

Setor Noroeste, Brasília: can an elite neighborhood be considered green?

**Gabriela de Souza Tenorio
Reinaldo Germano dos Santos Júnior**

Introduction

There is a joke going around Brasília at the moment which depicts a dialogue between a reporter and the winner of a reality show: "What are you going to do with your prize of 1,5 million BRL (750 thousand USD)?" "I'm going to buy an apartment in *Setor Noroeste*". "And the rest?" "I'm going to get a mortgage to cover!"

The joke lies in the high value of real estate property of *Setor Noroeste*, a neighborhood that is beginning to be built, in the northwestern region of the capital, close to the city center. Not even the new national celebrity can afford to buy today, with his millionaire prize, an apartment whose dimensions correspond to his status (i.e., more than 150 m²). Considering the socioeconomic reality of the country, the housing deficit and the disorganized sprawl that often occurs in high risk and environmentally sensitive areas, this ends up being a joke of black humor.

Setor Noroeste is being advertised by the government as "the first ecological district in Brazil" and it aims at achieving the LEED-ND (*Leadership in Energy and Environmental Design - Neighborhood Development*) certification. It would be expected that the project of this neighborhood entailed the principles of sustainable development, in which every and each governmental action should be based on. In summary it should be environmentally correct, economically viable, culturally accepted and socially equitable.

This paper attempts to contrast the project of *Setor Noroeste* with the sociospatial reality of the Federal District (DF) and analyze its contribution to the city, focusing on the social dimension of sustainable development. The hypothesis is that an enterprise which does not contemplate social equity cannot be considered green. In the end, there is speculation about a possible expansion for the sector in order to make it more inclusive, based on recent research showing that, to accommodate people of different income levels, we need a varied selection of places and buildings.

The city and the document *Brasília Revisitada* (Brasília Revisited)

Brasília, here considered as the Federal District, has today just over 2.6 million inhabitants. In 2007, the reference year of data used in this article, the estimated population was 2,455,903. In the central business district (CBD), where 80% of formal jobs in the city are, lives less than 10% of the population. The rest lives farther away, either in neighborhoods with suburban characteristics, dormitory-neighborhoods or gated communities.

The center is composed basically by the Pilot Plan, the area where the original design of the city is materialized, and which has been regarded as World Heritage Site in 1987. In this area, there is a lot of open space served by infrastructure (mostly publicly owned) in contrast to a very low and little varied housing supply. The high value of land in this region is thus justified: it is an exclusive place. Some of these public open spaces are critical to maintaining the identity and the features of the city. Others are not.

The architect Lucio Costa himself, designer of the Pilot Plan, has identified some of these areas, allocating them to residential occupation. Before that, any expansion had to take place outside the limits of the heritage area, mostly in remote neighborhoods completely dependent on the center of the city, reinforcing the character of the dispersed metropolis, with a strong spatial segregation and long home-work distances. In his document Brasília

Revisited (1987), Costa designates six areas for predominantly residential occupation, among which two are west of the city, very near the CBD (Figure 1). In these areas, there would be "economically viable blocks" – henceforth called economic blocks – "(buildings three stories high over pilotis) in order to meet the demand for housing on the part of the lower income population and *superquadras* (buildings six stories high over pilotis) for the middle class, linked together by small neighborhood centers, with denser occupation (two stories high without pilotis) and of mixed use."

In the same document, Lucio Costa states that "emphasis should be placed in the need for housing for low-income populations, by a large scale implementation of the Economic Blocks." The later would have 5 hectares and 28 apartment blocks, housing 2,500 people, which profiles a density of 500 inhabitants / ha (he considered that a family had an average of 5 people) in a "compact deployment." He had suggested the creation of these blocks along the lines connecting the master plan with the satellite towns as a way of "bringing back ... the lower income population, which are today virtually cast away from the city."

In summary, Brasília Revisited proposes to occupy areas near the center; increase population density and seek to integrate in the same neighborhood, people with different income levels. It seeks to bring low-income population to the Pilot Plan, while solving the housing deficit problem.

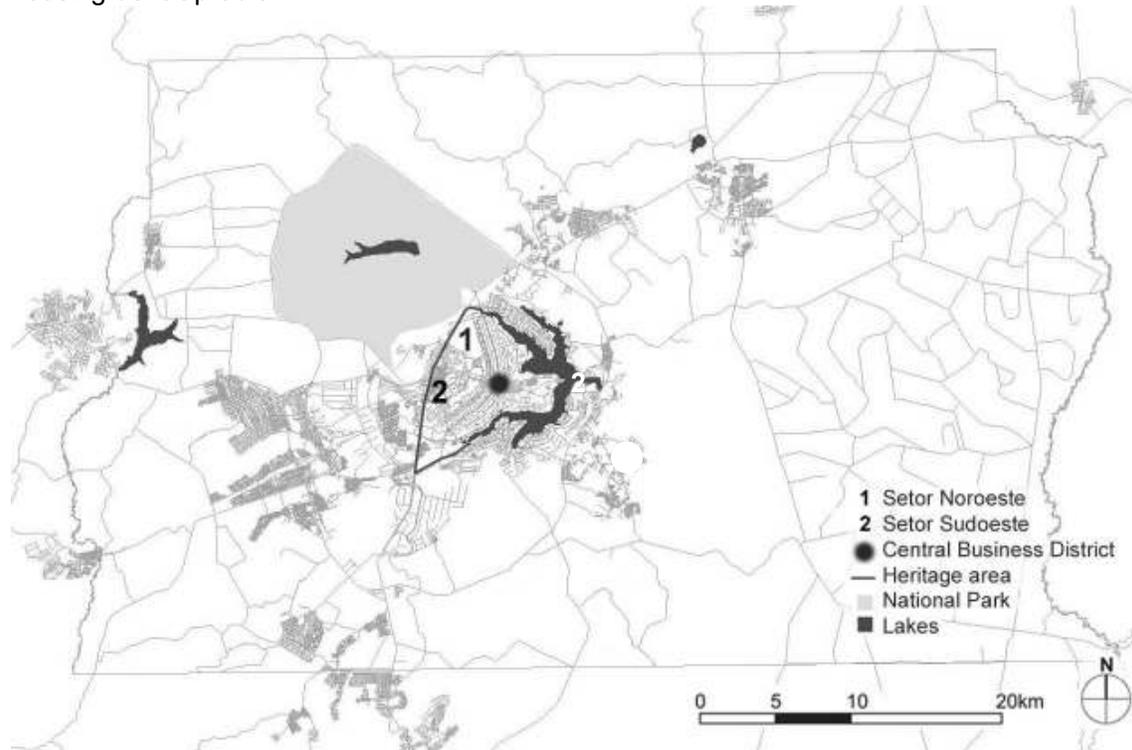


Figure 1 – Federal District and surroundings

The lessons of Setor Sudoeste (Southwest Sector)

The first neighborhood to translate these guidelines was *Setor Sudoeste*, which was created in the late 80's. Despite having mixed-use buildings, the neighborhood is mainly divided into "noble" Sudoeste and "economic" Sudoeste. The first has *superquadras*, with buildings six stories high over pilotis, all with underground garages, elevators, and either private penthouses or public terraces on the top of the buildings. The second is based on the economic blocks where there are buildings three stories high over pilotis, no elevator or underground parking, which results in much of the ground level being occupied by free public parking area. These blocks do not alternate or interpenetrate in the design of the

neighborhood. Although there are also mixed blocks and a major shopping street, there is a clear division of territory between "noble" and "economic".

Considering the graphs below, which relate the percentage of population and income levels for each part of the sector (Figure 2), one can see that neither the "noble" Sudoeste contemplate adequately the middle class, nor the "economic" Sudoeste attenuated the popular demand. However, it is possible to observe that the difference in architecture between the two blocks was efficient in providing some variation of residents regarding their income levels. The *superquadra* was occupied by the rich (65%) and upper middle class (23,5%), while the other segments of the middle class amount to 11,5%. In the economic blocks, rich and upper middle class show up in equal measure (38%) and participation of other segments of the middle class double in relation to the "noble" Sudoeste (Holanda, 2007). Still, given the spectrum of Brazilian society, the variation could be larger and it is far from representing the composition of income of the population.

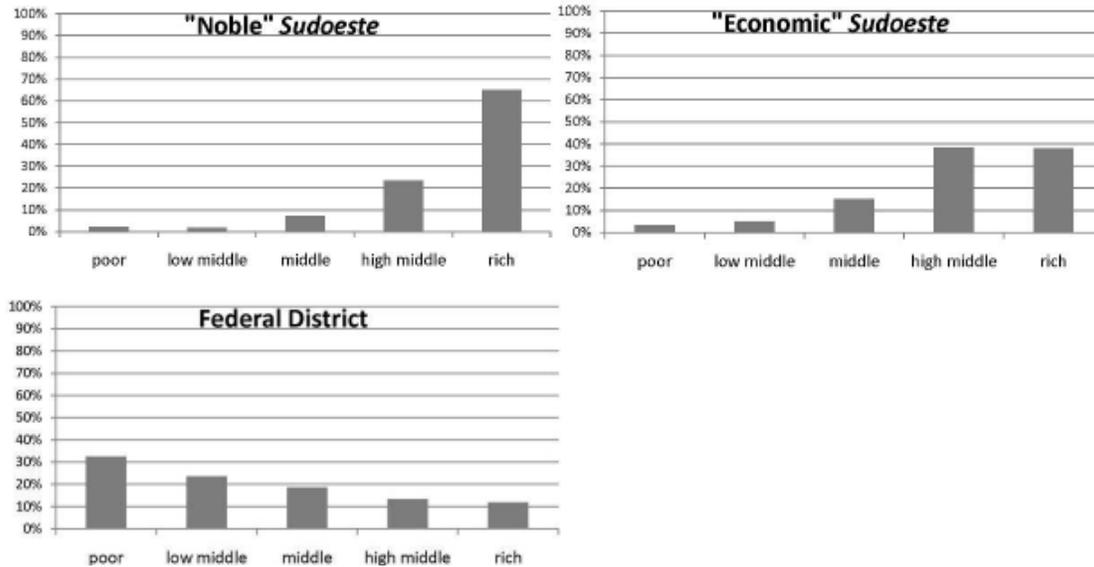


Figure 2 – Graphs of both "noble and "economic" Sudoeste, showing the residents profile regarding to income level. Compare with the Federal District graph (adapted from Holanda, 2007)

Considering the level of income, one can imagine that if *Setor Sudoeste* had only *superquadras*, it would have a more homogeneous population than has currently, and homogeneous communities may become intolerant, prejudicial and hostile. A few years ago, two episodes demonstrated the frame of mind of some residents from the "noble" part of the neighborhood: in the first, they lined up against the construction of public schools, claiming it would be only "for the children of the cleaning ladies", and in the second they positioned themselves against the construction of sports courts "to avoid the gathering of poor people". (Alves, 2009)

Homogeneous communities may also become vulnerable when this homogeneity is expressed by the type of family composition, life stage, or routine. Alves, 2009, describes the profile of the residents of the economic blocks in *Setor Sudoeste*, which is also linked to the characteristics of apartments they occupy: "(People) tend to live alone or in pairs. They are either highly paid employees of private companies, or public officials with a well-defined routine. They generally spend all afternoon at work. They usually don't talk to neighbors nor worry about the security of property". These characteristics would have been crucial for criminal to choose the area as the target of robberies last year. A diverse neighborhood would be more heavily used during all hours of day and every day of the week, which would help to promote safety.

In the process of materializing the ideas of Brasília Revisited, *Setor Sudoeste* has shown that, in general, the *superquadras* are not for the middle class, but rather to the upper class, and that the economic blocks are not intended for low-income population, but were able to absorb part of the housing demand of the middle class. Another information can be drawn from this experience: little variation in the types of buildings available in the neighborhood tends to assign it to homogeneous communities, which do not represent the society in which they operate, and this is not good for the city as a whole.

Setor Noroeste (Northwest Sector)

In face of these lessons, it seemed natural that *Setor Noroeste* should advance its design proposals in order to become inclusive and bring diversity to the neighborhood, effectively seeking to minimize housing demand. The Government of the Federal District - GDF - had at hand a great opportunity to meet the social function of urban property. Unfortunately, as shown below, this has not occurred.

The studies for the implementation of this neighborhood began in 1994 and its first Occupation Plan was approved in April 2000. In it, "the estimate of the population" [80 000 inhabitants] "was based on the assumption that the area would be occupied by a population of middle class" (GDF, 2000). Although the plan said that the fundamentals of the proposal had followed "the guidelines set forth in the document 'Brasília Revisited'", the economic blocks were not contemplated (which, as shown in Figure 2, benefit a much wider range of the middle class: 60% versus 35% in the *superquadra*). This plan was terminated in December 2000.

Setor Noroeste was finally approved as government decree in 2008 (first stage of the proposal). Some alterations to the Occupation Plan of 2000 were made, which resulted in the Urban Design Project of 2008, among which a decrease in the size of the population to 40,000 inhabitants (20,000 in the first stage). Other features, however, were maintained, like the fact that the district does not contemplate the economic blocks. The Descriptive Memorial of the Project also says that "the population estimate was made based on the assumption that the area will be occupied by middle class." This "assumption", which comes from the 2000 plan, has not clarified its origins in the literature for this work. One would imagine that it was based on the values of the housing deficit in the District.

The Environmental Impact Assessment / Environmental Impact Report (EIA/RIMA – a document whose approval is essential to the achievement of the district as proposed) states that "housing demand in the DF is not measured by income range". However, it is important to notice that in the website of the Ministry of Cities, the latest annual report on Housing Deficit in Brazil is easily available, in which all the housing demands of the DF are quantified by income.

The housing deficit in the Federal District in 2007 was 105,202 households, distributed as follows:

Income (SM)*	up to 3 2	between 3 and 5	between 5 and 10	more than 10 > 20
Class**	poor	lower-middle	middle	high-middle ch >
Deficit	84,5%	8%	4,3%	3,2%
Households	88.896	8.416	4.524	3.366
People***	275.578	26.090	14.024	10.435

Table 1 – Percentage distribution of urban housing deficit by income ranges in average monthly household in the Federal District (Source: Ministry of Cities, 2009). The same report says that in 2007 there were 40,470 vacant homes in conditions of be occupied and under construction in the DF.

* Family income indexed by Minimum Wage - SM (SM 1 ≈ USD 190 in April 2007);

** Definition of income classes according to Nunes, Brasilmar, quoted in Holanda, 2010;

*** The average family is composed of 3.1, considering one family per household. This approach excludes the voluntary cohabitation.

According to the EIA/RIMA, even though the “problems associated with the housing shortage for middle class in its various strata are notorious”, there’s no denying that the deficit figures for the lower income range are much greater. The extensive document cites the text of Lucio Costa regarding economic blocks only once, and it does not comment any further. It merely said that *Setor Noroeste*, for being inserted into the perimeter of heritage area of the city, should follow the recommendations of the Brasília Revisited and concludes: “the principles that guided the development of the plan of Brasília were therefore followed.”

The neighborhood has 825 hectares and is thus divided into: Burle Marx Park (300 hectares); housing sector (275 hectares) and the expansion area (250 hectares). The housing sector is basically divided into 20 *superquadras*, five local commercial areas with mixed-use buildings, and a regional commerce area, with part of its buildings also being of mixed-use. The population to be contemplated is of approximately 40 000 people, out of which 90% will live in the *superquadras* (Figure 3). In the area where the neighborhood will be built, there is a group of native indigenous people who claims to have resided there for more than four decades. According to the media, some of the natives are requiring a millionaire compensation for leaving the premises, but others will not negotiate: they want to own the land, as they would be entitled to, according to federal law. While there is no agreement on this issue, the natives are being treated by GDF as invaders.

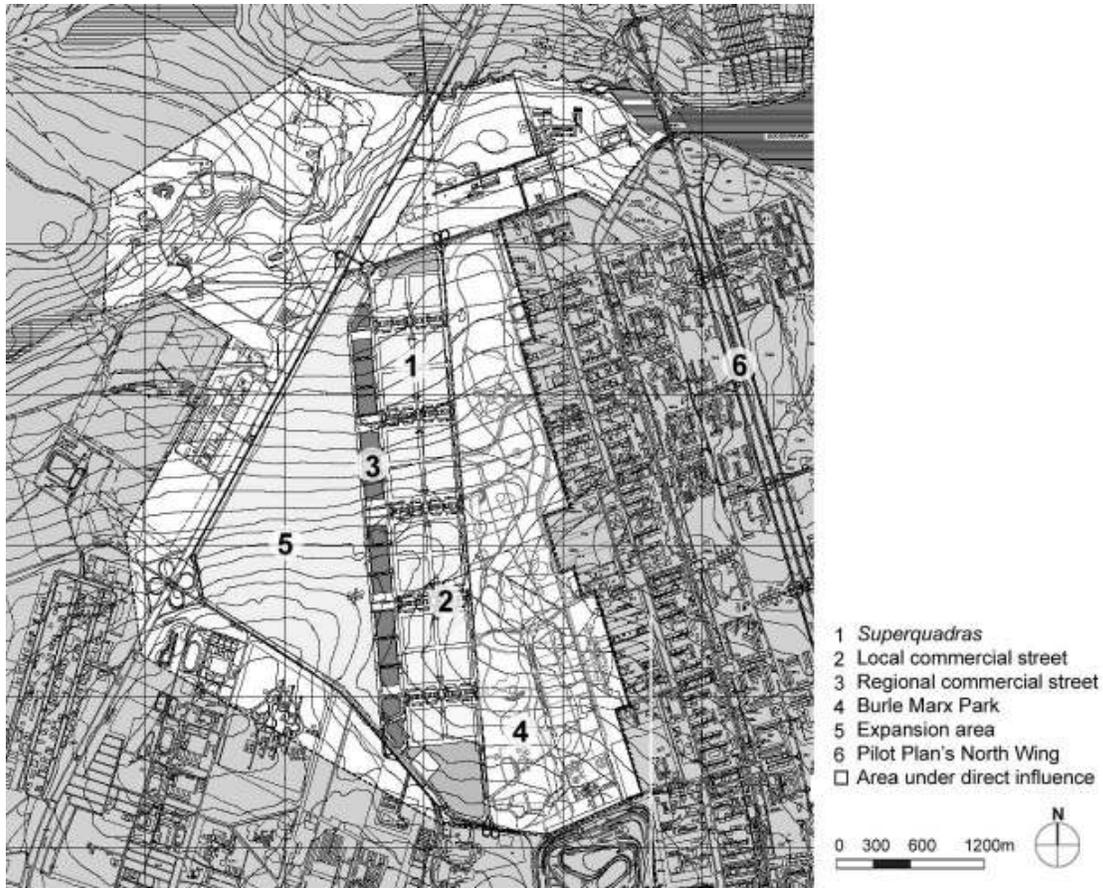


Figure 3 – Proposed Setor Noroeste.

The Descriptive Memorial Project makes no reference to the economic blocks, stating only that “the urban design concepts and guidelines adopted provide, as much as possible,

typological and morphological diversity, as recommended by the document 'Brasilia Revisited', prepared by architect Lucio Costa". This alleged "typological and morphological diversity" will be discussed a little later.

Green Neighborhood

Perhaps the main difference of the currently proposed *Setor Noroeste*, regarding the 2000 proposal, is the concept of green neighborhood, which was added the concept of the enterprise. TERRACAP (government real estate developer) has developed a Manual of Sustainability, which was distributed to all companies who acquired land in the neighborhood. It "aims to establish sustainability strategies for *Setor Noroeste*, following the LEED (Leadership in Energy and Environmental Design - Neighborhood Development) criteria, prepared by the USGBC (United States Green Building Council), for obtaining certification". This idea is explored in all promotional material and sales related to the neighborhood.

In the Manual, there are several requirements which materialize in practices and decisions not only desirable for *Setor Noroeste*, but for any real estate development, in this or in any other city. After all, it would not be consistent with all the current knowledge available, that any building be constructed from now, without buying materials of certified origin, or providing for the use of rainwater, for example. Similarly, neither would be consistent today, to implement an urban space which does not seek the maximum preservation of native plant species, or does not guarantee total accessibility to the citizen.

Setor Noroeste meets several prerequisites of the LEED rating system due to its location (near a consolidated area, served by infrastructure, not inserted in area of environmental protection, or agriculture, or subject to flooding). There are also prerequisites that are met by its urban project: design for an "open community" (which is exactly the concept of *superquadras*), with priority to pedestrians and "compact urban density" (i.e., density of more than 7 housing units per acre, a rate easily attained by multifamily residences or even individual ones). There are also those requirements that must be met by contractors, such as the "control of pollution generated by construction activities, as well as a number of items that relate to "design, marketing, implementation and operation of the buildings in *Setor Noroeste*".(TERRACAP, 2009)

The construction sector in the Federal District promoted a seminar in 2009 to consider the items of the Manual of Sustainability. During the event, the availability of technology or methodology that met the proposed solutions, the deployment costs and the current conditions of the construction industry chain were analyzed, in order to verify the feasibility of implementing the specific requests made by the Manual. The results were compiled into a document of great value to understanding the implications of TERRACAP's requirement. Among the 169 items contained in the Manual, 39 were not analyzed because they required clarification. Of the 130 evaluated, 12 had no solution available, 64 have average implementation cost, two have high cost of implementation and 23 are applicable, but with reservations, within the chain of the construction industry (SINDUSCON, 2009). The construction industry therefore is able to meet most of the requirements from the Manual of Sustainability, but there will be additional costs linked to it.

The problem is that, these additional costs are being handled by the contractors themselves. Contrary to what occurs in other cities worldwide, where the government sells its land for lower prices for businesses that have strong social or environmental character, TERRACAP did not reduce the price of land in *Setor Noroeste*. The area being one of very few in the vicinity of the Pilot Plan for the expansion a privileged location, the value of a plot of land there reached exorbitant prices.

In the first public bidding, in January 2009, the minimum price of the lot for residential buildings was 10.3 million BRL (5.15 million USD). In January 2010, the value had risen to 15 million (7.5 million USD). As a consequence, only to pay for the investment of buying the lot, the builder has to charge 2300 BRL (1,650 USD) per square meter of property. The president of the Construction Industry Union in the Federal District stated that the high value of the residential units is due: to the high cost of land, to items of sustainability that make the construction more expensive and the high luxury finishing materials. "*Setor Noroeste* was not designed to be a low income neighborhood," he concludes (Mader, 2010).

This becomes even clearer when one observes the advertisement material of property for sale in the neighborhood. From them, one realizes that all the buildings, without exception, are aimed at people with high incomes. The finishes are expensive, and a number of additional items are added to the housing units, as a way to justify its high cost, making it more exclusive: biometric access control, spa, pool, game room. It is pertinent to use the word "exclusive": these items lead people to use less the public space and therefore interact less with the neighborhood residents who are not their neighbors in the building. As a result, the square meter of a flat in *Setor Noroeste* is marketed today by at about 8,000 BRL (4,000 BRL).

However, TERRACAP and those responsible for the project claimed not to be sure of the gentrification of the neighborhood. They said that *Setor Noroeste* wouldn't be a "rich ghetto", and pointed out the mixed-use buildings in commercial block as "the great asset to diversify options for homeowners" (Mader, 2009). However, the price per square meter there is "equivalent to the properties of three and four bedrooms sold in the neighborhood" (Amorim, 2009). Some apartments are even larger than the ones advertised for the *superquadras*, and its buildings have elevators and underground parking (a minimum ratio is one vacancy per unit).

Another matter worth mentioning regarding the mixed-use buildings is the proposed solution for the local commerce area. The building type adopted in the sector is the same as in the Pilot Plan's North Wing, in which commercial buildings have no rear, contrary to what is seen in the South Wing. The way the commercial buildings are arranged in the North Wing, there are shops facing the street - usually more valued, of the higher rent price - and shops geared to the side and to the residential block. The latter are generally less valued, of lower rent price, because they are less visible, and this means that small businesses can establish themselves there. The local commerce of *Setor Noroeste*, seeking to exploit all of the facades, may hinder the deployment of a diversified trade that caters to different audiences: products and services tend to be less accessible if they are located in highly visible areas.

Here we return to the issue of "typological and morphological diversity". Although the shape of the buildings of *Setor Noroeste's superquadras* may be rectangular or square, and although their apartments may have one, two, three or four bedrooms, be duplex or not, have a private penthouse or a shared terrace, this "diversity" does not change significantly the price of the square meter. This happens because its main features are the same: all six floors buildings, with elevators and pilotis, luxury finishes, special environments for collective use and many parking spaces (the average is two vacancies per unit).

The same consideration applies to the buildings of the local commerce. The fact that a building is of mixed use does not necessarily mean that it will offer properties at lower prices. The main features (underground parking garages, elevators, units of good size and good commercial location) appear to have been enough to ensure that prices reached their present level.

Architecture and social diversity

A study conducted by Holanda in 2007, accounts for the close correlation between architecture and the distribution of people with different income levels in the city. That is, it is not quite correct to say that the rich live in the center of Brasília and the poor live in the suburbs. Local features, of both the neighborhood and the buildings, add up to more global attributes (related to the metropolis), such as "distance from the CBD", and contribute to better distribute the population in the territory, without producing ghettos. In this study, eight areas in the Federal District were analyzed, five of which are within the heritage perimeter and contain standardized type of buildings: "noble" and "economic" *Sudoeste* (shown in the graphs of Figure 2), *Superquadra* 103 south and JK buildings (shown in Figure 4).

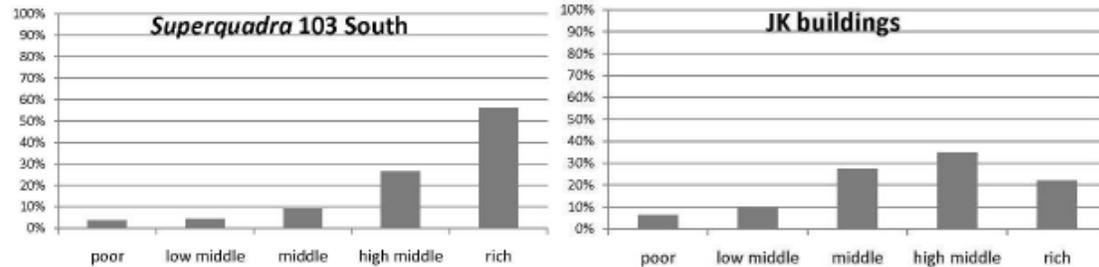


Figure 4 – Graphs for *Superquadra* 103 south: six story buildings over pilotis with elevators, but not all have underground parking; and JK buildings: three story buildings without pilotis, elevators or garages (adapted from Holanda, 2007)

The study strongly indicated that the buildings which differ from the ones in the *superquadras* are precisely the ones which favor a greater diversity in the center of Brasília. This study investigated the income profile of those living in other areas of the city and linked it to the characteristics of buildings and the site of its implantation. All these buildings have a simple façade, without any sophisticated materials. In the case of multifamily buildings, the common areas are limited to circulations, with no other rooms for the enjoyment of the residents. The lack of underground garages leads to a competition between customers and workers for the surface parking on the ground floor (Figure 5).

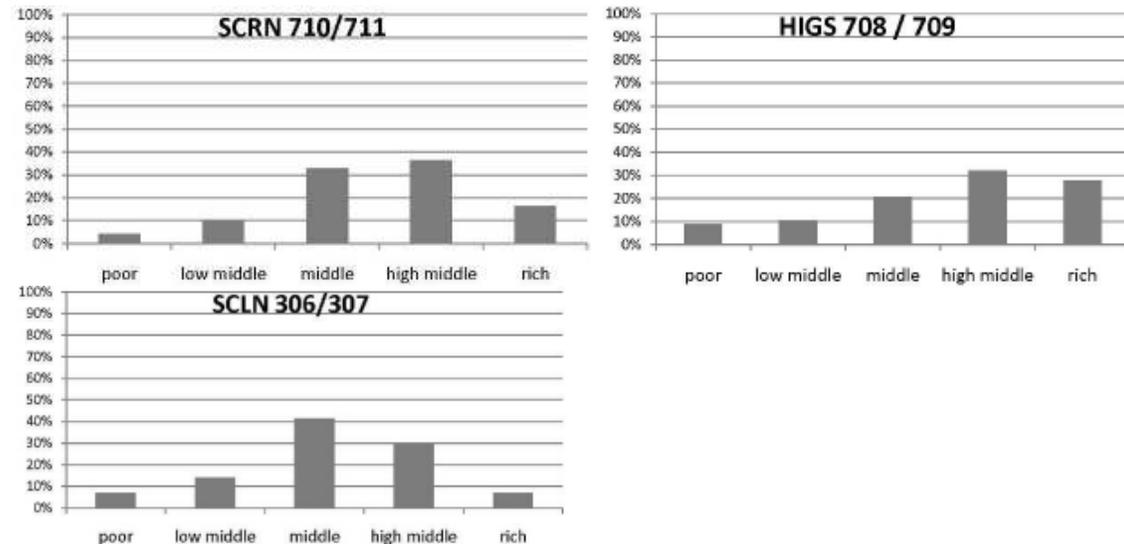


Figure 5 — Charts for: SCRN 710/711 (mixed-use buildings, five stories high, no underground parking and, in some cases, with elevator); HIGS 708/709 (single-family detached housing with plots of 8x20. Some rows of houses have no parking in the front); SCLN 306/307 (local shopping street: mixed-use three-story buildings, no elevator or underground garage) (IBGE, 2000)

Speculations

Unlike what is indicated in EIA/RIMA, which considers the area of direct influence of the

venture as going only slightly beyond its boundaries, it is believed that the new district will have direct implications for the metropolitan structure. Thus, if the available data shows the undesirable sociospatial situation of the Federal District, and if research and surveys suggest options that can be implemented in order to minimize its negative implications, what is the rationale in creating a neighborhood that segregates the population and further consolidates a situation which goes in the exact opposite direction from sustainable development, sharpening the center-periphery dichotomy?

In light of the facts presented, this paper aims to spark the debate about the diversity in the center of Brasília, anticipating the clear tendency for new neighborhood to become a rich ghetto. It recognizes the importance of this enterprise to the context of the whole Federal District, and that is why the proposal is not limited to the population of 40.000 inhabitants. Such project should reject the current pattern of growth which entails urban sprawl of low density, by offering a scenario of greater density in the center as an alternative to urban reorganization of the federal capital.

The proposal considers: 1) the first phase of *Setor Noroeste* as a fact, as it is already being implemented, 2) the possibility of settling the natives where they are today, with the consequent relocation of *superquadras* to include them, 3) the necessity to make connections with the surrounding areas of the city and its main flow channels to create important axis of integrated public transport, 4) the possibility of occupying the whole area for expansion. From there, it speculates on the final character of the neighborhood, after full occupancy, in terms of level of income of its residents.

The ability of this neighborhood, as a whole, to help reduce the housing deficit, to balance the metropolis and to promote social diversity is believed to be strong and should be emphasized. This paper does not aim to advance the discussion to other important aspects of the urban project, which would require a multidisciplinary team and a different focus from that proposed in this article. Thus, among the intervention guidelines, considering that the expansion will adopt all the needed measures to ensure its low environmental impact, we can point out:

1) Design a neighborhood that offers diversity of housing options for people of different income levels. Use the current architectural language, building solutions and urban design of the city, according to research presented, but in a different urban environment. This will favor the identification of the sector as part of a whole, while respecting the features of the heritage area, by not using the same urbanistic types of the Pilot Plan outside their original context (Holanda et alli, 2008).

2) Design a neighborhood completely focused on the pedestrian, the public transport and cycling. That means discouraging the use of private transport, making it deliberately slow, cumbersome and inconvenient. In the case of a city that greatly favors the individual transport, and has a high rate of motorization (2.3 inhabitants per vehicle), the lack of garages or parking spaces nearby seems to be an important factor for bringing down the price of property. Add to that the possibility of limiting the number of vacancies per building to a maximum of 50% of their residential or commercial units, not allowing free public parking, or underground garages, and there is a chance the district would be more accessible for low-income population. The environmental benefit of a housing development which is not focused on the private car is a plus.

		
<p>Type 1 Economic buildings: 3 stories high over pilotis, elevators or underground parking.</p>	<p>Type 2 JK Buildings: 3 stories high without pilotis, elevators or underground parking</p>	<p>Type 3 Single-family detached housing with narrow plots, without garages</p>
		
<p>Type 4 Mixed-use buildings: 3 stories high, with commerce on ground floor, no elevators or underground parking</p>	<p>Type 5 Mixed-use buildings: 5 stories high, with commerce on ground floor, no underground parking. Elevators are a possibility.</p>	<p>Type 6 All <i>Setor Noroeste</i> buildings, mainly 6 stories high over pilotis, with elevators and underground parking</p>

Figure 6 – Building types chosen to compose the neighborhood expansion (pictures of types 1, 3 and 6: Holanda, 2007)

The result is registered in figure 7 and summarized in table 2.

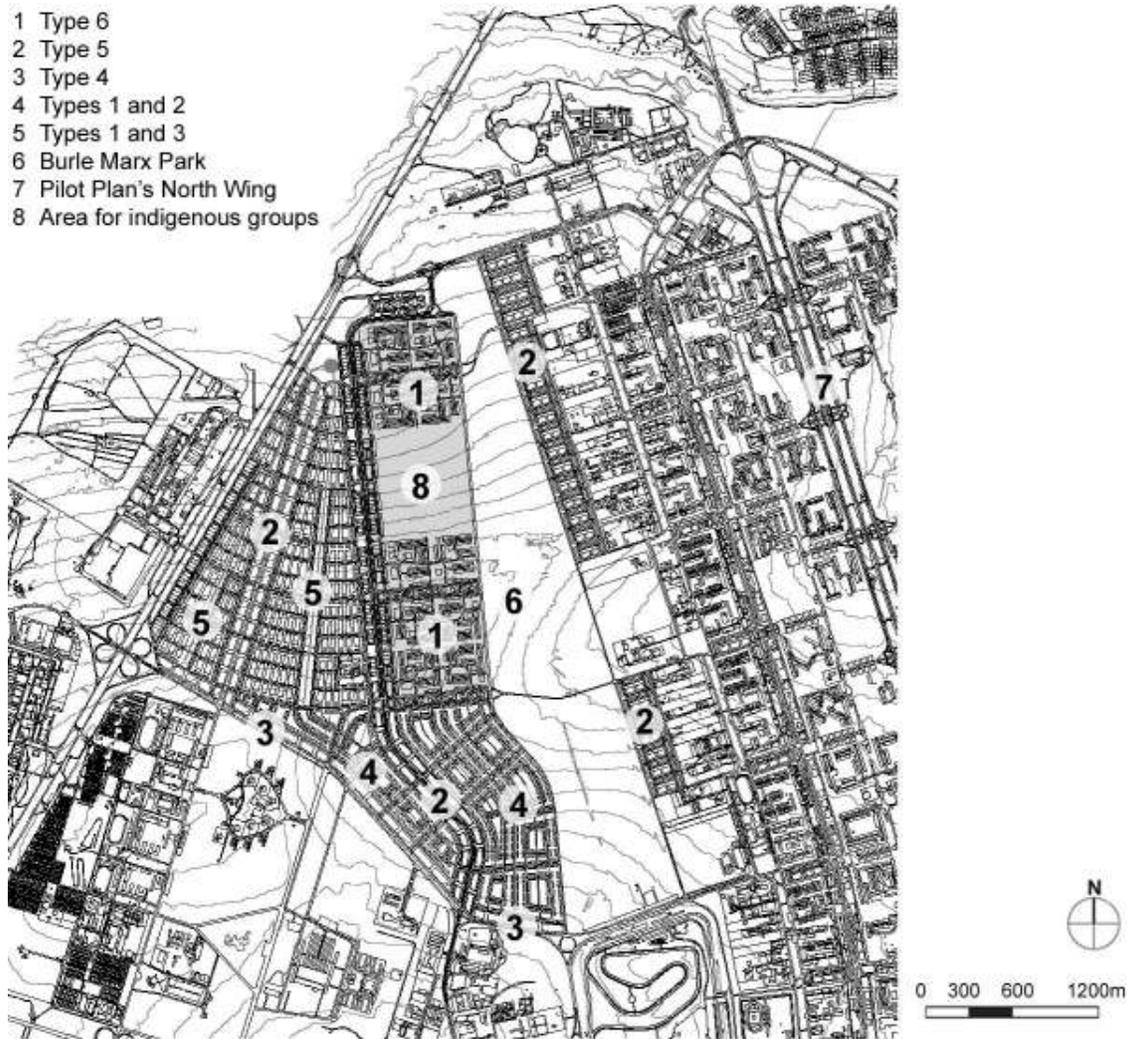


Figure 7 – A possible expansion for Setor Noroeste. Types alternate and interpenetrate in the design of the neighborhood. The 2-type blocks on the east intend to better define the limits of Pilot Plan's North Wing and to fill rear spaces on the back of existing plots, in order to give the park a front façade

income layers

types	buildings	households	poor	low- middle	middle	high- middle	rich	popul.
1	543	7819,20	259,60	394,87	1190,08	2993,19	2981,46	24240
2	275	3960,00	254,63	375,80	1083,06	1378,08	868,43	12276
3	2992	2992,00	267,78	315,36	621,44	955,94	831,78	9275
4	120	3471,43	246,47	493,29	1441,68	1043,16	246,47	10761
5	444	14685,30	607,97	1518,46	4810,90	5317,55	2430,42	45524
6		6451,61	138,06	120,00	467,10	1521,94	4205,16	20000
total	4374,0	39379,54	1774,52	3217,78	9614,27	13209,86	11563,71	122077

Table 2 – Simulation of Setor Noroeste resident families, in terms of level of income, after the proposed expansion. For the formulas, an average apartment of 50 m² was considered in types 1, 2 and 5; an average apartment of 35 m² was considered in type 4; and an average plot size of 6x12m was considered in type 3. The figures of type 6 (Setor Noroeste's superquadras and other building types) were calculated using the "noble" Sudoeste profile and the population data.

Conclusion

The comparative charts presented in figure 8 summarize this paper objective: to point a possible path for the social diversity of Brasília, especially in its most valued areas. Many variables have influence on the distribution of people of different incomes in the city, the “market” being one of them. However, it is evident the main role architecture play on this matter. Recognizing it is the first step for learning from our cities’ configuration and to use this knowledge for equity and sustainability.

The proposed expansion has raised the district population from 40.000 to 122.000 inhabitants (it is important to notice that, originally, it was 80.000). The density became higher: from 48,5 inhabitants/hectare to 148 inhabitants/hectare, considering the whole area. This will bring environmental implications concerning, for instance, water supply or sewage treatment, as any other neighborhood, located 30 Km away from the city center would. However, a compact and varied community, located in a place where infrastructure already exists, close to the CBD, designed to produce low environmental impact, will benefit the whole metropolis. It will avoid expansion in natural or rural areas, favor the use of public and non motorized transport and increase the use of existent public places.

From the methodology used and based on the choices made here, this brief speculation has shown it is possible to outline a more balanced scenario for rich and poor within the metropolis, when trying to reach a truly ecological neighborhood: one that fulfills the social function of the urban property.

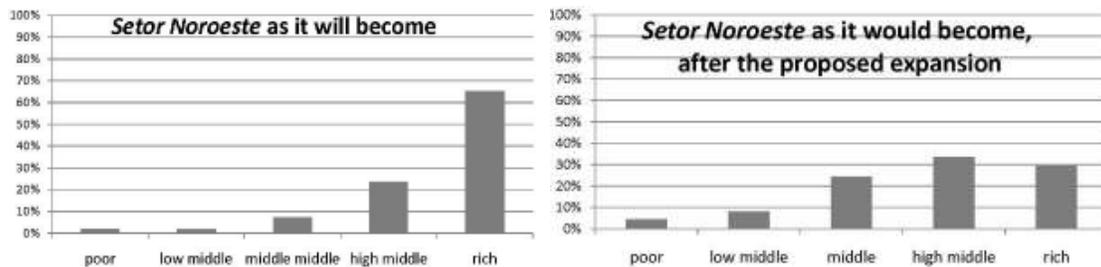


Figure 8 – Graphs of income levels of Setor Noroeste as it will become and as it would become, after the proposed expansion. The amount of rich families decreases from 65,2% to 29,4% while all the other income layers increase: poors from 2,1% to 4,5%, low middle from 1,9% to 8,2%, middle from 7,2% to 24,4% and high middle from 23,6% to 33,5%.

References

- Alves, Renato (2009) “Bicho-papão do Sudoeste”, Brasília: Correio Braziliense, 17/07/2009
- Amorim, Diego (2009) “Lojas de R\$1.6 milhão”, Brasília: Correio Braziliense, 17/11/2009
- Andrade, Liza (2009) “Princípios de Sustentabilidade para Reabilitação de Assentamentos Urbanos” Reabilitação Ambiental Sustentável Arquitetônica e Urbanística, Brasília: FAU/UnB
- Costa Lucio (1987) “Brasília Revisitada” Plano Piloto 50 anos: cartilha de preservação, Brasília: IPHAN.
- Distrito Federal (2000) “Decreto nº 21.132. Aprova o Plano de Ocupação do Setor Noroeste, na RA I e dá outras providências”, Brasília: Diário Oficial da União, 14/04/2000
- Distrito Federal (2008) “Decreto nº 29.409. Aprova o Projeto Urbanístico de Parcelamento do Setor de Habitações Coletivas Noroeste na RA I”, Brasília: Diário Oficial da União, 20/08/2008
- Fundação João Pinheiro (2009) *Déficit Habitacional no Brasil*, Brasília: Ministério das Cidades, Secretaria Nacional de Habitação
- Holanda, Frederico (2007) “Be aware of local properties” Proceedings, 6th International Space Syntax Symposium

- Holanda, Frederico et alli (2008) "Integration through city space-form" Proceedings, Design Decisions Support Systems
- Holanda, Frederico (2010) *Brasília – cidade moderna, cidade eterna*, Brasília: FAU UnB
- IBGE (2002) *Base de informações por Setor Censitário. Censo 2000. Resultados do universo. Distrito Federal*. Rio de Janeiro: Fundação IBGE (CD-ROM)
- IBGE. (2007) "Contagem da População 2007 e Estimativas da População 2007, Brasília: Diário Oficial da União, 05/10/2007
- Mader, Helena (2009) "Terracap prevê imóveis acessíveis no Noroeste", Brasília: Correio Braziliense, 16/01/2009
- Mader, Helena (2010) "Unidos contra o preço alto", Brasília: Correio Braziliense, 13/01/2010
- SINDUSCON (2009) *Análise do Manual de Sustentabilidade*, Brasília: Serviços.com
- TC/BR – Tecnologia e Consultoria Brasileira S/A (2005) *EIA/RIMA da Área de Expansão Urbana Noroeste*, Brasília: TC/BR
- TERRACAP (2009) *Manual Verde – Noroeste*, Brasília: TERRACAP

Gabriela de Souza Tenorio, University of Brasilia, Brazil

Reinaldo Germano dos Santos Júnior, Federal University of Rio Grande do Sul, Brazil¹

¹ Illustrations with no indication of source have been prepared by the present authors. English translation by Patrícia Mamede. The authors thank the invaluable collaboration of prof. Frederico de Holanda.