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Publication Date

1989-10-01

Peer reviewed

Working Paper 499

Planning and the
Unplanned Reality:
Brasilia

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October 1989

University of California at Berkeley

PREFACE

Over the past decade, IURD has developed a tradition of publishing a few Master's dissertations of outstanding quality. The first such, by AnnaLee Saxenian on Silicon Valley, was published in 1981¹ and immediately became a much-cited basic reference on the subject. The second, by Pei-Hsiung Chin on housing and planning policies in Taiwan, was published in 1988.² We are now pleased to publish Pia Wong's study of the planning and development of Brasilia. Despite the existence of two prior major studies in English on the subject, by David G. Epstein and by Norman Evenson, it breaks new research ground and tells us a great deal that was not readily available before, particularly about the detailed development of the satellite towns. We are confident that it will be as well-received as the earlier two student publications.

PETER HALL
Director, IURD
May 1989

¹Saxenian, AnnaLee. 1981. Silicon Chips and Spatial Structure: The Industrial Basis of Urbanization in Santa Clara County, California. Working Paper No. 345, Institute of Urban and Regional Development, University of California at Berkeley.

²Chin, Pei-Hsiung. 1988. Housing and Economic Development in Taiwan. Working Paper No. 483, Institute of Urban and Regional Development, University of California at Berkeley.

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INTRODUCTION

On April 21, 1960, a new capital city was inaugurated in the interior of Brazil. Brasilia, as she was named, represented the culmination of roughly two hundred years of speculation, discussion, and debate about moving the national capital into the interior region of the country. It was not the first time that the capital had been moved. In 1763, the national capital was transferred from Salvador to Rio de Janeiro. Nor was it the first instance of a planned city being built in Brazil. Both Goiania, Goias, and Belo Horizonte, Minas Gerais, were planned cities whose construction preceded that of Brasilia's.

Yet, there is much more to distinguish Brasilia beyond the facts that she is a planned capital city in the interior of Brazil. Beginning with the design of Brasilia, certain fundamental attributes should be noted. Brasilia's design utilizes two elements never before joined together in the same city. The first is the exclusive use of modernist architectural principles in the design of all built structures in Brasilia. All of the buildings follow design guidelines established in 1933 at the International Congress of Modern Architecture. Secondly, Brasilia's design implements the idea of new towns, introduced by town planners in Great Britain.

More important, however, are the specific urban planning questions and problems that the creation of Brasilia evokes. One of the purposes of moving the capital from a coastal location to an interior location was to produce a more effective integration of national space. A second goal was the creation of a more rational division of administrative and political power, which would result in a better organized, balanced nation.

These two goals can, in turn, serve as the basis for some fundamental questions concerning Brasilia that will be addressed in this study. First of all, will the creation of a new city actually serve national development purposes? Secondly, can one city transform the way people operate and provide the basis for a new society? And thirdly, to what extent must the ideas utilized in a city plan relate to the actual social and economic realities of the country in which the city is to be built?

These were the guiding questions propelling this research. The methodology used in the completion of this work included three phases: an in-depth review of all pertinent scholarly works, in both English and Portuguese; comprehensive data analysis covering the history of Brasilia, beginning with the idea to move the capital and continuing to the present; and fieldwork conducted in Brasilia, including data collection from federal statistical agencies, archival review, interviews with government officials and community leaders, and personal visits to various locations in Brasilia.

The most significant body of research on the creation of Brasilia is Brasilia, Plan and Reality, written by David Epstein in 1973. Mr. Epstein is an anthropologist by training, yet this work evaluates the incidence of squatter settlements in the Federal District. It is an interesting and informative work colored by personal vignettes interspersed throughout the text. Mr. Epstein writes with a true concern for the plight of squatters in the Federal District, and with a sense of outrage over the poor planning and policy implementation that have exacerbated their condition.

The focus of Brasilia, Plan and Reality is of an ethnographic nature rather than a planning one, and, because it was published in 1973, many of the situations that he describes are no longer in existence or have changed drastically. Thus, Mr. Epstein's book provides a good descriptive and

historical account of Brasilia and her implementation. But because of its anthropological focus, the analytical content of the work is not quite as substantial as would have been helpful. Brasilia, Plan and Reality does provide the reader with familiarity concerning the "invasions" and the situation of squatters in the Federal District. However, Epstein does not draw any conclusions regarding the relationship between these squatter settlements and particular planning issues.

A second important resource written in English is Norma Evenson's Two Brazilian Capitals. Though this book concentrates more on the architecturally significant aspects of Brasilia, it provides some extremely useful information on the history of the idea behind moving the capital and on the selection process for the design of Brasilia. In addition, Evenson's analysis of the Costa Plan was very helpful.

Finally, there are two works written in Portuguese which proved indispensable for the purposes of this research. The first, written by Jose William Vesentini, is titled: A Capital da Geopolitica ("The Geopolitical Capital"). Published in 1986, this book gives a fascinating analysis of the geopolitical forces which influenced the process of transferring the capital, and provides a comprehensive description of the historical precedents and context surrounding this event. The second work, Brasilia, Ideologia e Realidade: Espaco Urbano em Questao ("Brasilia, Ideology and Reality: Urban Space in Question"), is a collection of articles written by Brazilian professionals and academics. Edited by Professor Aldo Paviani of the University of Brasilia, the articles in this book address a variety of urban issues confronting Brasilia today.

A number of data sources were utilized in the course of this work. Census data compiled by federal agencies was used, and the Federal District has

two statistical agencies of its own that work exclusively on collecting data about the capital. These agencies are: Instituto Brasileiro da Geografia e Economica, or IBGE ("Brazilian Institute of Geography and Economics"), and Companhia do Desenvolvimento do Planalto Central, or CODEPLAN ("Development Company of the Central Plateau"). CODEPLAN proved to be the most useful and helpful agency in terms of providing current, consistent data and pertinent reports about the Federal District.

Finally, all the Brazilian people with whom contact was made were extremely helpful and enthusiastic, and really facilitated the progress and completion of this project. Government officials were extremely generous with their time and were instrumental in providing a number of valuable resources. Community leaders were also quite willing to share information concerning the various problems that their organizations were confronting. In addition, planned and spontaneous conversations with residents of Brasilia provided quite a bit of interesting and enlightening information.

This work is organized according to the following scheme. The first chapter describes the evolution of the idea to transfer the capital to an interior location, discussing the major reasons behind making this move and the various steps that made it possible. Chapter Two discusses the competition that was held to choose a plan for Brasilia, and analyzes this decision process. Chapter Three provides an in-depth analysis of the physical aspects of the Costa plan as well as the ideas that were to be implemented in this plan. Chapter Four critically evaluates the Costa plan.

Chapter Five contains a brief description of the history of both Brasilia and the satellite towns from 1958 to the present. Following this, in Chapter Six, is a comprehensive statistical analysis of a variety of social, economic, and urban environmental indicators for Brasilia and each of the satellite towns.

In Chapter Seven, a systematic comparison between the Pilot Plan and the satellite towns is made on the basis of the indicators listed above, as well as types of urban spaces and their uses and the planning processes involved in each area. For further clarification of the data discussed in these two chapters, the reader is urged to consult the tables found in the appendix.

The final chapter provides some concluding remarks and thoughts about the situation in Brasilia, and addresses the questions posed in the beginning of this introduction.

CHAPTER ONE: THE IDEA

The idea of moving the capital of Brazil out of Rio de Janeiro was inspired by economic and political reasons as well as nationalism, strategic concerns, and mysticism. The transfer of the capital, from a coastal location to an interior location, was argued from a number of different viewpoints. A commonly used argument was that Rio de Janeiro was a strategically unsuitable location for a national capital. In 1761, the Marques de Pombal made the first suggestion that the national capital be moved to a safer, more defensible location in the interior. In 1808, when the Portuguese Royal Family came to live in Brazil, Prince Dom Joao VI expressed concern about the strategic safety of Rio and began to look for other suitable sites in the interior of the country. The physical vulnerability of Rio was also an issue raised by Francisco Adolfo de Varnhagen, a celebrated historian and diplomat who completed a number of studies in the late 1800s which strongly advocated moving the capital (Paviani 1985).

In addition to these defense considerations, the location of the national capital in Rio was considered inappropriate by some groups.

In 1789, the insurgents of the Inconfidencia Mineira, a rebellion in the state of Minas Gerais, called for a federal university located in the state of Minas Gerais and also demanded that the national capital be transferred to the city of Sao Joao d'El Rei. This uprising occurred during a period when Minas Gerais had gained considerable economic power based on the discovery of its mineral resources. The supporters of this rebellion felt that the political and economic power of the country should be concentrated in the same geographical location, and that Rio, which had little economic importance, was not qualified for this role.

Though this uprising was suppressed fairly rapidly, suggestions to build a new capital continued to be proposed sporadically over the next thirty years. In 1813, for example, the idea of moving the capital appeared for the first time in Correio Braziliense, Brazil's first newspaper. An article, written by the founder of this journal, Jose Hipolito da Costa, advocated the transfer of the capital to Pirapora, Minas Gerais, based on the region's economic importance. In 1822, Costa wrote another article also suggesting the interiorization of the capital (Paviani 1985).

When Brazil gained independence from Portugal in 1822, the idea of transferring the capital became more of a nationally debated issue and took on more political significance. Most notably, the motivation for these demands began to stem from a different set of concerns. With Brazil's new status as a sovereign nation, the idea of transferring the nation's capital took on more importance in terms of political and economic integration and development.

First of all, it was argued that Rio de Janeiro was neither a suitable nor an appropriate location for a national capital for a number of reasons. In addition to the defense considerations mentioned earlier, the overall atmosphere of the city was questioned. The tropical climate and the proximity of Rio's beautiful beaches were thought to be detrimental to the efficient and effective operation of the government bureaucracy. Moving the capital to a new location that was especially built for political work and did not have the distractions ever present in Rio was thought to be necessary in order to increase motivation and decrease corruption in Brazil's political system.

More importantly, however, the idea of building a new national capital was seen as an important step in the process of creating stronger national unity and identity among the Brazilian people. Moving the capital from Rio de Janeiro would serve to break any residual colonial ties with Portugal.

Furthermore, the construction of a truly Brazilian capital would signify the destruction of the last vestiges of Portuguese imperialism and the first step towards the consolidation of the Brazilian republic.

At the heart of this issue was the desire to expand the spatial occupation of Brazil away from the coast and into the interior of the country. Historically, the bulk of Brazil's vast land mass remained underdeveloped or completely undeveloped. The majority of the country's population has traditionally lived in the coastal areas, primarily concentrated in the southeastern states of Sao Paulo and Rio de Janeiro. It has only been within the last century that any type of population or economic development has been initiated in the interior. Those in favor of creating a new capital hoped that an interior location would encourage national integration and economic development away from the coastal area.

The first interest in this project was expressed by Francisco Tossi Columbina, a geographer from the interior state of Goias. Though this project was subsequently abandoned, Columbina did produce some very good maps of the interior areas, which were useful in subsequent years (Paviani 1985).

More significantly, from 1839 to 1877, a number of concentrated efforts to investigate possibilities for a new capital and to educate the political powers as to the benefits of a transfer were made by Francisco Adolfo de Varnhagen, mentioned previously. In 1839, he began a series of research projects dedicated to detailed, geographical studies of the interior states of Brazil and, based on these studies, made recommendations for suitable locations for the new capital. In 1845, Varnhagen stated that Rio de Janeiro did not possess even the minimum requirements necessary for a secure national capital. Also, though not specifically expressing support for establishing the new capital in Minas Gerais, he suggested the creation of a university in Sao Joao d'El Rei (the site previously suggested in 1789). Between 1849 and 1851,

Varnhagen's Memorial Organico was published, providing a detailed argument in favor of transferring the capital to the interior (Paviani 1985).

Finally, in 1877, Varnhagen published two celebrated works: A Questao da Capital: Maritima ou Interior ("The Question of the National Capital: Maritime or Interior"), and Carta de Vila Formosa da Imperatriz ("The Letter from Vila Formosa da Imperatriz"). The former work is by far the more substantial, and reinforces his original idea that the capital could not remain in Rio. He cited the 1711 invasion of Rio by the Frenchman Dugnay Truoin as ample evidence against Rio's strategic suitability. More importantly, however, Varnhagen outlined criteria for selecting a new site for the national capital. Included are the following:

- a. easy railroad access to coastal ports (Salvador, Rio de Janeiro, and Santos);
- b. an intensification of interregional economic transactions with the new capital acting as the hub;
- c. a location in the interior secure from foreign invasions;
- d. an economy based on wage labor;
- e. a location in the central plateau, with good air quality, proximity to natural sources of water, and far from the tropical climates of the littoral (Paviani 1985).

Varnhagen further expounded on the subject in his latter work, published in 1877, which was presented to the Minister of Agriculture, Tomas Coelho. Central to this letter was the proposal that, in addition to a new capital situated in the interior, the Brazilian government would create other areas in the interior to provide economic support and to absorb excess migration.

Clearly, Varnhagen expressed ideas that were ahead of his time. However, the viability of his arguments planted enthusiasm for transferring the capital into the minds of many Brazilian people, and these criteria were also used at a

later date. Above and beyond the details of his argument, his work aroused national interest with these words:

Rio de Janeiro would be a good location for the capital of Brazil if Brazil were to absorb Africa, in the same way that Cuiaba would be a suitable capital if we were interested in expanding to the west, or as Bage would serve our purposes if we wanted to take over the Southern Cone. . . . But if our mission is to keep our national territory intact and to improve it, the new capital must be in a central and defensible location (Paviani 1985).

Spiritual and mystical confirmation of Varnhagen's ideas was provided through the prophetic dream of Dom Joao Bosco in 1883. In this dream, Bosco, who was later canonized by the Catholic Church, envisioned a grand city in a promised land possessing fertile soil and large oil reserves. This new city was to be situated between the latitudes of 15 and 20 degrees. Though it is unlikely that this vision had much influence on Brazilian politicians, it plays a significant role in the popular myths surrounding the creation of Brasilia.

The efforts of Varnhagen, however, did produce some concrete results. In 1890, a Constitutional amendment to select a potential site for the new capital was sponsored by Deputy Lauro Muller and 88 other deputies and senators. In 1891, the legal and political details of this transfer process were articulated, and Article 3 of the new Constitution was passed. This article established an area of 14,400 square kilometers for a new capital, and authorized the President to establish a commission for delineating the boundaries of this area. The next year, Marechal Floriano Peixoto announced to Congress the creation of the first commission to explore the possibilities of the Central Plateau. The Cruls Commission, named after its director, Dr. Luis Cruls, subjected the designated area to a number of tests. Among the criteria used were suitability of climate, quality of soil, geological and topographical

conditions, animal and plant life, and the availability of water and building materials in the immediate area (Evenson 1973).

At the end of its study, the Cruls Commission identified five potential sites in the Central Plateau and recommended an area in the state of Goias near the town of Planaltina as the most suitable choice. Despite the accomplishment of this first study, however, no further action was taken to secure the transfer of the capital until nearly thirty years later. It was in 1922 that interest in transferring the capital to the interior was once again revived. At this time, legislation was passed that legalized the transfer of the capital from Rio de Janeiro, and President Epitacio Pessoa laid a symbolic cornerstone on the site previously named by the Cruls Commission.

More than twenty years passed before anything else concerning the new capital was initiated. But in 1946 a new constitution was written; included in it was an article that made provisions for moving the capital. In compliance, President Eurico Caspar Dutra created a new commission to investigate, once again, potential sites for the new capital. The commission was headed by General Djalma Polli Coelho, and in 1947 two geographic expeditions were made to the Central Plateau. Thus, from the research done by the Coelho Commission and an aerial study completed by Belcher and Associates (of the United States), two sites were selected and submitted for Congress's approval (Evenson 1973).

In 1953, an area of 5,000 square kilometers was demarcated for the new Federal District, 1,000 square kilometers of which were reserved for the new capital, Brasilia. The new Federal District included land from both Goias and Minas Gerais and, coincidentally, was the exact site chosen by the Cruls Commission in 1894. In 1955, the Bananal Plantation, located in Goias, was appropriated by the Federal Government, and the consolidation of the new Federal District had finally begun (Evenson 1973).

In light of the fact that the idea of a new capital had been a topic for discussion in some Brazilian circles for nearly two hundred years, why wasn't the move made earlier? Or considering that both the Cruls and the Coelho Commissions chose the same general area, what were the particular circumstances in 1947 that differed from those in 1890 and made it possible for the actual move and construction to be initiated? In order to understand Brasilia and the significance of this new capital, the idea to move the capital must be examined within the historical context of the political and economic situation of Brazil.

Until the end of World War II, the prospect of moving the national capital represented rather vague ideas concerning strategic safety, national unity, and Brazilian destiny. As mentioned earlier, Brazil has historically suffered from extreme regional inequalities, with most of the population and economic development concentrated on the coast. Administrators hoped that a new capital in the interior would serve to integrate the country and initiate more comprehensive national economic development. Since World War II and the development of Brazil's industrial economy, the idea of creating a new capital became a much more significant factor in achieving this national integration.

This change in the perception of the new capital has its roots in the industrial and economic development of Brazil. In the beginning of this century, Brazil entered its first stage of capitalist development. The abolition of slavery in 1888 was an important catalyst for this first stage because it allowed the development of a salaried labor force. This phase, which occurred between 1900 and 1930, was characterized by an economy based on primary exports, the most important of which were agricultural products. During this first stage, the rural areas were the production centers, and the urban areas were the mercantile centers for distribution (Paviani 1985).

In spatial terms, however, the effect of this first stage of capitalist development was to reinforce traditional regional inequalities. In conjunction with the growth of this agro-export sector was the emergence of important financial and mercantile sectors, centered mostly in the state of Sao Paulo. This period also created a few dominant agricultural regions, located in the southeastern coastal areas and directly linked to European markets. Very little development in either agricultural production or mercantile activities has occurred in the interior or in the northeast.

Inherent in this phase was an increasing conflict between the rural oligarchy and the emerging industrial powers. In 1930, with the end of the Old Republic, the industrial sector became the dominant power in the Brazilian economy. With this change of power, combined with impressive rural-urban migration, an urban proletariat emerged. In addition, the state made massive investments in infrastructure and light industry, though, once again, concentrated primarily in the coastal regions and the South. This capitalist trend entered a crucial period in 1956, when Juscelino Kubitschek was elected.

Kubitschek's administration can be characterized by its ambitious program, called the Programa de Metas or the Plan of Goals. The most crucial element of this plan, which consisted of over 25 goals, was the opening of the country to multinational investment. This event was, to be sure, extremely significant for national economic development; however, in terms of spatial development, it merely served to reinforce regional inequalities by concentrating investment in the Southeast region of Brazil.

Brasilia was the other key element in Kubitschek's Plan of Goals, as she was supposed to offset the spatial effects of multinational investment in Brazil as well as provide the cohesive link for some of the other goals. For example, another element of Kubitschek's Plan of Goals was the increase of

domestic consumer demand. This was to be achieved by incorporating historically underdeveloped sectors of society into the consumer market and the national economic process. The targeted sectors were the Northeast and, more importantly, the interior (Vesentini).

Obviously, Brasilia was an intrinsic element in the achievement of this goal. It was hoped that Brasilia would serve as a growth pole, attracting migrants that might have normally relocated in Sao Paulo or Rio de Janeiro. Once the city was established it would then provide an entirely new opportunity for commercial and retail activities. In addition, administrators looked forward to the creation of a particularly sophisticated consumer market because of the concentration of politicians and bureaucrats in Brasilia.

Another of Kubitschek's goals was the expansion of the communications and transportation industries. Kubitschek envisioned Brasilia at the center of an intricate web of transportation and communications systems connecting all of the different regions of Brazil. Placing the capital city in the country's interior would provide the proper impetus for the growth of each of these industries: the new capital would require a technologically advanced communications and transportation network in order to link it with the rest of the country. In addition, the construction of Brasilia and, consequently, of the satellite towns, greatly bolstered the construction industry in Brazil. (See Appendix, Map 1.)

Thus, in addition to her important function as the new national capital, Brasilia also represented a method for achieving a number of different national goals. First of all, she was to serve as a springboard for the industrial Southeast into the untapped markets of the interior and Northeast. Second, Brasilia was supposed to operate as a growth-pole for population expansion and redistribution into the interior, thereby evening out some of the regional disparities

that had historically plagued Brazil. Third, it was hoped that the new capital would open up new consumer markets in the interior regions of Brazil.

Within the context of Brazilian history, the transfer of the capital from Rio de Janeiro to Brasilia symbolized the culmination of nearly 200 years of effort and possessed significance on many different levels. The creation of Brasilia symbolized the arrival in the promised land envisioned by Dom Bosco and, with this arrival, a hope for the fruits that this land would bear for the nation as a whole. Brasília also represented the final "cutting of the apron strings" from Portugal. Brasília, unlike Rio de Janeiro, which was full of associations with Portuguese imperialism, was the first capital chosen and created by Brazilians and for Brazil as an independent sovereign nation.

Ultimately, the significance of Brasilia embodied the hopes of Brazilians, accustomed to hearing that Brazil was the country of the future. The new capital was to present to the world the most modern city ever built and was to represent the arrival of Brazil in the modern, industrialized world. The new capital would have all kinds of wonderful characteristics: it would house a new and more efficient Brazilian government, it would be designed for the automobile, it would have plenty of open spaces, and it would be free of the favelas and slums that marred other urban areas of Brazil.

After so many years of dreaming about a capital in the interior, a truly Brazilian capital, and after numerous false starts, Brasilia was finally to become a reality.

CHAPTER TWO: SELECTING A PLAN FOR BRASILIA

Once a site had been chosen, an administrative organization was formed to oversee the preparation of the site for the new capital. This organization, the Company for the Urbanization of the New Capital (NOVACAP), also performed duties of land distribution and sales when the capital was finally completed. Today it is in charge of public works in the Federal District.

Shortly after the creation of NOVACAP, architects, planners, and engineers from within Brazil were invited to submit plans for the new national capital. The competition was limited to Brazilian professionals, in keeping with the idea that Brasilia was to be a capital for a new Brazil, symbolized by its independence and self-reliance. The jury, however, was composed of international panelists.

The plan competition began in 1956. Entrants were required to submit two documents:

- a. a basic layout of the city, giving the position of main urban structures, locations of various economic sectors, distribution of housing, open spaces, and communication/transportation networks;
- b. a supporting document that would elaborate on design decisions and assumptions (Evenson 1973).

The jury evaluated the entries according to several fundamental elements, including use of natural topography and environmental features, size of the city in relation to population projections, integration of urban elements, and the relation of the city to surrounding elements (Evenson 1973).

In addition to these criteria, there were also some underlying assumptions that influenced the judges' decisions. First of all, Kubitschek did not merely want a plan for a new city in Brazil. He wanted a plan for a new capital city--a city that would embody all the grandeur, importance, and monumentality

inherent in Brazil's new national capital. Furthermore, Brasilia was to mark the entrance of Brazil into the modern age. In addition to monumentality, Kubitschek wanted a capital city that would demonstrate to the world that Brazil could achieve her potential as a major power in the Southern Hemisphere. In order to reveal this, Brasilia had to be not only monumental but extremely modern, highly organized, efficient, and clean--everything that Brazil, in reality, was not (Epstein).

Secondly, the plan for Brasilia was unlike most other city plans in that it had to provide an urban setting that would be, in its initial form, also its ultimate form. That is to say, the plan for Brasilia had to enable her to immediately become functional, thus surpassing the normal evolution of city spaces and functions typically experienced by urban areas.

The jury selected to view the plans submitted for the Brasilia project was composed of several distinguished Brazilian professionals as well as experts from abroad. The most notable Brazilian figure was Oscar Niemeyer, a famous modernist architect who was a disciple of French architect Le Corbusier. Niemeyer's relationship with President Kubitschek went back at least fifteen years to Kubitschek's days as mayor of Belo Horizonte, in Minas Gerais. One of his most ambitious projects as mayor was the creation of a wealthy suburb for the city. Niemeyer was the principal architect in this effort. In the tradition of this relationship, Niemeyer was precommissioned to design all of the major buildings in the new capital city (Evenson 1973).

Other Brazilians on the jury panel included Paulo Antunes Ribeiro and Horta Barbosa. Three foreigners were also members of the decision panel, Stamo Papdak of the U.S.A., Andre Sive of France, and William Holford of Great Britain (Evenson 1973).

There were some twenty-six plans submitted, and they varied in their presentations. Most of Brazil's most prestigious architects and planners took part in this competition. The majority of the plans were modernist in their approach. Many incorporated large-scale apartment complexes in their plans. Some firms chose to rely heavily on statistical data, and produced plans that used many of the modern planning techniques employed during that time, such as population projections and other statistical tools. In the end, however, none of these complex techniques or methods succeeded in winning the competition. The simplest and most basic of all the competition entries was submitted by Lucio Costa, and it was his plan that was selected.

Unlike his competitors, Costa did not utilize statistical data, demographic analysis, geographical considerations, or elaborate architectural or planning techniques in devising his plan. His project did not include detailed drawings, and he did not submit transportation plans, growth plans, or any documentation. Costa's plan was submitted on five notecards which displayed rough sketches of the proposed "Pilot Plan," as he called it. (See Appendix, Figures 1, 2, and 3.)

Despite Costa's economical use of materials and visual aids, it was the intent and overall effect of his plan that apparently won the judges' approval. Furthermore, Costa's design, in addition to the fact that it presented a truly "monumental" city, was considered more appropriate because it succeeded in creating a city that could function as a purely administrative center. The other competitors had created integrated cities with a variety of functions, but none seemed to have designed a city that would be dedicated almost entirely to administrative and political uses. Also, Costa presented the city in its final, built-out form. Many of the other designs made provisions for incremental growth. However, it was Kubitschek's desire that the city be

immediately functional and limited in its capacity to grow. In these ways, then, Costa's plan could be considered more appropriate.

Given the glaring disparities between Costa's sparse presentation and the comprehensive designs of the other competitors, one must question some of the deeper motivating forces behind Costa's selection. The other entrants in the competition had presented elaborate projects with detailed designs for commercial areas, residential areas, recreation areas, and governmental functions, all based upon systematic analyses of statistical data and population projections. Costa's designs were, by his own admission, hastily drawn sketches. He provided an extremely basic layout for the city and gave little indication of the position of the main urban functions. He also did not provide any supporting documentation for his design.

That Costa's presentation was even taken seriously is surprising. He did not even partially fulfill the competition criteria, which called for a basic layout of the city, indicating major urban centers and functions, and a supporting document. One suspects extraneous factors may have been at play in the decision-making process; however, that would be extremely difficult to prove.

In two interviews conducted during the course of this study, some light was shed on the actual selection process. In an interview with architect Theodore Wu, who was part of the Pedro Paulino Guimaraes design team and later worked for NOVACAP designing the finer details of Costa's plan, some interesting statements were made. Mr. Wu stated that although quite a few Brazilian firms entered the competition, it was generally known that Costa would be selected as the principal planner for Brasilia. Mr. Wu's opinion was that Niemeyer and Costa were the two most prominent figures in the architecture and urban planning fields, respectively, in Brazil, during that era. His general

feeling was that the selection of the Costa plan was logical given that Niemeyer had already been designated as the principal architect for Brasilia.

In another interview conducted with Dr. Jorge Wilhelm, Secretary of the Environment for the State of Sao Paulo and a participating architect in the competition for Brasilia, the judges' decision regarding Costa's plan was confirmed. He stated that, realistically speaking, of the models submitted, Costa's was the only plan that was suitable, in terms of scale and design, for a capital city.

Though none of the individuals interviewed ever suggested that the competition was conducted in an unethical or questionable manner, it does seem as if there were other considerations involved besides those established by the competition jury. The fact that Niemeyer had already been chosen to design the major buildings in Brasilia could very well have played an important role in the decision to choose Costa's plan. This would make sense because, in many ways, the plan for Brasilia follows the architecture to a great extent. Of the other plans submitted, none would have really lent itself well to Niemeyer's architectural style.

Though documentation does not show that the relationship between Costa and Niemeyer was as long-standing as that between Niemeyer and Kubitschek, they certainly had many ideas in common, especially concerning social and economic issues. Although Costa's thoughts on these issues are not immediately apparent from his design, one can assume that Costa's ideas concerning these issues were known by Niemeyer.

There is certainly not a lot of concrete evidence to suggest that anything but the competition criteria was used in choosing Costa's plan. However, it does seem almost impossible that his plan could have been selected solely on his presentation. To think that personal politics may have played a

role in the decision is not to discount the final selection, but merely makes the evaluation of the decision process more realistic.

CHAPTER THREE: THE COSTA PLAN

Despite any questions about the reasoning behind choosing the Costa Plan, it was the plan that was selected and must be evaluated according to its merits and its shortcomings. Perhaps the best way to discuss Costa's Plan is in terms of the driving ideas behind its conception.

In his own words, Costa said: "Founding a city in the wilderness is a deliberate act of conquest . . ." (Staubli). In the construction of Brasilia, this was certainly the case, in the literal and figurative senses. Before construction began, the area that is now the Federal District was a vast, open expanse of dense, low trees and brush growth. Those who helped with the construction of the city undertook the awesome task of clearing this growth and preparing the site for construction. Figuratively, the creation of Brasilia, as mentioned previously, signified the conquest and "civilization" of the vast interior region of Brazil. In compliance with this notion, Costa's design is an embellishment of the most basic form of expressing this conquest: a cross.

The plan created by Lucio Costa involves a cross-axial scheme. The city is formed around two major axes: the Monumental Axis and the Residential Axis. The Monumental Axis runs from east to west and has been designated for all political and administrative activities. The Residential Axis runs from north to south. Almost all of Brasilia's housing is located on this axis, and is divided into three distinct types: single-family homes, six-story apartment buildings, and three-story apartment buildings. At the intersection point of these two axes is the central transportation center (the Rodoviaria), the Banking Sector, the South Commercial Sector, and the Hotel Sector.

Also central to the Costa plan is the notion of monumentality. As mentioned earlier, it was actually his ability to convey this sense of

monumentality that made his selection possible. This idea of monumentality is expressed in many ways in Costa's plan. The simplicity of the design, combined with the oversized scale of the axes, contributes to the overall impression of grandeur and monumentality. Costa's design is also well-suited to the natural landscape, which, in itself, is quite monumental. Brasilia sits on top of a plateau, characterized by a vast open sky, an endless horizon, and long, extended vistas. The linear aspects of Costa's design, which is without rectangular or circular enclosures, enhance these natural qualities and produce a boundless and open feeling.

The most monumental aspect of Costa's plan is, logically, the Monumental Axis. At the east end of the Monumental Axis, closest to the lake, is the Hall of Justice, the Plateau Palace, the Plaza of the Three Powers, the office of the Deputies, and the National Congress. This conglomeration of buildings, each of which was designed by Niemeyer, is a very striking sight. The Hall of Justice and the Planalto Palace are fairly similar, each adhering to Niemeyer's principles of suspended structures. The Plaza of the Three Powers contains a number of stunning pieces, including a monument to the people involved in building Brasilia. The offices of the Deputies and the National Congress, however, are the most spectacular. The offices of the Deputies consist of two tall thin towers made out of white marble. The National Congress is a long flat structure, on top of which sits an inverted dome and an open dome, both of which are also white. The National Congress is situated in front of the offices of the Deputies, creating a memorable contrast.

Leading away from these structures are the ministry buildings. Each of these buildings is a large multi-story structure in a rectangular shape, made out of white marble and green glass. These buildings have been placed in rows on either side of the Monumental Axis, at a slight angle to the Axis itself.

The view of the two very formal rows of ministry buildings, leading to the domes of the National Congress and the two towers of the Deputy offices, is a dramatic sight indeed.

Located on the west side of the Monumental Axis is an immense television and radio tower. Beyond this tower is the Diversion Sector, which includes a conference center, a large soccer stadium, an aquatic facility, a car-racing track, and other recreational facilities. In addition, a few other governmental buildings are located here, such as the offices for the government of the Federal District. At the end of the Monumental Axis lies a recently constructed monument/museum to Juscelino Kubitschek.

There are, to be sure, many aspects of the Monumental Axis which make it true to its name. The mere size of the axis, with its fourteen lanes of traffic, contributes to the impression that it is somehow "bigger than life." The entire ensemble of government buildings, including the ministries and the National Congress, makes a very impressive, powerful statement of monumentality. The television and radio tower, which literally seems to tower over the axis, also contributes to the overall impression of monumentality. On the whole, it is the carefully crafted combination of all of these oversized structures together that produces this overwhelming quality of monumentality.

Along the lines of this idea of monumentality was another of Costa's ideas that might be considered rather grandiose. Brasilia, as mentioned previously, was to be a decisive factor in pulling Brazil into the "modern age." In keeping with this idea, Costa designed a city where the main form of transportation would be the automobile. As noted earlier, the Monumental Axis is a large arterial that has fourteen lanes of traffic, seven for each direction; and there are only two traffic signals on it. The Residential Axis

is divided by three arterials: the W3, the Eixo, and the L2, each of which has at least six lanes of traffic and runs from north to south.

The W3 has six lanes of traffic, three in each direction. The Eixo is the largest arterial. The inner eight lanes of traffic (four lanes for either direction) are reserved for the faster, crosstown traffic. On either side of this inner arterial are four lanes of expressway, which have been reserved for local traffic and have access to the residential areas. The L2 is not as large an arterial as the Eixo, but it is larger than the W3. It has eight lanes of traffic, four for each direction, and has off-ramps into the residential areas as well as access into the Embassy Sector on the south side of Brasilia.

Costa did not totally exclude other forms of transportation from his plan for Brasilia. At the intersection of the Residential Axis and the Monumental Axis sits the major transportation center, the Rodoviaria. Each of the major arterials--the W3, the Eixo, and the L2--funnel through the Rodoviaria. The main bus station for the Federal District is also located here. All bus lines originate from the Rodoviaria, and it serves as a transfer point for locations within the Pilot Plan and for destinations in the satellite towns. (See Appendix, Map 2.)

Though one can appreciate certain aspects of this particular idea, much of what Costa envisioned for the flow of traffic and so on has not materialized. For example, although traffic does flow quite freely along these arterials, traffic in the small streets that link these arterials and that run through the residential areas is always extremely congested. In addition, the straight, linear qualities of the W3, the Eixo, and the L2 that make them so driveable were not transferred to these smaller cross streets, which are a convoluted mix of roundabouts and on-ramps and off-ramps.

In addition, a large proportion of Brasilia's population does not own cars and must rely on public transit or must walk in order to reach their destinations. Using public transit seriously limits a person's mobility, precisely because of these three north-south running arterials. Bus lines only run along the W3, the Eixo, and the L2. Because there are no arterials that run from east to west, there are no bus lines linking these arterials together. Of course, there is the Monumental Axis, but this runs through the middle of the city, and bus lines on this arterial do not address the needs of individuals who need to get from the W3 to the L2, for example, in the south wing.

As far as walking is concerned, that is an extremely time-consuming effort, not to mention tiring and dangerous. Distances in Brasilia are monumentally long! More than the length of a walk, however, is the organization of the city, which contributes to the complication of walking in Brasilia. Because of the city's organization into various sectors, one cannot merely walk to one area and be able to do a variety of activities. One must first walk to the South Commercial Sector, then walk to the Banking Sector, and then maybe to the Diversion Sector. Finally, because of the width of the major arterials and the speed at which the cars travel, it can be fairly dangerous even to try crossing these streets on foot!

Costa had some very definite ideas concerning social and economic issues which he attempted to express in the design of Brasilia. In addition to symbolizing a more modern Brazil, Brasilia was also supposed to represent a Brazil that was more equitable, more enlightened, and more progressive. It was Costa's dream that Brasilia could serve as a model for a new type of social interaction and economic integration (Costa 1957).

Costa chose to use his residential designs to further these ideals. To foster social interaction, Costa envisioned small neighborhoods that were

fairly self-contained and self-sufficient. To meet this goal, he used the superblock--a neighborhood unit containing four to six six-story or three-story apartment buildings. The apartment buildings are placed in such a way as to provide an enclosed area that is used for recreation and other children's activities. No major streets pass through the residential areas, so in terms of traffic hazards, it is a very safe place. Adjacent to each group of apartment buildings is a small commercial area that has basic stores such as a bakery and a drug store, as well as other retail establishments such as boutiques, appliance stores, book stores, and so on. In most superblocks, these commercial areas also have restaurants or cafe/bars.

Superblocks also share certain services. For example, for every two superblocks there is a large supermarket, which is owned and operated by the federal government. Gas stations are located in every other superblock, as are churches.

Costa's superblocks do provide a new expression for residential living. They provide living space, recreation space, and commercial/retail activity for everyday needs. Each superblock has open spaces for children to play in and areas for neighbors to sit outside and converse. Traffic is not a concern for parents whose children are playing outside. Buying daily necessities such as bread or vegetables requires only a two-minute walk to the commercial area. Thus, in a limited way, Costa did succeed in creating the small, self-contained, self-sufficient communities that he had imagined.

Costa also sought economic integration in the residential areas of Brasilia. He imagined a city without slums, where rich and poor shared the same residential areas (Costa 1957). The superblocks played a crucial role in achieving this goal.

He conceived the residential areas in two different sorts of patterns. The first was in the superblocks themselves. He designed the apartment buildings so that, from the outside, there was little to distinguish a nicer, more comfortable apartment from a more modest one. All apartment buildings share the same long, rectangular design. By making the architectural design of the buildings uniform, Costa hoped to deemphasize visual distinctions of high-income areas from less affluent ones.

Though the outsides of buildings were relatively standard, the inside floorplans would be different. In that way, a diplomat's family living in a large apartment could occupy the same building as a lower-level bureaucrat's family living in a smaller apartment. Because the superblocks were such self-contained units, furthermore, arranging the living situations this way would encourage, if not actually force, interaction among families and individuals of different social classes.

Costa's ideas concerning economic and social integration were also expressed in the design of the plan as a whole. There was actually some physical differentiation among the superblocks, in that some buildings are six stories tall and others are three stories tall. The six-story buildings have elevators, whereas the three-story buildings do not. The six-story buildings are designed for the middle to upper classes, as reflected in apartment sizes and other amenities (such as elevators). These six-story buildings are located in the 100 and 300 superblocks, which are situated between the W3 and the Eixo, and in the 200 blocks, which are situated directly below the Eixo.

The three-story buildings are located in the 400 block, between the 200 block and the L2. These buildings were designed for working-class families, and certain economical measures mark their construction. For example, the low height of the buildings avoids the expense of elevators. Many do not exactly

follow the same design patterns as the others, in that they are not suspended above ground. Also, all buildings in the 300 and 100 blocks have underground garages; the 400 block has outdoor parking.

In creating these different blocks, Costa hoped to achieve two goals. First, by providing more modest housing for working-class and low-income families, Costa thought the potential for favela-type slums would be eliminated. Second, by placing both six-story and three-story buildings within the same neighborhoods, Brasilia would contribute to a kind of economic integration not normally seen in Brazil. In addition, because of the way certain facilities were distributed, people living in the 200 block, for example, would be obliged to interact with individuals from the 400 block (Costa 1957).

This aspect of Costa's plan has quite a few internal contradictions. On the one hand, he envisioned the superblocks integrating the upper classes with the middle classes through their occupancy of uniform buildings that contained a variety of floorplans. On the other hand, he purposely designed housing for the lower and working classes that was spatially separated and visually distinct from the residential areas of the upper and middle classes. For example, instead of mixing three-story and six-story buildings in the same superblock, he designed superblocks that were entirely composed of either three-story or six-story buildings. In addition, the economizing measures that Costa implemented in the 400 block run counter to the goals that he was trying to achieve by making the buildings physically uniform. There is an obvious and qualitative difference in appearance between the 400 block and the other blocks.

Finally, there are some elements of Costa's plan that adhere to traditional town plans. Along the W3, to the west side, is the 700 block of housing, which consists of small single-family homes. In addition, the W3 also

contains the traditional strip commercial development, which includes all types of commercial uses ranging from car dealerships to fabric stores.

On the south side of the Monumental Axis, above the W3, is a wonderful city park. This park has been beautifully landscaped and offers a number of different activities. There is a wave pool, tennis courts, soccer fields, an aquatic park for canoes and pedal boats, a biking track, and a small amusement park. In addition, there are shaded picnic areas and playground facilities.

CHAPTER FOUR: AN EVALUATION OF THE COSTA PLAN

Costa's plan was essentially a product of the Modern Movement in architecture, though it did draw on Ebenezer Howard's Garden City ideas.

The modernist ideas of functional zoning, systemmatized traffic separation, and segregation of major urban activities are easily identifiable in Costa's plan. The demarcation of the banking sector, the hotel sector, the commercial sector, and the recreational sector also illustrate modernist principles, as does the use of the Eixo Monumental in conjunction with the smaller local streets. In addition, the superblocks received inspiration from the modernist concept of self-contained residential units. Extensive greenbelts and the concept of a "hygienic environment" were ideas commonly used in the Garden City Movement. Monumentality and conquest were the most pervasive concepts used in the design of Brasilia.

Norma Evenson called Brasilia "the greatest single opportunity to be given to an architect in our time," and to a certain extent her claim is substantiated. Brasilia represents an extraordinary accomplishment in many areas--architecture, engineering, and the organization and motivation of manpower. It pays tribute to the Modern Movement in architecture and offers testimony to the convictions and dedication of those who built Brasilia. However, there are many areas in which this great opportunity was not fully taken advantage of.

Costa possessed a sense of social compassion and idealism that he claimed to have integrated into the design of Brasilia. He hoped that the new capital city would foster a social and economic integration that previously had been unseen in Brazil. He envisioned a city that would transcend the frustrations of urban life in the underdeveloped world--a city that would herald Brazil's

arrival into the modern age. Yet, from the beginning of the construction process, it became obvious that these goals would not be achieved.

Economic and political crises beyond Costa's control account for some of the shortfall, yet there are some serious flaws and misconceptions in the actual design itself. The monumentality, expressed in the public buildings and the large arterials, also suggests authoritarianism and autocracy. The designs are monumental, yet they are severe and overpowering. The simplicity of the plan, which so impressed the competition jury, does not allow disorder or spontaneity of any kind. The use of the superblock as the only form of residential unit is both unimaginative and sterile.

Incisive criticisms of Costa's plan relate more to the underlying assumptions used in designing Brasília, than to its actual physical appearance. Costa's projections for the automobile age were fairly unrealistic. His intention was to integrate the automobile into daily life by implementing a design that would facilitate its use. The large avenues with few traffic signals were one of the more important aspects of this plan. The problem is that only a small proportion of Brazilian society can afford to buy and maintain a car. Thus, for those few who have cars, getting around in Brasília is not a problematic affair. But, because Costa designed Brasília almost exclusively for automobile traffic, the options for those without cars are extremely inefficient and cumbersome.

Costa's initial intention was to design the superblocks in such a way that, from the outside, a lower-class residence could not be distinguished from an upper-class residence. However, he still included in his plan more modest housing for lower classes in the 400 blocks. Also, he did provide single-family housing in the 700 blocks, which he designated for upper-level bureaucrats, and large estates on the shores of the lake, which were reserved

for diplomats and other wealthy residents. Thus, though he expressed an intention to create this new social integration, the plan does not adhere to this desire with much conviction.

Furthermore, the current reality of the housing situation in Brasilia could not be any further from Costa's original ideas. Brasilia has slowly evolved into an elite residential area. The wealthier families have, for the most part, moved away from the Pilot Plan and live in extremely large and luxurious houses along the lake. Most residents of the six-story apartment buildings are from the upper-middle classes. Lower-middle-class families live in the 400 blocks. Working-class and lower-class families have been pushed out into the satellite towns.

There is little mixing in Brasilia. Public spaces, such as the city park, are not used. Families living on the lake have swimming pools in their backyards. Those who live in the Pilot Plan belong to special country clubs and prefer to socialize and engage in recreation there. Poorer people who might be inclined to use the park do not because they live in the satellite towns, too far away.

People from diverse economic and social backgrounds are not coming into contact with each other in other situations either. For example, there are two main commercial areas in Brasilia. The first and oldest is the Conjunto Nacional, located above the Rodoviaria. It is convenient for all people living in the Pilot Plan because it is easily accessible by bus. The Conjunto Nacional, however, is rather old and experiencing some deterioration. The stores located there do not have the most up-to-date goods, nor is the quality high.

The second commercial area was recently built by a large Brazilian shopping mall developer and is located about 15 kilometers south of the Pilot Plan. It is modern, with posh, elegant stores and restaurants, as well as

movie theatres, an ice skating rink, and other attractions. However, because of its distance from the city, it is accessible only to those people with cars. Thus, only a certain, more affluent portion of the population goes there.

It is not surprising that this segregation and separation exist in Brasilia; it is prevalent in all urban areas in Brazil. However, even social relations within economic classes are subdued. Unlike other major Brazilian cities, where exciting nightlife and streetlife abounds, social dynamics in Brasilia resemble a typical suburban community. Brasilia has no promenades or centrally located meeting points. Thus, socializing is conducted in people's homes on a small, individualized scale. Since all superblocs have their own supermarkets and shopping areas, these cannot be substituted as meeting places. Brasilia does have a feira (outdoor market) once a week. However, it is geared mostly for tourists, and local residents do not attend it. Even the sports clubs do not invite extensive mixing, because they are largely organized by profession (the Navy club, the Bank of Brasil club, etc.). Thus, Costa's design did not even provide the structure for social relationships in the traditionally Brazilian sense.

Costa's design not only fails to create a new reality in Brasilia--it actually fosters the extreme segregation there. This situation can be explained in a number of ways. In planning Brasilia, Costa placed great stress on the physical form of the city, and focused much of his efforts on creating an improved visual environment. Through these physical solutions, he hoped to prevent squatting and the appearance of other indications of urban poverty. However, the physical environment has very little impact on the behavior patterns and values of people--especially in Brazil, where the economic hardships of the majority prohibit concern for or attention to physical environments or natural setting. Costa's plan focuses on esthetic and symbolic

issues rather than pointedly addressing the economic, social, and political elements operating in Brazil. As a result, it is a pretentious plan that bears no relation to the social, economic, or geographical reality in which it was applied.

CHAPTER FIVE: A BRIEF HISTORY OF BRASILIA AND THE SATELLITE TOWNS

Brasilia was constructed at a total cost, in 1966 U.S. dollars, of \$600 million (Evenson 1973). The Federal Bank (Caixa Economica Federal), the Popular Housing Foundation (Fundacao Casa Popular), and the Bank of Brazil (Banco do Brasil) all made contributions to fund this enormous effort. The federal government funded the bulk of the construction costs, providing \$500 million in direct budget appropriations. NOVACAP also participated in fund-raising by administering the sale of private lots in the Pilot Plan. The organization succeeded in selling 18,000 lots for a total revenue of almost \$5 million (Evenson 1973). Construction workers were recruited from all over the country, but mostly from the states of Minas Gerais, Bahia, and Goias.

The history of Brasilia has occurred in roughly four distinct phases. Between the creation of NOVACAP in 1956 and the inauguration of Brasilia in 1960, the city experienced a tremendous construction boom. Over forty thousand people migrated to Brasilia in the first year of its construction period. For these first four years, the growth rate did not dissipate, with the majority of the people coming to work in the construction camps. Most of the workers migrated from the poor interior states of Brazil. Beside the opportunity to find profitable employment, a major drought in the Northeastern part of Brazil in 1958 provided further impetus for these migrants (Daland 1967).

Though the most important public buildings had been completed by the time of the inauguration ceremony, a large part of the Costa plan had yet to be completed. Kubitschek's term as president ended soon after the inauguration of the city and, with it, much of the political support for Brasilia. Political turmoil kept further construction in Brasilia from occurring between 1961 and 1964. The politicians that came into power in 1964, furthermore, were loathe

to continue the construction of Brasilia for several reasons. This junta was primarily concerned with consolidating its own power and, in addition, one of its foremost goals was to control inflation. As a result, public expenditures for the new capital city decreased drastically (Daland 1967).

A right-wing military government came to power in 1968 and saw as its goal the creation of a highly centralized hierarchical form of government. The strong and unified state they envisioned required that construction in Brasilia be finished and that the relocation of administrative functions be completed. Combined with the construction of a massive highway system in the interior of the country, this government also invested huge amounts of money to complete the landscaping and construction of many buildings designated on the original plan. At this point, ten years after the city's official inauguration, an official decree was passed that required all governmental functionaries to move their offices and residences from Rio de Janeiro to Brasilia.

The government officials may not have moved to Brasilia until 1971; however, by this time, the city's population had already reached 546,000 (CODEPLAN 1984). As stated previously, migration into the city had been tremendous, and was primarily induced by the need for construction workers. This unexpectedly large influx of migrants, however, produced the first squatter settlements in Brasilia. Those in charge of construction did a wonderful job of attracting workers from all over Brazil; however, once in Brasilia these workers found that there had been no preparation made for living areas during the construction period. Faced with no place to live, especially during the initial phases of construction, these workers were forced hastily to erect makeshift shacks that served to house them during the construction period.

Initially, these activities were allowed, if not overtly sanctioned by the government. Space for the shanties was provided near the construction

sites. The workers, however, tended to congregate and build their shacks in an area which became known as Free Town (A Cidade Livre). As with the shanties erected near construction sites, the government also provided the land on which Free Town was built. Obviously there was a need for a place for these workers to stay and the government had little alternative but to provide land for these shacks (Epstein 1973).

The government provided the land for Free Town. However, they assumed that as soon as Brasilia was completed Free Town would be demolished, and the workers would relocate to more conventional types of housing (e.g., the 400 block of the Pilot Plan) or move away from Brasilia altogether (e.g., return to their native states). Contrary to the government's wishes, Free Town became the major focal point for all activities in Brasilia in her earlier days. Because most of the population lived there, the entertainment centers, stores, and meeting points centered in Free Town. Even Kubitschek, Niemeyer, and Costa had makeshift residences located there. By the time the Pilot Plan was completed and Brasilia was ready for her inaugural celebration, Free Town had actually become the popular center for most social and retail activities (Magalhaes 1987).

Free Town was the first formal squatter settlement within Brasilia. However, it was only a glimpse of some of the problems that were to plague Brasilia.

In addition to Free Town, other large squatter settlements soon developed in the Pilot Plan. (See Appendix, Map 3.) Among these were Vila Amauri, Vila Tenorio, and the Social Security Invasion. Vila Amauri, formerly known as the Bananal Nucleus, was located along the northern shore of Lake Paranoa. The residents of this squatter settlement were primarily people who were unable to

find land or space in Free Town. Though not as cohesive or populous as Free Town, Vila Amauri did contain 6,000 residents in 1960 (Paviani 1985).

A second squatter settlement that also accommodated those unable to establish residence in Free Town was Vila Tenorio. This squatter settlement was located directly adjacent to Free Town and was considered practically an extension of it (Epstein 1973).

The third and largest squatter settlement was the Social Security Invasion. Located behind a large hospital once operated by the National Social Security Institute, this invasion was originally started by employees of the hospital. As in Free Town and the other squatter settlements, these squatters were tolerated initially because they lacked a viable alternative. Unlike Free Town, which had some sense of order, the Social Security Invasion was a totally spontaneous settlement and had a more seedy character (Epstein 1973).

Government policy towards these squatter settlements consisted of heavy regulation and attempts to control the construction of new shacks. Inspectors were routinely sent to the settlements to search for new structures. However, these regulations failed for several reasons. Until the policy makers arrived at the solution provided by the satellite towns, the government had no alternative to these squatter settlements. It was easy to identify new structures, but there was no place to relocate any of the new residents.

From the beginning of construction, it was apparent that this problem of squatter settlements required a quick and permanent solution. It was out of this crisis that the plans for the satellite towns were devised.

Though not part of the original Costa plan, there are now eight satellite towns in the Federal District. Conceived as "dormitory cities," these satellite towns were envisioned as residences for the functionaries of various governmental agencies and of other businesses, such as banks. The satellite

towns were also created for relocated residents of squatter settlements. It was not the intention to make these towns independent, self-sustaining cities. They were to remain linked to Brasilia for employment and for all but the most basic commercial activities. Like many elements of the plan for Brasilia, certain aspects of the satellite towns have been implemented, but many others have not. (See Appendix, Map 4.)

The first satellite town was Taguatinga. Located 20 kilometers from Brasilia, Taguatinga was formed in 1958 through the relocation of 4,000 people who had been squatting in large settlements in the Pilot Plan area. In 1959, Nucleo Bandeirante was the second officially designated satellite town. Actually, Nucleo Bandeirante encompasses the area known as Cidade Livre, Free Town, described above.

In 1960 two other satellite towns were built: Gama and Sobradinho. Gama is situated 33 kilometers southeast of Brasilia and was also formed to relocate squatters in the Pilot Plan. Sobradinho, on the other hand, was created to house the employees of NOVACAP, Banco do Brasil, and some of the ministries (CODEPLAN 1984).

In 1966, Guara was built for government functionaries. Brazlandia was established in 1966. And, finally, in 1971 Ceilandia was created. Ceilandia was established to eradicate one of the largest squatter settlements in the Pilot Plan--the Social Security Invasion. Between 1971 and 1972, 80,000 squatters from the Pilot Plan were relocated to Ceilandia; today it is the largest of all satellite towns (CODEPLAN 1984).

Despite official desires to create uniform "dormitory towns," there is a surprising amount of diversity among the satellite towns, each possessing its particular characteristics and distinctive features. As Table 1, shown below, illustrates, the combined populations of the satellite towns comprise almost 75

percent of the entire population in the Federal District. Ceilandia has more residents than Brasilia, and Taguatinga has almost as many.

TABLE 1

	<u>1960</u>	<u>1970</u>	<u>1980</u>	<u>1987</u>
Pilot Plan	68,665	152,024	310,701	412,000
Nucleo Bandeirante	21,033	95,473	17,477	22,014
Guara	-	24,073	82,482	127,946
Gama	-	71,258	132,726	170,224
Taguatinga	26,111	106,202	192,999	241,001
Ceilandia	-	-	280,521	439,238
Brazlandia	-	9,519	19,144	25,285
Sobradinho	8,487	38,797	62,980	77,544
Planaltina	2,917	18,466	39,964	52,372
FEDERAL DISTRICT	127,204	515,812	1,138,994	1,567,644

Source: CODEPLAN: Mensario Estatistico do Distrito Federal, Agosto, 1987, and Caracterizacao do Territorio e da Populacao do Distrito Federal, 1-9, 1984. ("Monthly Statistics for the Federal District, August 1987" and "Characterization of Population and Land Use in the Federal District, 1984.")

As part of the fieldwork conducted for this project, several visits were made to the satellite towns to speak with administrators of each town and to become familiar with their physical characteristics. The following sections will describe each of the satellite towns in more detail, as well as provide an in-depth comparative analysis of the Pilot Plan and the satellite towns.

CHAPTER SIX: BRASILIA AND THE SATELLITE TOWNS TODAY

A. Brasilia--The Pilot Plan

In addition to being the national capital, Brasilia is also the administrative center for Administrative Region I of the Federal District. Included in this region are also Nucleo Bandeirante and Guara. Of all the urban areas in the Federal District, Brasilia has the most favorable social and economic indicators. In fact, on some variables such as income, median rates in Brasilia are the highest in the country.

Median family size in the Pilot Plan is 4.39, and median monthly income per family is CR\$82,391. This is the smallest median family size in the Federal District and the highest median monthly income as well. In comparison, Ceilandia, which is similar in population size to Brasilia, has a median monthly income per family of CR\$15,685. Almost 25 percent of Brasilia's population earns over 5 minimum salaries monthly. Fifty-eight percent of the eligible population is economically active. Ninety percent of these people work in the tertiary sector, with the majority working in public administration.

There are 515 businesses in Brasilia, employing 36,917 people. Industrial activities range from construction businesses, which are the largest employers, to food production and communication electronics, which also employ a considerable number of residents, to furniture establishments, of which there are 33. Taguatinga is the only other town that could realistically be considered to have an industrial sector, and it has only 177 businesses.

The public health care system is above-average in Brasilia. Brasilia has a higher ratio of health-care professionals to residents than all the satellite towns, except for Brazlandia (though because of its small size, this is not a

fair gauge). In comparison with a satellite town such as Ceilandia, which is larger than Brasilia, Brasilia has twice as many doctors as Ceilandia and almost three times as many nurses and nurses' aides.

Brasilia did have the highest number of crimes committed in 1983; however, a number of factors explain this phenomenon. First, the most common infraction in Brasilia was traffic accidents. The simple explanation for this is that because the majority of the jobs and other activities are located in Brasilia, the Pilot Plan is also where most of the traffic passes. It is not surprising, then, that the majority of traffic accidents occur here.

The second most common crime is petty theft, which also has a relatively obvious explanation. The Pilot Plan is where the more affluent residents of the Federal District live. Thus, as they are the individuals with the most property, they are the most common targets for petty theft. A quick look at the public safety data compiled for Ceilandia serves to confirm these inferences. Though demographically bigger, Ceilandia has a considerably smaller number of infractions in these categories.

Despite the fact that Brasilia has a higher number of infractions than other areas in the Federal District, it is a safe place nonetheless. There is probably not another city of its size in Brazil that can boast only 2 armed robberies in 1983.

The more astounding data concerns Brasilia's environmental quality. Basically, all urban areas in Brasilia have proper infrastructure, proper lighting, and beautiful landscapes. These landscaping projects are ongoing. There are no dirt roads or dirt walkways. Roads are always being repaired, and grass lawns and gardens are immaculately manicured.

Millions of dollars were spent in the construction of Brasilia, and hundreds of thousands of dollars are spent each year to maintain this showcase

city. Despite these outrageous expenditures, Brasilia still has serious deficiencies. It is interesting that Brasilia, with such advantages in infrastructure and urban environment, still lacks the vitality and warmth of places that have not been as carefully planned or as meticulously maintained.

B. Taguatinga

Located in Administrative Region III, Taguatinga sits 20 kilometers from Brasilia and was formed in June 1958 for the relocation of squatters in the Pilot Plan and Vila Amauri, a settlement on the lakeshore. Of all the urban agglomerations in the Federal District, Taguatinga is the one that looks most like a city in the Western tradition--even more than Brasilia. There is a recognizable center of town: a plaza with a clock tower where a casual observer will see residents sitting and chatting. The Avenida Central runs through the center of town and is full of crowded stores and restaurants. Taguatinga has an extremely healthy retail/commercial sector, a medium-sized industrial sector, its own sports clubs, recreation areas, a park, and a private Catholic university.

In 1987 the population of Taguatinga was 241,001, the second-largest of the satellite towns. Median family size, in 1980, was 5.0, larger than the Pilot Plan's 4.39, while median monthly income per family at CR\$30,857 was considerably lower than Brasilia's CR\$82,391. In 1980, it had one of the higher ratios of economically active/non-economically active residents: 55.7 percent. Unfortunately, data about income in Taguatinga is aggregated with figures for Ceilandia, which probably makes them lower than they would be had they included only Taguatinga.

However, in 1983, 82 percent of the residents of Taguatinga were employed in the tertiary sector. The highest number of residents work in the service

sector, 25,700. Yet, unlike the other satellite towns, commerce was the second-largest employer, with 16,341 employees, and public administration employed only 11,065 people.

Taguatinga's industrial sector is one of the healthiest in the Federal District. In fact, with 177 businesses it has the largest industrial sector outside of Brasilia. Forty-five of the businesses are involved with food production; metallurgy and non-metallic mineral activity also employ quite a few Taguatinga residents (680 and 240, respectively).

Other significant industries are the wood and furniture businesses. Because of its location in the middle of the country, the Federal District can easily receive wood from all parts of Brazil. In part because of this location, the furniture business has been a successful one for Taguatinga and for other satellite towns as well. In addition, there is a federal law that restricts the Federal District to "non-polluting" industries, with which wood production complies.

Taguatinga has 102.5 percent of its children between the ages of 7 and 14 enrolled in schools. What this signifies is that in addition to the children who are residents of Taguatinga, children from other towns, most probably Ceilandia, are also enrolled in schools in Taguatinga. However, enrollment levels for children between 15 and 18 years of age are much lower, with 74.2 percent enrolled.

The number of crimes committed in Taguatinga increased notably between 1982 and 1983. The most common infractions in 1983 were petty thefts, minor traffic accidents, and physical assaults. These were also the most frequent crimes committed in 1982. However, in most areas, this rate of crime was lower than in Ceilandia or in Brasilia.

Public health indicators for Taguatinga are fairly favorable. Taguatinga has the highest number of health-care professionals, behind Brasilia. With 1,061 health-care professionals, the ratio between health-care workers and Taguatinga residents is 1 to 207.

Deficient urban infrastructure is one problem most frequently mentioned by administrators in their interviews. As in other satellite towns, the urbanization process in Taguatinga has not been completed. The town still lacks 885,302 square meters of paved roads, out of a predicted 2,352,254. Only 328,581 meters of roadside curbing has been installed--290,456 are still needed. More than 60 percent of the rainwater collection infrastructure in Taguatinga still remains to be implanted. The service level for public illumination was 75.67 percent in 1983, one of the lower levels in the Federal District, although service levels for the potable water system was 96.6 percent. Finally, only 21.6 percent of the predicted number of square meters of sidewalks has been implanted; and out of 1,600,000 square meters of landscaping, only 162,640 square meters have been planted.

In an interview with Mr. Ardison Sobreira Rolin, the Director of Licensing and Public Works in Taguatinga and Ceilandia, several of the current problems in Taguatinga were outlined. The two most crucial situations in Taguatinga are insufficient infrastructure and traffic. The root of these problems is that Taguatinga was implemented as a traditional satellite town, to be a dormitory city. However, the city has experienced tremendous growth in population and commercial activities.

Unlike other satellite towns, Taguatinga actually provides considerable employment opportunities for its residents. This demographic expansion has taken considerable toll on the existing infrastructure, which is near capacity at this time. In addition, a new ordinance was recently passed which altered

the height limit on new buildings--increasing it from 9 meters to 35 meters. This change creates serious problems, however, because the infrastructure that will service these buildings has been designed for buildings no taller than 9 meters. Furthermore, individual residential lots were provided with an infrastructure according to an allocation of 7 people per lot. The reality, however, is quite different, with as many as 18 people living on one lot in some instances.

Taguatinga suffers from incredible traffic congestion, which is intensified during certain hours of the day. Planners of the city did not anticipate the amazing rate at which the town would grow. Moreover, commuters between Ceilandia and Brasilia must pass through the center of Taguatinga.

With the possible exception of Gama, Taguatinga occupies a unique position in the Federal District as the only satellite town that could be considered a truly operational urban area. In fact, one often sees commercial advertisements for establishments located in Taguatinga, which actually compete with similar stores in Brasilia. In many ways, it is a more "real" place than Brasilia. It has a mixture of low-income and middle- to upper-middle-class residents, and the neighborhoods have a variety of architectural styles and housing sizes not found in the uniform superblocks of the Pilot Plan. The downtown area includes commercial/retail establishments, banks, restaurants, and the government offices. People can be seen walking in the streets, and the cafe/bars are always crowded with people conversing over a cup of coffee or a beer. A welcome sight in the different neighborhoods is the children playing in front of their houses and in the public open spaces.

Such activity and vitality is missing from all of the satellite towns and even from Brasilia itself, which does not really have an identifiable center of town. However, Taguatinga's status as a satellite town limits its growth and

development as an urban area as well as its ability to deal with certain basic problems.

C. Ceilandia

Though living conditions in all the satellite towns are deplorable, they are unquestionably worse in Ceilandia. Somehow, the significance of the town's name provides the context for understanding the current reality of life there. "Landia" basically means settlement or area. "Cei" is an acronym for the Companhia da Eradicacao das Invasoes (Company to Eradicate Invasions) (Farret 1987). So, Ceilandia was created to be the destination for all people living in invasions, squatter settlements, and any other illegal occupation of land in the Pilot Plan.

Thus, in 1971, the population living in the Social Security Invasion and Vila Tenorio and Vila Esperanca were moved to Ceilandia. Typical of the government's treatment of poor people in Brazil (and other countries as well), these relocated people received dismal housing conditions in a totally sterile built environment, 24 kilometers and at least two bus rides away from their place of employment.

Ceilandia has the largest population of the satellite towns and, with 439,238 people in 1987, its population exceeded that of the Pilot Plan. In 1980, Ceilandia had a median family size of 5.27, and median monthly income per family was CR\$15,685, higher only than that of Brazlandia, which has a predominantly rural economy.

Unfortunately, statistics available for Ceilandia regarding income include data for Taguatinga as well, which serves to push income figures higher. However, in spite of this combination of data, income statistics still reveal that more than 40 percent of the population in Ceilandia and Taguatinga

earn less than 3 minimum salaries per month. Only 12 percent earn between 3 and 5 minimum salaries per month.

Data concerning economic activity, however, have been disaggregated for Ceilandia alone. As would be expected, economic activity is highly concentrated in the tertiary sector. Seventy-five percent of the economically active residents of Ceilandia work in the tertiary sector, 45 percent of these people working in services. The construction industry is the second-largest employer in Ceilandia, employing 15 percent of Ceilandia's residents. For a town of its size, Ceilandia has surprisingly meagre industrial activity. It has 17 businesses, which officially employ 58 people. Only Guara and Brazlandia have fewer businesses, and even a considerably smaller town such as Sobradinho has more industrial activity. The 58 people employed by Ceilandia's industrial sector do not even come close to the 36,917 people employed by Brasilia's industrial sector, although Brasilia's population is smaller than that of Ceilandia.

In 1980, over 50 percent of the population was under 19 years of age. Of this school-age population, 91.5 percent between the ages of 7 and 14 were enrolled in school, and only 50.1 percent between the ages of 15 and 18 were attending school. Once again, these figures are considerably lower than Brasilia's, which recorded 100 percent enrollment in both levels of school. For that matter, they are lower than those in most of the other satellite towns except for Brazlandia.

Reported crimes in Ceilandia were among the highest, although between 1982 and 1983 the number of crimes in Ceilandia decreased. Of the 5,705 crimes reported in 1983, 727 involved armed robbery, 862 were physical assault, and 2,838 were petty theft. Though Brasilia's crime rates were higher than Ceilandia's, it is commonly believed that many of the perpetrators of crime actually come from Ceilandia.

As might be expected, the indicators of public health for the residents of Ceilandia are not positive. With 752 health professionals working in Ceilandia, the ratio of health professionals to residents in 1983 was 1 to 476. This is not a very low proportion, and it is also thought that many residents of Ceilandia go to neighboring Taguatinga for much of their health care, so in reality the ratio is probably higher.

The data relating to urban environment paint an even more dismal picture of the quality of life in Ceilandia. In 1984, Ceilandia still lacked 2,552,262 square meters of paved roads, or 81 percent of the estimated number. 1,772,391 meters of roadside curbs were predicted for Ceilandia; in 1984, only 214,851 meters of this curbing had been installed. Ceilandia still lacks 72 percent of its rainwater collection infrastructure. Only 96,464 square meters of sidewalks have been laid; 1,150,000 square meters were predicted. Of the 4,807,926 square meters of landscaping that was to have been planted, only 241,317, or 5 percent, has actually been planted.

On a somewhat more positive side, the level of service for public illumination in Ceilandia was 80.77 percent in 1983, higher than all of the other satellite towns. Also, the level of service for the potable water system was 96.4 percent, which was higher than in Guara, Nucleo Bandeirante, and, surprisingly enough, the Pilot Plan itself.

The preceding statistics hardly reveal the utter misery and tragedy of life in Ceilandia. There are many factors, other than those the raw data suggest for employment and living conditions, that make Ceilandia a serious indictment of the satellite towns in general.

In the first place, just the mere layout of Ceilandia makes the town an oppressive and depressing place to live. Basically, the plan for the city involves a grid pattern that has been filled in by thousands of small, unimagi-

native concrete houses. There are no recreation spaces, no public spaces, and minimal commercial/retail activities. Whereas in the Pilot Plan the built environment somewhat complements the enormous views provided by the Central Plateau, in Ceilandia the wide open spaces create the impression that these horrible rows of housing never end. Further adding to this impression are the ridiculously wide avenues that also seem to stretch on forever and which are the wrong scale for the horse-drawn carts that many of Ceilandia's residents use.

The limited infrastructure that exists in Ceilandia seems only to mock the actual subhuman conditions in which most of the residents live. Dr. Carlos Mello, Secretary of the Government for the Federal District, compared the conditions in Ceilandia with conditions in a typical town in Brazil's poorest region, the Northeast. Yet, he also noted that unlike these small towns, Ceilandia was benefitted by a fiber-optic communications system, connecting it with Brasilia and Taguatinga. High-technology services such as this are probably not appreciated by people who live in homes without plumbing or telephones on roads that are not paved.

D. Gama

The road from Brasilia to Gama is beautifully wooded, with lovely vistas of slowly rolling green hills and fields of vegetables. Yet, the visual appeal of this drive makes the contrast between the Pilot Plan and Gama even more brutal and astonishing. Located 33 kilometers from Brasilia, the travel time to Gama is approximately 40 minutes by car or an hour and a half by bus, depending on one's final destination in Gama. With a population of 170,244, Gama is the third-largest of the satellite towns. The majority of this population lives in the planned urban area of the satellite town, but there are also two experimental farming cooperatives within the administrative region.

Median family size is highest in Gama, at 5.52, while family income is ranked fifth in the Federal District, with a median monthly income per family of CR\$20,431. In 1980, over thirty percent of the population earned less than 2 minimum salaries per month, and 15.5 percent of the population earned between 2 and 5 minimum salaries per month. Obviously, then, the residents of Gama are concentrated in the lowest income groups.

As would be expected, the largest proportion of the population is employed in the tertiary sector, mainly in service jobs. However, the secondary sector in Gama does employ a surprising number of people: 11,560 or 25 percent of the economically active population. There is actually a fairly significant industrial sector in Gama. For example, SKOL, a national alcoholic beverage company, has a brewery and bottling plant located in Gama that serves the Federal District, Goias, and Belo Horizonte. Other industries located in Gama include foodstuffs, furniture, construction materials, and a bicycle factory.

Of those children of mandatory school age (between 7 and 14 years of age), only 91 percent were enrolled in school; only 65.5 percent of those children between 15 and 18 years were enrolled in secondary school. The number of crimes committed in Gama was third behind Taguatinga and Ceilandia, with petty theft and physical assault being the most common crimes.

Data concerning urban infrastructure indicate that nearly 75 percent of the road-paving goal has been reached, with 1,195,505 square meters paved out of a predicted total of 1,762,121 square meters. About 60 percent of the predicted number of meters for roadside curbs have been installed. Seventy-two percent of the town is illuminated, and the level of service for the sewage systems was 99 percent in 1983.

This type of infrastructure, however, represents only the most basic of urban amenities. One of the most striking differences between the Pilot Plan

and Gama, or even between Gama and the area within which it is located, is the starkness of the urban environment. For example, only 105,095 square meters or 14 percent of the predicted amount of sidewalk paving has been installed. Worse yet, only .7 percent of the predicted landscaping has been planted--and this in an area that could have naturally abundant vegetation. Finally, only 39 percent of the rainwater collection infrastructure has been installed, compared to 87 percent in Sobradinho and 96 percent in Guara, cities of approximately the same population.

Perhaps the only aspect of Gama that the data portray favorably relates to its public health. With 997 health-care professionals working in Gama, it has a relatively high proportion of health-care professionals to residents: 1 to 152. This ratio is higher than that of any of the other satellite towns, although it is lower than Brasilia's.

Yet, the statistics regarding these satellite towns, and Gama in particular, reveal only a certain aspect of the daily reality there. Of all the satellite towns, it is the one that has the most contrasts in living conditions. In Block 52, there is a large invasion that has received partial site servicing, including electricity and waste disposal infrastructure. In the West Sector, families live in fashionably designed two-story houses. In the South Sector, sometimes as many as eight families live in abominable conditions on a lot that should legally be rented to one family. In the agricultural communes, people live simply and humbly, but they at least have the dignity of growing their own food and making an income through selling it at weekly fairs.

Gama is by no means the only satellite town that has to battle with problems of substandard housing and other deficiencies in urban services. This is a reality in all the urban areas of Brazil. However, the abrupt contrasts in Gama make this crisis seem more urgent. What is most interesting about Gama

is the solution that the administration there proposed for some of these problems. In an interview with Assessor Soares, various problems particular to Gama were discussed. Like the other administration officials that were interviewed, Mr. Soares mentioned problems such as unemployment and lack of adequate infrastructure as some of the most serious situations in Gama.

He also made a very interesting plea for autonomy for Gama, as well as the other satellite towns. The satellite towns are under the jurisdiction of the Government of the Federal District. Each region has an administrator; however, this administrator has very little executive power. Because of the particular mix of industry and agriculture in Gama, there are certain options open to this town that are not available to other satellite towns, options that might help to improve some of the problems here. However, because policies towards the satellite towns are made by comprehensive, blanket-type decisions, these policies rarely address the problems peculiar or unique to individual towns. There are specific programs concerning housing issues and health care issues that Gama's administration wishes to implement, yet does not have the authority to. More local control and autonomy, especially given Gama's distance from Brasilia, may be the first step in resolving some of Gama's problems.

E. Nucleo Bandeirante

Nucleo Bandeirante, the satellite town closest to Brasilia, was created from Cidade Livre (Free Town). Its population is relatively small now. However, there was a time when this town constituted the center of all activity in Brasilia. Because of the role it played during the construction period of Brasilia, Nucleo Bandeirante has a fairly active retail sector. In addition, the town has several areas of historic interest, such as a museum documenting the town's era as the Cidade Livre, a few barracks that have been preserved to

show how the construction workers (candangos) lived, and one of the first churches in the Federal District.

From the construction period until 1975, Nucleo Bandeirante was one of the most populous satellite towns, incorporating what is officially the satellite town as well as the squatter settlements of Candagolandia, Vila Tenorio, Vila Esperanca, and the Social Security Invasion. However, with the creation of other satellite towns, the squatter populations were removed from Nucleo Bandeirante, and the population was reduced considerably. Currently, the population in Nucleo Bandeirante is 22,014.

In physical size it is the smallest of the satellite towns. It has a very simple plan that basically includes three main avenues. All retail and commercial activity takes place on the Avenida Central, which includes a large, enclosed marketplace. Residential areas are located on the Segunda Avenida and the Terceira Avenida, as well as toward both ends of the Avenida Central.

Until a major governmental effort in 1985, all of the housing in Nucleo Bandeirante, though serviced with plumbing and electricity, consisted of one- and two-story wooden shacks. But in the space of three years, this aspect of the town has been transformed, and the shacks have been replaced by permanent structures. A lot of improvements still remain to be made in its environmental qualities.

Of the 610,424 square meters of paved roads that were to be installed, Nucleo Bandeirante is still lacking 96,494 square meters, or 15.8 percent of this pavement. Roadside curbing is another infrastructural element that needs to be addressed; 56.6 percent of the roadside curbing estimated for Nucleo Bandeirante has been implanted. A considerable amount of landscaping still needs to be done--67.5 percent of the predicted amount has been planted. Similarly, 65,898 of the predicted square meters of sidewalks remain to be

laid. Rainwater collection infrastructure is also lacking in this small town: 14,601 meters have been installed, leaving 14,278 or 49 percent of the predicted amount still to be implanted. The level of service for potable water was 90.1 percent in 1982 and 94.7 percent in 1983. Though these are not the lowest levels of service in the Federal District, they are not especially high.

In terms of economic indicators, Nucleo Bandeirante has a fairly large number of businesses for a town of its size and given its proximity to Brasilia. Out of a total of 30 businesses, 9 are in metallurgy, though the largest employers are the 5 food products companies, which employ 82 people.

Like the other satellite towns, the tertiary sector employs the majority of Nucleo Bandeirante's population. In 1983, 6,351 of the 7,335 economically active residents of Nucleo Bandeirante worked in the tertiary sector. Of this segment, 2,493 worked in the service sector and 1,667 worked in commerce. The number of people working for public administration was surprisingly small: 753.

Unlike some of the other satellite towns, one is not overwhelmed by a sense of isolation in Nucleo Bandeirante. It inhabits a small geographical area, and all activities are concentrated in the bustling Avenida Central. In addition, though much of the infrastructural work still remains to be completed, the core area of the town is entirely urbanized. According to Ms. Marcia McBraga Rocha Muniz, Nucleo Bandeirante's chief civil engineer, Nucleo Bandeirante's major problem has to do with zoning. Because the town has been through so many different demographic stages, each with great disparities in population, urbanization has occurred in an extremely haphazard way with no overall or comprehensive zoning laws or codes. The condition of the town reflects these stages--for example, the sidewalks along the Avenida Central are extremely difficult to walk on. Sometimes, to go from one store to the store adjacent to it, a pedestrian has to walk up two or three stairs. Thus, one of the projects

currently underway in Nucleo Bandeirante is the construction of a more even pedestrian walkway.

In relative terms, conditions in Nucleo Bandeirante are fairly acceptable. If the progress of urbanization in Nucleo Bandeirante were compared to Planaltina or Brazlandia, it would appear that conditions here are more favorable. In addition, because of the role it played in the creation of the capital, Nucleo Bandeirante has a special quality that the other satellite towns do not possess. In the same vein, however, it is disappointing that a town which played such an important and significant role in the development of Brasilia still lacks such a high proportion of its basic infrastructure.

F. Guara I & II

Guara is located about three kilometers from Nucleo Bandeirante and also enjoys the advantages of being relatively close to the Pilot Plan and Park Shopping, the newest shopping center in the Federal District. Unlike the other satellite towns, the physical appearance of Guara reminds the casual observer of the Pilot Plan. Its housing is more of the superblock style, using fewer small single-family homes. The single-family homes that have been built in Guara, however, are quite attractive.

Guara is predominantly inhabited by lower and mid-level bureaucrats, with 10,393 of its 42,067 economically active residents (almost 25 percent) working in public administration. Of all the satellite towns, Guara has the lowest median family size (4.78) and the highest median monthly income per family: CR\$42,075.

In addition, its infrastructure is fairly complete. Out of a predicted 1,080,000 square meters of paved roads, Guara only lacks 15,157 square meters of paving. Nearly 75 percent of the urban area is landscaped (443,490 square meters out of a predicted 625,943 square meters). Similarly, almost all of the

necessary roadside curbs have been installed: 268,204 meters of the calculated 280,028 meters. In terms of sidewalks too, only 14,121 square meters of sidewalks still need to be laid.

In other areas as well, the infrastructure in Guara is of good quality. Rainwater collection infrastructure has been installed in all but 4,713 meters of the city. Seventy-nine percent of the city has public lighting. The level of service for potable water was 94.70 percent in 1983.

However, in the categories of education, public health, and public safety, the data do not reflect particularly outstanding conditions in Guara. For example, 95.5 percent of its children between the ages of 7 and 14 years are enrolled in school. For children between the ages of 15 and 18, 72 percent are enrolled in school. Both rates are considerably lower than in Brasilia, where there is 100 percent enrollment at both levels. It is also a lower rate than the rate found in some other satellite towns such as Taguatinga and Sobradinho.

With 541 traffic accidents without victims, in 1983, its rate is one of the highest of all the satellite towns. It also has a fairly high number of petty thefts: 974. Physical violence, such as attempted homicide or physical assault, is not as prevalent.

Guara appears to have one of the highest ratios of health professionals to residents in the Federal District. In 1983, there were 158 health professionals working in Guara, compared with 451 in Sobradinho (whose population is smaller), and 183 in Brazlandia (whose population is less than half of Guara's). Because of its proximity to Brasilia and because many residents are government employed, many of Guara's residents may be attending to their health care inside the Pilot Plan. However, it would be much more beneficial for the residents of Guara to have adequate health-care facilities in their own town.

This issue of health-care facilities in Guara brings up an important point about one of Guara's most serious problems. According to Mr. Expedito Justiniano de Noronha, head of the Surveying Department of Guara, one of Guara's major problems is a serious lack of its own facilities. For example, in the original plan for Guara, there is very little space reserved for commercial areas, schools, and recreation areas.

In addition, very little space was allocated for grocery stores, drug stores, and other stores selling products generally consumed on a daily basis. Unlike Brasilia, where each superblock has a small commercial area that includes at least a bakery and a drug store, the distribution of commercial areas in Guara's superblocks is very poor. For every two superblocks, there is an extremely small commercial area consisting of two to three establishments. In addition, the central commercial area only contains space for about 15 stores. For those who have the means of transportation and/or the time, they can go to the large shopping mall, which is about a ten-minute drive from Guara. But there is a portion of the population in Guara for whom this shopping center is inaccessible and, as a result, the local stores in Guara itself are overused.

Of all the satellite towns, Guara most closely imitates Brasilia in its architecture and design. Its infrastructure is also the most complete in terms of meeting estimated goals. However, despite these factors it is one of the more desolate towns. Driving down the streets in Guara during the daytime, one sees very few people and little activity. There are few cafes or bars, and those that do exist have only a handful of customers. The spaces designed as public spaces are unkempt and deserted. Even after school hours, one doesn't see many children playing either in frontyards or in the courtyard areas of the superblocks, as one would in Brasilia.

Unfortunately, Guara enjoys proximity to Brasilia, which has deterred investment in commercial and retail activities. Because it is a town built for government bureaucrats, the actual physical conditions are better than elsewhere. However, a sense of vitality and life is missing from Guara--a sense of emptiness that even the agreeable physical environment does not mask.

G. Sobradinho

Of all the satellite towns, Sobradinho is probably the one that would most closely approximate the "ideal" dormitory city. Nestled at the base of a small range of hills, 23.5 kilometers outside of Brasilia, Sobradinho is the most visually pleasant of the satellite towns. Its population, 77,544, is relatively small, yet sufficient to support some retail and commercial activities. It appears to be a well-maintained city. The houses are not extremely elaborate, nor are they dilapidated or run-down. It has an attractive commercial/retail area that is formed around a plaza. The administration is interested in beginning a small electronics industry to employ more of the town's residents. It has also recently opened its first theatre and art gallery.

Median family income per month in 1980 was CR\$23,384, which does not come close to Brasilia's CR\$82,391, yet is considerably higher than Ceilandia's CR\$15,685. Roughly 30 percent of the population is very low-income, earning less than 2 minimum salaries per month. Only 1.9 percent of the population earns over 10 minimum salaries per month. However, in Brasilia slightly more than 20 percent earns less than 2 minimum salaries per month, and 13.7 percent of the population earns more than 10 minimum salaries per month. Nearly 80 percent of Sobradinho's residents work in the tertiary sector. Within this sector, service industries employed the most people, 8,367; and public

administration followed with 4,635 employees. Social services and commerce are also significant employers in Sobradinho.

Administrator Hiram Ferreira described life in Sobradinho as reasonably comfortable. Its infrastructural support is sufficient, and commercial/retail activity, though small, is stable. The school system was also described as reasonably successful. Urban environment statistics for Sobradinho suggest that these assessments seem to be accurate.

Ninety-seven percent of children between the ages of 7 and 14 years are enrolled in school. This figure is not outstandingly high in comparison with the other satellite towns, and it must also be noted that school attendance is mandatory until the age of 14. More impressive is that 79.9 percent of Sobradinho's children between 15 and 18 years of age are enrolled in school. This is the second-highest percentage in the satellite towns. These statistics do not, however, compare with the 100 percent enrollment rates found in Brasília.

Even a brief visit to Sobradinho reveals that environmental conditions are better than in the majority of the other satellite towns. The numbers also support this impression. Sobradinho lacks 11.9 percent of the original goal for paved roads. The goals set for roadside curbs have almost been met, lacking only 31,993 meters out of a predicted 238,484 meters. Similarly, the goal for rainwater collection has nearly been reached, with 104,200 of the 119,406 predicted meters already installed. Seventy-four percent of the urban area in Sobradinho is lighted, one of the highest percentages in the satellite towns. The level of service in potable water is 99.5 percent; again, one of the highest levels.

Of course, there are still many improvements to be made. For example, only 118,674 square meters of landscaping have been planted--leaving 1,991,346 square

meters still needed. Sobradinho also lacks a large proportion of its predicted paved sidewalks (only 15 percent of the estimated sidewalks have been laid).

Thus, in comparison to the other satellite towns, conditions in Sobradinho are considerably better. In public health and public safety, the residents of Sobradinho also fare better. In 1983, the ratio of health professionals (451) to residents (70,429) was 1 to 156. Sobradinho's number of recorded crimes was one of the lowest in both 1982 and 1983. Crimes such as petty theft, armed robbery, and physical assault were on the low end of the scale, as were the number of traffic accidents.

Yet these positive indicators by no means signify that Sobradinho is a problem-free, ideal place to live, or that it comes close to offering a standard of living that is found in the Pilot Plan. Administrator Ferreira also noted that, despite the basically adequate nature of the infrastructure and other urban services, transportation services in Sobradinho are extremely deficient.

The major problem stems from the fact that transportation services are provided by one privately owned company. Because it is privately owned and because it has no competitors, this company (VIPLAN) provides a service that is quite inadequate. For example, buses do not run according to a fixed schedule. They leave the bus terminals (in Brasília and Sobradinho) when they are full, which can often mean delays of up to 45 minutes.

In addition, the buses go only between the main bus terminal in Brasília and the bus terminal in Sobradinho. Therefore, internal bus service in Sobradinho itself is quite limited. To get to certain locations in Brasília, the commuter must take more than one bus, which, cumulatively, becomes quite expensive.

Complications with transportation in the Federal District are especially serious problems for several reasons. First, the satellite towns were designed

with the same assumption that was used in designing Brasilia--to accommodate automobile traffic. Thus, the satellite towns, such as Sobradinho, are not especially easy places for pedestrians. Further complicating this situation, of course, is the fact that the majority of residents in Sobradinho cannot afford the expenses associated with owning an automobile and are completely reliant on the public transportation system. The problems cited earlier in conjunction with public transit only serve to make living conditions more difficult for residents of Sobradinho and other satellite towns as well.

H. Brazlândia

Brazlândia was created in 1966 and is the most distant from Brasília, located 47 kilometers northwest of the Pilot Plan. It is also the most rural of the satellite towns. In 1987, the population in Brazlândia was 25,285. Median family size was 5.27 in 1985, and the median monthly income per family was CR\$14,684, the lowest in the Federal District. Over 38 percent of Brazlândia's residents earned under 2 minimum salaries per month, and none earned more than 20 minimum salaries per month.

As with all the urban areas in the Federal District, the majority of Brazlândia's residents are employed in the tertiary sector. In 1983, 62.4 percent worked in the tertiary sector, the majority of these in the service industry. Agricultural activities also employed a considerable proportion of the population: 17 percent, compared to 1 percent in Brasília. Industrial activity in Brazlândia is not significant, though 10 out of the 15 businesses are involved in food products industries.

With respect to public health and safety, Brazlândia fares relatively well. It has a higher ratio of health professionals to residents than the Pilot Plan or any other satellite town, for that matter. With a total of 183

health-care professionals, the ratio of health-care professionals to residents is 1 to 122. Indicators for public safety reveal that in 1983, Brazlandia had the lowest number of infractions recorded: 388. The majority of these crimes committed involved physical assault and petty theft. This crime rate, however, was considerably lower than Brasilia's, where 17,445 crimes were recorded. Brasilia's population is much larger than Brazlandia's, of course; however, even in Planaltina, which is twice the size of Brazlandia, the crime rates were nearly three times as high. In addition, Brazlandia's relative isolation is probably a contributing factor to this low crime rate.

In terms of urban environment and infrastructure, Brazlandia does not fare quite so well. In 1984, only 64 percent of its paved roads had been installed. It still lacked 36 percent of its roadside curbing. Only 45,974 square meters, out of a predicted 181,815 square meters, of sidewalks had been laid. The level of service for public lighting was only 80 percent, though the level of service for the potable water system was 99.5 percent. Furthermore, Brazlandia had one of the lower percentages of school-age population enrolled in schools. For those children of mandatory school age (7-14 years), 94 percent were enrolled. For children between 15 and 18 years, only 44 percent were enrolled. The enrollment levels in Brasilia, however, were 100 percent.

In comparison with the other satellite towns in the Federal District, Brazlandia plays a fairly insignificant role. Its rural character makes it different from the other satellite towns which are more urbanized and definitely distinguishes it from the Pilot Plan. It does share some of the problems common to the other satellite towns, such as insufficient infrastructural development and inaccessibility to the services available in the Pilot Plan.

I. Planaltina

Planaltina is the location of the original cornerstone laid for Brasilia in 1922. It is distinct from the other satellite towns in that its plan incorporates the historical part of the city into the new satellite towns design. Thus, Planaltina is unique in the sense that its history embodies more than its creation as a satellite town. Unfortunately, its status as a satellite town has done little to incorporate or enhance this historical quality.

Planaltina is the third-smallest of the satellite towns, with 52,372 inhabitants. Surprisingly, the median family size in Planaltina is one of the highest in the Federal District: 5.47. Median monthly income per family, however, is one of the lowest: CR\$16,564. Moreover, only 50 percent of the population of economically active age is actually working. Of those in the labor force, 65 percent are employed in the tertiary sector. Of the 14,182 people working in the tertiary sector, 7,240 are in service industries. Planaltina has the least amount of industrial activity in the Federal District, supporting only 5 businesses, 4 of which are food-products industries.

Planaltina also has a fairly disappointing ratio of health-care professionals to residents: 1 to 217. This ratio is especially disturbing because of the distance between Planaltina and the Pilot Plan, where alternative medical attention would be available. Given the size of its population, the crime statistics for Planaltina are quite alarming. In 1983, 920 infractions were recorded, with petty theft, physical assault, and traffic accidents being the most common. On a more positive note, however, Planaltina is the only satellite town that approximates the education enrollment rates found in the Pilot Plan. Between the ages of 7 and 14, 95 percent of children in Planaltina are in school. One hundred percent of the children between the ages of 15 and 18 are enrolled in school.

The numbers regarding urban environment, however, reveal a situation that is not quite so encouraging. In 1984, Planaltina still lacked 22 percent of its paved roads, 73 percent of its roadside curbing, and 67 percent of its sidewalks. Only 55 percent of its landscaping had been planted, though 92 percent of its rainwater collection infrastructure had been installed. Levels of service for public lighting and potable water were at 94.5 percent of the predicted number, and 88.2 percent of the urban population was being served by the potable water system.

Like many of the other satellite towns, Planaltina suffers from irregular land uses and incomplete urbanization, each of which is further complicated by the unsuccessful attempts to integrate the older part of the city into the new satellite town design. There are quite a few small invasions in Planaltina, which the government has not been successful in removing. There is quite a discrepancy in housing conditions, with some housing units in reasonable condition and others in various states of disrepair and decay. In addition, much of the new commercial areas remains without pavement or sidewalks, which hinders retail and business activities. Furthermore, because of its distance from the Pilot Plan and its relatively small size, the government of the Federal District does not give Planaltina's problems high priority.

CHAPTER SEVEN: BRASILIA VS. THE SATELLITE TOWNS

The contrast between Brasilia and the satellite towns is shocking. Brasilia's conditions are so far superior to those in the satellite towns that detailed comparison is almost not worth making. As revealed earlier, all areas of Brasilia receive more than adequate infrastructural servicing, and the city is beautifully maintained and landscaped. The satellite towns, however, lack up to 80 percent of their urban services, in some cases, and none of these is maintained at the standards of Brasilia. A quick comparison of various indicators will reveal the extent of these differences.

Median family size in Brasilia (4.39) is the smallest in the Federal District. Gama has the highest median number of persons per family at 5.52. The median family size for the Federal District is 4.99. Brazlandia (5.51), Sobradinho (5.49), Planaltina (5.47), Ceilandia (5.27), Nucleo Bandeirante (5.27), and Taguatinga (5.00) are all higher than the Federal District average. Only Brasilia and Guara (4.78) are lower.

Median monthly incomes reveal similar contrasts. The median monthly income per family in Brasilia is CR\$82,391, almost six times higher than the lowest: Brazlandia's CR\$14,684. The median monthly income per family for the Federal District was CR\$40,498. Once again, only Guara (\$42,075) exceeded this figure. All of the other towns were well below it. Taguatinga (CR\$30,857) and Nucleo Bandeirante (CR\$29,203) somewhat approached this median. But the remainder of the towns (Sobradinho: CR\$23,384; Gama: CR\$20,431; Planaltina: CR\$16,564; and Ceilandia: CR\$15,685) were not close at all. In addition, those towns where family sizes were largest were also the towns where income was lowest.

Fifty-eight percent of Brasilia's population over ten years of age is economically active. Guara (56.44 percent) and Taguatinga (55.74 percent) approx-

imate Brasilia's figure. The other towns are considerably lower: Sobradinho, 52.78 percent; Nucleo Bandeirante, 51.54 percent; Ceilandia, 50.91 percent; Planaltina, 50.76 percent; Brazlandia, 49.07 percent; and Gama, 48.55 percent.

Furthermore, the monthly earnings reflect these same patterns. Though data for some of the satellite towns are aggregated, they can still serve to make these comparisons. In Brasilia, Nucleo Bandeirante, and Guara, 37 percent of the population makes less than 5 minimum salaries per month. Twenty-four percent of the population earned more than 5 minimum salaries a month. If these statistics were aggregated for Brasilia alone, the percentage population earning over 5 minimum salaries would probably be greater. In Taguatinga and Ceilandia, 50 percent of the population earned less than 5 minimum salaries per month, and only 5 percent earned over five salaries per month. Income distribution followed a similar pattern in Gama: 49.7 percent earned less than 5 minimum salaries, and 3.2 percent earned over 5 minimum salaries. Sobradinho, too, reflects a high concentration in the lower salaries (48 percent under 5 minimum salaries; 7.2 percent above 5 minimum salaries). Planaltina has only 2.5 percent of its population earning above 5 minimum salaries; 50 percent earns under 5 minimum salaries. Similarly, in Brazlandia, 2.6 percent of the population earns over 5 minimum salaries, and 48.7 percent earns less.

Social indicators for education, public health, and public safety also rank Brasilia considerably above the satellite towns. Data for public health in Brasilia reveal a disproportionately low ratio of residents to public health professionals, with 145 residents to every health professional. Only Brazlandia showed a lower rate with 122 residents per public health official. All other satellite towns were considerably higher. Guara had the highest ratio, with 701 residents for each health-care professional. After Guara came Ceilandia,

595 to 1; Nucleo Bandeirante, 283 to 1; Planaltina, 217 to 1; Taguatinga, 207 to 1; Gama, 206 to 1; and Sobradinho, 156 to 1.

Unfortunately, public safety statistics are rather difficult to compare properly. The number of infractions in Brasilia is significantly higher than in the satellite towns. However, this is most likely caused by two factors. First, incidents such as traffic accidents are bound to occur more frequently in Brasilia than elsewhere. Brasilia is the center of activity in the Federal District. During the daytime hours, the majority of the population is in the Pilot Plan--thus, accidents of this type are more likely to happen. Second, because Brasilia's residents are wealthier, they are more likely to be owning and driving cars.

The number of violent crimes such as armed robbery and homicide is higher in Ceilandia and Gama than it is in Brasilia. If data were available concerning the origin of the person perpetrating the crime, a more conclusive statement might be able to be made concerning the variations in public safety between Brasilia and the satellite towns. As it is, it would appear that more crimes are committed in Brasilia because it has a higher concentration and flow of people during most times of the day.

Education statistics are much easier to compare, and further reinforce the disparities between Brasilia and the satellite towns. One hundred percent of the school-age children are attending school in Brasilia, including both those between 7 and 14 years of age (when school is mandatory) and those between 15 and 18 years old. For the 7- to 14-year-old age group, Nucleo Bandeirante (150 percent) and Taguatinga (102 percent) exceed Brasilia's percentage of school-age children in school. This situation is probably due to the fact that children from the neighboring satellite towns, Guara and Ceilandia, respectively, are also attending school in these towns. Otherwise, in the same age group,

attendance rates in the satellite towns are noticeably lower than Brasilia's, ranging from a low of 91 percent in Ceilandia to a high of 97 percent in Sobradinho.

In the 15- to 18-year-old age category, however, with the exception of Nucleo Bandeirante and Planaltina, rates are shockingly low. The lowest rate of attendance is 44 percent in Brazlandia, closely followed by 50 percent in Ceilandia. Gama has 65 percent enrollment, and the remaining satellite towns have enrollments in the 70-79 percent range, although this is still quite different from the 100 percent rates in Brasilia.

Perhaps the only area where the situation in Brasilia resembles that in the satellite towns is in the distribution of economic activity. In all of the areas, the tertiary sector is the largest employer. Ninety-one percent of Brasilia's labor force works in tertiary activities, 86 percent in Nucleo Bandeirante, 82 percent in Taguatinga, 75 percent in Gama, 74 percent in Ceilandia, 90 percent in Guara, 79 percent in Sobradinho, 65 percent in Planaltina, and 62 percent in Brazlandia. This distribution, of course, merely reflects the predominant role of the government in the Federal District.

The final set of indicators, the urban environment data, reflects the types of planning processes in each area. The data on the various urban environments provide an adequate notion of the severe inequalities between Brasilia and the satellite towns. The levels of most infrastructural services are extremely low, and conditions in some satellite towns resemble those found in some of the poorest neighborhoods in other Brazilian cities. The situation is markedly different in Brasilia. All areas receive high-quality urban services, and there are no reminders of urban poverty (i.e., favelas, invasions, or squatters). Though the data accurately reflect these contrasts, the reader is

urged to examine the maps found in the appendices for a more complete, visual display of these discrepancies.

As discussed earlier, Brasilia was a city whose design was based on concrete ideas. Furthermore, the city plan is a deliberate and well-thought-out one with extremely high standards for the quality of the built environment. Brasilia was created to be a showpiece to the world and is maintained as such.

The satellite towns play a clearly subordinate, subservient role and are meant to be ignored. They did not receive the same reverential treatment in their planning processes. Designs for the satellite towns were produced by NOVACAP employees, and follow an unimaginative grid layout. Far from promoting ideas about social and economic integration, the motivating thought behind the creation of the satellite towns was to provide a dumping place, as quickly as possible, for squatters and other undesirable low-income individuals who were disturbing the idyllic setting of Brasilia. The conditions there reflect these hasty processes.

Living conditions vary within the towns themselves. In all towns there are areas that do receive running water, plumbing, and electricity. Residents of these areas usually live in two-room concrete houses or, in towns such as Guara, Sobradinho, and Taguatinga, larger homes or apartment buildings. In other areas, however, services are not provided, and the residents live on lots that have been illegally subdivided and in shanties made out of cardboard, tin, and wood.

The discrepancy between areas can be attributed to the original organization of the satellite towns, which was based on a sites-and-services plan with sites, services, and minimal building materials supplied by the government. People living in squatter settlements in Brasilia were given lots in the satellite towns, on which they built their own houses. However, the administration

of the satellite towns has not been conducted with much foresight or organization. Thus, as population in the satellite towns has increased, the government has been incapable of maintaining this policy. As a result, lots and homes have been made available for purchase, although they are not necessarily located in areas that receive infrastructural services. Social service organizations have sponsored housing projects that somewhat alleviate the situation; however, the poor conditions persist.

These situations and conditions are maintained and exacerbated by the political organization of the Federal District. The area is divided into eight administrative regions, each possessing an administrative head appointed by the governor of the District. Since they are granted no executive power, the administrators' role is almost purely managerial. They distribute resources, which are allocated to the regions in equal parts, and they implement policies formulated by the government of the Federal District. Unfortunately, issues in the Federal District are prioritized, with Brasilia's expenses paid first, and the satellite towns' needs addressed with whatever remains. This lack of autonomy renders the satellite towns practically powerless over their own destinies. Yet the administrators interviewed during this study expressed their frustration with this system and their desire for change.

Despite the fact that the satellite towns share characteristics such as poor infrastructure, low incomes, and little political power, distinctions can be made among the towns themselves. A five-tier classification of urban environments can be applied to the Federal District. The elite tier is, of course, occupied by Brasilia, which is the product of a coherent, purposeful planning process and is more than adequately serviced and maintained. In the second tier would fall satellite towns such as Taguatinga and Nucleo Bandeirante. Though of different sizes, they do share certain characteristics. Each has a

fairly active and well-developed commercial/retail sector and a somewhat even distribution of incomes. There are no seriously marginal residential areas in either town, nor are there any exceptionally extravagant ones.

The third tier is occupied by Guara and Sobradinho. The quality of living in these two towns most closely approximates that of Brasilia, especially as indicated by their urban environments. Both of these towns were built to house government bureaucrats and employees of other enterprises such as the Banco do Brasil and NOVACAP. In addition, neither town has developed much of an economic life of its own in industrial or commercial/retail activity.

Ceilandia and Gama occupy the fourth tier, though industrial activity in Gama could also be classified in the second tier. This fourth tier is characterized by extremely low incomes, poor indicators in the health-care and public safety areas, and very limited urban services. Brazlandia and Planaltina are placed in the fifth and final tier, because of their predominantly rural nature and small populations.

Though there are some qualitative differences among the satellite towns, they are not remarkable distinctions, by any means. Compared to Brasilia, people living in any one of the satellite towns are still less educated, receive lower salaries, have poorer living conditions, and spend more of their time commuting to their places of employment. Thus, although a hierarchical system can be established for the Federal District, Brasilia will always be the most important priority. The satellite towns will remain a mere afterthought.

CHAPTER EIGHT: CONCLUDING REMARKS

This study of the urban dynamics and conditions in Brasilia has provided an opportunity for formulating substantial and important conclusions concerning the significance of Brazil's new capital. There has been a tendency among critics and observers of Brasilia too hastily to dismiss Brasilia as a failure, as a city that "just doesn't work." On a superficial level, this opinion may be supportable. Whether or not Brasilia is a success is rather immaterial at this point, because the existence of Brasilia cannot somehow be denied or ignored. The more important issue now is to understand how Brasilia has contributed to the field of urban planning and what lessons can be learned from her creation.

In the introduction to this work, three broad questions were proposed: Does the creation of a new city actually serve national development goals? Can the transformation of a society be achieved through the alteration of physical environment? How necessary are acknowledgement and consciousness of national economic and social realities in the planning process? Brasilia provides a number of answers to these questions.

As far as facilitating national development goals, Brasilia has achieved rather mixed results. Designed as a growth pole, Brasilia has succeeded in attracting large numbers of migrants from other regions of Brazil. She has also fostered the expansion and growth of other neighboring cities such as Goias and Belo Horizonte. The intricate and expansive highway system envisioned by Kubitschek has been built and is fully functional. Brasilia has had some impact on population distribution and communications.

Yet, her creation has not fostered the radical events that were anticipated. Regional inequalities are still extremely marked, with the Southeast continuing to dominate the national economy. The majority of individuals who

migrate to Brasilia still come from the poorer regions of Brazil, such as the Northeast, and represent the unskilled, underpaid sectors of the labor force. The "Brasilia weekend" (leaving Brasilia on Thursday nights for the nightlife of Sao Paulo or the beaches of Rio, and returning to work on Tuesday) is still commonly practiced by Brasilia's wealthy residents. In addition, a permanent move to Brasilia would be considered by very few residents of cities along the coast.

In terms of certain economic and social indicators, furthermore, Brasilia has had little impact. Urban conditions in Brazil, as a whole, remain as deplorable as they were before Brasilia's construction. Significant private investment in the interior has not occurred. None of the important academic or cultural activities has relocated to Brasilia. In fact, the airport in Brasilia does not even have international flight service.

Thus, only a few of the national development goals envisioned for Brasilia have been met, and, of these, their achievement can be considered only a partial success. Brasilia has contributed to population redistribution and demographic growth in the interior of the country, by attracting migrants to the Federal District and to neighboring cities as well. However, she has not contributed at all to any economic or social goals. In fact, maintenance of Brasilia consumes a large proportion of the federal budget in Brazil, and much of the money received in taxes from other states is used for Brasilia's budget.

This, of course, brings us to the issue of whether or not Brasilia was able to transform Brazilian society in any progressive way. The answer to this question is a resounding and unequivocal "no." Rather than creating a new model for social interaction, as Costa and Niemeyer had hoped, Brasilia merely mirrors the extreme regional inequalities and the sharp urban contrasts that can be observed in Brazil as a whole.

The spatial occupation of Brasilia is one of extreme economic segregation. The wealthier, more educated, well-employed individuals live in the planned, better maintained, heavily subsidized city that is close to employment centers and all urban facilities and services. The poorer, less-educated people live extremely far from employment areas, must spend a higher proportion of their time and money to get to centers of employment and urban services, and live in substandard conditions in urban areas that have few facilities and receive miserably low levels of maintenance. Thus, instead of transforming Brazilian society, Brasilia has actually provided a grotesque caricature of some of Brazil's most disturbing urban situations.

Finally, by clarifying the nature of the conflict between its planners' ideas and national realities, the example of Brasilia provides substantial support for the maintenance of a strong connection between urban planning and national context. What Kubitschek, Niemeyer, and Costa did not do was develop a city plan based on close analysis of the realities and trends operating in Brazil. The assumptions upon which the plan for Brasilia was envisioned had very little to do with the economic and social realities that existed in Brazil, either during the 1950s and 1960s or currently.

This plan ignored the fundamental patterns of rural/urban migration that had been established years before in the experiences of Rio de Janeiro and Sao Paulo. Studies have revealed that the majority of migrants to urban areas are poor, unskilled laborers, who will usually remain in urban settings, even if their living conditions are worse than in rural areas, because of the opportunities that they perceive as existing in cities.

Thus, the assumption that once the construction was finished the workers would somehow disappear either demonstrates incredible naivete or insensitivity. Many of the construction workers did not have the financial means to

leave Brasília. In addition, after having lived in Brasília for a number of years, many individuals had established themselves and their families there and had no desire to leave.

This assumption contradicts one of the stated goals of Brasília, which was that she was to serve as a growth-pole in the interior of the country. Perhaps, however, she was supposed to have been a selective growth pole, attracting only middle-class and wealthy people, instead of working-class and poor people. If this were actually the case, it would serve to further demonstrate the ignorance of those involved with the planning of Brasília.

Costa's ideas proved to be unrealistic in other areas as well. For example, the housing that Costa designated for the lower classes, in the 400 blocks of the Pilot Plan, has never been affordable for working-class individuals. These units, today, are barely affordable for the lower-middle-class families that inhabit them currently. Those for whom this area was designated have had to seek alternative housing in the satellite towns. In addition, Costa's ideas about the automobile age have not materialized either. Every household cannot afford to own a car, and for those that do not own their own transportation, mobility in this city designed for cars is extremely limited.

Finally, in separating all the functions of the city into different sectors, Costa completely ignored those individuals who rely on the informal sector as a means of earning a living. In a country where the informal sector plays such a significant economic role, and in a city where the main source of employment is the tertiary sector, this is quite an oversight indeed.

In his book on Chandigarh, India, Ravi Kalia made an interesting observation that can easily be applied to Brasília. He stated that:

The government . . . naively believed that the creation of a new capital would resolve other social, economic and political

problems of the state. It was forgotten that a city, an entirely man-made environment, is a unique product of a particular society and culture. . . . No attention was paid to the fact that there are inherent drawbacks in a method that attempts to create a totally new community within a larger cultural milieu as an answer to specific needs . . . such an exercise threatens to transform the experience of the existing culture without first creating the necessary preconditions for such a transformation (Kalia 1987).

The pertinence of these comments to Brasilia cannot be denied. Brasilia symbolized the nation's hopes and dreams of becoming a modernized and efficient country as well as a potent international power. The Kubitschek Administration looked at Brasilia as the first major step towards achieving national development.

It seems evident, however, that one city cannot bear the responsibility for the transformation of an entire nation, nor can it significantly affect national development and urban conditions. A city may be able to contribute to the transformation of a nation; however, Brasilia, with its extreme residential stratification, has not succeeded in making this contribution. Therefore, these issues must be addressed by comprehensive national policies specifically designed to combat such problems.

Furthermore, emphasis on physical targets such as buildings and other structures ignores the limited effects that the physical environment actually has on the behavior of individuals. Cities will not necessarily "civilize" people, and urbanization does not always lead to modernization. The way to transform a society is not achieved through redesigning its physical appearance but through the restructuring and reconstruction of its economic and social fabric. After all, the quality and diversity of an urban environment have more effect on residents than do land use patterns and buildings.

In addition, Brasilia proves that the ideas that contribute to planning a city must accurately reflect the conditions present in the country where that city will eventually exist. Costa, Niemeyer, and Kubitschek planned a capital

city for a nation that existed only in their imaginations. They ignored the actual economic and social situation that existed in Brazil and, because of their oversights, created a plan based on fantasy. They were caught up in the prophecies that predicted a prosperous future for Brazil and so planned a city that could only accommodate wealthy individuals.

Finally, Brasilia demonstrates that even if certain realities are ignored in the planning process, this does not in any way signify that these realities have been resolved or obliterated. Brasilia also demonstrates that all sectors of society contribute to the functioning of that society. The lower classes in Brasilia have effectively been pushed out of the mainstream flows of the city and stuck in the satellite towns. Yet the dominant classes have not been able to eradicate this sector of society and, actually, could not survive without the residents of the satellite towns. Despite the supposed desire of Costa and Niemeyer to create a more economically integrated society, Brasilia has not been able to escape the reality of a class society.

Brasilia was supposed to express the arrival of Brazil into the modern, industrialized era. If the spatial configurations and the urban conditions in Brasilia are any indication of the direction in which Brazil is heading in the future, then the country's course should definitely be recharted.

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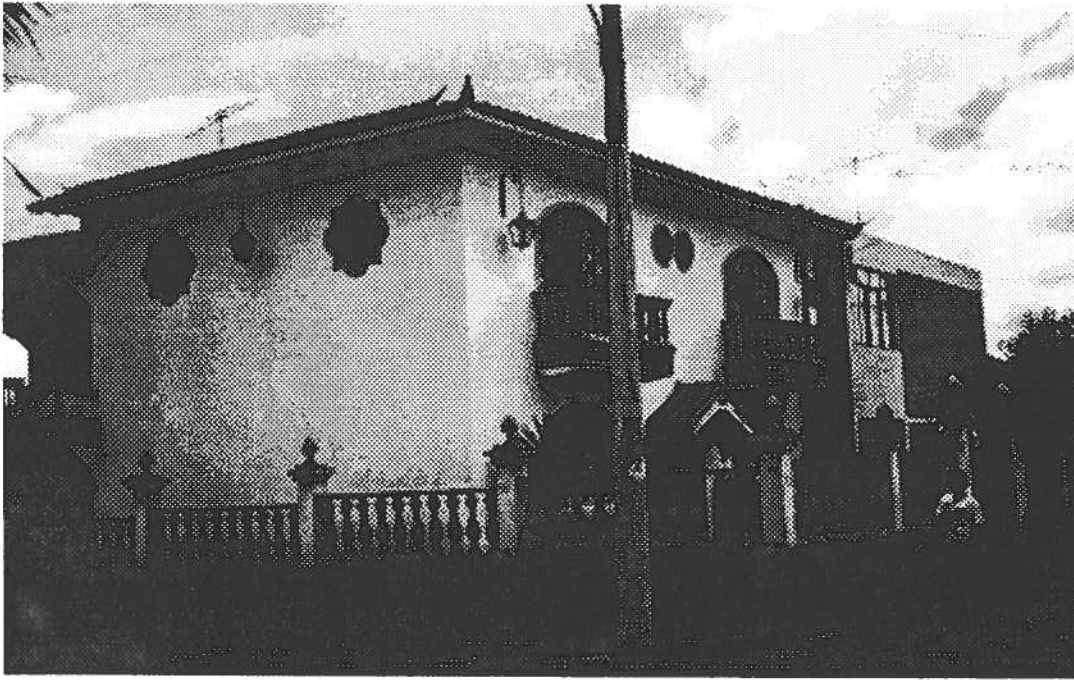
- Dr. Jorge Wilhelm, Secretary of the Environment for the State of Sao Paulo, November 7, 1987, Sao Paulo, Brazil.
- Dr. Ricardo Farret, University of Brasilia: November 20, 1987, and March 10, 1988, Brasilia, Brazil.
- Dr. Mello, Secretary of Public Services, Government of the Federal District, December 15, 1987, and January 20, 1988, Brasilia, Brazil.
- Ms. Maria Theresa Bernardina, principal architect, in the office of the Secretary of the Government, Government of the Federal District, January 20, 1988, and February 25, 1988, Brasilia, Brazil.
- Mr. Wander, Assistant to the Administrator of Taguatinga, February 3, 1988, and February 10, 1988, Taguatinga, Brazil.
- Mr. Ardison Rolin, Director of the Regional Division of Licensing and Public Works for Taguatinga, February 3, 1988, Taguatinga, Brazil.
- Mr. Expedito J. de Noronha, Chief of the Surveying Department, for Guara, February 12, 1988, Guara, Brazil.
- Mr. Soares, Assistant to the Administrator for Gama, February 21, 1988, and February 25, 1988, Gama, Brazil.
- Mr. Hiram Ferreira, Administrator of Sobradinho, March 1, 1988, Sobradinho, Brazil.
- Ms. Marcia Mc Braga R. Muniz, Regional Division of Licensing and Public Works for Nucleo Bandeirante, March 2, 1988, Nucleo Bandeirante, Brazil.
- Dr. Aldo Paviani, University of Brasilia, March 5, 1988, Brasilia, Brazil.
- Ms. Nanci Magalhaes, 26-year resident of Brasilia, March 13, 1988, Brasilia, Brazil.



Residential area in Planaltina, 1988

Newly constructed superblock building in Brasilia (Pilot Plan), 1988

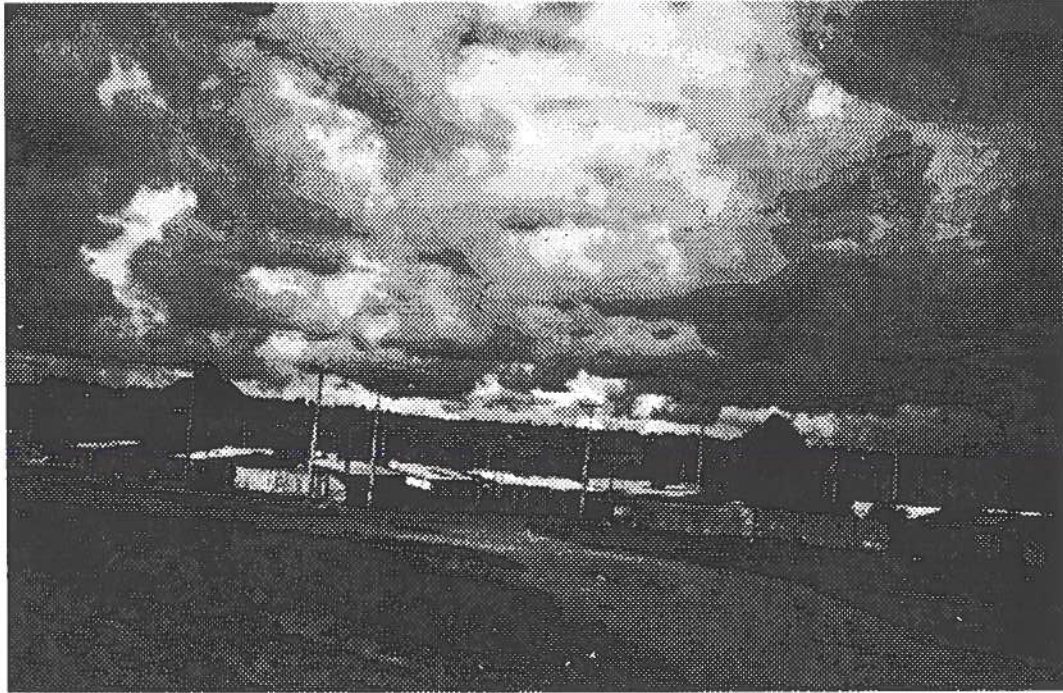




Residence in Taquatinga

Illegally subdivided property in Gama, 1988





Sites-and services project in Gama, 1988

North Wing, residential superblock, Brasilia, 1988





Commercial area in Taguatinga, 1988

Commercial area in Planaltina





South Wing, residential superblock (400 block), Brasilia, 1988

TABLE 1: POPULATION

	1959	1960	1970	1980	1987
PILOT PLAN	23,834	68,665	152,024	310,701	412,000
NUCLEO BANDEIRANTE	15,751	21,033	95,473	17,477	22,014
GUARA	---	---	24,073	82,482	127,946
GAMA	---	---	71,258	132,726	170,244
TAGUATINGA	3,677	26,111	106,202	192,999	241,001
CEILANDIA	---	---	---	280,521	439,238
BRAZLANDIA	---	---	9,519	19,144	25,285
SOBRADINHO	---	8,478	38,797	62,980	77,544
PLANALTINA	2,245	2,917	18,466	39,964	52,372
FEDERAL DISTRICT	45,507	127,204	515,812	1,138,994	1,567,644

SOURCE: CODEPLAN: Mensario Estatístico do Distrito Federal, Agosto, 1987 and Caracterizacao do Territorio e da Populacao do Distrito Federal, volumes 1 - 9, 1984.

TABLE 2: PERCENTAGE OF ECONOMICALLY ACTIVE POPULATION

PILOT PLAN	58.00%
TAGUATINGA	55.74%
CEILANDIA	50.91%
GAMA	48.55%
NUCLEO BANDEIRANTE	51.45%
GUARA	56.44%
SOBRADINHO	52.78%
BRAZLANDIA	49.07%
PLANALTINA	50.76%

SOURCE: CODEPLAN: Caracterizacao do Territorio e da Populacao do Distrito Federal, volumes 1 - 9, 1984.

TABLE 3: MEDIAN FAMILY SIZE & MONTHLY INCOME

City	Median Family Size	Median Monthly Income Per Family
Pilot Plan	4.39	CR\$ 82,391
Ceilandia	5.27	15,685
Taguatinga	5.00	30,857
Gama	5.52	20,431
Guara	4.78	42,075
Sobradinho	5.49	23,384
Planaltina	5.47	16,564
Nucleo Bandeirante	5.27	29,203
Brazlandia	5.51	14,684
Federal District	4.99	CR\$ 40,498

SOURCE: Pinto de Andrade, Joaquim and Maria Luiza Falcao Silva, "Estrutura da Renda Familiar no Distrito Federal," Fundacao Universidade de Brasilia, Relatorio de Pesquisa NO. 1, Abril 1985.

TABLE 4: ECONOMIC ACTIVITY, 1983

	PILOT PLAN	TAGUA- TINGA	CEI- LANDIA	GAMA	NUCLEO BANDRTE.	GUARA	SOBRA- DINHO	BRAZ- LANDIA	PLAN- ALTINA
PRIMARY	2,214 (1.0%)	1,878 (2.3%)	647 (0.6%)	1,207 (2.3%)	116 (1.6%)	182 (0.4%)	1,224 (4.4%)	1,469 (17.1%)	4,383 (20.2%)
Agroindustry	2,214	1,878	647	1,207	116	182	1,224	1,469	4,383
SECONDARY	18,450 (7.6%)	14,266 (15.7%)	27,732 (24.7%)	11,560 (22.3%)	868 (11.8%)	3,909 (9.3%)	4,651 (16.4%)	1,757 (20.5%)	3,205 (14.7%)
Transformation	6,918	6,920	8,390	4,039	379	1,836	2,340	518	908
Construction	8,187	5,832	17,466	6,708	428	1,171	1,839	940	1,861
Other Industrial	3,345	1,514	1,876	813	61	902	472	299	436
TERCIARY	220,717 (91.4%)	73,774 (82.0%)	83,973 (74.7%)	39,097 (75.4%)	6,351 (86.6%)	37,976 (90.3%)	22,391 (79.2%)	5,399 (62.4%)	14,182 (65.1%)
Commerce	19,666	16,341	17,691	6,489	1,667	5,770	3,281	1,009	1,906
Transp./Commun.	8,740	6,531	7,729	2,752	442	2,474	1,294	324	835
Services	66,249	25,700	37,494	17,533	2,493	9,175	8,367	2,554	7,240
Social Services	34,238	10,539	7,935	5,309	667	6,578	3,756	736	2,260
Public Adm.	69,355	11,065	10,428	5,061	753	10,393	4,635	588	1,355
Other	22,469	3,598	2,696	1,153	329	3,313	1,055	138	586
TOTAL	241,381	89,918	112,352	51,064	7,335	41,794	28,263	8,575	21,770

SOURCE: CODEPLAN: Caracterizacao do Territorio e da Populacao do Distrito Federal, volumes 1 - 9, 1984.

TABLE 5: PERCENTAGE OF SCHOOL-AGE POPULATION ENROLLED

	School-age		School-age		School-age	
	Pop.	% in	Pop.	% in	Pop.	% in
	7-14 yrs.	School	15-18 yrs.	School	TOTAL	School
Brasilia	43,356	96.00%	22,768	74.40%	66,124	87.30%
Taguatinga	32,764	102.50%	19,863	74.20%	52,627	91.80%
Ceilandia	58,264	91.50%	23,311	50.10%	81,575	79.70%
Gama	33,601	91.00%	14,085	65.50%	47,686	83.50%
Nucleo Bandeirante	3,163	100.00%	1,604	100.00%	4,767	100.00%
Guara	13,527	95.50%	8,413	72.00%	21,940	86.50%
Sobradinho	12,689	97.30%	7,332	79.90%	20,021	90.90%
Planaltina	11,278	96.00%	3,378	64.60%	14,202	86.00%
Brazlandia	5,137	94.40%	2,307	44.70%	7,444	79.00%

SOURCE: CODEPLAN: Caracterizacao do Territorio e da Populacao do Distrito Federal, volume 1-9, 1984.

TABLE 6: NUMBER OF PEOPLE PER HEALTH CARE PROFESSIONAL, 1983

PROFESSION	Pilot Plan	Tagua- tinga	Cei- landia	Gama	Nucleo Bandrnte	Guara	Sobradinho	Brzinda	Planltna

Doctors	444	580	1,396	533	1,456	na	453	270	470
Odontologists	7,061	8,391	16,501	13,273	8,739	na	15,745	9,572	13,321
Nurses	1,168	2,098	1,603	2,011	5,826	na	1,702	1,473	2,855
Nurses' Aides	279	420	3,117	438	1,456	na	370	368	714
Health Agents	3,452	2,797	4,187	2,824	1,748	na	3,315	2,127	3,996
Others*	1,032	2,271	5,293	2,011	971	na	1,188	1,064	1,817

*Note: Includes pharmacists, lab technicians, etc.

SOURCE: CODEPLAN: Caracterizacao do Territorio e da Populacao do Distrito Federal, volume 1 - 9, 1984.

TABLE 7: PUBLIC SAFETY, 1983

TYPE OF CRIME	Number of Infractions								
	Pilot Plan	Taguatinga	Ceilândia	Gama	Núcleo Bandeirante	Guara	Sobradinho	Brasília	Planaltina
Fatal Traffic Accident Collision	33	18	12	22	12	11	7	5	4
w/Pedestrian Fatality	65	32	28	12	16	5	7	1	7
Traffic Accident w/Victim Collision w/Pedestrian Traffic Accident	949	359	209	110	110	145	93	20	52
w/o Victim	641	309	286	154	56	74	76	18	46
Armed Robbery	7,963	1,823	727	294	257	541	225	40	172
Homicide	2	2	3	2	0	0	0	0	1
Attempted Homicide	21	19	52	40	6	1	3	4	10
Physical Assault	37	10	36	21	4	4	8	2	3
Rape	1,039	684	862	648	165	250	314	88	197
Sexual Molestation	29	21	31	0	0	4	10	1	1
Petty Theft:	14	6	2	2	1	2	0	1	0
Vehicular	1,257	380	146	94	19	110	18	10	19
In Vehicle	1,136	487	230	92	42	251	100	10	38
In Residence	1,075	943	1,325	608	113	386	256	60	120
Other	1,571	688	489	474	134	168	131	63	139
Robbery	401	297	648	251	46	59	44	11	19
Illegal Poss. Of Firearms	160	110	269	139	5	17	30	19	54
Fire	56	19	15	3	42	6	5	2	2
Other	996	281	254	283	68	169	90	33	36
TOTAL	17,606	6,534	5,705	3,293	1,098	222	1,438	391	925

SOURCE: CODEPLAN: Caracterização do Território e da População do Distrito Federal, volume 1 - 9, 1984.

TABLE 8: PAVED ROADS, 1984

	QUANTITY (sq. m.)				
	Pilot Plan	Tagua- tinga	Cei- landia	Gama	Nucleo Bandeirante
Predicted	17,409,174	2,352,254	3,134,597	1,762,121	610,424
By 1981	590,505	1,299,831	420,182	819,133	237,920
In 1982	440,157	96,016	101,276	312,036	243,382
In 1983	373,670	71,105	60,877	64,336	32,628
TOTAL	18,813,506	1,466,952 (62.4%)	582,335 (19.0%)	1,195,505 (68.0%)	513,930 (84.2%)
Still Lacking	0	885,302 (37.6%)	2,552,262 (81.0%)	566,616 (32.0%)	96,494 (15.8%)

	QUANTITY (sq. m.)			
	Guara	Sobradinho	Brazilndia	Plnaltna
Predicted	1,080,000	1,100,486	424,230	529,736
By 1981	1,016,443	708,313	212,567	293,209
In 1982	26,580	182,667	38,186	4,690
In 1983	21,820	78,313	20,850	11,346
TOTAL	1,064,843 (98.6%)	969,193 (88.1%)	271,603 (64.0%)	409,245 (77.3%)
Still Lacking	15,157 (1.4%)	131,293 (11.9%)	152,627 (36.0%)	120,491 (22.7%)

SOURCE: CODEPLAN: Caracterizacao do Territorio da
Populacao do Distrito Federal, Volume 1 - 9, 1984.

TABLE 9: LANDSCAPING, 1984

	QUANTITY (sq. m.)				
	Pilot Plan	Tagua- tinga	Cei- landia	Gama	Nucleo Bandeirante
Predicted	na	1,600,000	4,807,926	2,864,000	241,843
By 1981	1,382,678	103,510	234,901	173,610	138
In 1982	689,295	36,000	6,206	18,890	89,055
In 1983	884,409	24,130	210	0	23,708
TOTAL	3,371,633*	163,640 (10.0%)	241,317 (5.1%)	192,500 (6.7%)	163,131 (67.5%)
Still Lacking	na	1,436,360 (90.0%)	4,566,609 (94.9%)	2,671,500 (93.3%)	78,712 (32.5%)

*Note: Total includes 415,251 square meters planted in 1984.

	QUANTITY (sq. m.)				
	Guara	Sobradinho	BrzIndia	PlanItna	
Predicted	625,943	2,110,020	na	421,623	
By 1981	284,804	118,674	120,751	232,820	
In 1982	29,300	0	0	0	
In 1983	129,386	0	9,000	0	
TOTAL	443,490 (71.0%)	118,674 (5.6%)	129,751 na	232,820 (55.2%)	
Still Lacking	182,453 (29.0%)	1,991,346 (94.4%)	0 na	188,803 (44.8%)	

SOURCE: CODEPLAN: Caracterizacao do Territorio da Populacao do Distrito Federal, Volume 1 - 9, 1984.

TABLE 10: CURBS, 1984

	QUANTITY (m)				
	Pilot Plan	Tagua- tinga	Cei- landia	Gama	Nucleo Bandeirante
Predicted	na	619,037	1,772,391	476,500	188,387
By 1981	2,182,103	268,182	150,052	192,370	46,770
In 1982	59,044	25,880	28,866	90,347	51,213
In 1983	107,095	34,519	35,933	15,000	8,564
TOTAL	2,429,514*	328,581 (53.0%)	214,851 (12.1%)	297,717 (62.5%)	106,547 (56.6%)
Still Lacking	na	290,456 (47.0%)	1,557,540 (87.9%)	178,783 (37.5%)	81,840 (43.4%)

*Note: Total includes 125,577 meters installed in 1984.

	QUANTITY (m)			
	Guara	Sobradinho	BrzIndia	PlanItna
Predicted	280,028	238,484	121,210	239,398
By 1981	248,464	116,035	51,698	60,818
In 1982	2,240	32,090	19,336	3,196
In 1983	17,500	58,366	6,000	0
TOTAL	268,204 (96.0%)	206,491 (86.6%)	77,034 (63.6%)	64,014 (26.8%)
Still Lacking	11,819 (4.0%)	31,993 (13.4%)	44,176 (36.4%)	175,384 (73.2%)

SOURCE: CODEPLAN: Caracterizacao do Territorio da
Populacao do Distrito Federal, Volume 1 - 9, 1984.

TABLE 11: SIDEWALKS, 1984

	QUANTITY (sq. m.)				
	Pilot Plan	Taguatinga	Ceilândia	Gama	Núcleo Bandeirante
Predicted	na	1,000,000	1,150,000	726,120	119,630
By 1981	2,795,381	163,018	37,260	91,745	8,859
In 1982	96,190	10,263	20,406	6,350	31,537
In 1983	80,079	43,171	38,798	7,000	13,336
TOTAL	3,046,206*	216,454 (21.6%)	96,464 (8.4%)	105,095 (14.5%)	53,732 (44.9%)
Still Lacking	na	783,546 (78.4%)	1,053,536 (91.6%)	621,025 (85.5%)	65,898 (55.1%)

*Note: Total includes 74,556 square meters installed in 1984.

	QUANTITY (sq. m.)			
	Guara	Sobradinho	Brzília	Planaltina
Predicted	373,159	523,937	181,815	342,728
By 1981	347,038	77,205	32,374	106,143
In 1982	0	0	3,000	0
In 1983	12,000	6,000	10,600	6,008
TOTAL	359,038 (96.2%)	83,205 (15.9%)	45,974 (25.3%)	112,151 (32.7%)
Still Lacking	14,121 (3.8%)	440,732 (84.1%)	135,841 (74.7%)	230,577 (67.2%)

SOURCE: CODEPLAN: Caracterização do Território da População do Distrito Federal, Volume 1 - 9, 1984.

TABLE 12: RAINWATER COLLECTION, 1984

	QUANTITY (m)				
	Pilot Plan	Taguatinga	Ceilândia	Gama	Núcleo Bandeirante
Predicted	na	293,561	412,548	179,089	28,879
By 1981	415,482	105,891	87,282	39,070	11,485
In 1982	19,674	1,005	4,361	25,507	2,357
In 1983	29,196	2,190	23,720	5,800	759
TOTAL	468,537*	109,086 (37.1%)	115,363 (28.0%)	70,377 (39.0%)	14,601 (50.6%)
Still Lacking	na	184,475 (62.9%)	297,185 (72.0%)	108,712 (61.0%)	14,278 (49.4%)

*Note: Includes 20,017 meters installed in 1984.

	QUANTITY (m)				
	Guara	Sobradinho	Brasília	Planaltina	
Predicted	115,799	119,406	na	25,046	
By 1981	110,009	95,863	1,498	17,451	
In 1982	780	4,950	431	3,197	
In 1983	297	3,387	0	2,600	
TOTAL	111,086 (95.9%)	104,200 (87.0%)	3,723**	na	23,245 (92.8%)
Still Lacking	4,713 (4.1%)	15,206 (13.0%)	na	na	1,798 (7.2%)

**Note: Includes 1,794 meters installed in 1984.

SOURCE: CODEPLAN: Caracterização do Território da População do Distrito Federal, Volume 1 - 9, 1984.

TABLE 13: PUBLIC LIGHTING, 1983

	Pilot Plan	Tagua- tinga	Cei- landia	Gama	Nucleo Bandeirante	Guara Sobradinho	BrzIndia	PlanItna	
Consumption (MWh)	54,340	10,867	15,255	8,110	1,225	6,761	3,825	1,491	2,811
Total Light Posts	34,716	7,009	12,434	6,058	939	3,984	3,033	1,240	262
Predicted	na	9,262	15,394	8,392	1,323	5,029	3,850	1,503	2,753
Level of Service	na	75.67%	80.77%	72.10%	77.92%	77.92%	78.70%	80.10%	94.50%

SOURCE: CODEPLAN: Caracterizacao do Territorio da
Populacao do Distrito Federal, Volume 1 - 9, 1984.

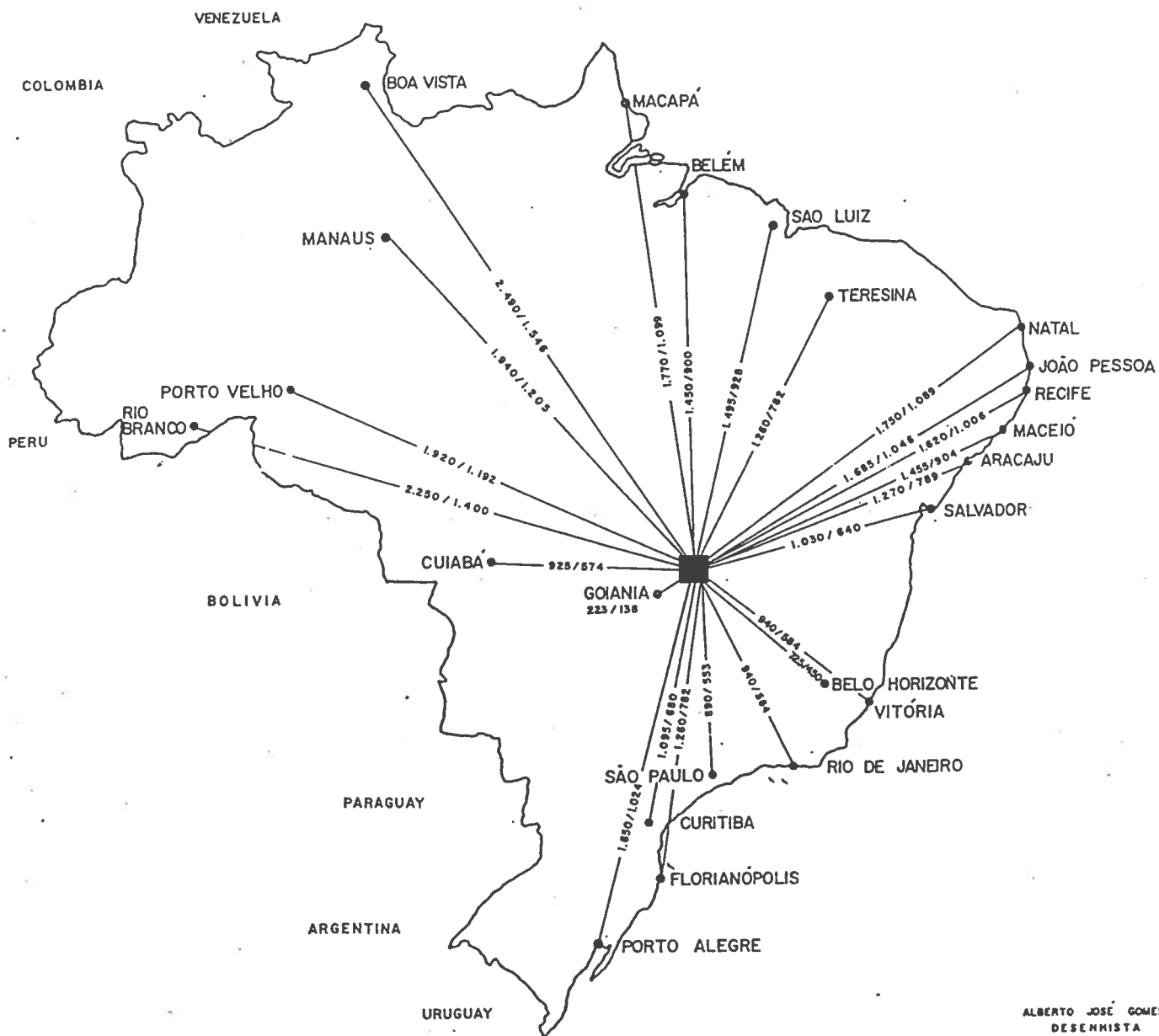
TABLE 14: POTABLE WATER SERVICES, 1983

	Pilot Plan	Tagua- tinga	Cei- landia	Gama	Nucleo Bandeirante
Size of					
System (m)	1,306,472	352,755	453,910	235,433	35,725
Distribution (m3)	72,453	14,693	18,302	8,746	2,969
Residential Units					
Served	97,548	37,304	54,885	20,417	4,916
Commercial Units					
Served	91,575	8,915	4,019	3,201	2,158
Industrial Units					
Served	2,504	984	224	473	187
Urban					
Population	468,854	219,459	358,674	152,351	19,813
Population					
Served	448,749	211,997	346,480	151,590	18,763
Level of Service	92.20%	96.60%	96.60%	99.50%	94.70%

	Guara	Sobradinho	Brzlandia	Planltna
Size of				
System (m)	18,287	107,943	45,036	68,991
Distribution (m3)	3,172	4,587	1,262	2,573
Residential Units				
Served	19,373	10,220	3,558	5,940
Commercial Units				
Served	1,363	1,910	457	1,376
Industrial Units				
Served	46	130	14	22
Urban				
Population	102,419	70,429	22,410	46,193
Population				
Served	96,990	70,077	22,298	40,754
Level of Service	94.70%	99.50%	99.50%	88.20%

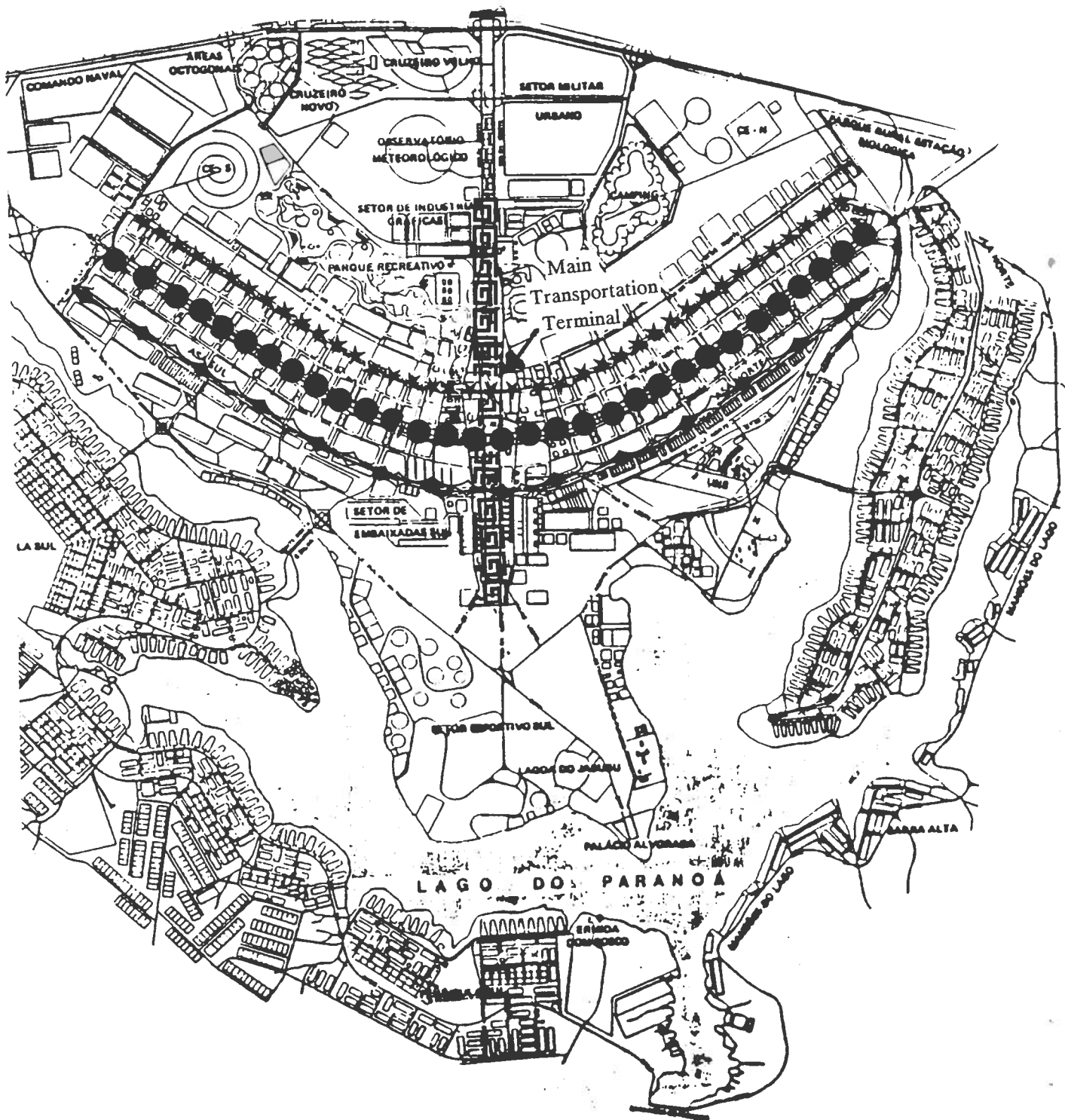
SOURCE: CODEPLAN: Caracterizacao do Territorio da Populacao do Distrito Federal, Volume 1 - 9, 1984.

MAP 1: BRASILIA IN RELATION TO OTHER BRAZILIAN CITIES



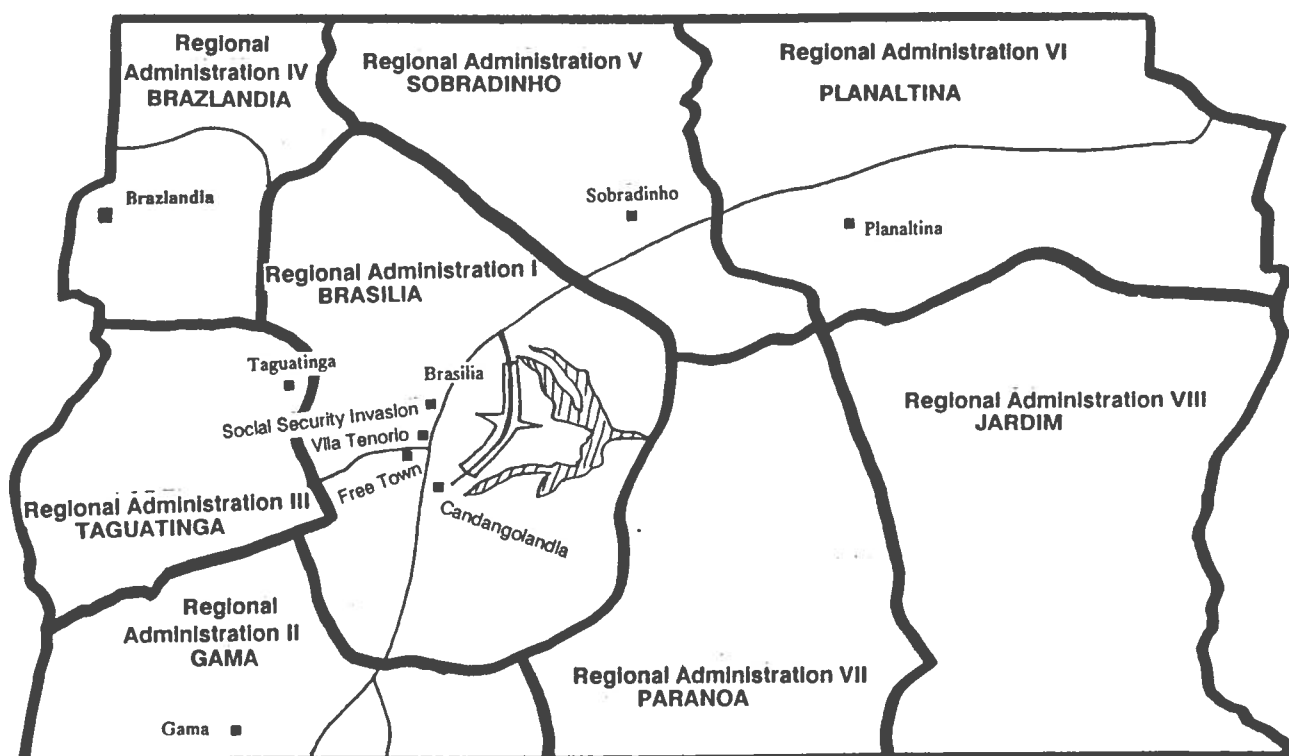
ALBERTO JOSÉ GOMES
DESENHISTA

MAP 2: MAJOR ARTERIALS IN BRASILIA



Legend	
W-3	*****
Eixo	●●●
L-2	—◆—◆—◆—◆—◆—◆—
Eixo Monumental	GGG

MAP 3: MAJOR URBAN LOCALITIES IN THE FEDERAL DISTRICT, 1967.



MAP 4: MAJOR URBAN LOCALITIES IN THE FEDERAL DISTRICT, 1987

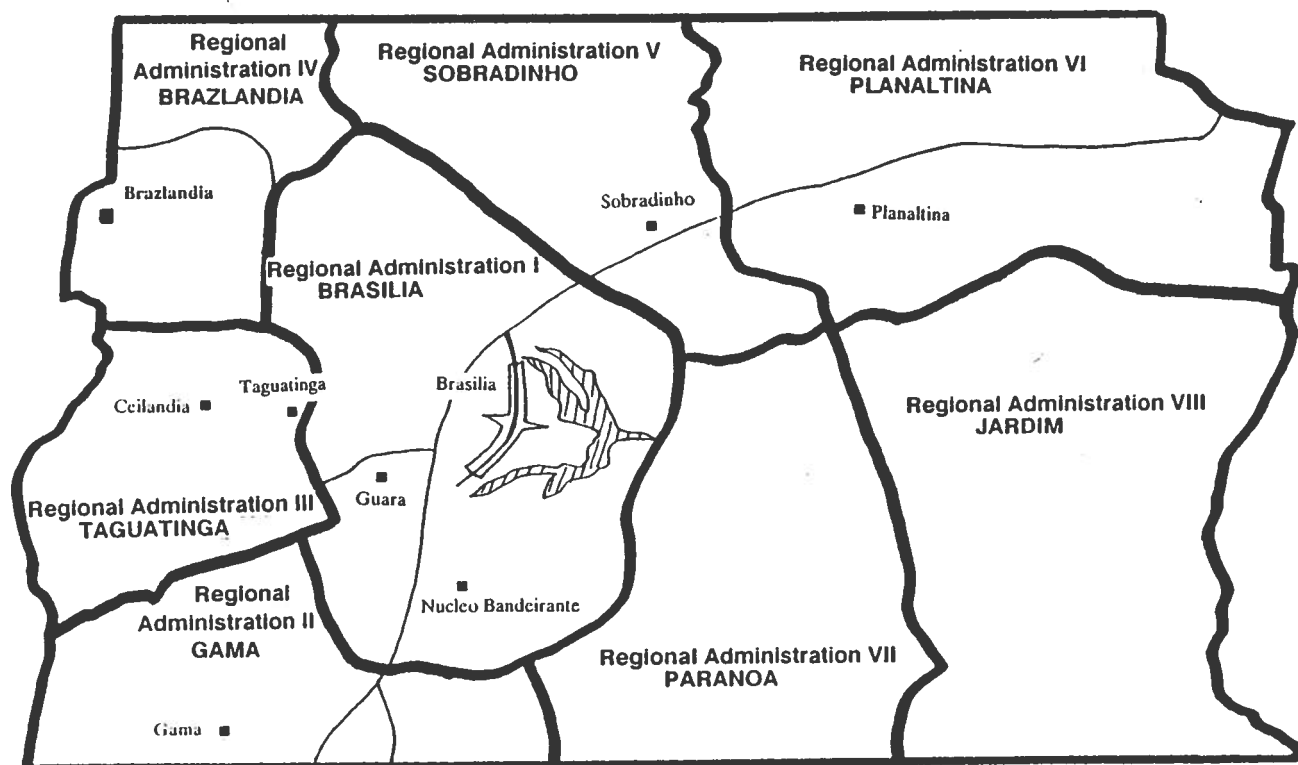


FIGURE 1: THE WINNING DESIGN: LUCIO COSTA'S PILOT PLAN

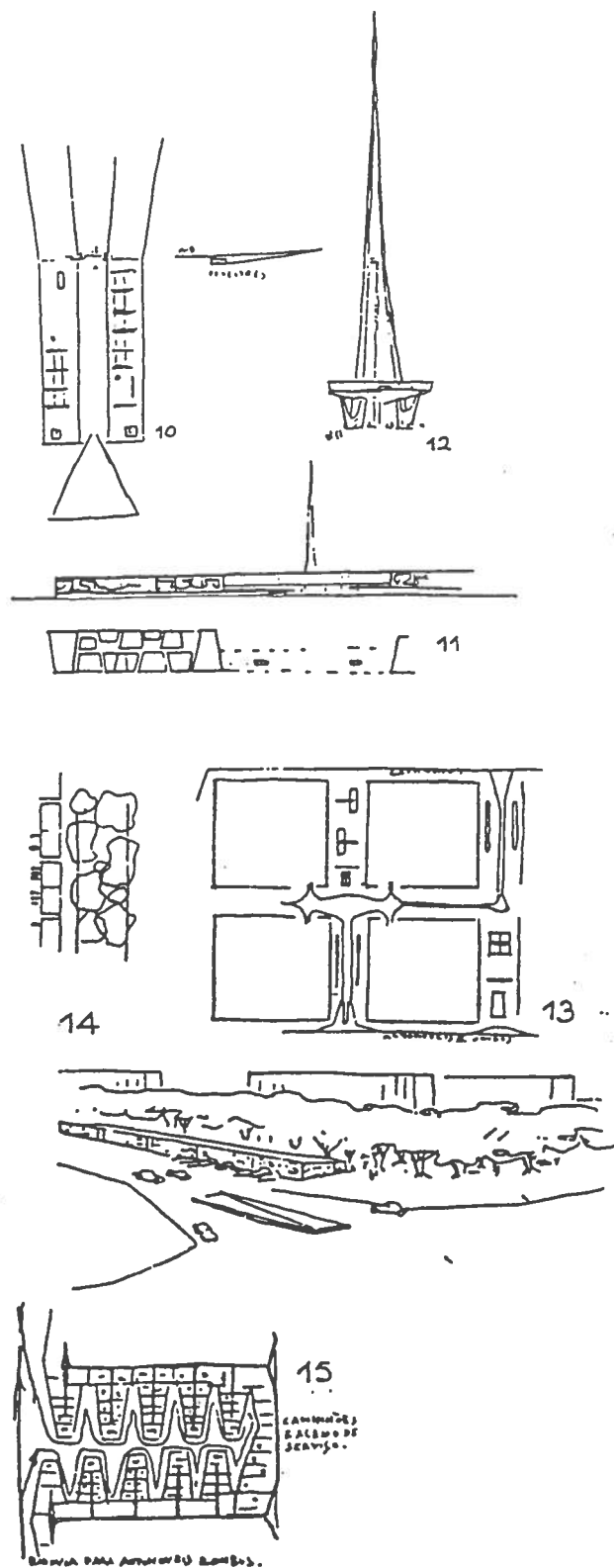


FIGURE 1: THE WINNING DESIGN: LUCIO COSTA'S PILOT PLAN

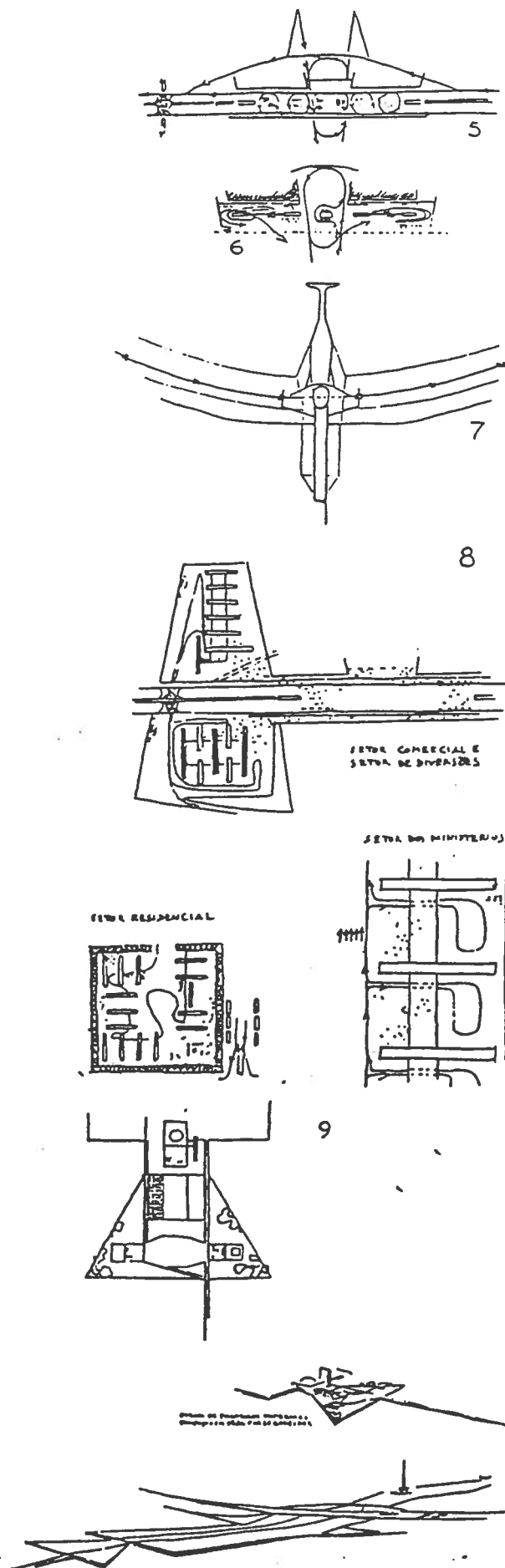
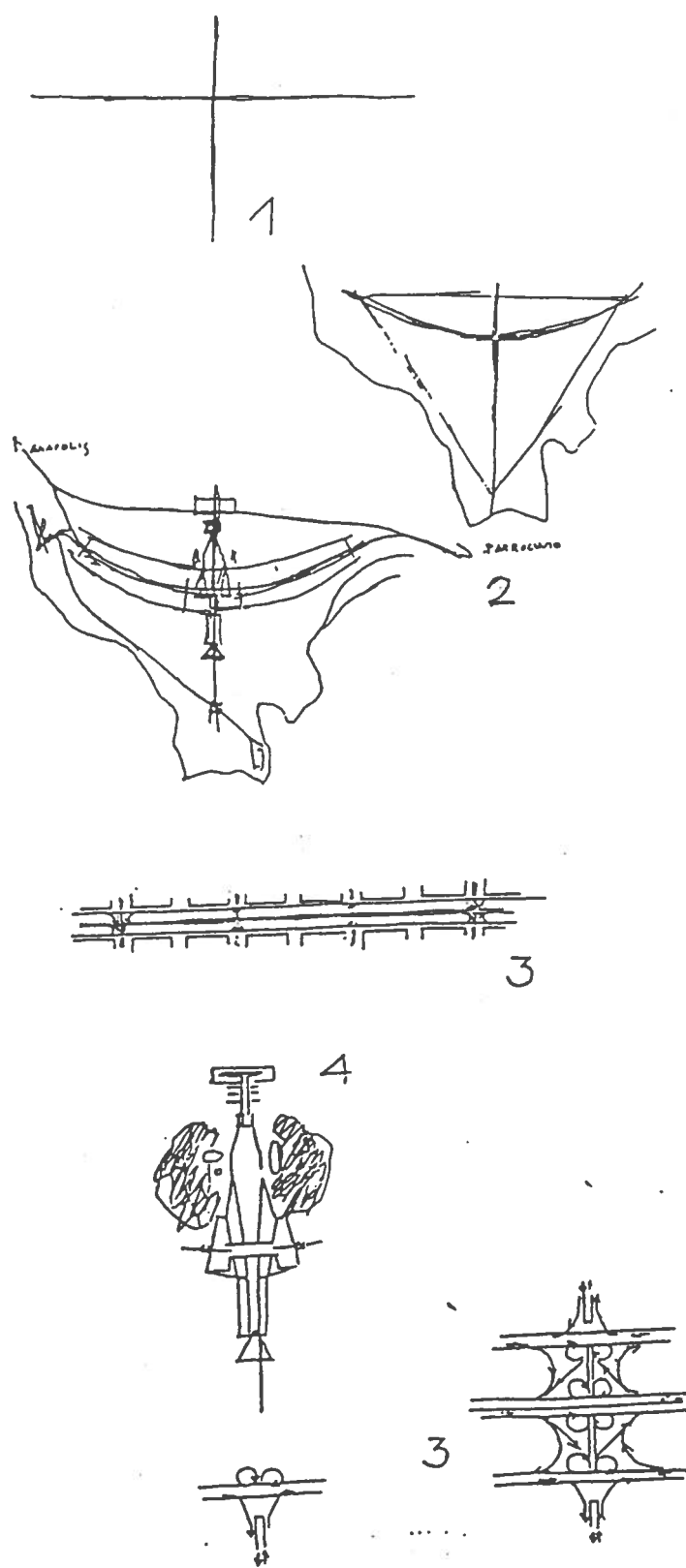


FIGURE 1: THE WINNING DESIGN: LUCIO COSTA'S PILOT PLAN



LEGEND

Residential
Civic/Administrative
Commercial
Industrial
Parks/Open Space

SOURCE: CODEPLAN, 1984

EXHIBIT 2: LAND USE IN TAGUATINGA, 1984

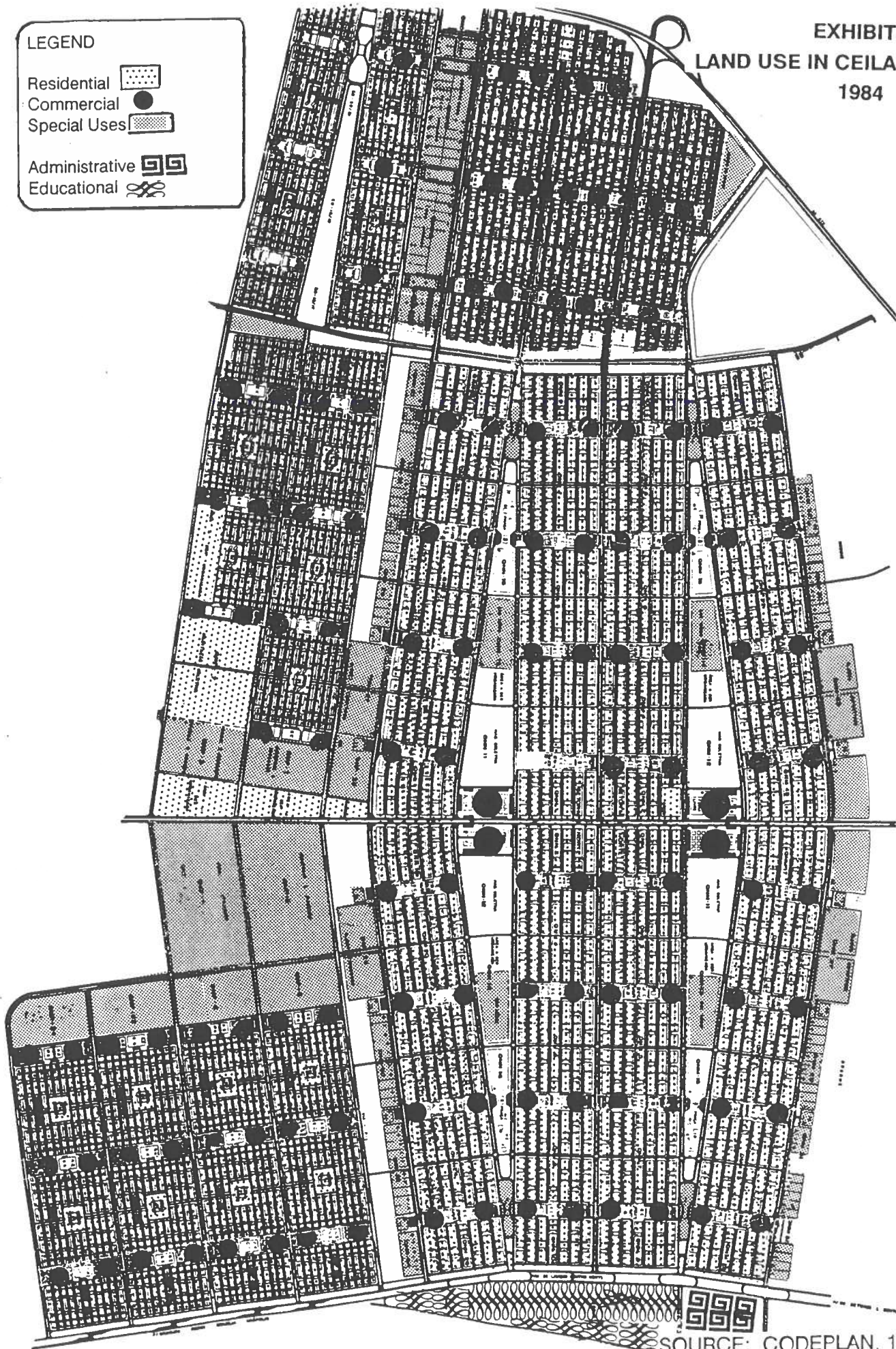


SOURCE: CODEPLAN, 1984

EXHIBIT
LAND USE IN CEILA
1984

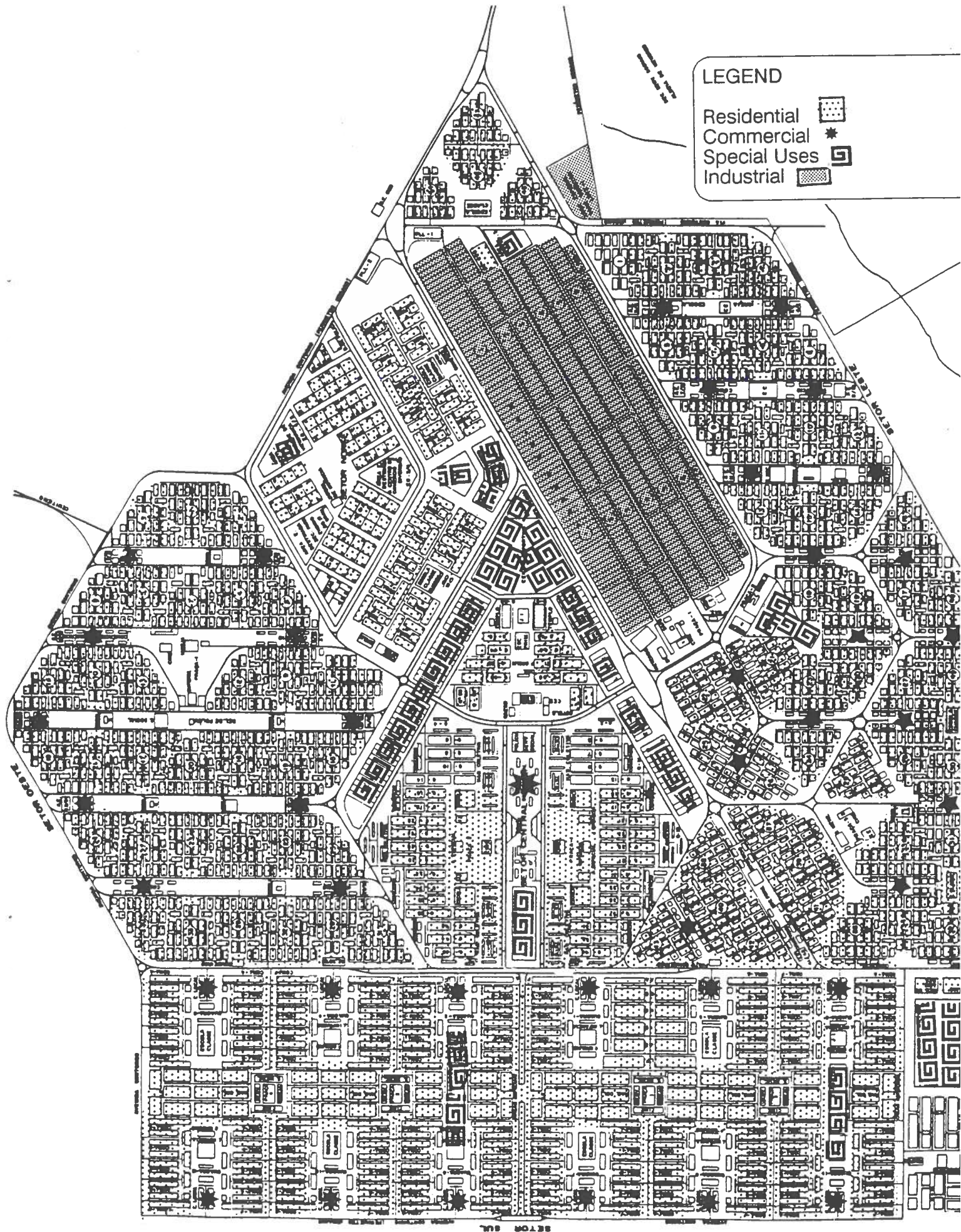
LEGEND

- Residential 
- Commercial 
- Special Uses 
- Administrative 
- Educational 



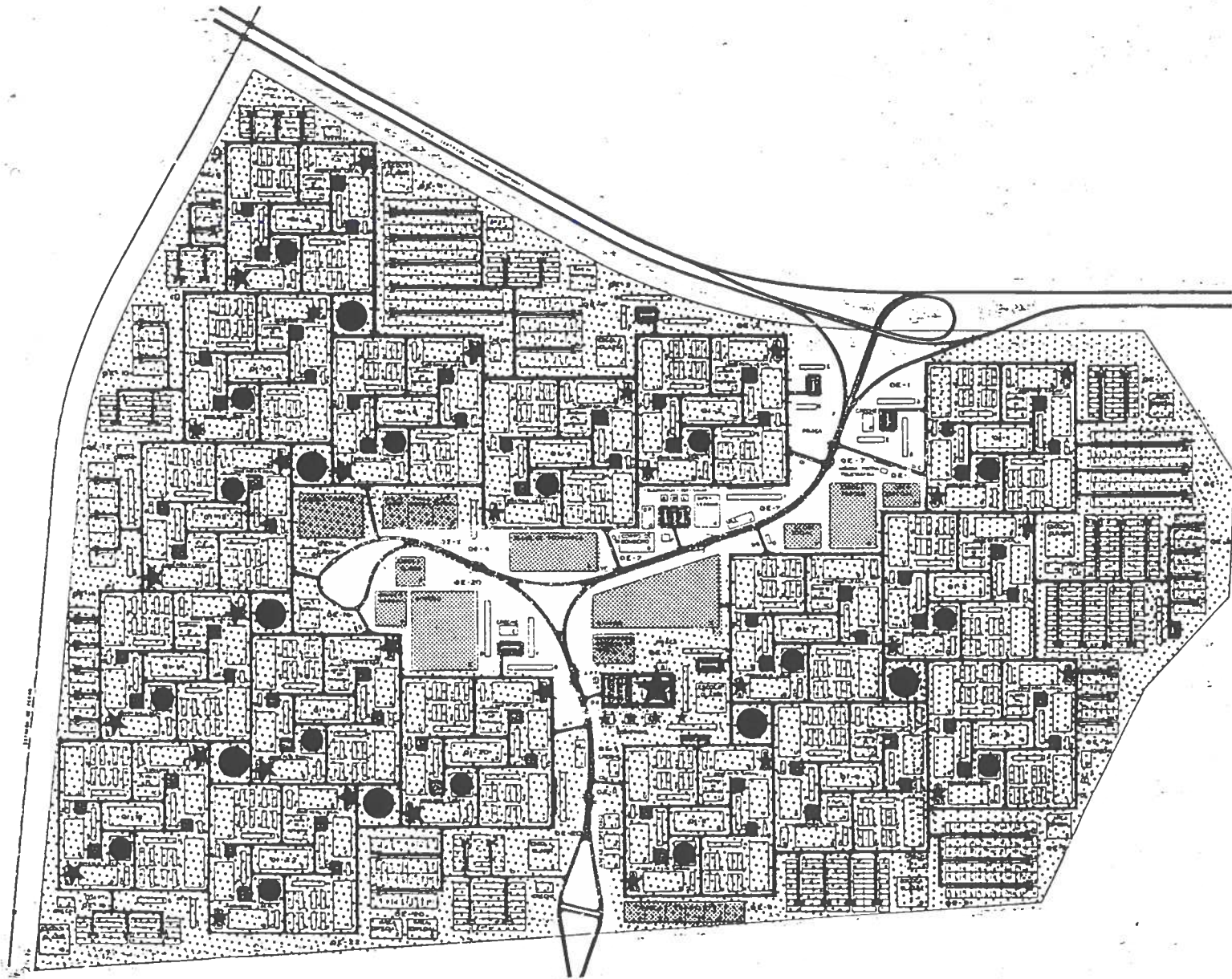
SOURCE: CODEPLAN, 1

EXHIBIT 4: LAND USE IN GAMA, 1984



SOURCE: CODEPLAN, 198

EXHIBIT 5: LAND USE IN GUARA I 1984

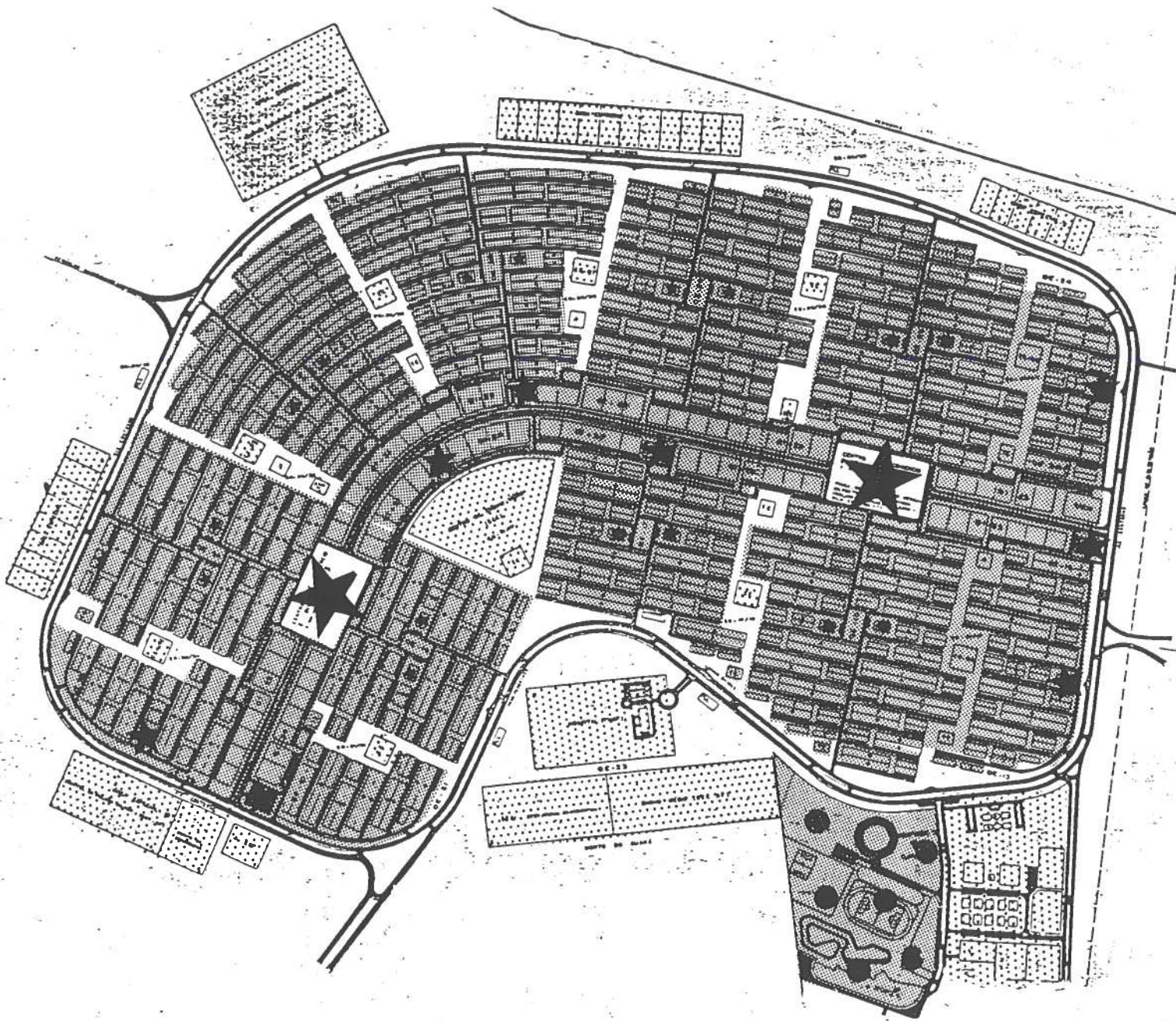


LEGEND

- Residential 
- Commercial 
- Special Uses 
- Parks/Open Space 

SOURCE: CODEPLAN, 1984

EXHIBIT 6: LAND USE IN GUARA II, 1984

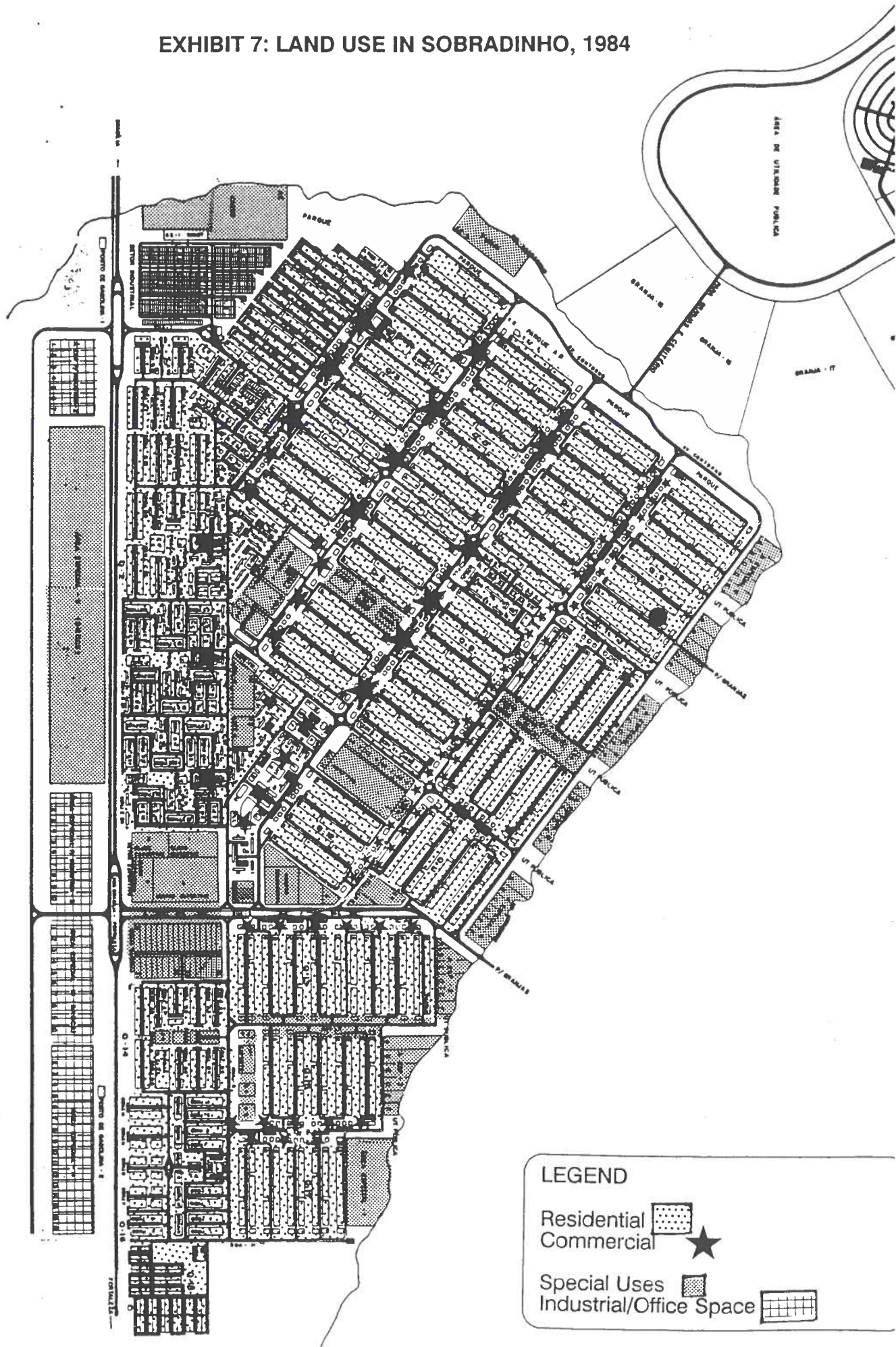


LEGEND

- Residential 
- Commercial 
- Special Uses 
- Parks/Open Space 

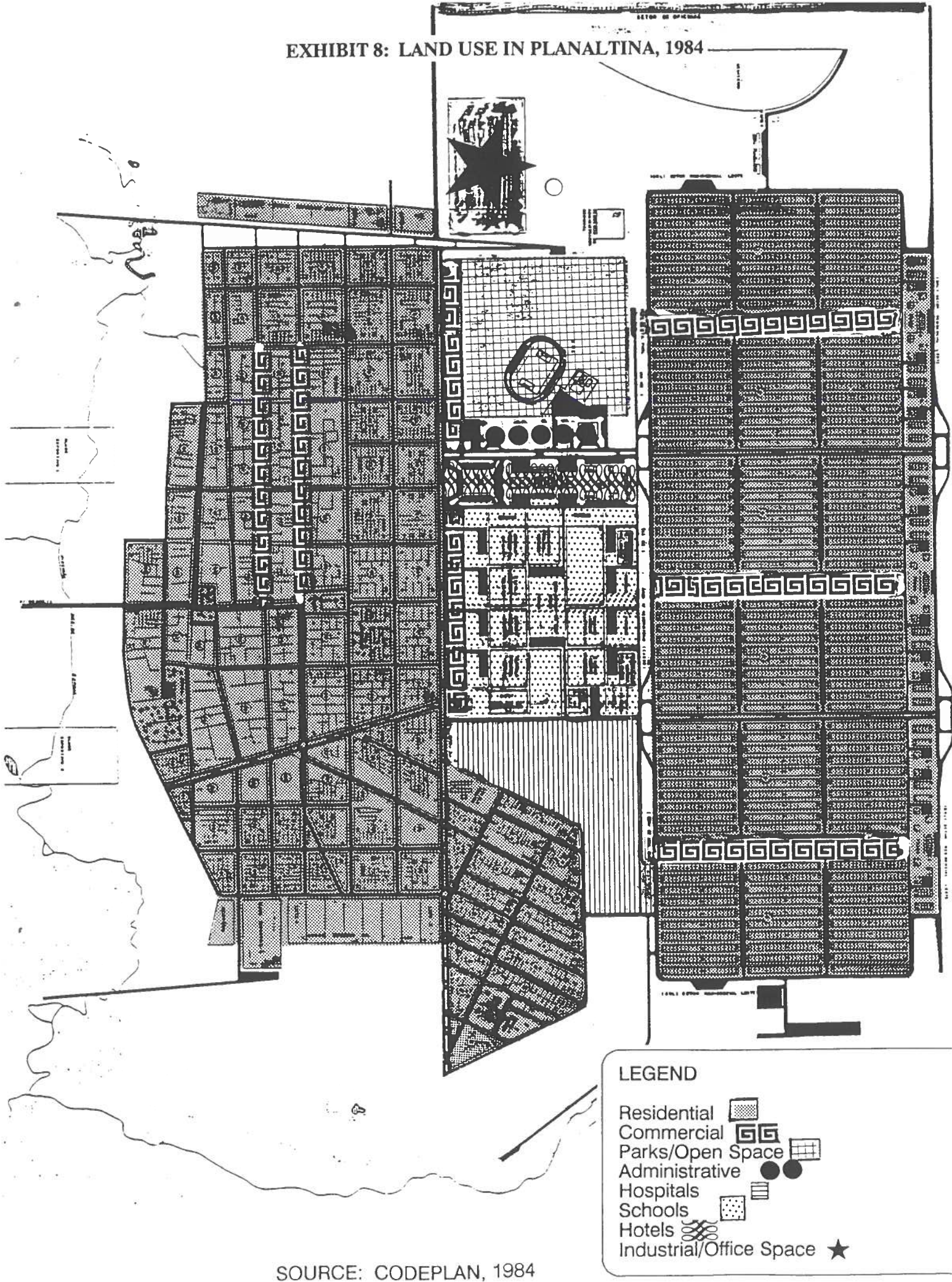
SOURCE: CODEPLAN, 1984

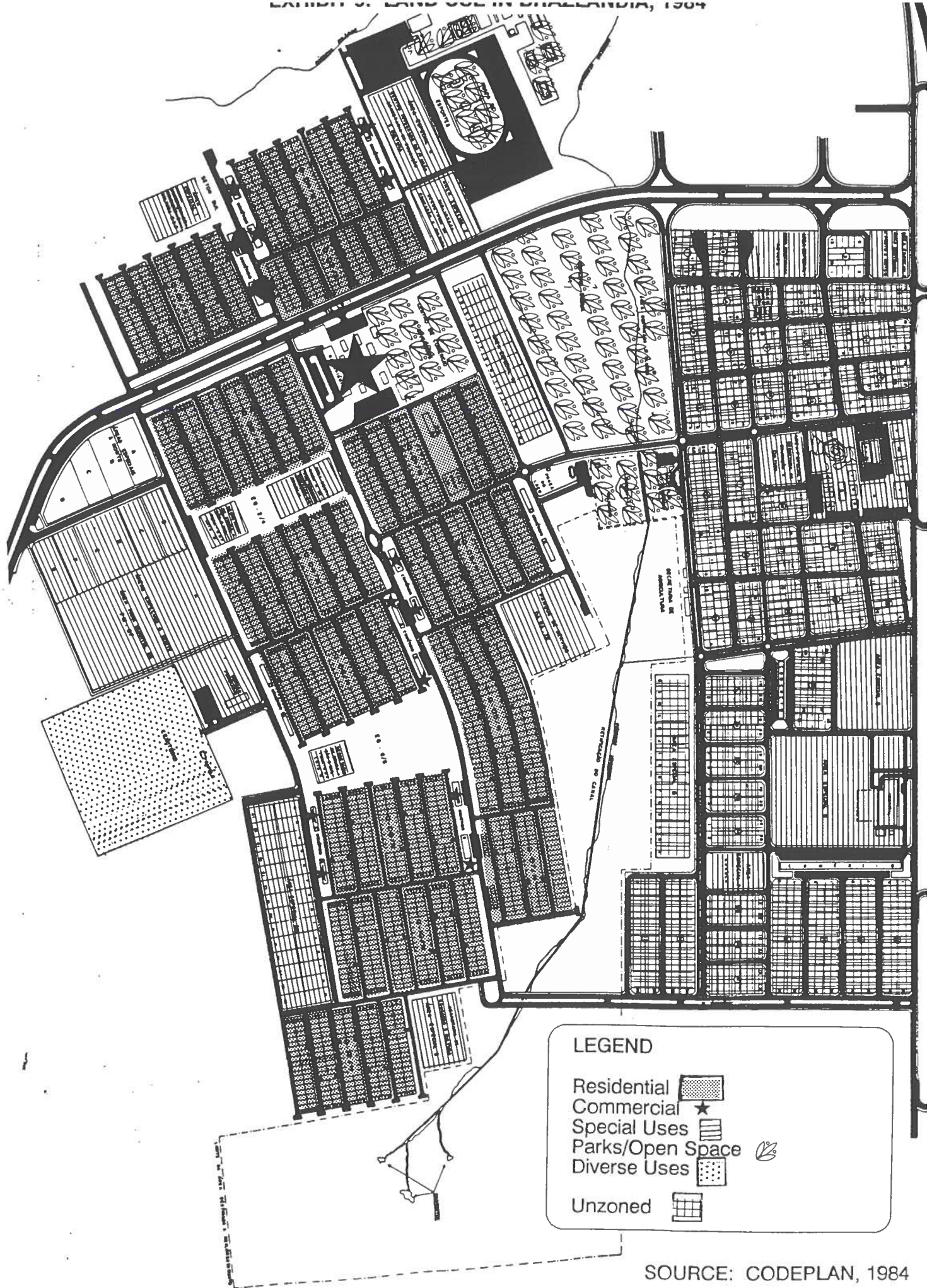
EXHIBIT 7: LAND USE IN SOBRADINHO, 1984



SOURCE: CODEPLAN, 1984

EXHIBIT 8: LAND USE IN PLANALTINA, 1984





SOURCE: CODEPLAN, 1984

