

MODERN URBAN PLANNING IN BRAZIL: PRESENCES AND ABSENCES IN THE CITY OF SANTOS URBAN EXPANSION PLAN OF 1910

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ABSTRACT

This article covers some aspects of the origins of urban planning in Brazil through a study of case of town plan developed to the city of Santos, São Paulo State, in 1910, by one of the most important Brazilian engineers during the early years of the 20th century, Saturnino de Brito. The "plant of Santos", as it was known, guided the city's urban development in the 1910s and 1920s, not without conflicts. The options regarding interventions conducted by the Government show the relationship between the urban planning and the social production of urban space in early years of the 1920s.

INTRODUCTION

In early twentieth century, the harbor city of Santos became one of the most important urban centers of Brazil due to the exportation of coffee produced in the state of Sao Paulo, the main product of Brazil's economy at the moment. In order to cope with the city's urban development, the state government of São Paulo hired the sanitary engineer Saturnino de Brito, one of Brazil's most known sanitary engineers in the period. This engineer was called to design a development plan for Santos to face yellow fever epidemics which plagued the city towards the end of the nineteenth century. The modern network of water, sewerage, and drainage infrastructure was based on flow theory, combining the removal of polluted waters, rapid conduction of rain water; abundant supply of safe drinking water and absolute separation of water, wastewater, and rainwater, measures conceived to avoid the proliferation of microbes in urban rivers.

Moreover, there was a clear intention to establish guidelines for urban expansion in the vast wetlands south of the urban core, an idea which landowners welcomed. The bold drainage system, designed by Saturnino de Brito, included extensive channels multiplying the possibilities of urbanization and occupation of these areas. But it wouldn't take long before the myth of the plan as a "*tabula rasa*" for the city's urban development to fall apart. The moment of euphoria of some space production agents also revealed possibilities for profits that went beyond Saturnino de Brito's technical reasoning.

By presenting a complete system of streets and parks, defined from an erudite knowledge he brought from his readings of Camilo Sitte, Raymond Unwin and the plans for L'Enfant for Washington and Cerdá for Barcelona, Brito offered

Santos one of the first urban plans elaborated in Brazil (ANDRADE, 1991: 55), and thus at the forefront of modern Brazilian urbanism. The state was interested in construction a modern city to be home to what would be Brazil's biggest port for exports. We would see one of the most emblematic events in the history of Brazilian planning take place: an ample debate on modern urbanism and its meaning for urban space production.

“THE PLANT OF SANTOS”

In 1906, when referring to the location of the new sewage collectors, while still preparing the elements needed to carry out the plan, Saturnino de Brito reported the study of a rigorous topographical map in which he was designing new streets and improvements. Brito used to say that for a flat city like Santos, the sewage network should be elaborated according to future urban development. Therefore, it was indispensable for the designed network to be carried out without any alterations by City Hall or those interested in laying out streets on their properties. Brito said he had the complete project for city expansion but was reviewing it to promote the law that would maintain it with City Hall. Two years later, concerned about the rigid control for carrying out his plan, Brito proposed two laws: one, a state law, for contributing improvements, and the other, municipal, to regulate the buildings on the blocks. The engineer worried in advance about controlling construction growth that accompanied the improved sanitary conditions with sewage and drainage works. Brito used to say that residential connections and repairs of old works could only be executed after approving a regulation that would also indicate the appropriate materials to be used. The city could not be considered sanitary without a complete renovation of defective installations and approval of the regulation.

With the announced legislative instruments, the general map of city improvements, with “avenues, squares, gardens and streets in the part without buildings and some changes in the already constructed part”, was concluded and offered to City Hall in 1910, which “certainly had to have it considering the improvements it would undertake in the future”, indicated that year's Report (SÃO PAULO, 1912). One year earlier, Saturnino de Brito had taken over as head of the Sanitation Commission of the State of Pernambuco, obtaining unpaid leave from the São Paulo government, to direct from afar the works in Santos that were temporarily assumed by Brito's first assistant, engineer Miguel Presgrave. Therefore, Brito's leaving the Sanitation Commission was not related to the controversy that occurred years later with City Hall, but in 1915, it would be forever marked in Brazilian urban culture with the publication of the “Plant of Santos”, a 269-page book containing the entire debate and an exchange of accusations between Brito and City Hall and the directors of the City Hall's Public Works, Roberto Cochrane Simonsen and Francisco Teixeira da Silva Telles, the former, grandson of the then Superintendent of Public Works for the government of the state of São Paulo, Ignácio Wallace da Gama Cochrane and the latter, son of the prominent São Paulo councilman, Augusto Carlos da Silva Telles.

On pages 32 to 37 of the referred to publication, Brito exposed the history of these issues with City Hall and the dimension the case took in face of the opposing points of view he and City Hall had. Brito argued that only were the two directors of public works, Simonsen, who remained in that position until

1911 and Telles, who replaced him that year, but also the local population, seduced by the praise filled publications in the local newspaper, *A Tribuna*, were in favor of his project. He said that until 1912, there was harmony in the relationships between the city and the Sanitation Commission, a situation that changed in April 1913 during the last trip he made to Santos. That is when he realized that the Directorate of Public Works "was succeeding in obtaining City Hall's defiance against the general plan projected by the Sanitation Commission for the city's progress according to the project elaborated for the development of the sewage network." A series of opinions noted on the pages of the proceedings had enraged Saturnino de Brito who, authorized by the Secretary of Agriculture, Paulo de Morais Barros, responded with a series of eight articles published in the *O Estado de São Paulo* newspaper, in order to "energetically stir up the issue". In the introductory pages, Brito suggested it was a plot contrived by the city, led by director, Francisco Teixeira da Silva Telles who used the name of the City Hall in a collection of aggressive articles published by the *A Tribuna* newspaper to attack his plan. When describing the accusations, Brito said that "in Latin countries, it was common to make use of such arguments without any need to involve personal matters."

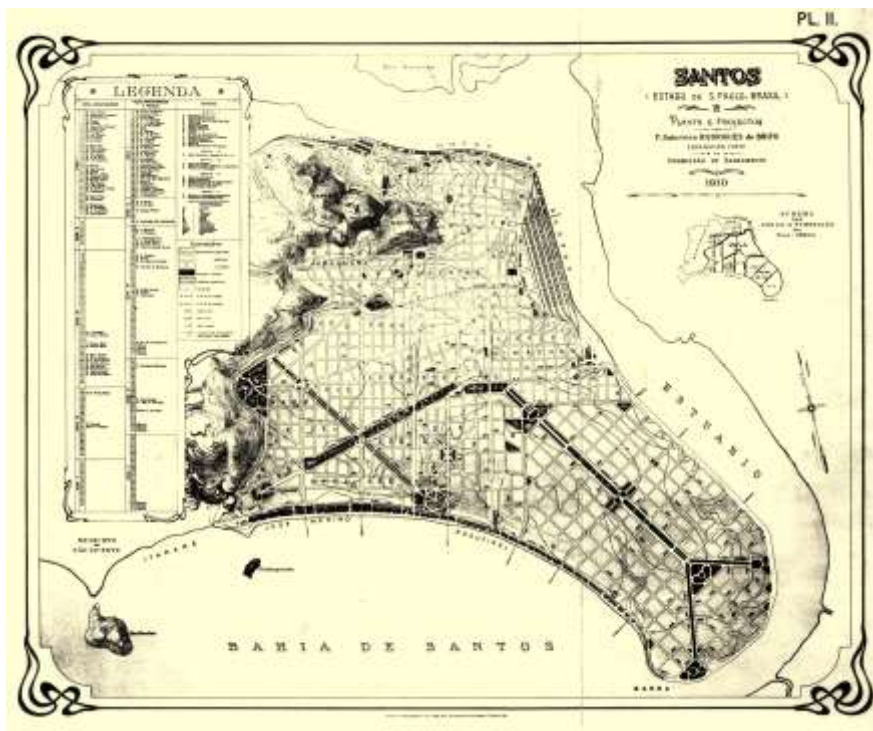


Figure 01 - "The Plant of Santos". BRITO, 1915.

Brito was certainly concerned about the infrastructure system designed and executed in 1905, with the sewage network as a core element in the hypotheses regarding urban growth. His attack against the director of works reflected the

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major issues of urban planning that began to emerge from the cabinets and that, in a way, already indicated the themes that would lead to the creation of urbanism and urban planning at that time. Much beyond the digressions regarding layout, which Brito discussed in detail in this publication, the content fueled a discussion regarding the scope of technical competence to execute or approve urban plans and of the professionals qualified to carry them out. In touch with the latest ideas, Brito deferred to an international urban practice, which was also not neglected by Francisco Teixeira da Silva Telles. He took advantage of the situation to criticize municipal autonomy, reaffirming federalism as the method to construct good cities. With that he explained that being a state attribution, sanitary practices must be subordinate to state government, which should be the only one responsible for formulating expansion plans, always associated with the plan of infrastructure networks, the only way to construct a beautiful and healthy city.

The elaboration of an expansion plan was already common for several engineers, which Brito explained on page 133, and was therefore a procedure known by the better informed engineers, as was his case. However, the point of view regarding city growth and how to carry it out fueled the dispute. On one hand, it was not possible to establish a rigid map and an expansion plan, regardless of how well studied, could not predict all the needs, all the future (and remote future) trends - an idea defended by Telles. On the other hand, strict control of avenue, street and square layouts was necessary, together with a good sanitary project, requiring all private agents to follow the guidelines - defended by Brito. Denied in Brito's writings, Telles idea certainly had to deal with the limitations of public power over property rights, an issue that became a core topic in Brazil starting in 1850 with the enactment of the "Land Law". By stating that the plan should be limited to indicating the general lines for city growth, determining the position of gardens, the convenient direction for the main streets, Telles was demonstrating lucidity regarding the meaning of urban property in Brazil. By citing the American author Mullfor Robinson, Telles went even further. He was demonstrating the power private landowners exercised over local policy, positioning them not only against any overlapping of that sort, but also establishing channels of political dialogue (with the Executive and City Council) that satisfied their desires.

Thus, for Telles, the city was responsible for managing conflicts derived from legal interference involving urban properties, interferences that often went against the interests of the landowners. Such was the case involving Ms. Catarina Ablas, the property owner who benefited from running one of the drainage channels projected by Brito on her property, and who, engaged in selling the lots for the villa she had projected, did not accept the parceling model and the installation of buildings on the blocks that the engineer wanted to impose. That property owner, certainly interested in profiting from the undertaking, demanded greater freedom in defining the layout, perhaps in disagreement with the sanitary layout Brito had elaborated for the model block, which was more costly and had reduced possibilities for making use of the land.

These discussions, which were part of the exchange of knowledge impregnated in the technical and professional sectors in which these engineers were inserted, anticipated what would become the practice of future planning in Brazilian cities and of which Santos was the best example. Brito's defense of

strict expansion plans, conducted by the State, would lose strength during those years. Besides the sharing of attributions, already a public policy practice since the days of the Empire, the state government would not continue to invest resources in sanitation in São Paulo's cities, with the exception of São Paulo and Santos. Indeed, some of these cities were given attributions so they could solve the sanitary infrastructure issue, besides the attributions they already had. In the 1920s, without proportional resources and already with serious urban problems, the cities would be called to elaborate joint plans, dealing with various urban issues, from sanitation to the transportation system. We would see what came to be greater municipal autonomy for the City of São Paulo, for example, where Mayor Prestes Maia's plan for 1930 arrived with much delay in face of the expressive urban expansion taking place. In most of the state's cities, however, sanitary issues did not guide their layout, or even their expansion. Laid out by overlapping the existing street layout, infrastructure networks were not directed for urban expansion, as Brito wanted. That was not because the City Hall had any sort of bad intention, but because the possibilities of defining the urban design the city would have in the future through an expansion plan were limited. That's why the plans would quickly become laws for urban control or improvement that sometimes were obeyed and sometimes not.

The strategic position assumed for Santos made the city an exception since part of the planned improvements were implemented, and it also had the state government in command of sanitary issues, even after the controversial episode involving Brito and City Hall, which frayed relations between the state and municipality. However, its operations would be restricted to actions already being carried out in the installation of sewage and drainage networks and management of the contract with the City of Santos Improvements Company, contracted by the government to operate the city's water supply. The government removed its support for Brito, announcing years later that the sanitation works would contribute towards property valorization and urban development. The government's silence in face of the exchange of official letters and articles published in newspapers was evidence of its action focused on the main sanitation measures and on the major urban expansion guidelines¹, which Silva Telles knew how to explain very well in the answer he provided Saturnino de Brito in 1913. In 1912, before the famous controversy in the pages of newspapers, the government thought of dissolving the Sanitation Commission, since it could almost completely carry out the project elaborated in 1905 itself. That year's Report indicated the creation of a definitive government Bureau in 1914 which would be responsible only for conservation of

1 In 1925, this is how the Report manifested itself in relation to the channel works designed by Brito: "In order to demonstrate the influence drainage channels have had on city development, it is sufficient to say that Dr. Saturnino de Brito, authorized to construct the most urgent channels, organized a city expansion plan and designed channels for the future in 1910. However, after only 15 years, his plan for channels had become a splendid reality thanks to the foresight and continuity of state government action." (SÃO PAULO, 1926: 320)

the Santos and São Vicente sewage networks and inspection of Companhia City² contracts.

In Santos' case, the contraposition between planned city and real city proved to be emblematic. From early on, the exercising of planning was present, making it possible for diverging ideas about its institutional practice to emerge with full force. In this sense, state government action demonstrates the planning logic that would win - the one that would take care of management, control (or lack thereof) and monitoring, always trailing private production of urban space. However, in Santos, real implementation of large guidelines for streets, sanitation and some parks and gardens, present in Brito's plan, made the difference, and whose equilibrium between public and private interventions was kept at the limit.

THE IMPLEMENTATION OF DRAINAGE AND SEWAGE WORKS

The big solution proposed by Saturnino de Brito in his 1910 plan was the implementation of seven drainage channels that cut the island's swamplands, making them dry and safe for receiving streets and infrastructure. Each channel received a number (from one to seven) related to the distances in relation to the city's central area and already urbanized areas. Thus, the first channels, from one to four, were closer to the central area and other already installed developments and the last, from five to seven, were more distant, located in untouched territory, east of the island, in the region known as "Ponta da Praia".

Already in 1911, the government had legislative (budgetary) authorization to conclude all drainage channels already initiated and two more rainwater galleries. It was also authorized to construct Channel 4, which besides draining the lands that would be home to the new "*Hospital de Isolamento*", would benefit *Vila Macuco*, a port workers village, which still did not have a superficial drainage network installed. However, it is curious to note that conclusion of these channels did not follow the numerical sequence, and thus, in 1911, only channels 2, 3, 7³ and 9 were concluded, the first two benefiting a wide stretch of land that extended between Conselheiro Nébias and Ana Costa Avenues, the two most important avenues that linked the central areas of the city and its seafront. The 2,795 meters of channel and 10,205 meters of galleries executed were described as elements to valorize the surface of the lands, then still swampy and unfit for construction. But valorization was still restricted to those lands that accompanied the two main arteries that led to the sea. Channels 2 and 3 would provide the region's first real estate boom and until today it is the most valorized area in Santos. Meanwhile, channel 1 would continue to be built and channel 4, a priority for installing the "*Hospital de Isolamento*" and for *Vila Macuco* sanitation, would be interrupted after questioning arose from two property owners.

2 This Company was responsible for the water supply to the city of Santos.

3 This channel 7 was actually part of channel 1, located in the Jabaquara basin. The current channel 7 at Ponta da Praia would only be constructed years later.

In 1914, channel construction was paralyzed, but nevertheless the government concluded channel 1, making it possible to finally fill in the lowland areas of *José Menino* and *Parque Balneário* (along Ana Costa Avenue) with land removed from the channel itself, and for Mayor Belmiro Ribeiro, together with his partner Roberto Cochrane Simonsen at Companhia Construtora de Santos, to idealize a small development between channels 1 and 2 that would later be installed with the name “Vila Belmiro”. The following year, with channel works paralyzed, the government already planned on constructing channel 6 (with 3 stopped and 5 not even considered).

Once again a convergence of interests was felt. Channel 6, one of those located on Ponta da Praia, would permit expansion of the port in the future, an expansion already underway little by little and that in 1912 was reaching the point where channel 4 flowed into the estuary and where the Sanitation Commission constructed a basin to serve as shelter for embarkations looking for the port and loaded with wood, cereals and sand. Between 1917 and 1919, the government only carried out that channel, treating it with priority and basing it on the “scourge of malarial fevers that desolated the population of Santos”. In reality, it was a work in an almost entirely uninhabited region with precarious accessibility. The government had made it clear it would only invest resources in the construction of channels in those stretches of land donated by property owners, which, indeed, occurred in the construction of channel 6, but that certainly impeded the continuation of channel 4 works where property owners were expecting the valorization of their properties after its conclusion. Although prioritized, the works on this small channel (the smallest of all those constructed) were never free of commotion. On one hand, use of “Rodovalho cement”, a domestic brand used for the first time in Santos, was not successful.

The material, supplied by A. Pereira e Companhia, did not have the recommended uniformity, and besides that, it was not delivered with the required regularity, resulting in contract rescission. Without any alternative, since cement imports during the War were prohibited, the works were delayed. On the other hand, with its construction, it was not possible to raise the land quotas in those areas through which it passed. Total land extracted from the channel and from the lowering of side avenues was not sufficient to fill the existing lowlands in Ponta da Praia. In order to completely solve the region’s sanitation, it was indispensable to carry out the works on channels 4 and 5. Channel 6 was inaugurated in 1919, but the conclusion of channel 4 and construction of channel 5 only began to be considered in 1923.

Channel 4 was concluded in 1924. But it was still necessary to construct channel 5, indeed, perhaps the least important, but still complementary to 4 and 6 in a region already served with accesses and improvements. It was carried out in the midst of an already consolidated speculation process in which, different from the others, construction was automatically accompanied by the construction of beautiful residential buildings. The Report of 1925 described “the plain of enchanting panoramas, incorporating into the city’s heritage a region up to then considered abandoned and unhealthy.” In 1926, when it was already approaching conclusion, channel 5 complemented the beautiful landscapes conceived by Saturnino de Brito, announcing what those works would represent in the not too distant future.

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Figure 02 - Channel 4 under construction. Source: SÃO PAULO, 1925.



Figure 03 - Drainage channel 6 constructed with "Rodovalho cement". Source: SÃO PAULO, 1918.

The sewage works would also be carried out partly in compliance with engineer Saturnino de Brito's desires. The general lines of his system were carried out beginning with the installation of 12 pumping stations. In 1910, material for electrically equipping those stations arrived in Santos, providing them with a great push forward. This also occurred in the construction of the main collectors and of the new network in urbanized areas that was to soon substitute the old and defective network taken over in 1897 by the state government. In 1910, the system was already partly functioning, and the following year it would be inaugurated. The only thing lacking was to complete the works for pouring the sewage into the open sea. Projected to receive sewage from the neighbor city of São Vicente, which also began to install infrastructure works, a general outfall would carry the sewage to *Ponta de Itaipus*, for which a suspension bridge was inaugurated in 1914. The works were daring and would discharge the already purified sewage into the open sea in 1914, when Brito's system⁴ was in full operation. In these installations designed by Brito, we underscore the unrestricted use of electric energy supplied through underground cables by Companhia Docas⁵ to pump the sewage in the district stations. Even when there were power shortages, the sewage system continued to be pumped by the energy generated at the Prevention Plant, built next to the pumping station terminal.

4 The Brito system was very daring. The description of its elements and operation reveals an uncommon ingeniousness in the use of machinery and modern technology. It was comprised of main collectors, secondary collectors and clevises, district outfalls made of iron, special channels with siphons and a general outfall, operating with ten district stations, seven siphons and one Terminal Plant. In 1912, the operation was perfect in every detail: the ten districts into which the city was divided were drained by collectors that converged to station wells where the contribution of each district was calculated by electric pumps until the main collectors.

5 This Company had the Concession of the federal government to operate the port of Santos.



Figure 04 - Santos Sanitation - Terminal Plant and Prevention Plant. Source: SÃO PAULO, 1912.



Figure 05 - Inauguration of the Suspension Bridge on May 21, 1914. Source: SÃO PAULO, 1916.

The efficient system implemented would be perfect if not for the construction increase the city was going through with the implementation of drainage works and expansion of the city beyond its central nucleus. If it was not interesting for the government to pressure City Hall to approve the map Brito had provided, then it would be necessary to draw up regulations that would soon be part of the routine of the Sanitation Bureau, created in 1914. The Sanitation Commission had been adopting the normative criteria of just connecting those buildings with modern sanitary installations to the new sewage network, increasing the contributions to the new network and gradually reducing those to the old. The old network would thus only cease operations after the last domicile was disconnected from it.

Once defined, these decisions would have some consequences and from then on we would see the emergence of building irregularities. In 1914, the new Bureau pointed out the financial difficulties of owners of older buildings in carrying out the renovations required. Even the Sanitation Commission, tied to the Secretary of the Interior, was making concessions regarding terms and procedures for these properties to become regulated, and thus many buildings would end up not being connected to the recently constructed network. Nevertheless, the number of projects carried out by the Bureau's technical office was far from negligible⁶. Every year, the volume increased, giving it a quality of being a more effective controller than City Hall, which had already revoked Municipal Law 288, which demanded prior submission of the new buildings floor plans to the Sanitation Commission before they could obtain municipal approval. The source of this controversy, the repeal did not inhibit the Bureau's action and it continued to exercise control over each new unit being constructed or renovated in Santos, obtaining an almost complete registration of the entire city, getting to know the details and the sanitary installations of each domicile. In 1922, Article 148 of the new Building Code would include that no construction, reconstruction or renovation plan would be authorized by City

6 This organization consists of launching the definitive project for sewage system installation in the projects arriving at the Bureau.

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Hall if not accompanied by the respective sewage project organized by the Sanitation Bureau.

Not every property owner was able to carry out the required installations, especially in the old constructions that demanded special adaptations. Even though the government was enthused about the evolution of buildings connected to the official network, it admitted to the irregular situation, which were absent from the official statistics.

The pressure on owner of old constructions increased every year. This pressure was not accompanied by any sort of subsidy or assistance for renovation costs. In the confrontation between the Health Department and property owners, the number of renovations carried out increased timidly, gradually reducing the number of domiciles connected to the old network, without allowing it to be shut down. In 1923, there were still 461 buildings connected to it; in 1924, 366; in 1927, 250.

Nevertheless, the Bureau was approaching 1920 following the government's guidelines for establishing a service of excellence. Manufacturing of special pieces, all of the cement material used in constructing the collectors and residential connections and even the hydraulic tiles that designed the beautiful sidewalks in the city were still carried out on site, at the Bureau's workshops. This manufacturing was not only a savings for state coffers, but it also offered uniformity and regularity in service progress. It is not hard to imagine the meant for the city and its real estate agents such efficiency in running sewage works. It was hard for the state to accompany all that real estate activity that drove the island in the 1920s. Indeed, pressured to take on the entire, consolidated urban territory, that year the Bureau would encounter a city that was growing outside the daring sanitary sewage system. And that was easy to explain. Unable to expand its sewage network since 1914 due to the financial crisis tied to the First World War, the Bureau would only begin to invest in its expansion again in 1922. That year, it would encounter a high number of buildings constructed on streets not equipped with collectors, discharging into cesspools, often opened just a short distance from homes, "inflicting great harm on the health of the inhabitants".

According to the reports of 1922, with the valorization of these properties, there continued to exist the so-called inconvenient construction, on remote streets, obliging the Bureau to expand its collectors and build new ones for discharges from these buildings, adding further expenses to an already reduced approved budget. Brito's fears were becoming reality. Of course, this was not a concern of the property owners, and as occurred in the City of São Paulo, they counted on the state to guarantee sanitary infrastructure in the developments they were creating. The Sanitation Commission Report of 1925 warned about the disorderly opening of new streets on private properties, being called "villas", selling lots in installments and promising improvements at points far from the urban nucleus.

In 1924, Secretary Gabriel Ribeiro dos Santos also authorized the opening of extraordinary credits to begin construction of the main collector on Marechal Deodoro Avenue, draining an extensive area with opened and densely constructed streets. As can be seen, the government had the means to justify its actions, stimulating and interfering in the private production of urban space,

demonstrating that in the 1920s, state action was no longer only tied to the strategic works of the port, nor only to the advertising service abroad. Its action in Santos' sanitary infrastructure was going through a prioritization process, and given the budget limitations, unable to serve the countless buildings being erected. With that guideline, the Bureau extended its collectors to the streets located within the urban perimeter, with a density that justified the investment. In other words, it tried to serve the consolidated and most valorized areas.

CONCLUSION

With these observations of the social processes that gave origin to urban planning in São Paulo and which, in Santos, we could feel with more vigor through the work carried out by engineer Saturnino de Brito and others, it is worth asking the role played by state investments, the housing proposals elaborated by him. The rich São Paulo of coffee would watch the birth of a modern city with dazzling landscapes, but it would not see the birth of a balanced city from the perspective of public needs. And thus proposals for the construction of villas or low-income workers homes that were far from being established as policies were timidly appearing, such the paltry initiatives by the state government for the Prevention Plant workers in 1917. Scheduled for application in the construction of a series of clean houses, the investments were transformed into two small healthy homes that were later occupied by the workshop foreman and the general overseer, committed to pay for them using interest from capital employed in the buildings. Finally, state government reports from 1917 concluded what advantage public service would have if the state, paying the appropriate attention to the healthy housing problem for workers, tried to solve the problem for those working in public bureaus.

In Santos, the shantytowns and unhealthy housing would continue to occupy old parts of the city at the same time that excessive vertical buildings grew in the sanitized neighborhoods crossed by the drainage channels. These speculative processes, present until today, have roots in the dawn of modern urban planning in Brazil.

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