day in the urban centers for different reasons. Furthermore, innovative services and new facilities must be introduced and highlighted, i.e.: the definition of ecological networks and urban vegetable gardens for environmental system, cycle paths and pedestrian trails for the slow mobility, social housing for residential system. It is necessary to define the evaluation of the a-spacial services, which, for their functional characteristics, do not occupy surfaces. For that kind of service, some parameters of quality should be defined, relating to their level of response to social needs. They are social services, public assistance or for mobility, telephone services, waste collection, cleaning and maintenance of the roads, maintenance green areas and open spaces and network services (such as local public transport), subservices and public lighting. Furthermore, it is necessary the assessment of technological equipment (service stations, installations, ecological areas);

− balance between supply and demand: a number of basic services should be guaranteed to all people, by checking whether the public service was able to take into account of territorial specificity and the characteristics of the population. If shortages occur, the balance allows to invent original solutions, suitable to the territory, and to identify the economic and social priorities. Through a comparison between the potential demand for each facility (with regard to the resident population, the present population and the potentially predictable population inside of the forecasts for the structural plan) and the existing, public or private, services supply, specific elements of attention are defined as a function of the comparison between the current sizing and the potential demand for each facility, and for each urban area of reference. By that assessment of criticality the identification of intervention policies for each urban area derives, which may be one of the following: increase in supply for the urban poor areas compared to the expected demand; consolidation of the current structure for the adequate urban areas ;increase of insediative forecasts or infrastructural reuse where supply is higher than demand;

− elaboration of the project of the services plan. It immediately notifies the expectations that the citizens cast into the future, in the short and medium term, to the improvement of the quality of life. According to a principle of fairness, the organization of services implies, in theory, that the whole of the territory benefits the same degree of accessibility of services, to different levels, aiming also in the reduction of mobility required, i.e. the services must be the minimum distance from homes, compatibly with criteria of efficiency and economy in their distribution on the territory.

− evaluation of the economic feasibility of the plan. In order to give the plan an operational valence, it is necessary to define the mode of retrieval of resources. For this reason, the service plan must be
interrelated with other plans and programs in the sector, and implemented consistently with the three-years program of public works, or with the annual list, including private projects;

− monitoring and control. That last phase defines the flexible character and dynamic nature of the instrument, because needs and services are continuously evolving, as well as the means to implement them.

4 CONCLUSIONS

Lacking a national framework law on services planning, that establishes the principles and the essential guarantees, and without regional measures, municipalities seem to be somewhat disoriented on the matter. On the one hand, local governments are obliged to comply with the quantitative requirements, but, on the other hand, they show sensitivity to a program of services of support to the life of the community. That program is based on territorial specificity and urban identity, depending on the local features, and not according to rigid and abstract classifications, in a framework of great flexibility. In the light of the current economic national and European contingency, there is also a request for a revision of the forms and contents of implementation of the welfare state.

The design and the project of the services is complementary to the land development project, indeed the first often precedes the second and, consequently, the evaluation of the overall budget of a territorial scope, in terms of services rendered to the resident population and the users, is essential to define its structure and attitude.

Nowadays, no community accepts a planning, which ignores or underestimates the need to easily meet the social needs that it expresses, as no local government can circumvent the important function to fulfill them. There is a need of local communities to establish a dialogue with local authorities and agree with them how to meet, at certain times, such needs.

The services and facilities combine to make an area a good place to live, which has to include the availability of political, educational, and social support systems, good relations among constituent groups, a healthy physical environment, and economic opportunities for both individuals and businesses.

The quality of public services helps to meet the growing and evolving needs of citizens, who are now better informed than once and, therefore, able to compare public and private services, by developing social cohesion and the sense of security and belonging to the locals. In fact, the quality of services determines the quality of life and level of territorial, economic and social cohesion.

The solidarity and democratic functioning of society depends from those factors, in addition to the territorial competitiveness, which is essential to attract new investments and new jobs.

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**AUTHORS’ PROFILE**

**Roberto Gerundo**

After the high school, he attended the Air Force Academy of Pozzuoli for three years, taking a degree in civil engineering building at the University of Naples (1979) with 110/110 cum laude. He practices to design in first the Urban Plans (1975-78) at the office of Luigi Cosenza in Naples, he participates in the work of post-sismic reconstruction, and works at the service urban planning of the Campania Region (1982-83) and the Commissioner for the flegreo bradyseism (1984-87).
He is a researcher at the Centre for the Study of the FILT and an expert on urban planning at the Faculty of Engineering and Architecture in Naples (1981-86). He is appointed Assistant Professor in planning (1988) and associate professor of urban planning and engineering (2001) from the University of Salerno. He launches the teachings of urban engineering, analysis of urban and territorial systems and town planning at the degree courses in civil engineering, the environment and the land and architecture (1992). He founded and directed the magazine areAVasta, Journal of Urban Planning and organization of the territory (2000). He thinks and coordinates Urbing, supportive and non-hierarchical network of teachers in urban planning at the Faculty of Engineering on the issues of teaching, research, popular science and higher education (2001). He organizes the Gruppo di Tecnica e Pianificazione and coordinates the laboratory of studies and research in partnership with a number of local authorities (2005). He teaches in the graduate schools and master's degree from the University of Ferrara, Rome La Sapienza, Calabria, Basilicata, Naples Federico II and the Polytechnic of Milan and coordinates the Lamav of Salerno. He works in public administration as councilor of planning in the towns of Pozzuoli (1993-94) and Pagani (1999-2002), and as director dell'Atan (1993-94) and he collaborates with the Procura della Repubblica in investigating crimes in urban planning, as well as experimenting with innovative forms of municipal urban planning. He is an effective member of INU (1985) and President of Inu Campania (2006), he is a member of the National Executive Council (2006) and President of board of national studies of Government of the territory in a wide area (2008-06) as well as being director of annual days of studies Inu (2004).

Gabriella Graziuso

After graduating in Civil Engineering at the University of Salerno in 2012, with 110/110, she qualifies to the profession of engineer at the University of Salerno in 2013. She participates in research initiatives and scientific and technical analyses of the activities of the Gruppo di Tecnica e Pianificazione Urbanistica of the Department of Civil Engineering, University of Salerno, with regard to issues related to the formation of the tools of government land, even with reference to the valuation aspects. In addition, for the AY 2012-2013 she worked in educational activities related to the course of City Planning, the Master of Science in Architectural Engineering, taking specific training seminars, and conducting exercises and tutoring towards the students of the course. In 2014 she enrolled in the first year of the doctoral course in Civil Engineering and Architecture, Environmental and Territorial path Structural Engineering, Building and Urban Rehabilitation. Main fields of research: planning standards of performance, developing inland areas.