



The Radiant Capital

LIFE, DEATH AND REBIRTH OF
THE MODERNIST DREAM



1. Taking radiant walks

Brasília was built with four scales in mind:

- monumental (government buildings)
- residential (housing)
- gregarious (central community spaces)
- bucolic (green areas)



City park
(bucolic scale)

"Brasília, air and road capital; park city. Arch-secular dream of the Patriarch." (Costa, 1957)



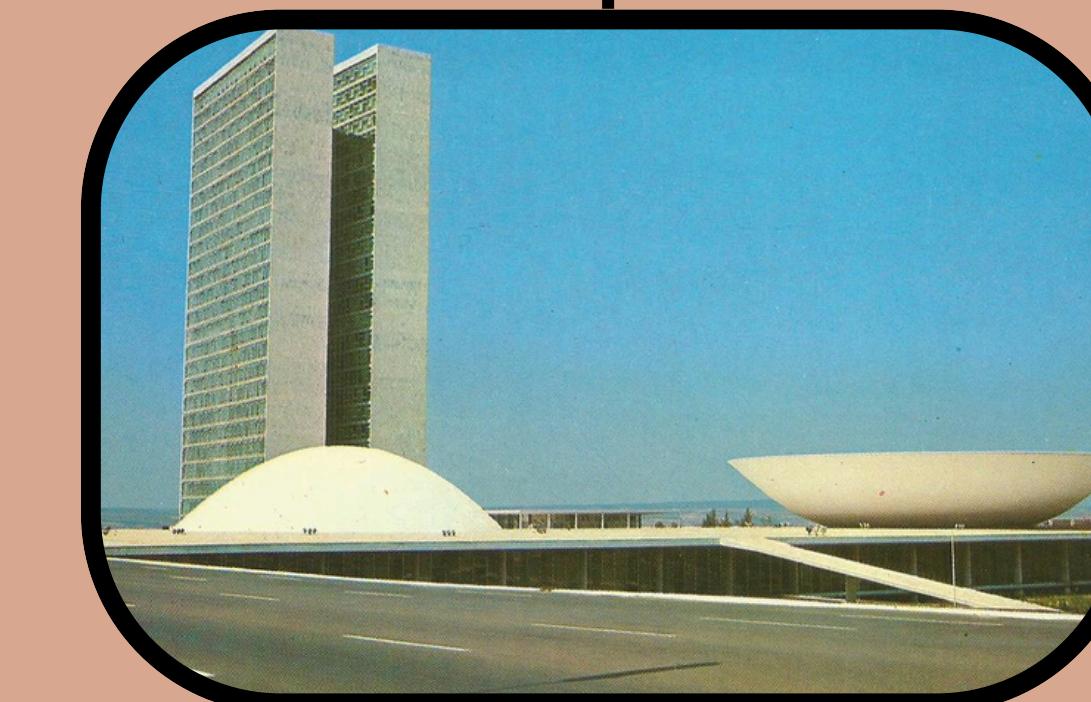
Park-school (308 S)



Superblocks
(residential scale)



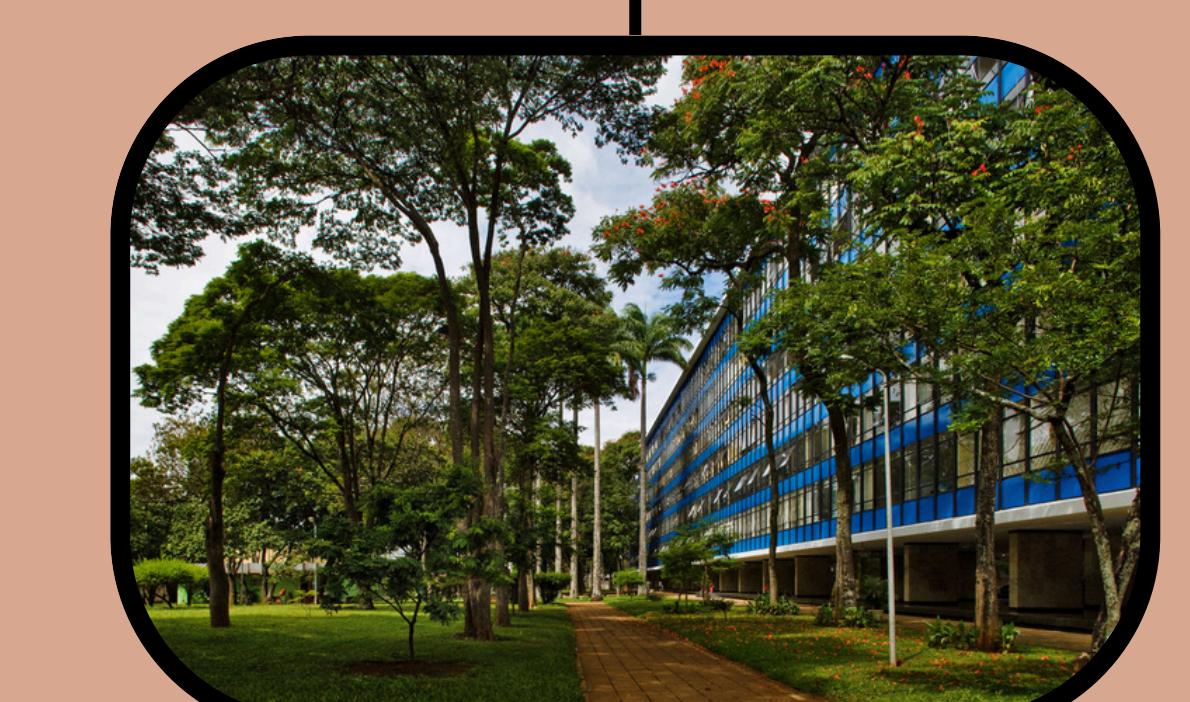
Cathedral



Congress
(monumental scale)



Conjunto Nacional
(gregorian scale)



Superblock
(pedestrian view)

Monumental axis
Residential axis

1. Taking radiant walks


Brasilia, Brazil's capital, was built from scratch in 1957 as a bold experiment in modernist design. Recognized as a UNESCO World Heritage Site, it stands as an iconic yet controversial example of modernist ambition. The city's design was driven by the ideals of rationalism, progress, and minimalism. However, its architectural splendour has some consequences: severe transportation issues and enforced socioeconomic segregation. Because of its profound problems, it is used as an example of the failure of the modernist project.

The fundamental tension at play here is exemplified by the basic structure of the city itself - the monumental and residential axes. Brasilia's layout emphasizes grand, ceremonial boulevards intended to house bureaucracy and project a powerful image of progress. Yet, this focus on the monumental often comes at the expense of the everyday needs of its citizens. Critics argue that the modernist project, while visually impressive from an aerial view, fails to create a functional, humane urban environment on the ground. What is the purpose of the city? Should the city's heritage of architectural authenticity be preserved at the cost of its residents' quality of life (Alencar, 2024)?

In response to these shortcomings in modernist urbanism, urban thinkers have championed an alternative paradigm embodied in the concept of walkable cities. Proponents of this approach, such as Jan Gehl, argue that cities should be designed at a human scale, prioritizing mixed-use neighbourhoods, community interaction, and accessibility. In walkable cities, the focus shifts from serving bureaucratic functions to nurturing the daily experiences of residents. This model also addresses practical concerns such as transportation efficiency and sustainability, as denser, flexible urban spaces can help mitigate issues like congestion, heat, and flooding.

Brasilia's original blueprint even envisioned a walkable city, complete with integrated park-schools and mixed-use zones. Yet, over time, the city's execution diverged from its design, and the promise of community-centered design was lost amid social stratification. Despite a host of plans proposed over the decades to remedy these issues, from Lucio Costa's 1987 proposals to the more recent PPCUB guidelines, the gap between visionary planning and practical implementation remains. Did we just not stick to the plan properly, did we lack the proper data or is strict rational planning fundamentally compromised?

2. Holistic evaluation



2. Holistic evaluation

Demographic analysis, social infrastructure and community needs

Brasília can only be understood within the context of its metropolitan area. It is heavily dependent on its satellite cities, with the Pilot Project (the central area) housing only 10% of its residents, even though it provides 70% of the area's employment (Derntl, 2016). The city's iconic physical structure reinforces this social segregation.

While other cities can become multipolar (Batty, 2007) and decentralize, Brasília is a special case in that the purpose of the city is to serve a few buildings. This centralization is reflected on its socioeconomic inequality: it is the city with the worst inequality in the country (Costa, 2018) and one of the most expensive in the world (ECA International, 2011).

Brasília's image (Lynch, 1960) as park-city and its abundance of green spaces must be taken in context. Turning grey into green is not necessarily better, and might be just another form of utopianism (Saboia et al., 2022). Making a city denser can be more sustainable than simply having more green (Stigsdotter, 2019).

Comparison of population and density

	Brasília	São Paulo	London
Area (1000km ²)	5,700	1,500	8,900
Population	2.8 M	11.5 M	14.9 M
Density (/km ²)	489	2900	1600

Land use and transportation

Brasília's zoning and land use separation follow strict modernist principles, keeping residential and commercial areas apart. Banks, hospitals, churches, and schools are either clustered or placed in designated areas. The city prioritizes green and monumental spaces, but these are not pedestrian-friendly, discouraging foot traffic. This design reinforces car dependency, as the city was built with the belief that automobiles symbolized modernity and progress. However, this approach led to chronic transportation issues.

Due to long distances, residents spend significant time commuting (Tenorio & Santos Junior, 2010). Increased car usage worsens public transport, harms the environment, and even affects cognitive well-being. Despite efforts like the Brasília Integrada mobility project which introduced things like electric buses and bus rapid transit (BRT), the city remains fundamentally car-oriented (Tenorio & Santos Junior, 2010).

There is also a psychological and cultural aspect to this. Car ownership signifies wealth, discouraging investment in quality public transport. The wealthy avoid it, creating a feedback loop of poor service. Though Brasília added 633,496 km of cycling infrastructure, biking remains recreational rather than a commuting option. Public transport challenges persist.

Comparison of metro infrastructure

	Brasília	São Paulo	London
Extension	42	104	400
Stations	29	91	272
Passengers/day	0.16 M	4 M	3 M

Climate and ecological systems

Brasília sits in the heart of the Cerrado, a vast tropical savanna and South America's second-largest biome after the Amazon. Known for its twisted trees, the Cerrado is a biodiversity hotspot and a crucial water source. However, rapid destruction for soybean and cattle farming threatens its ecosystem.

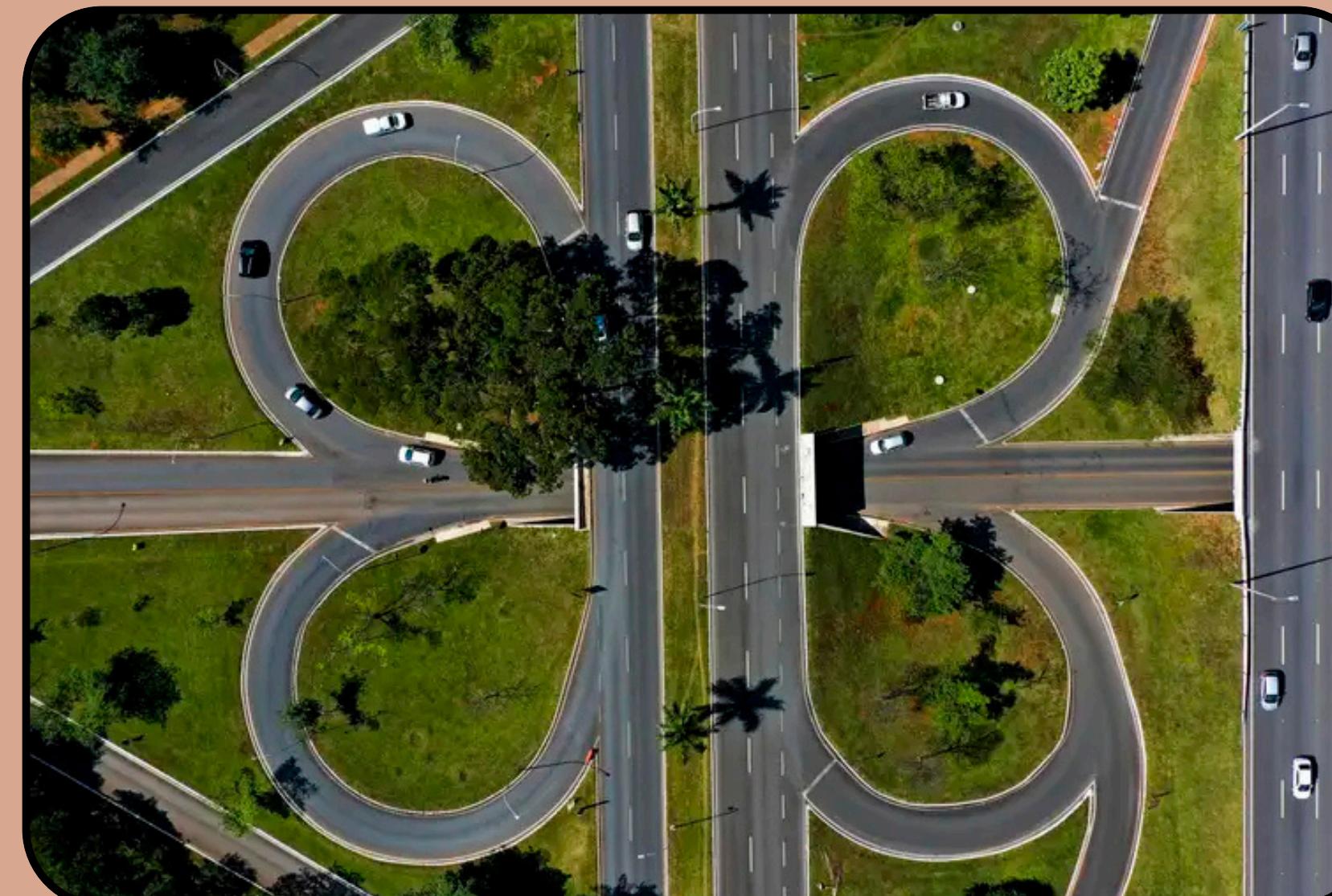
Brasília has two seasons—rainy and dry. Temperatures range from 14°C to 29°C, averaging 21°C annually. The city's lake is artificial. Many government buildings are poorly adapted, with glass facades that trap heat, making them heavily reliant on air conditioning. The formal dress code in government institutions, which requires suits, further increases cooling demands. A smarter approach using passive cooling and climate-appropriate materials could help.

Flooding is a known issue, worsened by recent upscale developments. The university's basement frequently floods, damaging books and equipment. Efforts to improve drainage are ongoing. Heat islands also exacerbate the city's temperature extremes.

As a government city, Brasília lacks major industries, natural resources, or a strong business sector. Its economy revolves around public administration, making it distinct from other Brazilian cities with diversified economic bases.

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3. Neuroscientific understanding



Iconic imagery and spaces help foster sense of belonging and well-being in residents (pictured: tesourinhas, cathedral, ipê trees, block marker, congress, JK bridge, central bank)

The structure of the superblocks was intended to create a local community that overcame limitations of class - at least in theory. (Pictured: Olhos D'Água park; Buddhist Temple)



As a park-city, Brasilia benefits massively from attention restoration and stress reduction associated with natural environments. This, however, means that spaces are not human-scale. (Pictured: desire paths cutting through natural spaces)

While the central area was planned with a lot of green spaces, most people in the district live in different conditions (pictured: Plano Piloto, Samambaia, Ceilândia)



3. Neuroscientific understanding

Neuroarchitecture examines how spaces shape our brains and behavior, combining subjective experience with scientific measurement (Higuera-Trujillo et al., 2021). This approach can inform evidence-based urban planning by understanding how different environments affect well-being.

Brasilia, as a "park-city", was designed around four urban scales: monumental (government buildings), residential (housing and amenities), gregarious (community spaces), and bucolic (green areas).

The city's plan incorporated neuroscientific principles before they were formally recognized. The gregarious scale aligns with walkable city ideals —promoting accessible, community-oriented spaces that support well-being. Park-schools reflected an understanding that children need diverse stimulation beyond academics. Tree-lined streets were designed to mitigate noise pollution. The city's logical structure helps with orientation within the image of the city (Lynch, 1960), while the iconic monuments and ipê trees contribute to the city's distinctive identity, which also fosters a sense of belonging for its residents.

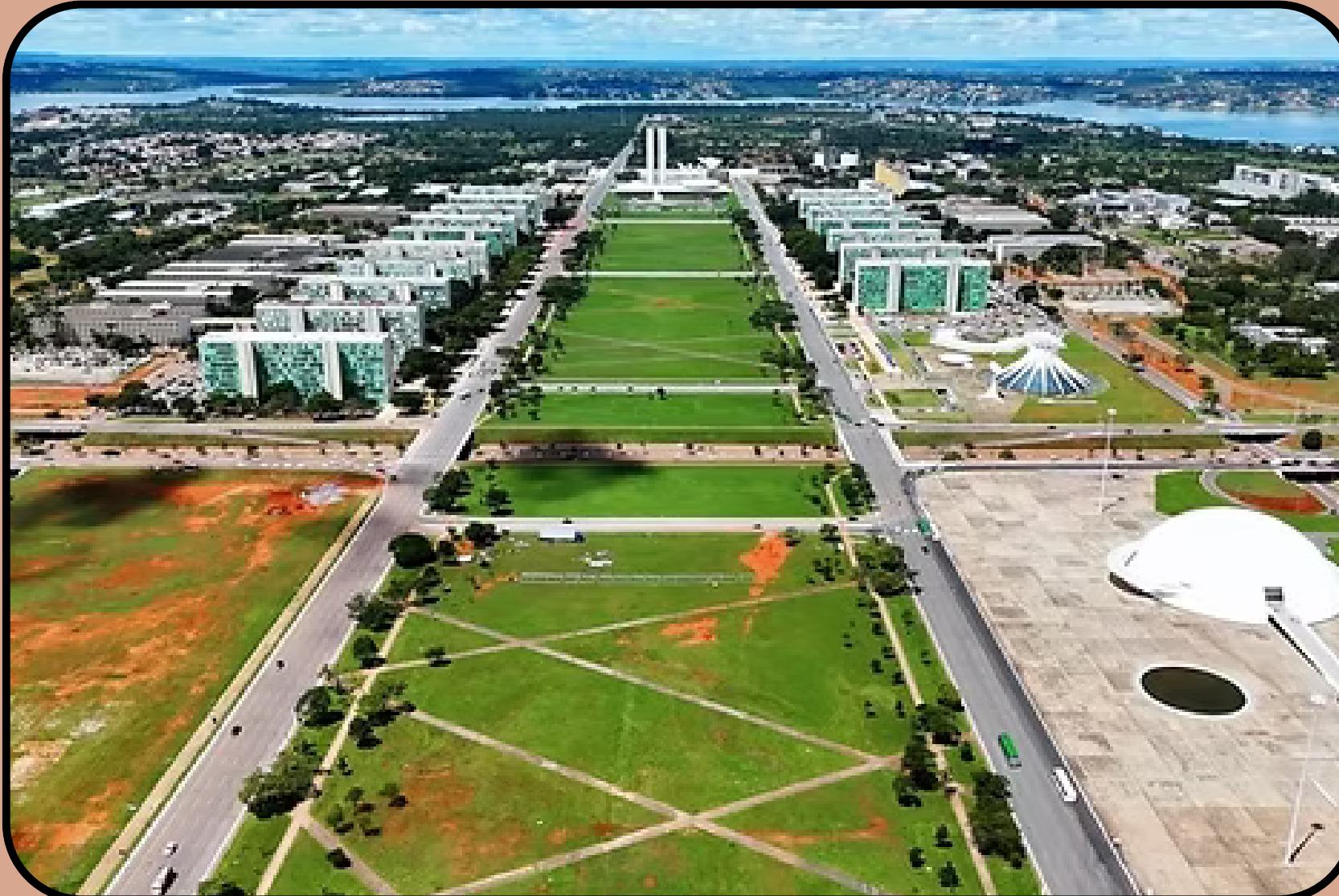
Natural environments provide documented mental and physical health benefits through mechanisms like attention restoration and stress reduction (Stigsdotter, 2019; Ohly et al., 2016; Ulrich, 2023). Urban settings typically demand constant attention, increasing cognitive strain —something that thoughtful integration of nature can help counteract.

The gregarious scale aligns with the idea of a walkable city—central, accessible, fostering local business and social interaction. Neuroscientifically, this is significant, as human-scale environments and strong communities are linked to well-being.

However, Brasília's reality diverges significantly from its vision. The well-being benefits of green spaces primarily serve the wealthier 10% living in well-arborized areas. This disparity highlights a crucial insight: urban well-being isn't just about aesthetics or iconic architecture but fundamentally about access, equity, and quality of life for all residents. While Brasília theoretically embraces holistic development through its four scales, the uneven distribution of these benefits reinforces existing socioeconomic segregation.

A truly effective neuroscientific approach to urban design must address these fundamental inequities. Simply focusing on biological responses to aesthetics without considering lived socioeconomic realities risks reinforcing the causes of the problems being addressed.

4. Design principles

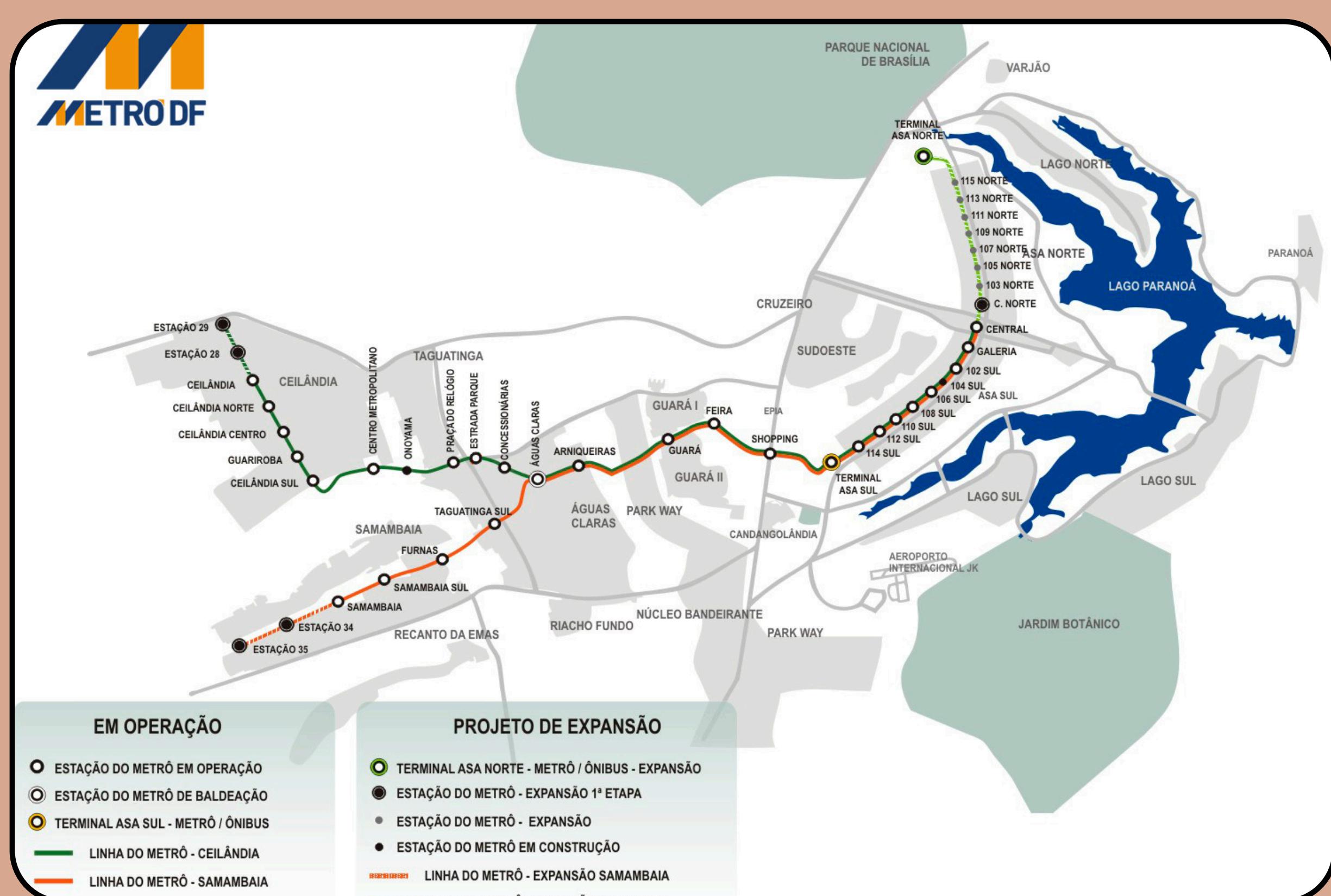


The university was planned as to have no fencing between it and the city (this was recently changed). The central area was planned to have trees instead of just grass.



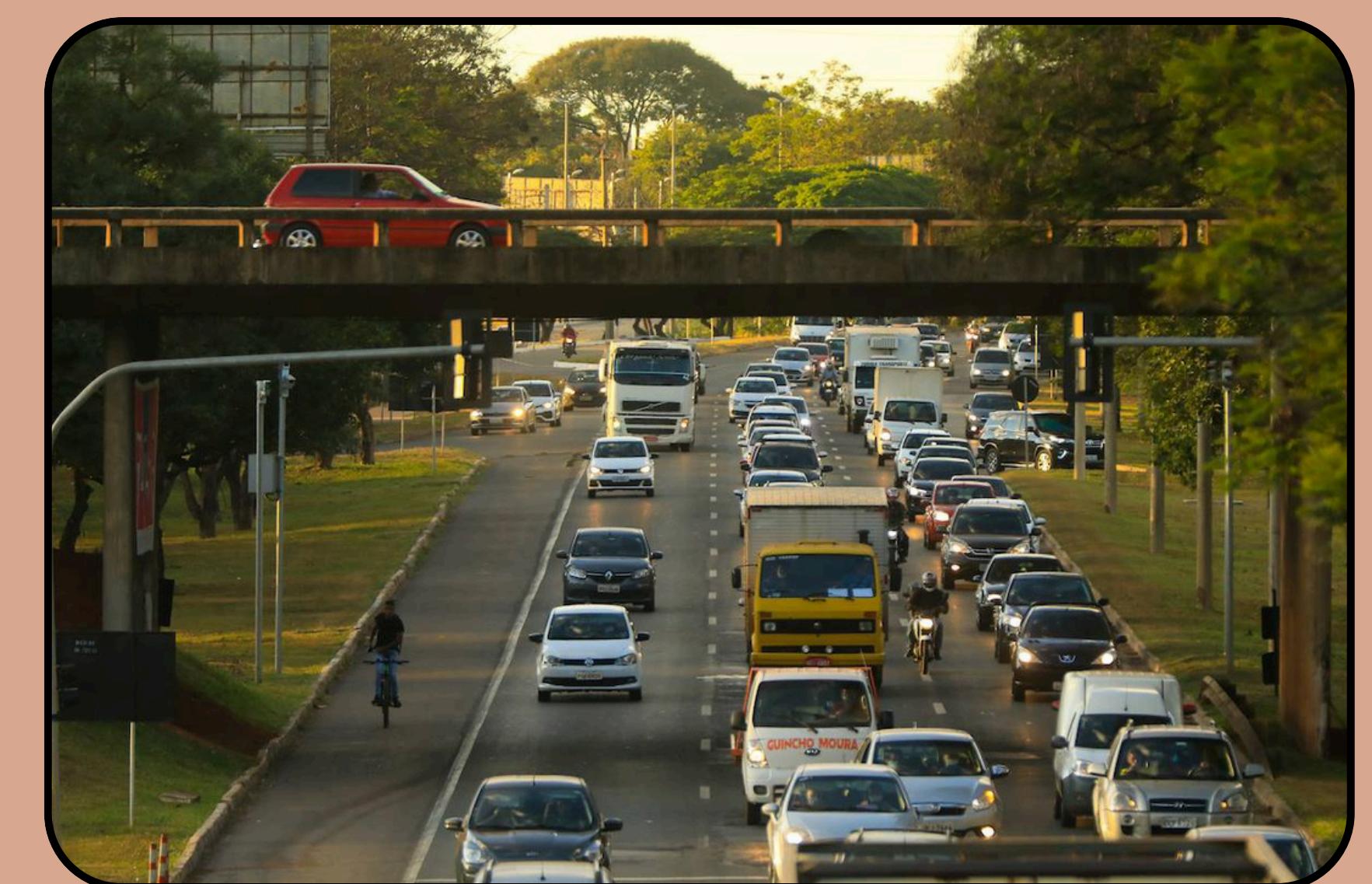
The gregorian scale, while planned, was not taken up by the residents. Even though it has plazas and bicycle lanes, nobody congregates in the center by choice.

Superblocks were planned as proto-walkable cities: to house both rich and poor people, not have pavement, and each one would be a community of local businesses, schools, etc. Social stratification was understood to be a risk and measures to avoid it were not implemented. By recovering these ideas, we can increase local well-being, reduce socioeconomic segregation and reduce the strain on the transportation system.



Several plans were or are being executed to improve the quality of transportation. Why haven't they worked? (Pictured: projected expansion of metro)

Most residents have long commutes which look very different from the bucolic scale (pictured: EPGT and EPIA roads). For addressing the chronic transportation issues, we can take cues from the Porto Metro in Portugal and the Transmilenio in Colombia.



4. Design principles

Brasília represents a complex urban problem with deeply interconnected challenges. Created as part of Brazil's modernization project, the city embraced cars and highways as symbols of progress—a vision that has resulted in chronic transportation issues, social segregation, and environmental concerns.

The car-centric design created a city with human-unfriendly scale. Low density makes infrastructure inefficient, discourages walking, and leaves streets empty and unsafe. The absence of mixed-use development further compounds these issues.

Yet Brasília's challenges offer systemic opportunities. Improved transportation could simultaneously reduce exclusion, enhance sustainability, and increase well-being. More walkable areas create safer streets and stronger communities.

However, any transformation must contend with the city's original purpose—serving government buildings—and its World Heritage status. The "undesirable social stratification" that the original plan sought to avoid has become embedded in residents' culture.

The superblock concept actually represents a proto-walkable city that was never fully realized. The discourse about Brasília as a modernist failure overlooks that the original plans contained merits that implementation abandoned. This disconnect exemplifies modernist planning's limitations in controlling living, evolving urban ecosystems.

The challenge isn't lack of creative solutions—multiple initiatives have proposed remedies for decades (Brasilia Revisitada in 1987, Brasilia Integrada in 2011, Plano de Preservação do Conjunto Urbanístico in 2024). The mystery lies in why implementation consistently fails.

Particular care must be taken when considering the framing of the interventions. Much like in the inception of the city, setting the narrative as progressive evolution—rather than lack of preservation of identity or communistic redistribution—would be instrumental for the success of the intervention.

Implementation should blend tactical urbanism with strategic planning through small-scale community interventions, bold infrastructure connecting central and peripheral areas, mixed-use development with local character, and strategic density increases.

Success depends on making public transportation attractive to wealthy residents, decentralizing activities, balancing preservation with evolution, converting vacant properties for housing, and engaging communities in planning.

To achieve this transformation, we must:

- Clarify the essential elements of Brasília's iconic image: what cannot be changed, what needs to be preserved, what can be altered and what must be transformed.
- Evaluate previous transformation attempts: analyze why past initiatives stalled or failed and extract lessons from both successes and failures.
- Rediscover original plan elements that align with contemporary urbanism: reinforce existing assets (bucolic scale, pilotis as community spaces), and resurrect abandoned concepts (park-schools, gregarious scale) and reconnect with the original vision's community-oriented intentions.
- Develop a forward-looking implementation strategy which introduces bold infrastructural changes (e.g. light rail along the residential axis) that reconfigures the image of the city without removing its essential character. This can be framed as the natural evolution of the modernist vision, positioning Brasília alongside Copenhagen and Amsterdam as progressive urban leaders.

By following these ideas, Brasília could transform into a city that's more walkable, socially inclusive, sustainable, and less car-dependent—while maintaining its distinctive identity as a landmark of Brazilian modernism.

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Maps generated using QGIS with data from Google Satellite and IDE DF Geoportal.

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