

Urbanity and legibility at Av. Cora Coralina, Goiânia-GO/ Brasil, from Jane's Walk movement

Ana Farias, Liza Andrade, Gabriela Tenório

Post-graduation program, FAU/UnB, REABILITA

carol@sobreurbana.com

lizamsa@gmail.com

gabrielastenorio@gmail.com

Abstract

The advent of the industrial revolution raised the claim of the urbanism as a discipline responsible for the creation of a new social and spatial order. Throughout the twentieth century, the progressive urbanism was applied both in interventions in consolidated urban areas as in the construction of new cities. Brazil was a fertile territory where some cities, as Goiânia, were built under influence of the industrial city and garden city models. South Sector, a residential district of Goiânia, was inspired by the picturesque organic design of the garden city, with isolated houses, green areas and culs-de-sac. However South Sector suffered interventions that contradict its own nature and undermine its vitality, such as the implementation of Av. Cora Coralina in year 2000. Designed to relieve traffic problems in the region, the avenue was built by cutting culs-de-sac and passing through green areas, bounded by closed, uniform and passive edges, unattractive to walk or stay. Monotonous landscapes like this generated throughout the twentieth century a series of overwhelming criticism of the model-based urbanism, for ignoring the physical and cultural reality of the intervention areas, resulting in residual public spaces due to zoning and standardization. Still at the end of the World War II, noting the insufficiency of the planning, the discipline of urban design emerged, with an interdisciplinary humanistic approach, working the space on local scale and associated with other reality aspects. Since the 60s, authors like Jacobs, Lynch, Appleyard, Whyte, Gehl, Hillier and more recently Kohlsdorf, Holanda and Tenório, these with studies on the morphological dimensions of the places (DIMPU - FAU/UnB), intensified researches on the complexity of the relationship between space and society, forming the conceptual framework of legibility and urbanity. This research will demonstrate a method of evaluating the morphological performance of the public space at Av. Cora Coralina, regarding its urbanity and legibility, validated by the Jane's Walk movement, a community tour inspired by the ideas advocated by Jacobs on the city streets vitality. During the Jane's Walk conducted in the research area in December 2013, the participants revealed not feeling welcomed in that environment and believing that its construction worsened the quality of the neighborhood. Starting from the user's perception and urban design guidelines on pedestrian scale, we elaborated a diagnosis on the study area and pointed paths for its rehabilitation, aiming to provide attractive spaces for walk, stay and life in society.

Key words: Urbanity; legibility; walkability; Jane's Walk; morphologic dimensions.

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Introduction

The logic of producing space based on purely functional and economic demands, undermines the city attributes that justify life in society: the fertile environment of exchanges and the emotional security of life in community.

The city is the key to the sustainable development of the planet. Considering sustainability in its various dimensions, we conclude that it depends both on the ability to develop new technologies and to live in harmony with nature and in community. This harmonious experience can be achieved through codes learned long time ago in the process of living in society: civility, solidarity, tolerance, respectful integration between equal and different.

All these codes can be gathered under the concept of urbanity - the condition of social life in the city. The city is the physical and spatial revelation of social organization, so the way people interact in it directly affects its shape and is also conditioned by it.

Since the mid-twentieth century, several authors have investigated the interactions between space and society, treating them as processes of cause-effect. Choay states that the practices of progressive urbanism, supported by CIAM - International Congress of Modern Architecture - sparked lots of criticisms uttered outside the specialized environment of urbanism. The criticisms stated that the model in vogue despised the physical and cultural reality of the interventioned areas, the zoning and standardization resulted in monotonous landscapes and residual public spaces and that these and other factors invisibilized community connections between individuals (CHOAY, 2007).

Brazil, in its recent history, built several cities from scratch. Especially between the late nineteenth and mid-twentieth century, during the construction of Belo Horizonte, Brasilia and Goiania, Brazil lived a urban practice contemporary to the developed countries, using hygienist concepts, the planing and the guidelines of CIAM. However, a few decades later its production had lagged due to political problems, such as discontinued governmental projects and the historical agrarian and social problems inherited from three centuries of colonization. But it was also hampered by the lack of studies on cities, especially regarding its spatial, physical dimension (KOHLSDORF, 1985).

Goiania, capital of Goias, built in the 1930s, witnessed a recent and intense process of densification of its central areas, proliferation of large commercial and residential equipments and simplistic road changes for the vast movement of goods and people. Although influenced by European urban planning, the initial plan showed improvement in relation with the rationalism of CIAM, once it considered the geographic influences on the urban layout of the site. Moreover, Goiânia already had in its original plan, conceived in 1935, particular concerns of urban planning, especially for the landscaping and the determination of having a technical sector in the municipal administration responsible for implementing the city (KOHLSDORF, 1985).

However, neither the original plan nor the successive planning directives drawn up over its eighty years, could prevent Goiania to face today challenging urban problems, being a good example of the failure of the planning. Therefore, Goiania is a fertile ground to apply techniques of urban design, to adjust on the local scale the good intentions that fill the planning directives.

The principles of urban design focused on city for people can be a transforming tool for the city and promote its urbanity, especially if focused on their topoceptive aspects (ability to be identified and provide good guidance to users) and sociological (ability to attract social life).

We need to get to the human scale and draw the city for the relation body versus space, creating attractive and pleasing places to the human senses. In this perspective, valuing the act of walking in the city or traveling with non-motorized vehicles, are fundamental propositions to the qualification of public spaces. The recent concept of walkability is a key to the qualification of the city and the devolution of public spaces for people usage and conduct of social life.

Still, for the strengthening of urbanity, it is also important to interfere with the way people interact with the city, which goes beyond architectural and urbanistic works. Worldwide, cities with good levels of quality of life count with a critical mass responsible to take care of their good characteristics and ensure proper and continuous use of public spaces.

This research will demonstrate a method for evaluating the morphological performance of public space of Avenue Cora Coralina, in Goiânia, according to its urbanity and legibility, aiming to find opportunities for its rehabilitation.

Theoretical and Methodological Aspects

Studies by Jane Jacobs in favor of diversity in the city are emblematic to understand the term urbanity. In *Death and Life of Great American Cities*, Jacobs wove a concise defense of the urban life, referring to modern urbanism landscapes as the 'Great Plague of Boredom'. The city defended by Jacobs should bet on the diversity (architectural and social), the vitality of the streets and the interaction between strangers on the sidewalks (JACOBS, 2009).

The importance given by Jacobs to the experience of walking on the sidewalks influenced the creation of the concept of walkability. Several authors have tried over the past decades to develop methods for observing and measuring the quality of walkability in urban spaces. A good example is the recent publication of the City of New York "*Active Design: Shaping the Sidewalk*

Experience", which methodology treats walkability as a right to have pleasurable and healthy experience of walking on the 'sidewalks rooms'.

The apology of the 'urban being' and the public life that unfolds in the streets, as referred in *Death and Life* also inspired, four decades after its publication, the creation of a non-governmental organization called Jane's Walk in Toronto, Canada. The institute aims to disseminate the theories of Jacobs and, besides researching on walkability, organizes community neighborhood walks to get people on the streets discussing about the quality of the urban environment. Since then, hundreds of walks happened in all continents and has been proved as an effective way to investigate the perception people have of urban spaces, as well as a way to encourage civic engagement in urban causes, the urbanity.

The studies on legibility by Kevin Lynch, contemporary of Jacobs, are important to understand the urbanity under the approach of the pedestrian scale, treating the relationship between observer and environment as an exchange. This is a topological study on the city shape, i.e., on the relationship between body and space, without forgetting the individuality of each body, in the opposite direction of the man machine standardized by Le Corbusier. Lynch showed that the legibility of the city is crucial in the urban landscape because it provides emotional security to the observer. Thus, an environment with good identifiability and orientability – legible - reveals a good interaction between body and space.

In line with the topoception crafted by Lynch, Maria Elaine Kohlsdorf adds the factor of time to the analysis of environmental perception, considering that the perception of places by individuals happens through the displacement of the body in space. To investigate the topoceptive performance from this displacement, Kohlsdorf proposes the capture and analysis of the visual stimuli of the street, demarcated as stations separated by intervals. With this analysis, we can obtain the level of clarity of the relationship between the repeated and diversified visual informations of the urban space.

To approach the social life of public spaces, Hillier and Janson brought even more targeted tools, that compose the Theory of Space Syntax – TSS - published in *The Social Logic of Space*, in the early 80s. The authors argued that the space has a social logic, as well as the society has a spatial logic. They believed that, from reading a given space, we can perceive what kind of social relationships can happen there. Therefore, the space should be understood from the relations between its occupants and their relationships with outsiders (HILLIER and JANSON, 1984).

In Brazil, the approach of urbanism as a spatial response to social expectations has been crafted over the past decades by a group of researchers from the Faculty of Architecture and Urbanism of the University of Brasília, whose research stream is called DIMPU - Morphological Dimensions of the Urbanization Process.

It approaches urbanism as a relational situation, which led to a taxonomy of space classified as follows: the economic dimension (costs of production and use), bioclimatic dimension (hygrothermal, acoustic, light and air quality comfort), sociological dimension (social interaction), affective dimension (feelings and psychological states), symbolic dimension (evocation of place), aesthetic dimension (pleasant stimulation of the senses), functional dimension (practical demands for everyday activities), and topoceptive dimension (identity and orientation) (HOLANDA, 2013).

Tenorio (2012) developed a methodology for the observation and evaluation of public life, considering the various morphological dimensions of urban design. His method of analysis consists on field visits and evaluation of the quality of space through 27 variables of urban design, raised from the work of various authors who have researched on the social aspects of urban morphology such as Jacobs, Gehl, Whyte and TSS. These variables were gathered into formatted tables with check items regarding public life (subjects and activities) and the public space in its global and local attributes. In the proposed analysis, each variable is assigned with a color under a gradation whose variation indicates if it satisfies or not its ability to foster social life.

To meet the objectives of this research, we restricted the universe of analysis of morphological dimensions, and hence the Tenorio's variables of urban design, choosing the sociological, which addresses urbanity and topoceptive issues, which deals with legibility and perception of the space.

Proposed Method

In December 2013, Sobreurbana, an urban interventions studio of which the first author is co-founder, held a Jane's Walk at Av. Cora Coralina, where it is based. The walk was conducted throughout the course of the avenue, punctuated by six stops where the following topics were discussed: mobility, urban identity, pedestrian scale, appropriation of public spaces, accessibility and civic engagement. After the walk a questionnaire with questions about legibility and appropriation of the space was applied. From the seventeen participants ten people filled the questionnaire. Their responses revealed that although the avenue has good identifiability and a reasonable orientability, it has a low ability to attract and retain people, because it represents a disruption with the local urban identity, but mainly because it offers uncomfortable environments. The experience also shown the concern of the participants in the deterioration of the neighborhood caused by the avenue and was very positive once it encouraged a more direct relationship with that urban environment, triggering a critical look over the city. In the end, participants expressed they had an interesting experience living and questioning about the city, a necessary habit to form critical mass, crucial to ensure the quality of urban environments.

After identifying these problems in Av. Cora Coralina, we sought to define a method for analyzing the spatial characteristics of this study area. The proposed analysis will use the methodology of DIMPU to study the urbanity of the avenue, according to certain morphological dimensions of its urban design, from the macro to the local scale of the environment.

For the macro analysis, we will use part of Tenorio's methodology, who identified that the global attributes of urban design (spatial relationship with the city), more influential in the social life of the city, are related to its sociological dimension (compactness and integration) and its functional size (type of activities, presence of residency and mobility).

For the local scale analysis, we selected a section of the avenue representative of different urban situations found in the area. Here, Tenório's methodology was cut into the sociological aspects of the morphology of the study area and in the characterization of the urban life, according to the characterization of subjects and activities, axiality, convexity, constitutivity and integration between public and private spaces.

For the analysis of the topoceptive aspects at local scale, we choose part of Kohlsdorf methodology, considering the visual fields of the demarcated stations, whose landscape effects can be: topological (enlargement, narrowing, partial enlargement/narrowing, involvement, enclosure, spaciousness, ascent, descent and preparation for each of these effects); or perspective (connection, direction, framing, preventing, closed visual, belvedere, relief, effect on Y).

Considering the walkability as a strong indicator of urbanity, it will be analyzed according to part of the methodology presented in the aforementioned handbook published by the city of New York. A survey on the fundamental dimensions of the environment/sidewalk will be done according to the spatial analysis of the breakdown of their faces (ground plane, roadside, building wall, canopy), considering: sustainability and resilience, security, accessibility, human scale and complexity, connectivity and continuous variety. Finally, we will analyze the constitutivity of the avenue section, by labeling and classifying the type of entries, the vertical articulation of the buildings and the positioning of vegetation on the sidewalks.

Thus, having the analysis of the sociological aspects of urban design, the walkability of the avenue and the degree of its legibility, we got the diagnosis of its urbanity.

Case Study

The Initial Plan of Goiânia was designed by the architect urbanist Atilio Corrêa Lima and had strong influences from the Tony Garnier's industrial city and Ebenezer Howard's garden city. This plan received the assistance of the Engineer Armando Augusto Godoy, who was responsible for the design of the South Sector, residency district for state employees, giving shape of city-garden: organic design, single family homes, single floor, isolated houses, facing green areas that permeated the entire neighborhood and with the funds to the streets in *cul-de-sac*.

However, this garden district was too different from what people who occupied it were accustomed: they used to live in the former capital, of colonial origin, where the street had a crucial role in urban life. In addition, the South Sector was not entirely built at once: as families acquired their land, the city hall would open that street and poorly supply it with urban services

(GONÇALVES, 2003). Thus, the organic design properly complied and the green areas became waste areas, having received some equipment or furniture only three decades later, with the CURA Project - Urban Community for Accelerated Recovery¹ - still without success in terms of appropriation by the population.

Despite being a district of great appreciation by city residents, South Sector suffered many interferences contrary to its nature. A recent example with visible consequences was the implementation of Avenue Cora Coralina.

Legitimated by the possibility of relieving traffic from an important avenue parallel to it, Av. Cora Coralina was created in 2000, under many protests from locals and experts. To create a circulation binary axis, the Mayorship transposed *cul de sacs*, cut green areas and transformed alleys in what today is one of the main access roads to a university located in the neighborhood which, according to the locals, was the real reason for the implementation of the controversial avenue. It is worth noting that, in the questionnaire applied during the Jane's Walk, the university was the most mentioned reference point of the avenue.

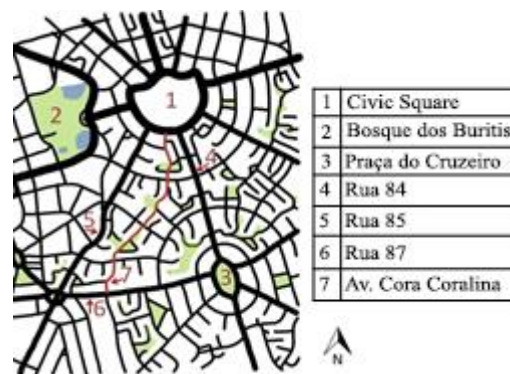


Figure 1 – Urban mesh in the surroundings of Av. Cora Coralina, highlighted in red.

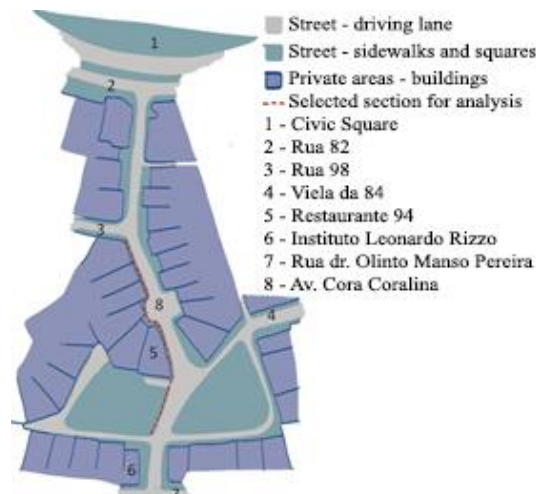


Figure 2 – Illustration of the section chosen for the study.

The result is a narrow street, with even narrower sidewalks, insecure and inhospitable for the few pedestrians who walk there. Despite cutting several green areas, the avenue is predominantly enclosed by high walls, blind frontages and fences. Aside from the project misconceptions that hampers the circulation of cars and that failed to solve the problem of urban drainage (which also supported its execution), the avenue has few public life by having various residencies turned back to it, many parking areas and for not offering attractions for people to walk or stay. Again in the questionnaire applied during Jane's Walk, most people revealed that they use the avenue only as crossing path, despite the amount of green public areas existing along its course. The replies

¹ Program of the extinct BNH - National Housing Bank - which aimed to encourage the occupation of idle urban areas as a way to optimize investments in urban infrastructure. It was applied in the South Sector, in the 1970s, without ever being finalized.

showed that people do not feel welcomed as pedestrians, cyclists, nor even when driving their cars, for which the avenue was built.

This condition results primarily from the influence exerted by the configuration of the city structure in the study area region, the influence suffered by the global attributes of their configurative elements. These attributes appear in the avenue under the following conditions:


Free public space	Quantity	Orange	The percentage of the free public space on the total area is large
	Dimensions	Red	The average size of convex spaces is not according to the area role in the context of the city
Global integration		Orange	The place is poorly irrigated by integrated lines
Activities	Variety	Yellow	There is some variety of activities
	Distribution	Light Green	The activities are distributed in space
	Complementary	Yellow	Activities have certain complementarity
	Temporal distribution	Red	There is a bad distribution of activities in time
Habitation	Variety	Orange	There is little variety of types of building density
	Distribution	Yellow	The types of building density are somehow spread
	Density	Red	There is no sufficient density to ensure the concentration of people
Mobility	Pedestrians	Red	The area is not structured to attend pedestrians
	Cyclists	Red	The area is not structured to attend cyclists
	Public transport	Red	The area is not structured for the use of public transport
	Private transport	Red	The area structure prioritizes private transportation
negative; does not satisfy; terrible; few			positive; satisfies; excellent; a lot

Table 1 – Analysis of the Global Attributes of Av Cora Coralina configurative elements, according to the methodology developed by Tenório.

Despite having a central position in the city, the avenue is poorly irrigated by circulation channels, due to the characteristics of the urban mesh of the garden city model. The traffic direction in one way also impairs its access conditions, although it has been constructed to improve the flow of cars.

The monofunctional residential use of the garden district received in that region, with the implementation of the avenue, an increase of service establishments, which is positive for urban diversity, however still insufficient. There are few commercial activities and even fewer establishments functioning in diversified schedules, resulting in a scarce use at night and weekends. Although there are major uses such as residences, university and office buildings, for some reason they have not attracted other mix uses and failed to vitalize the local diversity.

Regarding mobility, the avenue was built to solve a traffic problem in the region, but shortly after it was inaugurated, it suffered new interventions changing the number of lanes and direction of flow, and still remained with a drawing unfavorable to circulation. The simplistic and poorly finished design results in tracks with different widths along its axis and dangerous curves, difficult to make. Nevertheless, having been projected for cars, pedestrians have no privilege.

This disadvantage will be very visible below, when analyzing the avenue in local scale and at the pedestrian level. For this analysis we selected the section between Rua 84 and Viela 84, still at the beginning of the avenue, near Civic Square, which is the heart of the city and headquarter of the state administrative center (Figure 2). This neighborhood is highly affected by the avenue, with a high traffic flow, once limited by the *cul-de-sac*, and the existence of many private parkings supporting the numerous offices which appeared where before used to be single family residences. The section also includes a public square, a restaurant and borders a cultural center.

To understand the urbanity of a public space we have to understand the local public life. According to Tenório, this understanding includes the analysis of the persons who attend the site and the activities they perform there. Below we show the data obtained from the analysis in the section of the avenue, at different times and days of the week. The result of the field observations confirms the veracity of the data captured by the questionnaire applied during the Jane's Walk:

Number of people		Almost nobody	Few people
Variety of people	Gender	There is a reasonable gender balance	There is a reasonable gender balance
	Age range	There is a reasonable range of age groups	There is a reasonable range of age groups
	Social class	There is some variety of social classes	There is some variety of social classes
	Groups	There is no predominance of groups	There is no predominance of groups
Distribution of people over time		Terrible distribution of people over time	Terrible distribution of people over time
Circulation		There is a certain traffic of people passing through	There are few people passing through
Permanence	Number	There is no people staying in the area	There is no people staying in the area
	Duration	People stay for a short time	People stay for a short time
Meetings	Occurrence	There is no people meeting	There is no people meeting
Maintenance and monitoring	Occurrence	There is no people maintaining or monitoring the place	There is no people maintaining or monitoring the place
Other activities	Number	There are no other activities occurring	There are no other activities occurring
Period of measurement		Saturday morning	Thursday afternoon

Table 2 – Analysis of subjects and activities on the study area.

Approaching urban design at local scale, we have the following evaluation of the key attributes responsible for the quality of its urbanity:

Sociological dimension			
Location	Global integration		The place is close to an integrated line
	Local integration		The place is close to an integrated line
Boundaries and dimensions	Boundaries clearness		The boundaries of the place are very clear
	Configuration of boundaries		The boundaries of the place have high contiguity
	Public/private		Public/private separation is clear
	Dimensions		The size of the place is in a manner consistent with its features
Types of building density			There is a small variety of buildings density
Doors and windows	Blind spaces		There are no blind convex spaces
	Number of doors		There is a certain number of doors opening for the post
	Relation public/private		All public/private relations are indirect
	Smooth boundaries		There are no smooth boundaries
	Windows		There is a certain number of windows facing the place
Floor			The place is at ground level

Table 3 – Analysis of the local attributes of the urban design of the study area.

The Theory of Space Syntax and especially the work of Jan Gehl, emphasize the importance of the constitutivity of the limits of public space for social life. Using the method proposed in Active Design, we illustrated the urban environment of the section of the avenue, regarding the limitation of the buildings walls. There, we can observe that despite the small sized buildings, ensuring the perception of the whole, the architectural results are long horizontal panels, visually harming the route, favoring a low interaction between private and public, with few openings, transparencies and access. Figure 4 shows that along the studied section, over half of the existing entries are of parking lots, whose social interaction with the sidewalk is reduced and even dangerous to pedestrians.

We can observe that, despite being situated in a privileged location, central to the whole of the urban mesh of the city and owning uses with potential to attract people, such as a restaurant and a cultural center, the characteristics of the analyzed area limits (alignment of frontages), of its constitutivity, affect social life in the place. Eyes to the street are missing, compromising its safety. The public x private interaction is very low and the absence of smooth boundaries becomes an inhibitor of public life.



Figure 3 – Decomposition of the sidewalk room in the study section.

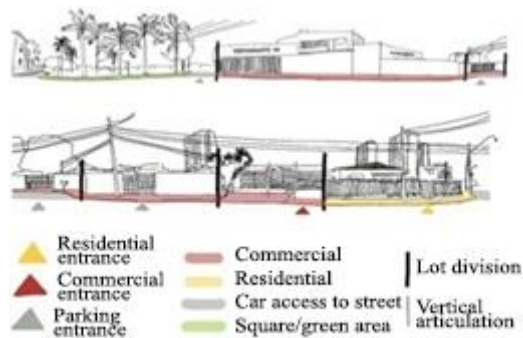


Figure 4 – Analysis of the constitutivity and relationship between public and private.

The cognitive performance of the urban space also has a key role in the enjoyment of its urbanity. Reading a place is the first contact established between people and the space, and defines the quality of this relationship in terms of capacity of orientation and identification, as support for other activities. Thus, the topoceptive attributes were analyzed according to Kolsdorf methodology, used to identify the visual stimulus provoked by landscape. Figure 5 shows scenes of the visual fields from two stations with distance of 46 meters from each other. Regarding topological effects, the perception of enclosure is strong in both scenes, which is positive for social contact. As for perspective effects, the direction appears in 70% of frontal scenes along the route. However, this effect is weakened by not being combined with other effects such as connection, distinction or framing, losing the opportunity to contribute to the legibility of the site. Still, we can observe that despite the monotony resulting from the built typologies, the track layout that resulted from the drawing of the typical garden city provides diverse perspectives with various visual effects, even in a small excerpt as the analysed section.

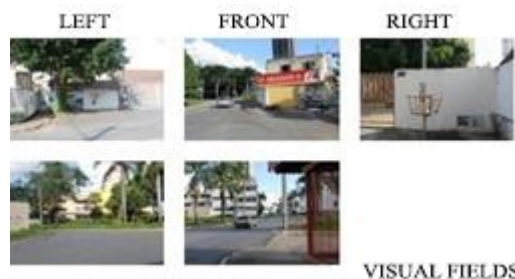





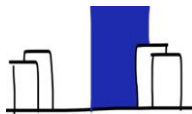

Figure 5 – Environmental perception analysis

However, although it may appear to be visually pleasing to pass along the avenue, the poor conditions offered to pedestrians undermine the experience for the human body. The analysis of the pedestrian environment in this area reveals that fragility. Using the same sidewalk and walking in the same direction as in the the visual landscape effects analysis, we extracted the following data from the sidewalk room (as shown in Figure 3 decomposition):

Building wall	Mixed land use; without distance; frontages with an average length of 10.0m; existence of six entries along the stretch; 20% of transparency in whole of the frontages; presence of a balcony with a length of 4.0m; 30.0m of vegetation along the sidewalk (considering the square at the end of the section); parking along the sidewalk with 31.0m in length; no outdoor uses; significant presence of landscape painting on the restaurant wall.
Ground plane	Full width of the street (driving lane) equal to 6.80m; sidewalk width equal to 1.85m (same value for free width); presence of two recesses adding 6.0m; green bands corresponding to pits for trees measuring 0.4 x 1.20m; presence of 3 electricity poles, 1 signpost, 1 remaining retreat of cul-de-sac, 1 entry for vehicles between the restaurant and the square, 11 pits for trees of which only 3 are planted.
Roadside	Absence of parking; absence of trees: presence of poles and traffic signposts.
Canopy	Average height of buildings of approximately 3.0m; presence of 2 buildings signposts; absence of awnings, emergency exits or balconies in projection.

Table 4 – Analysis of the physical characteristics of the pedestrian environment, in the study section.

It is noticed that the conditions offered to pedestrians in the study area are very unfavorable. There is no perception of the distance between the buildings and the sidewalk because the private spaces are enclosed by walls and fences, but the building and its activities are inside of the property, distanced and 'protected' from the sidewalk. The clear width for circulation is not only small and with poor accessibility, but also obstructed by the few existing street furniture. There are no amenities for the pedestrian, and transparency and interaction with the interior of private areas is rare. Even in the green area region, use conditions are poor: in practice there is no access into the area, the existing seats are vandalized and there is no signs of uses proposed by existing equipments in the surroundings (restaurants, cultural center and residences). The predominant use of this and other green areas along the avenue is parking, both at its edges and in its interior. Finally, before the diagnosis achieved we can point out ways for the rehabilitation of Av. Cora Coralina. The table below relates recommendations from some of the leading scholars on the influence of the shape of the city in social life, identifies a pattern and suggests its application in the study area:

REFERENCE	PATTERN/ RECOMENDATION/ ILLUSTRATION
To ensure continuing vitality of public spaces, its uses and activities should be as diverse as possible in terms of target audience and opening hours (JACOBS and GEHL). A good way to achieve this is by combining uses, between primary and secondary, as activities that feed other activities (JACOBS). This intense and constant use keeps away unwanted (WHYTE) and contributes to local security.	Diversity of uses during day and night – Encourage the installation of activities that support main uses, especially in its surrounding areas (eg stationery near school), and stores that remain open at night and on weekends, as restaurants and bars. 
Rearrange priorities and determine the privilege of pedestrians and non-motorized transport over automotive vehicles on streets with integrated traffic. Improve and increase the necessary infrastructure for pedestrians and cyclists, creating on the urban mesh exclusive streets for pedestrians or even shared streets, where there is no separation between cars and people (GEHL).	Traffic calming – Define sections of the avenue, such as near the school, the university and the green areas, to be shared between cars, pedestrians and cyclists, ensuring speed reduction and flow of cars. Increase the width of the sidewalks and build infrastructure for cyclists. 
The space should have good axiality, i.e., have a good integration with the various parts that make up the whole city (TSS). For that, it must be well located and accessible without gaps or other barriers as well signposted, with suitable flooring and preferably without requiring adaptations for use by persons with reduced mobility (GEHL).	Good ability of circulation – To value access to the avenue, especially for pedestrians, cyclists and public transport users in the surroundings. Promote accessibility, clearing the circulation flooring and signaling them properly. 
Promote visual cuttings to break the monotony of the landscape and point out landmarks to reveal the vitality of the places. For that, open more streets or build small parks where the orthogonal grid is very rigid, keeping the most interesting and differentiated buildings; encourage the saliences of frontages, including their misalignment; emphasize the functional and aesthetic details of urban elements (JACOBS).	Visual order – Take advantage of the visual effects produced by the landscape of the avenue to strengthen nodal points and to highlight landmarks and common characteristics of the neighborhood. 
Public spaces should result in convex shapes (TS), in suitable sizes to human scale and designed in detail to offer people comfort, protection and enjoyment (GEHL), with many opportunities to sit (WHYTE).	Human scale – prepare the environment of the sidewalk and green areas for welcoming the human body, with rich supply of furniture, functional landscaping and support for daily activities. 

A common feature among the public spaces of greater vitality is the beauty (WHYTE). Aside from the aesthetic pleasure, these spaces offer reasons for people to move into it and remain there (GEHL). Finally, the vitality is guaranteed with the integration between strangers, achieved through triangulation of uses and activities, such as urban art (WHYTE).

Reasons to stay – Provide human delight in public areas, enabling them with visual and functional appeal. Using large stretches of wall and large green areas such as support for urban art..



Table 5 – Pathways for rehabilitation of Av Cora Coralina, through urban design.

Final Considerations

The study conducted at Av. Cora Coralina demonstrates the negative impact that a bad urban design can have in public life. In the studied area, we could observe that the first level of interaction between body and space - topoception - is reasonably satisfied, since the avenue has strong points of reference, characteristics that identify the neighborhood, precise limits and a certain rhythm in the perception of the visual effects of its landscape. In other words, one observer can easily identify the avenue, which in turn offers a diverse landscape of visual stimuli capable of providing meanings to circulation along the avenue, easing orientation and enriching his topoceptive experience.

However, the structure of that city region prejudice its urbanity, resulting in a space with a low variety of uses, especially when considering time factor. The situation is aggravated by the terrible urban mobility condition, both by offering poor conditions for circulation as for the impact of such a great quantity of parking. Finally, the weak constitution of urban design at the local scale - characteristics of the buildings frontages, interaction between public and private space, pedestrian amenities - results in unpleasant environments, unfavorable to circulation and permanence. The urbanity is compromised because people do not find reasons to move along and especially to remain in the public spaces of that avenue.

We believe thus that specific interventions for the qualification of the urban design of Av. Cora Coralina, as suggested in Table 5, can positively contribute to strength its public life. This, of course, without neglecting the role of planning in uses zoning and the shaping of sustainable mobility.

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