São Paulo: Urban Planning Efforts and Metropolitan Growth

BY RENATO ANELLI

São Paulo started the 20th century as a 240 thousand inhabitant town and concluded it as a 10 million inhabitant center of a metropolitan zone of 17,8 million inhabitants. The congestion and disorder disguise the planning efforts conceived since the first decade, but only partially implemented. This article highlights some of the most important urban planning proposals as the Avenue Plan (1930), the Robert Moses's *Plano de Melhoramentos* (1950), the Basic Urbanization Plan (PUB, 1969) and the last Review of the Master Plan (2013–14) to São Paulo, and the challenges resulted of the pace of demographic and urban growth in that century.

History and Geography

Brazil is a South American country that was colonized by Portugal and that became independent in the beginning of the 19th century. Up until the 1930 National Revolution, Brazil wWas controlled by the rural coffee oligarchy based in São Paulo[1]. It was the wealth of the coffee economy that explains the town's urban growth in the first decades of the 20th century.

	São Paulo		Brazil	
Year	City	Metropolis		
	Inhabitants			% Urban
1890	64.934			
1900	239.820		17.438.434	
1920	579.033		30.435.605	
1940	1.326.261	1.568.045	41.236.315	31,3
1950	2.198.096	2.622.786	51.944.397	36,2
1960	3.825.351	4.739.406	70.070.457	44,7
1970	5.924.615	8.139.730	93.139.037	55,9
1980	8.493.226	12.588.725	119.002.706	67,7
1991	9.626.880	15.449.410	146.825.475	75,6
2000	10.435.546	17.878.703	169.799.170	81,3
2010	11.244.369	20.309.647	190.732.694	84,4

This table compares the demographic growth of São Paulo city, of the São Paulo Metropolitan Region and of Brazil[2]. In the last column stands the percentage of inhabitants living in urban areas.

These are amazing numbers, and very important to understand the challenge that Brazil's planning technicians faced.

The small 65 thousand inhabitant town of 1890 entered the 20th century with 240 thousand people, and it reached 580 thousand in 1920. Between 1882 and 1934, 2,3 million immigrants disembarked in the port of Santos, in São Paulo state. German, Italian, Spanish, Japanese and Syrian-Lebanese immigrants poured into the South and the Southeast of Brazil.

The surpluses generated by coffee production formed São Paulo industrialization bases throughout the 20th century. A powerful impetus was given to it during the WW2, when local companies' production replaced imports, hindered by the conflict. Population growth increased due to waves of migration from the North and Northeast, the poorest regions in the country.

In 1940, São Paulo reached the figure of 1,3 million inhabitants, 2,2 million ten years later and 3,8 million in 1960.

Throughout those years, the Brazilian population left the countryside and headed to cities and towns, seeking more job opportunities in the industry sector and services. From an urban population of 31,3% in 1940, it amounted to 44,7% in 1960, in an urbanization process that today totals 84% of the Brazilian population living in cities and towns.

In São Paulo, this growth caused the horizontal expansion of the outskirts over the city borders. From the 1960s onwards, its urban expansion decreased; however, it accelerated in the other 39 cities of the Metropolitan Region in a fast conurbation process.

Urban Planning to Occupy the Territory

Several plans were conceived throughout the 20th century to support this rapid increase in size, producing many transformations in the urban form and architecture of the city.

São Paulo was founded in 1554, in a mountainous region cut by the plains of three rivers, which flow into the inner part of the continent. As it was typical of the Portuguese, the town was built on the top of two hills, which bolstered its defense. The sloping borders of two valleys defined the triangular site. Apart from improving the colonial town's protection, the slopes limited urban expansion when the city started its growth in the middle of 19th century.

At the turn of the century, the town had already gone beyond the valleys to reach the railways built on the plains, and urbanization works in the first decades of the 20th century focused on this transposition.

In 1911, the French architect Joseph-Antoine Bouvard designed a plan for downtown São Paulo, which guided improvement works carried out by the City Hall over the following years. Parks in the valleys, viaducts and squares built in those years add a European air to the old colonial town.

However, the city grew at phenomenal rates. In 20 years there was a two-fold increase in the population and growth became an issue. Unlimited expansion models, presented by Stüben and Eugene Hénard, were adapted by Ulhôa Cintra and Prestes Maia in order to organize the town's growth through a radial and concentric road system[3]. The old town center and its expanded areas beyond the valley joined within an irradiation ring, from which radial roads and a series of concentric rings emanate.

The plan had two scales: the road system and the architecture of the city at local scale, conceived in the North-American urbanist Burnham's *City Beautiful* conceptions. City's code proposed to control the concentration of high-rise buildings along the main avenues of Maia's plan, and relate high-density with mobility facilities.

Despite the efforts of many to introduce urbanism control instruments in public administration, the incredible growth of São Paulo and the main Brazilian cities occurred with no efficient urban planning. The extensive occupation of the impoverished outskirts was singularly combined with the wealthy towers in the major neighborhoods.

Modern Architecture Without Modern Urbanism

The irradiation ring road and some of the radial roads were concluded during Prestes Maia administration as mayor, between 1938 and 1945. In the center of the irradiation ring the verticalization was intense and it produced new programs with a metropolitan character.

The kind of architecture used along the new roads did not follow the *City Beautiful* conceptions of the original plan. A modern architecture developed in São Paulo since 1927 produced the new image of this urban modernization. The new programs generated by this metropolitan condition, such as movie theaters, commercial centers, hotels and apartment buildings, were designed by modern architects who played an important role in urban modernization.

In a restricted region, the New Downtown, in fifteen years, an amazing concentration of modern architecture was built for real estate entrepreneurs. In these blocks, not conceived as modern urbanism, a great concentration of modern buildings reveals the potentiality of the juxtaposition of modern form and non-modern urban tissue. Tall buildings and a network of commercial galleries formed a new-sophisticated cosmopolitan and modern ambience, where the International Style approach did not mean a conflict with the old urban space of São Paulo's Downtown District.

In the post-war years, as São Paulo grew at a fast pace, modern architecture spread all over the city, in new districts for the middle class, in the form of apartment buildings or houses. However, the situation in the workers neighborhoods and in the areas of urban expansion was completely different.

The need for low-cost laborers for this industrialization reveals the wild face of capitalism in Brazil. Industrial development and terrible housing conditions were visible at the same time, in the same city.

The social housing issue has been a subject of debate since the beginning of industrialization. In Brazil, the offer of housing to workers was considered a private investment until the 30s. However, the major part of the huge group of urban workers lived in inadequate housing. Subdivided real properties turned into overpopulated and degraded slums.

The social conditions became a political issue for the State and for the architecture and urban planners. Two main fields of this action can be highlighted: the public housing and school programs.

After the 1930 Revolution, the State began to provide social housing, but the first huge housing projects appeared only at the end of the decade. It made use of retiring and social security institutes, which developed important modern housing projects. Most of them were placed near downtown or the radial avenues of Maia's plan.

State education diffusion could also count on the contribution of modern architects, as it is possible to observe in the development of school partnerships. 52 schools and cultural facilities were built in São Paulo in five years (between 1948 and 1953)[4].

The plans were developed based on the concept of *New School*, a Brazilian adaptation of John Dewey's ideas. Schools were supposed to work as social integration centers for migrants living in the city outskirts. With areas for the use of families at weekends, schools played an active role in the social structuring of São Paulo's urban expansion.

The distribution of schools in the city was based on utility networks and can be compared with other networks of the city in 1954, such as gas, telephone and public transportation. Nevertheless, school and housing construction volume was far from keeping up with the growth rate. From 1937 to 1964, only 10 thousand housing units were projected, of which only thousand were actually built.

The limits of a mononuclear city became clear. São Paulo spread out quickly, but utilities and infrastructure networks did not keep up with this expansion. In the late 40s, despite all efforts and the fast pace of road works, what was implemented of Maia's Plan did not keep up with the horizontal expansion of the city.

São Paulo reached 2,2 million inhabitants by 1950. City government then hired the American Robert Moses through Nelson Rockefeller's International Basic Economy Corporation[5]. Moses warned that the city road system planning should articulate the state motorway system. The non-limits city was acquiring an unexpected dimension, far greater than the models adapted by Prestes Maia for his plan.

Besides the territorial approach for the urban structure, Moses introduced a new kind of concept for the road system on a local scale: the urban highway concepts, which would
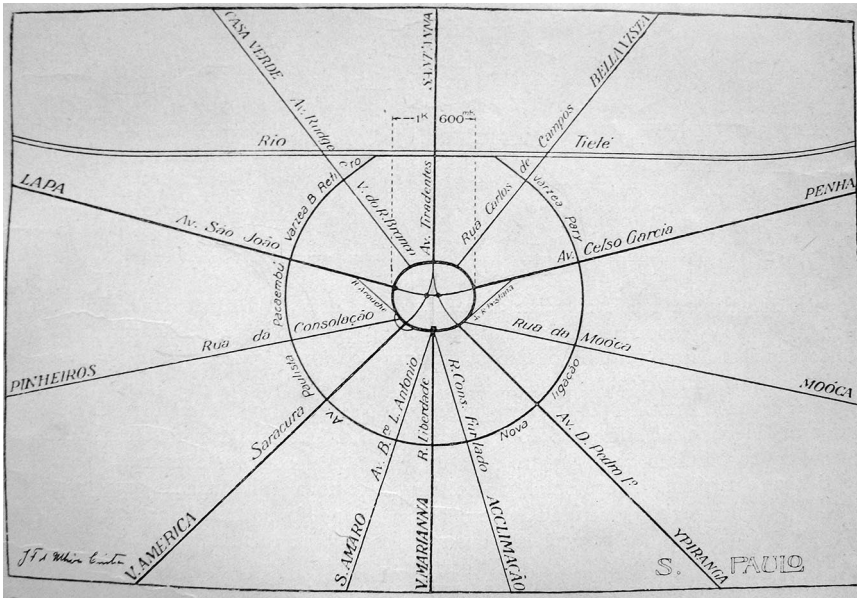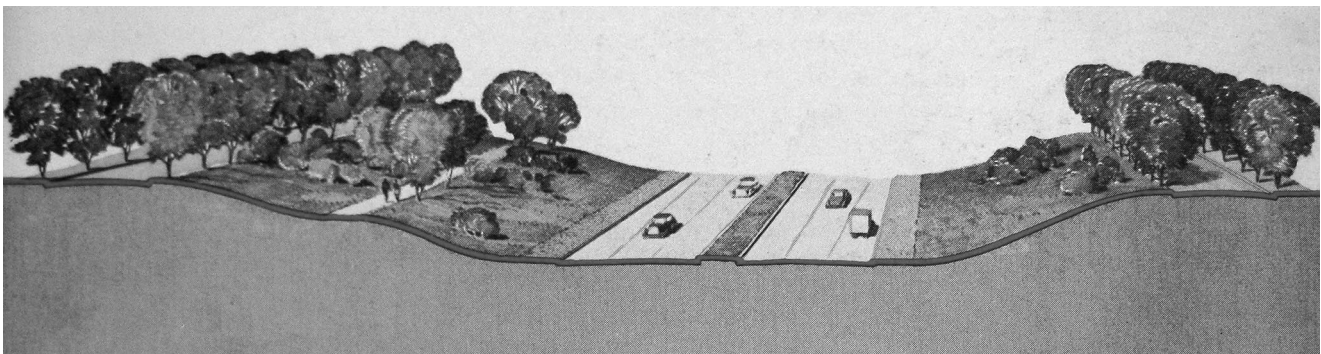
01 lhôa Cintra and Prestes Maia, urban schema for São Paulo, Brazil, 1930. © In *Plano de Avenidas*, 1929, p. 51. FAU-USP Library.
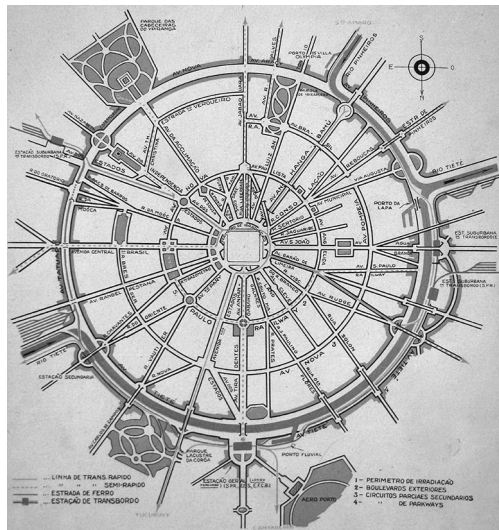
02 Ulhôa Cintra and Prestes Maia, urban theoretical schema for São Paulo, Brazil, 1930. © In *Plano de Avenidas*, 1929, p. 52. FAU-USP Library.
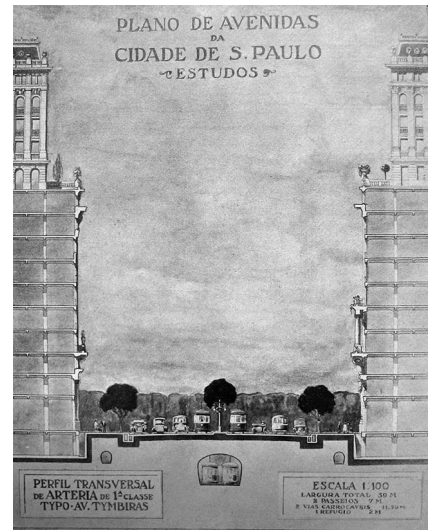
03 Prestes Maia, section of a first class avenue, São Paulo, Brazil, 1930. © In *Plano de Avenidas*, 1929, p. 86. FAU-USP Library.

04 Robert Moses/IBEC, section of an urban expressway, São Paulo, Brazil, 1950. © In Robert Moses, *Programa de Melhoramentos Públicos para a Cidade de São Paulo*, São Paulo, IBEC Technical Services Co./Prefeitura Municipal de São Paulo, 1950, p. 86. FAU-USP Library.

be used in São Paulo expressways, especially in the river-bank roads along the Tietê, Pinheiros and Tamanduateí.

Due to industrialization development, growth throughout the decade of 1950 was dramatic. The population of São Paulo skyrocketed from 2,2 million to 3,8. It exceeded the population of Rio de Janeiro, the country capital at that time as well as of Buenos Aires, in Argentina, becoming the largest city in South America.

Some urban planners were opposed to the mononuclear model of the Prestes Maia Plan and proposed a poly nuclear limited growth city model[6]. Based on François Lebret's research of 1958, the poly nuclear model was adapted so as to find a network of existent centers, some of which work as regional centers. Therefore, a complex network of multiple centers would be formed.

In spite of that, the mononuclear structure of Prestes Maia was used to guide expansion for over 10 years.

In 1957 the plan for Brasilia was launched, and for the first time, the modern Athens Chart principles were applied on a large scale in Brazil. The entries of "*Paulista*" architects to the Brasilia plan competition were concerned with the metropolitan reality of São Paulo. This is the reason for the mega structures proposed by Rino Levi (300 m high and 400 m wide residential buildings) or for a subway structured linear city proposed by Joaquim Guedes. Both entries were rehearsals for their main challenge: to face the unprecedented metropolitan condition of São Paulo in a Brazilian urban scenario.

The Urban Policy in the Years after the Military Coup of 1964

The urban policy in the years after the military coup was based on two large institutions: the BNH (National Housing Bank) and the SERFHAU (Federal Service for Housing and Urbanism). They centralized all the national efforts on social housing and urban planning during the military rule years. The Brazilian cities were in such a critical situation that even a conservative right wing government needed a centralized policy to rule the several conflicts in the intra-urban space.

This created a strong paradox: the first comprehensive national policy for urban planning and housing was created and conducted by a non-democratic government, a paradox that would be questioned in the re-democratization years by a new generation of architects and urbanists who accused urban plans as a technocratic matter.

In 1968, when the city population was close to reaching 6 million, city government proposed the Basic Urbanization Plan (PUB). A multi-disciplinary team composed of Brazilian and foreign technicians developed an in-depth survey of the city situation[7].

The plan proposed a multi-centered city model, connected by public transportation systems and expressway networks that broke with the radio-concentric and mononuclear model. An increase in density along public transport lines was planned, while the multi-directional expressways network encased environmental areas, as Colin Buchanam and Doxiadis promoted in other cities plans.

Mass rapid transit systems were strategic to the PUB, due to its 400 km dimension of subway and commuter trains. Despite only 72 km of subway lines and 230 km of commuter trains being built since the 1970s, the scale of services grew dramatically. It had introduced new challenges, not only for urban planning and urban design. It pushed architecture to new methods of design for mass scale equipment.

Throughout the 1970s, only a part of the PUB concepts were incorporated in projects and plans. Despite the regional dimension of these plans, it was usual to find architects that acted developing building architecture, urban design and urban planning.

The link of scales was visible in São Paulo in urban plans integrated with rapid transit networks. Conceived in the PUB as multiple-activity corridors along the lines and stations, most of those plans were included in the national CURA program (Urban Community of Fast Recovery) for São Paulo. Although it did not come up to what the PUB included, since the lines of the projects were much shorter, the articulation of urban renewal as urban densification of the areas served by the rapid transit network was innovative in Brazil.

Conceived as one of the PUB's sub-centers, the plan of Itaquera was the one among all of them, which had the greatest impact concerning the combination of a housing action and policies of city population decentralization[8]. Itaquera was planned in a rural area 18 km away from the city center. It was in an unusual moment of articulation of urban policies of mobility and social housing that the extension of the red line of the subway was planned, reaching the sites of the two large complexes, which had a total of 34 thousand units.

Next to the station that serves both complexes there was a lot of equipment that should have led to the creation of an urban sub-center, fostering the supply of jobs and services. One of the pieces of equipment was a soccer stadium that only after 30 years was built to host the opening of the 2014 World Soccer Cup.

Economical Crises and Urban Democratization

The economic crisis that began in the late 70s, as a consequence of the heavy debt of the country, led Brazil into two decades of recession. The 80s were known as the lost decade and the 90s were spent to cover the bills according to the international economies revenues.

The shortage of funds hindered large scale planning strategies just when the country began to have democratic governments.

Between the 60s and the 90s, despite São Paulo reducing the pace of growth, the poor informal housing invaded the shores of drinking water reservoirs in the South, watershed areas and unstable mountainous areas. In the 60s, the city of São Paulo grew by 2 million inhabitants while the other cities of the Metropolitan Region grew 1,3 million.

In the next decade, this relation was 2,5 million in São Paulo to 1,8 million in the other cities of the Metropolitan Region. In the 80s, the other cities of the Metropolitan Region grew by 1,7 million inhabitants, exceeding for the first time the growth of 1,1 million in the city of São Paulo.
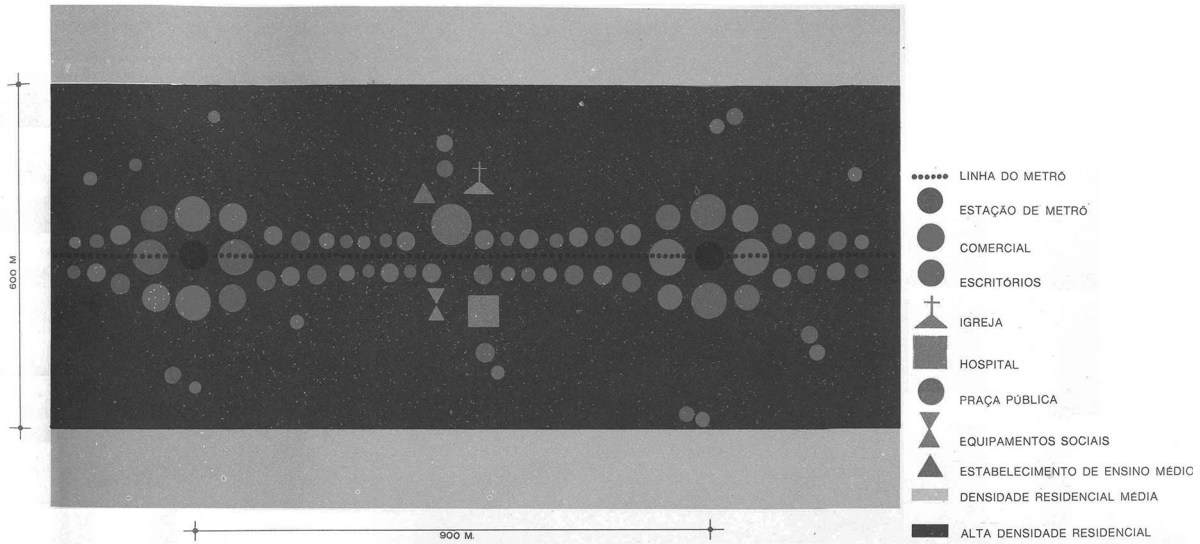
05 Basic Urbanization Plan, diagram of multiple activities corridor, São Paulo, Brazil. © In *Plano Urbanístico Básico*, São Paulo, City Government, 1969. EESC-USP Library.
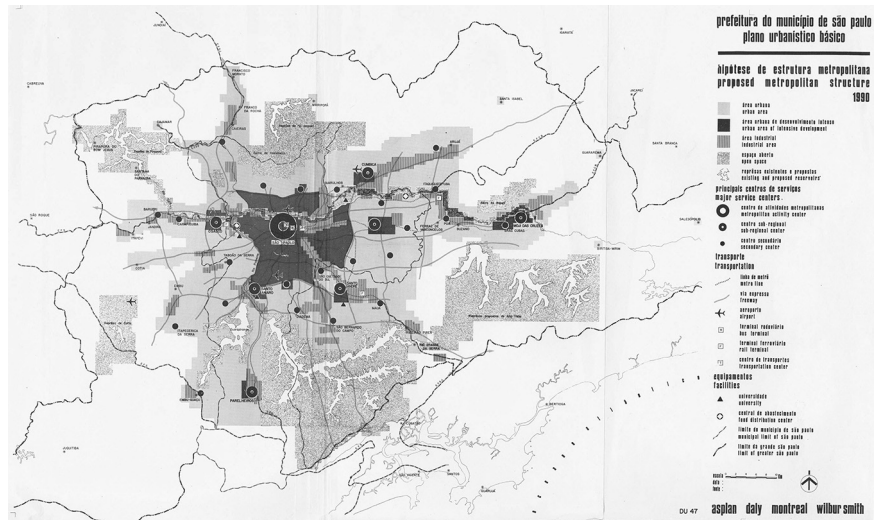
06 Basic Urbanization Plan, Metropolitan Map, São Paulo, Brazil, 1969. © In *Plano Urbanístico Básico*, São Paulo, City Government, 1969. EESC-USP Library.
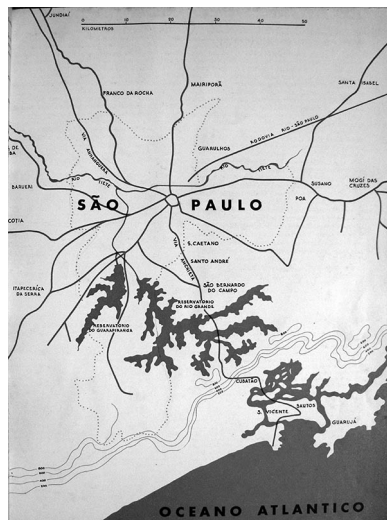
07 Robert Moses/IBEC, regional and municipal roads, São Paulo, Brazil, 1950. © In Robert Moses, *Programa de Melhoramentos Públicos para a Cidade de São Paulo*, São Paulo, IBEC Technical Services Co./Prefeitura Municipal de São Paulo, 1950, p. 19. FAU-USP Library.

Due to the limits of public initiatives, the poorest people tried to find other ways to live in large Brazilian cities, and it was mutual assistance and self-construction that allowed them to build their homes. The real face of the free market city in Brazil was this kind of settlements, in most cases, subject to environmental restrictions, occupying forest land or riverbanks.

Between 1996 and 2000, the metropolitan region population grew in a centrifugal dynamic form, resulting in a population reduction in central areas of São Paulo and major growth in the outskirts and in the other cities of the Metropolitan Region. In this new dynamic, the high-density zones were dislocated from downtown high-rise building areas to the *favelas* in the outskirts: a cruel combination of density, informal settlements and poverty.

In 2001, São Paulo city reached 10,4 million inhabitants, only 800 thousand more than the figure of the 1991 census, while the other cities of the Metropolitan Region grew 1,6 million.

At the beginning of the 1980s, the new social movements for democracy distanced themselves from the urban planning experience associated with the military rule. A kind of liberal democratic approach emerged, pointing to the creation of a civil society without the intervention of a strong state. This appeared with the new left parties not engaged with the old soviet communism. And also with the entrepreneurs associations, which defend a weak state to allow the strengthening of the free market. Those were two faces of the same political phenomenon.

Some initiatives undertaken in two programs of city management aimed at working directly with the organized social movements.

Between 1989 and 1992, the first government of this new left wing party at São Paulo city government introduced a number of architects and urban planners that had been acknowledged for carrying out research on alternatives to the military regime housing policy[9]. They started organizing groups that demanded housing into cooperatives and they managed state investments themselves. Specialized technical teams were organized in order to develop plans and provide technical assistance to these cooperatives.

Among the several plans implemented under this policy, two types brought about an important shift in urban concepts for social housing:

One was intended for the slum issue in the city center. Instead of removing residents, new buildings were put up next to the slums. This made it possible to convert old mansions into community centers and place their occupants near areas with a great availability of jobs.

In the other type, housing projects were densely designed, with the buildings put up along the streets, creating living areas in the inner part of the blocks as a reproduction of traditional courtyards.

These examples of small-scale projects were coherent to the lack of funds in public administration as well as what was within the range of community based policies. And both were far away from the challenge of the informal city between 1980 and 2000.

21st Century Economic Growth: the Challenge of Mass Scale Needs and Infrastructure Plans

This century, Brazil has returned to a period of economic growth. But the dimension of social needs in Brazil is still huge, despite the success of many policies to reduce poverty.

The complexity of social housing and facilities projects rose, needing to be conceived in connection with infrastructure plans, mainly of urban mobility networks. However, the capacity of public administration to deal with large-scale plans is still restricted.

Since 2003 the elevation of commodity prices was one of the reasons for a growth in GDP which in turn permitted an increase in important social programs, such as the family allowance. But Brazil was deeply affected by the 2008 crises.

Federal government implemented some anti-cyclic economic measures to increase the economy by consumption. They worked well, maintaining the unemployment rates near the figure of 7%.

However, two of those measures had affected all Brazilian cities — the investments in social housing and the tax exemption for cars. This means that social housing is being built on affordable land, distant from available offer of jobs, services and infrastructure. And the fleet of private individual cars grew to unsustainable levels. The need to commute rises as does the offer of affordable automobiles, thus, producing a collapse in urban mobility.

Since 2013 the São Paulo Master Plan is being reviewed and urban mobility issues are at the center of the debate once again[10]. A network of high and medium capacity rapid transit lines were conceived, covering all urbanized region, planned to be finished in 2028. Concerned with this future high offer of public transportation, the Master Plan proposed a buffer of high-density urban renewal, along the network, very similar to 1968's PUB proposals. Maybe this time it will work. ∎

Notes

1   Boris Fausto, *A Concise History of Brazil*, Cambridge, Cambridge University Press, 1999.
2   http://censo2010.ibge.gov.br/en/
3   Francisco Prestes Maia, *Estudo de um Plano de Avenidas para a Cidade de São Paulo*, São Paulo, Editora Melhoramentos, 1930; Maria Cristina da Silva Leme, *Revisão do Plano de Avenidas: um Estudo sobre Planejamento Urbano* (PhD dissertation), São Paulo, FAU-USP, 1990; Benedito Lima de Toledo, *Prestes Maia e as Origens do Urbanismo Moderno em São Paulo*, São Paulo, Empresa das Artes, 1996.
4   Ivani Ribeiro Abreu, *Convênio Escolar: Utopia Construída* (MSc dissertation), São Paulo, FAU-USP, 2007.
5   Robert Moses, *Programa de Melhoramentos Públicos para a Cidade de São Paulo*, São Paulo, IBEC Technical Services Co./Prefeitura Municipal de São Paulo, 1950; Hilary Ballon and Jackson Kenneth (ed.), *Robert Moses and the Modern City: the Transformation of New York*, New York, w.w. Norton & Company, 2007.
6   Sarah Feldman, *Planejamento e Zoneamento*, São Paulo, 1947-1972, São Paulo, Edusp/Fapesp, 2005.
7   Leo A. Daly Company, Wilbur Smith and Associates, Real Estate Reasearch Co., Hazen & Swyer, Montreal Empreendimentos and AS-PLAN S. A. Francis Violich, Louis Wetmore, Calvin Hamilton, Charles Blessing, Mário Laranjeira, Domingos Theodoro de Azevedo, Joaquim Guedes, Celso Lamparelli.
8   Wellington Ramalhoso, *Destino Itaquera: o Metrô Rumo aos Conjuntos Habitacionais da COHAB-SP* (MSc dissertation), São Carlos, IAU-USP, 2013.

08 Aerial view of the downtown of São Paulo, Brazil, crossed by South North structural axis. © Alexandre Leitão Santos, 2013.

09 Aerial view of Tietê River's plains, São Paulo, Brazil. High density in favelas at left bank and industrial plants at right bank. © Alexandre Leitão Santos, 2013.

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