The network construction of the "public city".
@22Barcelona: a smart neighbourhood in a Smart City

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Abstract. The metropolitanisation process that affects the contemporary city, climate change, the depletion of ecological and energy sources all demand a unified, integrated and interscalar public government strategy that makes urban regeneration and the restoration of territorial balance its priorities.
Such a strategy has been the benchmark for drafting the 12 priority themes of the Urban Agenda for the EU and policies that aim to promote the smart sustainability and efficiency of cities. In this framework, the @22Barcelona project in Barcelona, presented in this paper, represents an emblematic example selected from the case studies of the "Mediterranean Europe: Strategies of urban and metropolitan rebalancing and the construction of the public city" research project (2016).

Keywords: Public city, Networks, Urban regeneration, Innovation, Environmental sustainability

The "public city" and urban regeneration: in favour of an integrated strategy (LR)

This reflection refers to a part of the national and international research work[1] that its authors have been conducting for many years now regarding the issue of contemporary city government.

The contemporary city seems to be the result of a process of "metropolitanisation" that has changed the structure of Italy's territory and the meaning of problems affecting cities, the environment and the landscape (Oliva, 2010): «A city characterised by an extensively and uniformly "urban" dimension […]; by the unsustainability of its transport infrastructure; by high levels of land consumption; by the structural lack of public spaces» (Ricci, 2017); and by a high proportion of dilapidated, neglected and under-utilised areas.

The spontaneous nature of metropolitanisation - during phases such as the current global recession, the increase in the world population, climate change, territorial imbalances and the depletion of ecological and energy resources - demands a "unified, integrated and interscalar public government strategy" that makes "urban regeneration and the restoration of a territorial balance" its main priorities in order to restore the prospect of fairness, quality and efficiency to contemporary city government.

Such a strategy should envisage a new de-centralised arrangement featuring a "polycentric, sustainable and accessible urban structure" that has been verified in the light of its economic feasibility and social demands (Ricci, 2014) in order to guarantee the right to the city that all communities who live there should enjoy.

Such a strategy should provide an integrated answer to demands for environmental regeneration, social revitalisation and the cultural and economic enhancement of cities, in line with the principles of sustainable environmental and socio-economic development (Sbetti et al., 2016), prioritising the safeguarding and enhancement of identity-forming public assets upon which the "public city" can be newly founded, and a strategy that is broadly in line with EU policies, including the most recent examples addressing smart cities (the Europe 2020 Strategy)[2].

The integrated nature of regeneration strategy, as defined by the European Union (2007)[3] as a: […] renewal process, i.e. some form of repair or improvement […] targeted at revitalising problem areas - namely by addressing shortcomings in natural and built environments, heritage conservation, social integration and employment and economic activities - in cities and their surroundings, but also in rural settings represents a benchmark for identifying the Urban Agenda's 12 priority themes[4], designed to provide common solutions that will lead to the regeneration of urban areas and the implementation of best practices.

This is reflected in policies promoting smart-inspired sustainability and efficiency in cities, such as *Smart governance, Smart economy, Smart mobility, Smart environment, Smart living* and *Smart people* (Giffinger et al., 2007), in order to improve living standards and cultural, economic and social growth, such as those funded by the European Commission's Smart Cities and Communities European Innovation Partnership (SCC EIP) and the Smart Cities Stakeholder Platform, along with funding programmes such as Horizon 2020, the Connecting Europe Facility, and the 2014-2020 Cohesion Funds for renewable energy, energy efficiency, smart grids and mobility.

The fine-tuning of this strategy has adopted «[...] the construction of the "public city" as its reference matrix, reviving urban "voids" […] public spaces and services that have fallen into neglect and obsolescence; derelict areas […] railway infrastructure […] and natural features through a compensatory process of regeneration, thanks to the creation of infrastructure, services, parks, social housing and temporary uses» (Ricci, 2017).

The decision to consider the "public city" as a benchmark reaffirms a primary aspect of regeneration not only as town planning strategy addressing the physical, functional side of cities but as a way of promoting social inclusion as well.

The construction of the "public city" comes about whilst keeping three main perspectives in mind: the "structural", "morphological" and "environmental perspectives".

Firstly, it considers the "public city" as a primary structure, a way of guaranteeing more suitable living standards that meet demands for the right to education, health and shelter as well as public mobility, the tangible and intangible access to goods and services and the environment (Ricci, 2017). This perspective focuses on the measures and implementational mechanisms that, as part of a service-providing policy, guarantee both the identification of a system of public areas and their actual acquisition, creation, management and use (Oliva, 2010).

The "public city" is also understood as a way of highlighting the specific features of places as a manifestation of the historical,

01 | @22 Pla, (Ayuntament de Barcelona)

cultural and social identity of local communities, and as a way of reconstructing links between physical continuity and social integration and between the specific form and cultural identity of a place, as an answer to the fragmentation and standardisation of contemporary cities (Macchi Cassia, 1991; Borja and Muxi, 2001). Last but not least, the "public city" is seen as a driver of sustainable development and environmental regeneration that can implement urban regeneration strategies based on the principles of ecological/environmental potential that connect every town planning and construction project to actions designed to improve the fundamental resources of air, water and land (Ricci, 2014).

The research, its aims and method: in favour of an experimental dimension (LR)

This is the cultural context surrounding Barcelona's @22 project, which is one of the case studies featured in the "Mediterranean Europe: Strategies of urban and metropolitan rebalancing and the construction of public city" research project (2016).

The question of what methodological references and measures should be used to create the "public city" as part of a territorial rebalancing and regeneration strategy is therefore the main aim of this research.

To this end, the research has promoted a discussion amongst international experts, whilst adopting an inductive, reiterated, interscalar and integrated method, calling on different fields to study the issue, aware that the fragmentation of knowledge has proved unable to pursue complex aims, such as those that affect contemporary city.

Interscalarity and integration are guaranteed with the use of three different "levels" of investigation and planning - "vast", "communal" and "local" - and three different complementary and interactive "perspectives": "structural", "morphological" and "environmental". Taking its cue from the current debate and the most important trials now underway, this discussion has ended up identifying a reference framework for constructing the "public city" in Italy and in the rest of Europe, achieved by meeting three requirements.

The first two requirements, "contextualisation" and "operational effectiveness", focus on methodological and practical references that can be traced back to the organisational models adopted for the network construction of the "public city"- which should be applied on the basis of the perspectives and levels identified - starting with the close scrutiny of the ongoing debate and research as well as the best practices to be found in Italian, French and Spanish cities.

Such experiences were chosen from reports by local authorities, operators, associations and trade journals, validating the choice

02 | The transformation of the District of Poblenou,
(Photo Marc Arias)

of best practices through at least three sources that could high-light its innovative nature, any international recognition gar-nered or its ranking in the field.

The third requirement, "experimentation", aimed to set up a new reference framework for constructing the "public city", starting with the dialectic reconstruction of the interpretational and plan-ning categories identified, which are reflected in strategies, tools and implementational mechanisms that hark back to national leg-islation in order to contribute to its reform and innovation.

This requirement also confirms the central importance of ex-perimentation in this research, the ethical and civic nature of its efforts, the social aims of the project's disciplines, the relevance of its mission to the management of public assets and the con-struction of new systems that guarantee high standards of living for the communities dwelling there.

@22Barcelona: the innovation district (CM)

The project for the urban re-generation of the @22 district launched in Barcelona in 2000 is a trial that pre-empts many important guidelines for smart cities and emblematically harks back to the methodological references of this research.

In terms of the requirements of "interscalarity" and "integration", it reflects a town planning process divided up into levels - vast plan, local plan and urban projects - through which the three perspectives adopted - "structural", "morphological" and "envi-ronmental" - can be applied[5].

Launched by the Municipality of Barcelona in conjunction with the *Area Metropolitana de Barcelona,* the project aims to create a new centrality that can act as a driver for the entire metropolitan system in the former industrial estate of Poblenou, a 200-hect-are site that was abandoned in the early 1980s and nicknamed "Catalonia's Manchester"[6].

Thanks to a change in the *Pla General Metropolità de Barcelona* (PGM) zoning regulations of 1976, the *@22Pla* was drafted with the aim of turning the area into an innovative district that could attract knowledge-based businesses, replacing industrial activi-ties with those linked to the new economy (media, design, ICT, energy). The project involved companies, universities, techno-logical research institutes and business incubators, guaranteeing space, services and incentives in order to create a diverse tech-nological centre that would be integrated in the urban fabric with a high-tech infrastructural network (Pareja-Eastaway, 2017; Jutgla and Pallares-Barbera, 2015; Marti-Costa and Pr-adel, 2011) (Fig. 1).

The *@22Pla* therefore fosters a regeneration strategy that will be flexible over time, that is suited to the characteristics of the dis-trict and that meets the requirements of quality, practicality, in-
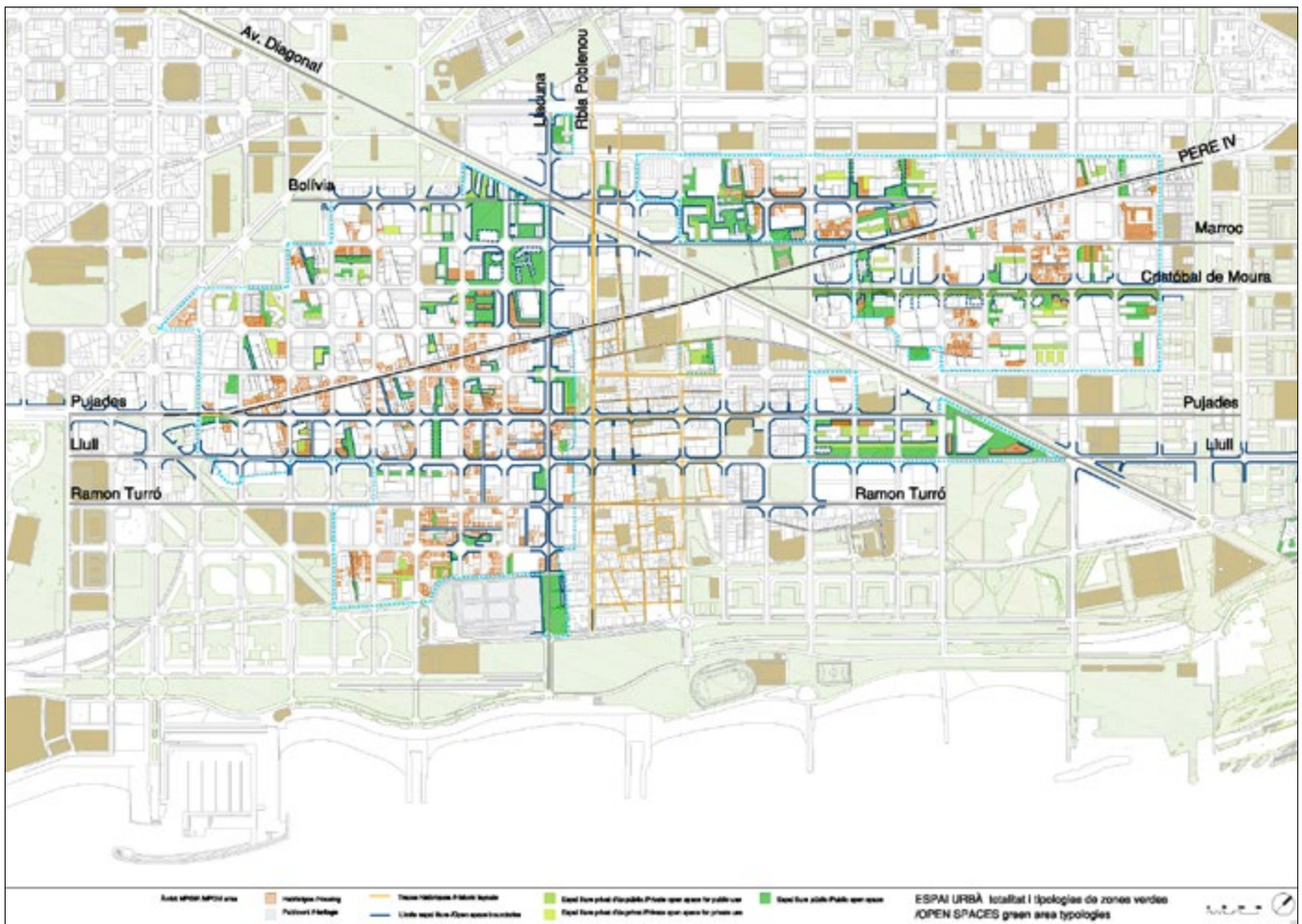
03 | The project for public spaces, (Ayuntament de Barcelona)

novation and integration, whilst preserving traces of the district's industrial past (Morrison, 2017).

Implementation is ensured by a system of working plans envisaged in the PGM (*planeamiento derivado*), known as PERIs (*Plan Especial de Reforma Interior*), which apply to six strategic areas and describe in detail the improvement work to be done at different levels: from the larger-scale aspects concerning adjacent city blocks to a single block or part of it, right down to individual buildings.

As regards the "structural perspective" when it comes to constructing the "public city", as a primary structure for urban and metropolitan rebalancing, the *@22Pla* contributes to the design of the polycentric settlement system of the Metropolitan Area of Barcelona, based on urban and local centres distributed throughout the territory, all of which are highly accessible.

In keeping with this perspective, the presence of public government to ensure the management and supervision of the entire process, the involvement of a number of players (institutions, politicians, operators, experts, universities, associations, residents), the new procedures adopted and the new implementation mechanisms that all combine to focus on a general aim of quality guarantee that the requirements of *Smart governance, Smart people* and *Smart economy* will be met.

The process is a kind of public initiative supported by a substantial European grant and by public-private partnerships, where the local authority is dealing with a brownfield site that is almost entirely private, built up and exceedingly fragmentary.

The project aims to create an ecologically efficient, high-density fabric, characterised by *functional mix* and by the presence of many public services thanks to the way it resorts to implementation mechanisms, such as compensatory acquisition, which have permitted the local authority to receive (in exchange for the increased construction possibilities) 30% of the estate from the developers, free of charge, for public facilities; a proportion of social housing; funds for urbanisation and the improvement of underground utilities (Oliva, 2004) (Fig. 2).

In keeping with the "morphological perspective" when it comes to constructing the "public city", as a matrix for the urban regeneration strategy, for reconstructing the links between physical continuity and social integration and between form and cultural identity, the project aims to regenerate a derelict brownfield site featuring dilapidated buildings and physical, functional and social marginalisation with the improvement and activation of public and private services, parks and social housing, infrastructure and a model of inclusive and sustainable mobility, the fostering of a combination of different residential and non-residential

uses, all with a view to the preservation and enhancement of cultural heritage, of the layout of Plan Cerdà's city blocks and the factories found there (Masboungi, 2010).

The central position of public spaces, the pursuit of urban quality, the recognisability of the layout and the enhancement of the site's identity-forming characteristics all guarantee that the requirements of *Smart people, Smart living* and *Smart mobility* are met.

The layout of collective spaces contributes to social safety and the socio-economic and cultural recovery of the district and is therefore one of the essential axes of the project's spatial design. Parks and gardens are laid out in a sequence of large open areas - the Parc de Litoral, the future Plaça de les Glòries, the Parc Central - which will be linked to smaller city squares and streets in keeping with the buildings, spaces that allow different users to interact (Mariano, 2015) (Fig. 3).

In order to maintain the historical and cultural identity of the area, the urban fabric's morphological features are strengthened by demolishing, replacing and changing the use of buildings and by enhancing monuments of historical and architectural importance, which are the object of specific goals in the 2006 *Pla especial de Protecciò del Patrimoni Industrial del Poblenou*.

As regards the "environmental perspective" with a view to the creation of the "public city"as drivers for sustainable development, the project manifests a direct interest in the hierarchical creation of "ecological networks" through the modification of public transport infrastructure so as to guarantee high levels of social inclusion, the expansion of various different forms of sustainable mobility, the ecological linking of gardens and parkland and the renovation of nearby residual, inaccessible spaces (Gasparrini, 2015; Pareja-Eastaway, and Piqué, J., 2014).

The overturning of the hierarchy that organises the different parts of the infrastructure system in favour of bicycle and pedestrian mobility, the decision to use technological solutions for smart lighting and for managing waste, the monitoring of air quality and traffic flow management all guarantee that *Smart mobility, Smart environment* and *Smart living* requirements are met.

The *Ajuntament de Barcelona* has prepared a special plan for infrastructure (the PEI *Pla Especial d'Infraestructures*) which addresses telecommunications, the water supply, refuse collection, energy and mobility systems in public spaces with the aim of creating both an infrastructural network featuring a highly competitive standard as a distinctive feature of the district that can attract large companies working in the field of know-how, production and new technologies and of testing, in an innovative way, the planning of a system of public spaces that is linked to the infrastructure system.

This gives rise to a new urbanisation model reflected in an avant-garde network of underground infrastructure that connects city blocks and ensures that services are distributed throughout the district, involving the creation of a modern network for energy, telecommunications, teleheating and automated vacuum waste collection, prioritising energy efficiency and the responsible use of natural resources (Oliva, 2004).

The new urban question in Italy: in favour of a structural reform (LR, CM)

This research highlights how the new urban question and the need for a new type of *welfare* require the introduction of an up-to-date concept that, in reaffirming the essential importance of an experimental approach, recognises the new multi-scalar, multi-dimensional vision of cities.

New issues such as the urban repercussions of ecological matters, the role of infrastructural networks in redesigning cities and their economic reorganisation, the strategies of social inclusion and the construction of the "public city" are amongst the essential aims of the Urban Agenda in Europe, of the programmes put in place in cities and the fields of training and research in the foremost educational institutions.

Urban regeneration must therefore take on a central role when fine-tuning the national urban agenda as well, given that it is an essential part of the day-to-day policy governing cities, taking its cue from the details of the Italian legislative framework, aware of how damaging it is to move forward by dumbing down and mechanically accepting European policies.

Therefore the research, convinced that regeneration cannot be achieved without a structural reform of national town planning regulations, has embraced the urgency of launching a process that will review the measures traditionally used to construct the "public city" - which would report to a central government office tasked with managing these issues - in order to implement policies, measures and mechanisms that can make the concept of urban regeneration and "territorial government" a reality[7].

In doing so, it would also acknowledge the repercussions that such a strategy would have on the social and ethical aspects of "project disciplines", highlighting the opportunity to put training courses in place, which are currently lacking in this country, designed to create skills that can be applied to urban regeneration processes.

NOTES

[1] See, among others, the 2012 university research project entitled "La Città sulla Città: Processi di rigenerazione urbana e politiche abitative: costruire il rapporto pubblico/private" (Scientific director: C. Mariano); the 2016 research project entitled "Europa Mediterranea: Strategie di riequilibrio urbano e metropolitano e costruzione della città pubblica" (Scientific director: L. Ricci); and the Sapienza University-ENSA Toulouse 2013 research project entitled "Costruire la Città Pubblica: Strategie e strumenti per il recupero del patrimonio edilizio esistente", UIF, (Scientific director: L. Ricci).

[2] See the European Commission's "Europe 2020: a strategy for smart, sustainable and inclusive growth", Brussels, 2010.

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