

# The Baixada Fluminense Highway Project

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## LOCATION AND GENERAL DATA ON THE AREA

Within the new global economy, Latin America has been considered a new economic frontier. Brazil has been a leader in this process. Rio de Janeiro Metropolitan Region is the second largest economic center in Brazil and has a population of 12 million. The fastest-growing area in the Metropolitan Region is the lowland area known as Baixada Fluminense, where 3 million people live in several districts.

## SUB-ZONES

The UGF work team has developed a three-step methodology: preliminary data basis, impact study and proposal. The data basis founded the impact study, which, in turn, provided guidelines for the

Metropolitan Area of Rio de Janeiro		
Rank	City	Population
1	Belford Roxo	337,699
2	Cidade de Deus	895,943
3	Guapimirim	28,005
4	Rebouças	181,399
5	Itaguaí	113,019
6	Itaperuna	186,976
7	Itaíba	103,244
8	Miraportas	17,822
9	Maricá	46,542
10	Niterói	157,866
11	Niterói	435,656
12	Novo Iguaçu	786,218
13	Paracambi	36,351
14	Paracambi	124,291
15	Rio de Janeiro	4,473,903
16	São Gonçalo	778,831
17	São João de Meriti	424,569
<b>TOTAL</b>		<b>17,527,256</b>

Source: IBGE - 1996

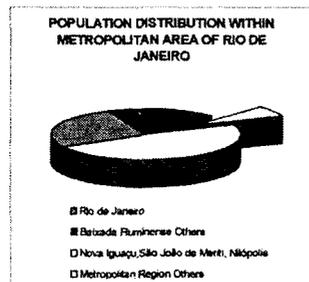


Fig. 1. A stretch of green areas amid the urban sprawl of the Baixada Fluminense is currently cut through by an electric power transmission corridor protected by a "safety strip" one hundred meters wide. Yet current pylons are to be replaced in two different ways: either by new and closer pylons or by underground cables. Both strategies will provide that great lengths of land become available. The current "safety strip" will be reduced from 100 to 50 meters.

The state government is to build on part of this magnificent site a twenty-meter-wide, tenkilometer-long, six-lane highway to connect the region to the state capital. The main goal is to organize the intensive automobile and bus traffic in the region. Yet the social concept behind the project is also to foster a variety of land use in order to meet the interests of local communities along the way and fill gaps in public facilities.

Always concerned with social issues and focused on the enhancement of research and teaching, the School of Architecture and Town Planning at Gama Filho University has signed an agreement with the State Bureau for the Development of Baixada Fluminense - SEBAMA. The university work team has put together reference data to analyze urban impacts and eventually develop alternatives to the project in progress. Baixada has a wide range of emerging problems due to the combination of rapid growth and social inequality that leads to a lack of services in this unprivileged area. Job offerings are also lacking, which makes a large part of the population to commute daily to downtown Rio by bus or railway.

final proposal. The data were collected by categories: environmental aspects, land-use, urban morphology, urban image, and transportation systems land values and urban infrastructure. Through these categories, it was possible to assess problems that are local in scope while at the same time identifying standards that recur along the entire length of the new thoroughfare. This led to dividing the area into 8 sub-zones.

The "safety strip" is crossed by a great number of roads as it runs through areas with dense commercial or residential settlements and quite different typologies. Some areas offer basic urban infrastructure whereas favela slums predominate in most of its borders.

## CONCLUSIONS

- Expected traffic will be intense, day and night, increasing sound and air pollution. On the other hand, frequent traffic-jams on local streets will be reduced.
- Currently, the urban landscape reflects the complexity of uses, in a rather confused manner, along the commercial streets, while its residential sectors offer a monotonous pattern. As a new vector in urban expansion, a construction boom is likely to happen on both borders of the highway. The contrast between old and new buildings will be intense, particularly in the lower-income areas.
- Demands for public facilities and social services will increase rampantly.

Architecture has an outstanding role to play, as it creates the environment of cities, operating simultaneously on various scales, and shaping the quality of social and intellectual life of the popula-

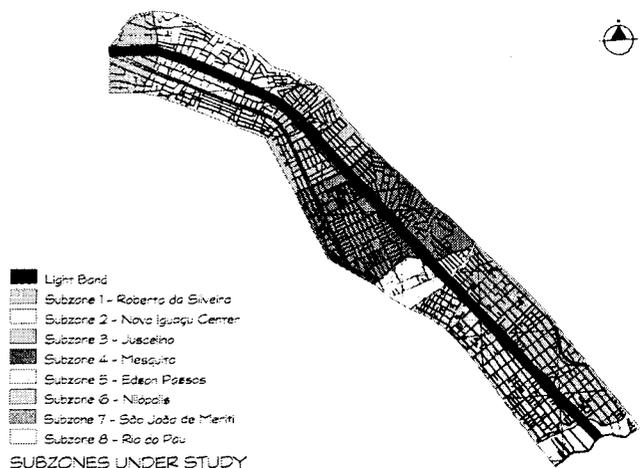


Fig. 2. Subzones under study.

tion. The Baixada Fluminense Highway is the first large-scale project in the region that is fully planned. Thus it should include not only changes in the entire transportation system in the region but also appropriate landscape treatment.

## PARADIGMS

The impact of the construction of a highway should not be underestimated from a town-planning viewpoint. Studies are often limited to the analysis of its basic function: to link two places. Transformations of a different scope and nature are often not taken into consideration. At local level, the road that brings two places closer may help fragmenting the urban tissue, a factor often noted along road and railway corridors. This is why the possibility of creating an expressway was eliminated. Analyzing roads, which have been laid as high-speed thoroughways, segregation was observed rather than urban integration as opposed to community-oriented thoroughfares with many halting points and no planning.

The birth of the highway may well lie in the Parisian boulevards created by Haussmann, but it was Le Corbusier who promoted the total dichotomy between cars and pedestrians. To the network of parks proposed by Olmsted to New York City at the turn of the century and the 1930's RPA plan were added the parkways and expressways idealized by Robert Moses in the 1950's. In 1960, the road axes in Brasilia symbolized the dream of the ideal city come true. The 1970's welcomed L.A. expressways as well as the ring roads, reproduced all over the world, from Rome to São Paulo, and have drawn an asphalt hoop around those cities. In the 1980's, La Défense, and its local ring road, created an off-town downtown Paris. But expressways build no dialogues with cities. To the contrary, they seem to draw away from this.

Due to its privileged site, Rio has ring roads along the shoreline. The view is great, but walking access to the beach is compromised. Still in Rio, Avenida Brasil radically segregates its two sides without eliminating the risk of traffic jams. This is an intervention with no integration, as the RedLine Expressway. Both are so hostile to the areas through which they run, and even to the city as a whole, that a special police force has been set up just to patrol them.

However, there are examples of roads within park areas, which are very successful. In New York's Central Park, different levels provide that the park does not adversely affect the thoroughway, while the thoroughway does not affect the Park, meaning they do not clash, and the flow of automobiles is not compromised. In Rio de Janeiro, the Aterro do Flamengo is designed to offer a series of interesting views as automobiles drive through it, while at the same time establishing a certain independence between the park and the thoroughway.

The UGF work team decided, thus, to eliminate the possibility of an expressway and designed a contemporary version of a parkway serving as an integrating element between its two borders fragmented today by the "safety strip." This paradigm seemed to translate the conclusions of the urban impact study more coherently and fits better to the comparative analysis of regional highways with intensive traffic in the Metropolitan Region, in Brazil and abroad. Even the name of the proposal was changed from Baixada Fluminense Highway to Avenida da Baixada. It brings to mind relationships between route, length, flow and urban image from the viewpoint of car drivers, bus passengers and pedestrians to whom is to be provided the remarkable experience of traveling through an area conceived as a dynamic architectural space.

## PROPOSAL

The route of the new Avenida da Baixada derives from the proximity and boundary relationships of built-up areas, in accordance with the impact study and taking into account the potential of existing land use. Areas where local shops have already occupied either side of the "safety strip" will benefit from the increased flow of vehicles,

whereas predominantly residential sectors alongside this new thoroughfare would benefit more from preserving the current character of the land, with extensive green areas. This conclusion led the work team to an alternative, which meets the vocation of each section and nurtured the idea of creating a park of a size unknown in this region.

Integration between park and avenue, while preserving a certain flow of traffic, resulted in a winding route guided by the specific characteristics of the land, and more particularly by the activities to be encouraged. In order to determine the points where the Avenue runs closest to the edge of the Strip, consideration was given to the attraction created by current commercial areas, which will tend to expand. The basic idea is that the shopping and business areas act as magnets drawing the road towards them and releasing the other side of the Strip for predominantly residential use. This decision made it possible to set aside well equipped leisure areas close to homes along the Strip, what will provide an immediate improvement of the quality of life of local residents. However, the main goal is that this improvement be reflected in a future enhancement of urban standards throughout the entire length of the Strip. Similarly, this will foster economic development already under way and open up business opportunities within the areas of influence of the Avenida da Baixada.

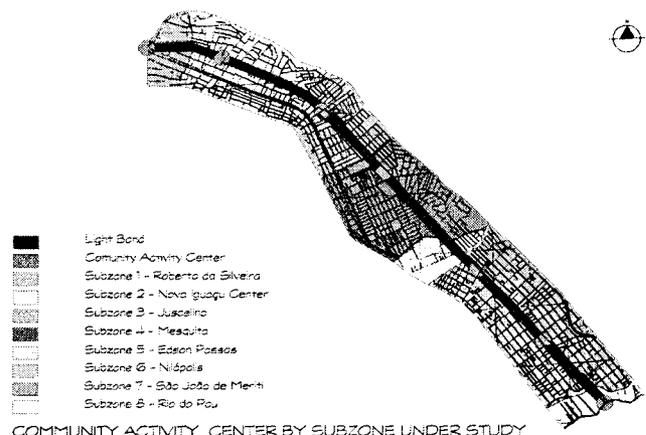
In addition to creating a recreational area, the park would ensure that the avenue is not a strip designed solely for vehicles, but also for the public at large. The green belt will neutralize much of the negative effect of intensive motor-vehicle traffic and may well add up to environmental improvements in the area, acting as a filter for pollution.

Taking into account all the construction work required by the road project, possibilities also include improvements in the urban infrastructure in order to solve one of the crucial problems caused by disorderly settlement of this area over the years: basic sanitation. It was thus decided to suggest that a network of stabilization ponds be open along the length of the park, with the support of a technical service gallery underground.

The global proposal also includes a main building and six community activity centers. These Centers form a horizontal complex with specific functions, constituting a virtual extension of the Main Building. The diversity of these functions is related to the demand detected in each sub-zone during the previous phases. This means that the project is not creating only another transportation corridor or urban park, but it is instead pointing the way to a more promising future.

## DESIGN PROPOSAL

Between the two traffic lanes running in opposite directions is a



COMMUNITY ACTIVITY CENTER BY SUBZONE UNDER STUDY

Fig. 3. Community activity center by subzone under study.

special lane exclusive for an articulated bus system, set up to organize and supply the transportation demands in the region. In order to balance the flow of intense traffic and the integration of both sides of the Strip, it was decided to create community activity centers at points where busy streets cross the new avenue. They would house large bus stations on the ground floor and specific activities on upper floors according to the demand of each sub-zone. Set around two kilometers apart, the community activity centers are located in a way that gently punctuates the length of the avenue, causing buses to slow down as they get near stations and cars to run slower at crossing points.

### CONVENTION CENTER

#### Rio do Pau Sub-zone

This function confirms the global proposal to promote the area and attract business opportunities. The building is located on the border with the city of Rio de Janeiro, and works as the main gate to those who come from downtown areas in the state capital.

### LOCAL COMMERCIAL CENTER

#### Nilópolis / São João de Meriti Sub-zones

Located on the border of these municipalities, the block was divided on the axis of the avenue, with its pedestrian overpass to symbolize the union between them. This responds to the program by setting the convenience stores closer to both sides of the avenue.

### MEDICAL CENTER

#### Nilópolis / São João de Meriti Sub-zones

Reflects the shape of the bus station bellow and opens access to ambulances. The floor plan is structured in sectors and includes an open space with views to the park.

### ECUMENICAL TEMPLE

#### Mesquita Sub-zone

The proliferation of temples of diverse religions within the sub-zone led the work team to incorporate in the project a multipurpose space with a strong symbolic character.

### ELEMENTARY SCHOOL

#### Juscelino Sub-zone

The design creates an elliptical wall on the edge of the building, which circumscribes program requirements. The wall has voids, which provide natural air circulation and different views of the park.

### BUS STATION

#### Nova Iguaçu Downtown Sub-zone

Within the influence of the MAIN BUILDING, which offers several types of service, the first bus station has no complementary use.

### MAIN BUILDING

Located in the core of Nova Iguaçu business district where the Avenida da Baixada crosses the railway, the main building constitutes the starting point of the architectural complex, by referring back to the nonstop flow of automobiles, buses, trains, people,

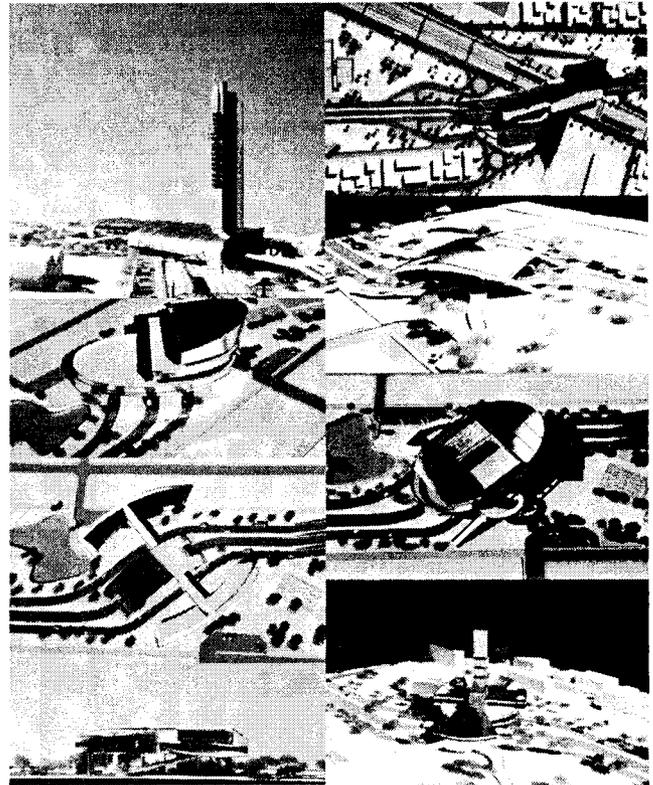


Fig. 4. From top left clockwise: Main building skyline and site plan; bus station; elementary school; ecumenical temple; medical center; local community center; and convention center.

energy and information. A striking volumetric design was selected, resulting from the combination of a long base following the route of the new Avenue crowned by an office tower which will act as a vertical landmark for the entire region.

The base will house an inter-modal transportation terminal bringing together the railroad with a new station, and the special articulated bus lanes with their terminal located here. Passengers in transit can thus make their connections without leaving the building, or can catch one of the various local bus lines routed along the streets running parallel to the railroad.

On the upper floors of the terminal, users of this new system will find services and shopping facilities that include a food court, as well as a public services center bringing together Government agencies of interest to the public at large.

Access to the office tower will be linked to the shopping center, although independent. The tower will be equipped with state-of-the-art communications technology. The concept behind the design of this tower will strengthen the intention of building a focal point for the development of the entire region, not only in terms of urban structures but also providing a gateway for its definite entry into the global data network.