The surroundings of the Urban Ensemble of Brasilia: an analysis based on its natural viewing locations

O entorno do Conjunto Urbanístico de Brasília: uma análise a partir de seus mirantes naturais

El entorno del Conjunto Urbano de Brasilia: un análisis desde sus miradores naturales

Received on 19/04/2021 Approved on 29/07/2021

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Abstract
This article addresses the topic of surroundings, a protection instrument for cultural heritage. The object of study is the polygonal surroundings of the Urban Ensemble of Brasília (CUB), as defined by Ordinance No. 68 published by the National Historical and Artistic Heritage Institute (Ip-han) in 2012. The overall objective is to investigate the visual axes mentioned in the ordinance, and the extent to which they serve to preserve the CUB. For this purpose, routes have been formed along the limits of the protected CUB, and in the polygonal surroundings in order to identify the territory, the visual axes and the urban landscape. The research seeks to contribute to the discussion on the topic by introducing new approaches to the subject.

Key-Words: Preservation, surrounding, Brasília.

Resumo
O artigo aborda a temática do entorno, instrumento de proteção de bens culturais. Tem como objeto de estudo a poligonal de entorno do Conjunto Urbanístico de Brasília (CUB) definida pela Portaria n°68 publicada pelo Instituto do Patrimônio Histórico e Artístico Nacional (Ip-han) em 2012. O objetivo geral é verificar os eixos visuais mencionados na Portaria e em que medida eles estão funcionando para a preservação do CUB. Para isso foram feitos percursos nos limites da poligonal de tombamento do CUB, e na poligonal de entorno para o reconhecimento do território, dos eixos visuais e da paisagem urbana. A pesquisa busca contribuir para a discussão do assunto acrescentando novas abordagens sobre o tema.

Palavras-Chave: Preservação, entorno, Brasília.

Resumen
El artículo aborda la temática del entorno, instrumento de protección de los bienes culturales. Su objeto de estudio es el entorno del Conjunto Urbano de Brasilia (CUB) definido por la Ordenanza No. 68 publicada por el Instituto Nacional del Patrimonio Histórico y Artístico (Ip-han) en 2012. El objetivo general es verificar los ejes visuales mencionados en la Ordenanza y hasta qué punto están trabajando para preservar el CUB. Para ello, se realizaron recorridos dentro de los límites del CUB, y en el entorno circundante para reconocer el territorio, los ejes visuales y el paisaje urbano. La investigación busca contribuir a la discusión del tema agregando nuevos enfoques.

Palabras clave: preservación, entorno, Brasilia.
1. Introduction

The topic addressed in the present article concerns the instrument used for the protection of cultural heritage termed surroundings, thus the object of study is the polygonal area surrounding the Urban Ensemble of Brasilia (CUB) defined by Ordinance No. 68, published by the National Institute of Historic and Artistic Heritage (Iphan) in 2012. The ordinance established guidelines for interventions in the surrounding area of the CUB, emphasizing the need to guarantee that what is visible, both along the horizon, from the protected area, and the Plano Piloto (the original design), from the natural viewing locations in the Paranoá Lake Basin. These viewing locations form the horizon of Brasilia. The criteria established for changing the land use and occupation basically refer to restricting the height of any new buildings that may block the views of the Ensemble. The overall objective of this work is to investigate these visual axes and the extent to which they serve to preserve the CUB. Therefore, routes were created both within the limits of the protected polygonal area of the CUB, and within the polygonal surroundings in order to identify the territory, from the visual axes and the urban landscape. The first route sought to explore the visible horizon from inside the limits of the CUB. The second stretched along the entire Parque Contorno Road (known as the EPCT), also called the DF-001, which is roughly defined by the limits of the Paranoá Basin, the main objective of the analysis of this article. This second route was undertaken in two stages, the first to identify the area, the time taken along the route and to define the viewing locations for the CUB. For the second, with seven pre-defined viewing locations, it was decided to carry out a photographic survey by capturing aerial images using an unmanned aerial vehicle (UAV). The use of UAVs, both as a tool for surveying high buildings and for taking aerial photographs has been widely used in the field of architecture and engineering, enabling a greater visibility of large areas because of the altitude that may be attained.

It may be perceived that the using the surroundings instrument as a manner with which to preserve heritage still encounters implementation difficulties and comes into conflict with interests other than urban planning. A number of recent studies have explored the issue of surroundings as an extended form of protection for national cultural heritage and the difficulties encountered in implementing surroundings as a management tool (NITO, 2015; MELO, 2016). Few studies, however, have focused on the area surrounding the CUB. Among them however, there is an article by Maurício Goulart, “O horizonte de Brasilia: a definição da zona de entorno e a gestão compartilhada do Conjunto Urbanístico de Brasilia” [The horizon of Brasilia: defining the surrounding area and the shared management of the Urban Ensemble of Brasilia] (2017), which addresses the concentration of competences common to both the Union and to the Federal District, the exclusive competences of the Federal District, and analyzes the process of delimiting the area surrounding the CUB; an article entitled “Brasilia: legislação patrimonial e gestão urbana” [Brasilia: patrimonial legislation and urban management] by Professor Sylvia Ficher (2019), which discusses the management of the CUB and analyzes the main protection norms in force and also the article “Revisitando o processo de tombamento de Brasilia: uma contribuição historiográfica para novas interpretações do objeto protegido” [Revisiting the protection process of Brasilia: a historiographical contribution to new interpretations of the protected object] by Thiago Perpétuo (2017) which, although it does not directly deal with Ordinance No.68, addresses the issue of the surroundings of the protected area of Brasilia. Therefore, the present article contributes to the discussion on the topic by bringing new approaches to the subject. Various primary sources were used for this analysis, including technical documents, which provided instructions for the surroundings

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1 This article is part of the research for a thesis in progress, entitled: “Historical Urban Landscape of Brasilia: Preserving the past to develop the future”, through the Postgraduate Program in the Faculty of Architecture and Urbanism at the Universidade de Brasília.

2 In chronological order, the legislation applicable to the CUB is: Decree No. 10,829/1987, which regulates art. 38 of Law No. 3,751, from April 13, 1960, regarding the preservation of the urban concept of Brasilia; the UNESCO resolution that included it in the World Heritage List, on November 12, 1987; the federal registration established by Ordinance No. 04/1990 by Iphan, amended by Ordinance No. 314/1992; Iphan Ordinance n°68/2012, which defined and regulated the area surrounding the CUB and Iphan Ordinance n°166/2016, which established two different macro-areas of CUB protection (FICHER, 2019).
process for the CUB; studies contracted by the National Historical and Artistic Heritage Institute (Iphan); maps, plans and studies prepared by the Federal District Government (referred to throughout as GDF)\(^3\); in addition to academic studies on the topic.

2. The implantation of Brasilia into the Paranoá Hydrographic Basin

The site chosen for the implantation of Brasilia by the Cruls Mission, and later endorsed and complemented by the Belcher team, was the hydrographic basin of Lake Paranoá. The geographic unit contained a unique landscape, and environmental and topographic characteristics that were considered to be favorable. These characteristics ultimately defined the urban layout of the design for the Brasilia Plano Piloto:

> Indeed, surrounded by hills that give it a horizon whose festoon cross-stratification is continuous and clearly legible from the inside, Brasilia appears (with enormous clarity, ever since its emergence from digital representation) as if implanted into the heart of a crater - and perhaps not a valley, as it is usually called - This ridge forms the Lake Paranoá Basin - and delimits the "sky of Brasilia" - with altimetric variations to the order of 250 m (OLIVEIRA, 2017, p.19).\(^4\)

**Figure 1:** Implantation of Brasilia.

Veríssimo highlighted Brasilia’s outstanding position in the Paranoá Basin, due to implementing the Plano Piloto on the dome relief, thereby enabling a privileged view of the horizon from various angles from the inside out; and the possibility for different neighboring urban locations to visualize the protected property, from the outside in. Alluding to Lucio Costa’s text “Brasília Revisitada” [Brasilia Revisited], in which the urban planner proposed new occupations within the vicinity of the Plano Piloto with uniform height templates to maintain the serenity of the horizon line, the geographer described that from a geomorphological viewpoint, from an observer located inside the Plano Piloto, over the dome relief, the line of the horizon corresponds to “the Chapada da Contagem [Contagem Plateau] and Chapada de Brasília [Brasilia Plateau], which occupy the highest elevations of the Lake Paranoá Basin” (2005, p.28). .

There are two massifs that make up the basin, one to the north, with elevations of up to 1285 m, which extends from the vicinity of the Paranoá reservoir to the west of the Brasilia National Park, and the other, from there, in a south-south-eastly direction, rising from 970m to 1245m, where the amphitheater-like contour of the Paranoá basin closes (GDF, 2009, p.109). Salviati considered that protecting the visual aspects of the landscape is closely linked to preserving the environment, in general terms, and the natural resources, in particular. He indicated that: “the deterioration of a view is nothing more than

\(^3\) The 1988 Federal Constitution equaled the Federal District to other federated entities, establishing that its competences coincide with the competences of states and municipalities (GOULART, 2017).

\(^4\) This and all other non-English citations hereafter have been translated by the authors.
the externalization of the occurrence of inappropriate uses of the environmental resources, i.e., the deterioration of the landscape becomes the visible expression of the deterioration of the natural aspects themselves” (2016 [1983], p.160). Therefore, preserving the visual landscape of a given location would be nothing more than preventing the uncontrolled occupation or inadequate subdivision of the land.

Much research has been conducted on the occupation processes of the Federal District after the Plano Piloto for the new capital had been implemented (BRITO, 2009; LEITÃO, 2003; FICHER, 2018; DERNTL, 2019), and many have indicated issues referring to an attempt to control the occupation around the central city during the first years of its implementation. Throughout the 1970s and 1980s, Brasília became established as the country’s capital. With the intense transfer of agencies and public servants from Rio de Janeiro, urban expansion continued with the occupation of areas such as Lago Sul and Lago Norte, in the immediate surroundings of the Plano Piloto, characterized by a higher-income population, although the periphery already represented around 80% of the population. In 1970, the Planidro – the Master Plan for Water, Sewage and Pollution Control was drawn up, and defined Sanitary Zoning for the Federal District, recommending the protection of the Paranoá Basin, and defining limits for the populational occupation of this territory (GDF, 2007). The understanding was that there was a shortage of water resources, and therefore there could be no new occupations through satellite cities within the Lake Paranoá Basin. However, what took place, according to Ficher, was an exclusion agenda, whereby only residential neighborhoods were allowed in the interior of the basin, such as the Individual Housing Sectors (Lago Sul and Lago Norte), the Park Way Suburban Mansions Sector, with only Paranoá, Vila Planalto and Vila Telebrasilia escaping this selection (FICHER, 2018). These last two remnants of the old encampments from the construction phase of the new capital ultimately became included in the protected polygon of the CUB. The limits of this polygon will be explored in the first route defined in this work.

3. The limits of the protected polygon of the CUB

For a better understanding of the definition and limits of the protected polygon of the CUB, some brief considerations will be made regarding the topic, which has already been extensively addressed by the specialized literature (FICHER, 2019; SILVA, 2019; PERPÉTUO, 2015).

At the end of the 1970s, based on dialogues regarding the intense growth that Brasília had been experiencing, discussions began on the creation of a working group, aimed at reflecting on the preservation of Brasília. This group became the Working Group for the Preservation of the Historical and Cultural Heritage of Brasília, the so-called GT-Brasília. The group was formed by members of the then SPHAN/Pró-memória; from the GDF Secretariat of Culture and from the Institute of Architecture at the Universidade de Brasília, adopting a tripartite format due to the need to consider Brasília on both a national and local level (SILVA, 2019). The initial objective of the working group was to study Brasilia with regard to its preservation; in a second moment, the group began to explore what could be effectively done to safeguard the capital. The themes covered by the group were broad, and received contributions from several professionals involved in academic research and in their institutional work.

The group’s work methodology, starting with the surroundings of the Plano Piloto, provided support for further research on the main object. Field trips, theoretical investigations and the collection of documents for each object made it possible to arrive at preservation proposals for the areas surveyed (SILVA, 2019). From a macro scale encompassing an area of interest for preservation, the whole was analyzed, relating to a smaller scale containing monuments, buildings and small urban complexes: “On the smaller scale there was a consensus on the need to protect some buildings, in relation to another scale, this would indeed fit into studies based on analytical categories” (SILVA, 2019, p.156). The Area of Interest for Preservation (API) was delimited as a preservation perimeter that encompassed the visual range up to the line of the ridge. Based on the Group’s periodic reports, Silva analyzed the analytical categories for characterizing Brasilia. The relief was highlighted in the 1985 Synthesis Report,
and the defined API considered the line of the ridge that acted as a limit of the visual horizon practically at 360°.

**Figure 2**: Preservation areas established by GT-Brasília.

With this being marked out, it was possible to obtain different safeguard measures according to each conservation area, whereby, while the Plano Piloto received more restrictive measures, the contiguous areas could be treated in a more flexible manner (SILVA, 2019).

What in fact was established, with the publication of Decree No. 10,829 in 1987, was the preservation proposal written by the architect Ítalo Campofiorito in which the urbanistic principles of Lucio Costa’s project were preserved, the four urban scales of the Urban Ensemble of Brasília. Perpétuo (2017) problematized the issue of defining the listed area, characterizing it as the “largest urban polygonal listed in the world, with 112.25 km²” (2017, p.66), and through research in primary sources, highlighted that the area of interest for preservation established both by district decree No. 10.829/10, and by the Iphan federal ordinance No. 314/92, which regulates protection in the CUB, ultimately became defined as encompassing the main object of preservation interest and its surrounding area. Perpétuo revealed a dialogue at a meeting of the Iphan Advisory Board that demonstrates the interest in preserving the Plano Piloto:

> [...] What used to be a preservation area soon became transformed into a protected polygonal, apparently not distinguishing between the protected object and its surroundings. [...] This mention in terms of demarcation and "in simple terms", clarifies, in my opinion, different meanings for different areas: “the protection of the Plano Piloto, only”, i.e., the “airplane”, followed by an area that was also protected in terms of what the institution had understood and oriented for preserving the surroundings. (PERPETUO, 2017, p.66)

Thus, what could initially be interpreted as an immediate area of buffering and protection of the good, ultimately became fully protected along with the capital’s collection of modern architecture and
urbanism (PERPÉTUO, 2017).

In 2016, as mentioned by Ficher (2019), a new, more “realistic and efficient” regulation (2019b, p.06) was approved by Iphan - partially resuming the protection areas proposed by GT-Brasília - in which two macro-areas were defined with distinct preservation restrictions, Macro-area A contained the Plano Piloto, and Macro-area B functioned as a buffer area for the former.

**Figure 3**: Ordinance No. 166, from 2016. Macro-areas A and B.

Currently, with the new protection parameters established by Iphan, it is possible to obtain a clearer notion that the route created from the limits of the polygonal encompasses areas with different preservation values, one in which the attributes of the four urban scales (gregarious, residential, monumental and bucolic) are present and another that refers to aspects related to the ambience\(^5\) of the good in question.

### 3.1 The first route

The first route took place on a Sunday afternoon and sought to explore the visible horizon from inside the CUB. The photographs recorded on this first route were taken with a Canon 6D camera with a 75-300mm lens, since this tool had proved to be sufficient for the visual axes demonstrated.

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\(^5\) According to the Unesco General Conference held in Nairobi (1976), the concept of ambience is defined as: “The ‘ambience’ of historical or traditional sets is understood as the natural or constructed framework that influences the static or dynamic perception of these sets, or it is linked to them immediately in space, or through social, economic or cultural ties” (CURY, 2004, p.220).
Figure 4: Viewing locations.

At location 1, it is possible to see the Paranoá Park Housing Complex (Figure 4) composed of collective residential blocks with four floors – the ground floor, plus three more. The height of the dwellings is in accordance with what has been established in Ordinance No. 68/12, Surrounding Sector (SE) - 05 - Controlled Occupation Sector II, the criterion in this sector is that any project in urbanized areas that exceeds a height of 9 (nine) meters must meet the approval of Iphan. However, the complex is particularly outstanding as a massive, dense, unvegetated, beige colored, arid stain on the landscape. From locations 2 (the JK Bridge) and 3 (the Garças Bridge), the horizon that may be seen from there is of controlled density – the South Individual Housing Sector (Figures 5 and 6), the visual axis is also inserted into SE 05. There is an outstanding format of an amphitheater-like relief demarcated by the Paranoá Hydrographic Basin, where local inhabitants commonly spend their leisure time along the shores of the lake: pedal boats, fishing, barbecues or picnics, even in times of the Covid-19 pandemic.

Figura 5: The Paranoá Park Housing Complex.
Figure 6: In the background, the amphitheater-like relief of the Paranoá Hydrographic Basin.

Figure 7: View of the region from the Garças Bridge.

At the southern end of the limit of the protected polygonal, at location 4, on the margins of DF-025 (Figure 8), it is possible to see the Riacho Fundo Wildlife Protection Area – protected natural springs – and to the back of Candangolândia, looking out towards the west, it is possible to see the tallest high-rise buildings in Guará. Continuing up the EPIA roadway, with the Plano Piloto Interstate Highway as a landmark, there is little horizon to be seen, just buildings, some still under construction, advancing towards the edge of the EPIA – an irremovable barrier within the limits of the Plano Piloto.

Figure 8: Southern end of the limit of the protected polygon.

Point 1 is the Riacho Fundo Wildlife Protection Area – protected natural springs –, at point 2 Candangolândia and at point 3, it is possible to see the tallest high-rise buildings in Guará.

Source: Authors (2021)
At location 5, there is a view of the old road-railway (Figure 9), located in the final alignment of the monumental axis. This point is located in Surroundings Sector (SE) – 06 – Controlled Occupation Sector III which defines a limit of 4 floors (12m) for buildings built in a 500m strip parallel to the EPIA roadway, and for other lots, a limit of 7 floors (21m). In the zoning proposed by the Federal District Territorial Planning Master Plan (PDOT) (2012), this area is classified as a Consolidated Urban Zone, although according to the Strategies Map for Road Structuring, Implementation of Multifunctional Hubs, Dynamization of Urban Spaces and the Revitalization of Urban Complexes, there are areas for Dynamization and Revitalization (Figure 19) with the maximum utilization of coefficient indices of 9.0, thus presenting a conflict between trends in the densification of the area and in occupation control. From this point, it is possible to see the region of the Industry and Supply Sector (SIA), and on the horizon, skyscrapers located in Taguatinga or Águas Claras. There is currently news of an initiative by the Federal District Government (GDF) which is offering\(^6\) (making available) this historic property for sale and the possible implementation of a new residential neighborhood on land belonging to the army\(^7\).

At location 6, at the end of the EPIA roadway, to the west (Figure 10), occupation becomes sparse and the limit is the Brasilia National Park. Continuing along the Parque das Nações Roadway, L4 North (Location 7), there is a view of the North Individual Housing Sector with its planned occupation, the digital TV tower and again it is possible to see the Parque Paranoá Housing Complex completing the first route (Figures 11 and 12).

**Figure 9:** Location 5.

The old railway station, the region of the Industry and Supply Sector (SIA), and on the horizon, skyscrapers located in Taguatinga or Águas Claras.

Source: Authors (2021)

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Figure 10 – The Industry and Supply Park Road.

View of the EPIA roadway, the western limit of the protected polygon from a viewing location in the Brasilia National Park.

End of the section by the EPIA roadway that borders the CUB.

Source: Authors (2021)

Figure 11: Location 7.

At point 1, it is possible to see the North Individual Housing Sector, at point 2 the ridge line of the Paranoá Hydrographic Basin and at point 3, the digital TV Tower.

Source: Authors (2021)

Figure 12: Location 7.

Point 1 is the North Individual Housing Sector, point 2, the ridge line of the Paranoá Hydrographic Basin and point 3, the Paranoá Parque Housing Complex.

Source: Authors (2021)

4. The limits of the surrounding area of the CUB

Albeit belatedly, Brasilia, the first modern city listed as a UNESCO World Heritage Site in 1987, saw the limits for its buffer zone, its settings or its surrounding areas, defined on February 15, 2012, more than two decades after receiving the title of World Heritage. Pressure from Unesco to demarcate a surrounding area for the Urban Ensemble of Brasilia (CUB) was not the only legislative factor to impose such protection onto the Good. Article 18 of Decree Law 25 from 1937 (DL N°25/37), had already highlighted the importance of preserving the vicinity of something protected, and constructions that reduced visibility could not be built. Based on this article, Iphan Ordinance No.68 in 2012 proposed parameters for interventions aimed at preserving the ambience and visibility of the listed Good. The Ordinance published by Iphan delimited the polygonal surrounding of the CUB covering stretches across 17 Administrative Regions of the Federal District, and a total area of 1060 km². As previously
mentioned, GT-Brasilia, in its studies, had proposed a surrounding area (AIP) and a buffer area (AAM) to protect the area of greatest interest for preservation (AIESPP). However, the area defined for the inscription on the World Heritage list and later listed by IPHAN was contained in Decree No. 10829, in 1987. In his text “Brasilia Revisitada” (1987) published in Revista Projeto, Lucio Costa, aware of the great distances covered by most of the population residing in satellite cities, proposed new occupations with economic blocks within the Paranoá basin, which had been contained by the proposed zonings since then. Starting in 1993, the year of the first Unesco monitoring mission to the site, the need to define a surrounding area (buffer zone) had been indicated. In 1995, the article “Brasilia patrimônio cultural contemporâneo” [Brasilia contemporary cultural heritage], by Sandra Bernardes, Carlos Madson Reis and Dulce Blanco Barroso, resumed the discussion, initiated by the GT-Brasilia, on the division of the protected area into sub-areas, gradually characterizing the criteria for the protection and the surrounds (GOULART, 2017).

In 2005, the geographer Mônica Veríssimo developed the study “Bacia do Lago Paranoá como Área de Entorno do Conjunto Urbanístico e Paisagístico de Brasília – Considerações históricas urbanas, paisagísticas, culturais, legais, ambientais, e de sustentabilidade” [Lake Paranoá Basin as a Surrounding Area for the Urban and Landscape Complex of Brasilia – Urban, landscape, cultural, legal, environmental and sustainability historical considerations], contracted by Iphan. Her study was structured around five main guidelines: visibility and ambience; cultural landscape; legal aspects; environmental aspects and the aspect of sustainability, among other complementary guidelines also addressed in the study. With regard to the legal aspects, Veríssimo argued that the Paranoá Basin as a surrounding area would allow a single basis to be adopted for managing the various aspects of territorial and environmental planning, such as making all conservation units inserted in the area compatible, thereby enabling the creation of buffer zones and ecological corridors, since 65.46% of the area of the Paranoá Basin is in conservation units. This would comply with Complementary Law No. 17, of 01/28/97, referring to the PDOT, art. 14, which established that urban occupation in the basin should be subject to its support capacity, which, among other things, would enable the protection of water sources. Veríssimo indicated that, in addition to being a Unesco World Heritage Site, the Plano Piloto, inserted into the Paranoá Basin, shared in this area another Unesco protected good: two core zones of the Cerrado Biosphere Reserve are located within the Paranoá Basin, thereby constituting a point of interaction between Cultural and Environmental heritage. Lastly, the geographer emphasized that although the adoption of the Paranoá Basin did not contain within its limits all the relationships to maintain the visibility and ambience of the surroundings, she supported the fact that in the formulation of the Master Plans, the administrative regions that are inserted within the Basin will have to consider the water issue as a limiting factor for population growth, which would already become a factor in regulating the area (2005).

From 2010 onwards, meetings and a working group were formed at the Iphan Superintendency in the Federal District to address the definition of the area surrounding the CUB. The proposal, by Veríssimo, to make the Paranoá Lake Basin a surrounding area, was accepted by the Superintendency, corroborating the idea of limiting occupation within the Basin area, in accordance with previous plans for spatial planning. During this period, one of the meetings of the Superintendency working group was attended by Professor Ferruccio Ferrigni from the University of Naples, who participated in a collaboration program between the Institutions. Ferrigni indicated the possible difficulties in managing occupation and construction rules, based only on the geometry of the visibility curves. He considered it important to adopt height zoning, a strategic instrument for building the landscape, thereby emphasizing the theme of “landscape construction”, and went on to highlight the importance of pedestrian walkways to demarcate the landscape and guide its construction. Within the scope of the Superintendency, comparative studies were carried out between the “Visibility Map of the Brasilia Plano Piloto horizon” - a partnership with the Army Geographical Images Center (CIGEx) - and the PDOT to identify points of
conflict with the protected area.

Figure 13: Visibility Map of the horizon of the Plano Piloto in Brasilia.

In 2009, the GDF joined forces to conduct a study in order to create the Preservation Plan for the Urban Ensemble of Brasilia, which focused significantly on the issue of defining the surrounding area. The study returned to the texts prepared by GT-Brasilia and indicated a need to differentiate between two categories of protection that fall within the Protected Urban Ensemble: “[...] since this situation does not express the necessary differences in control between Administrative Region I and the other
Administrative Regions included in the protected perimeter” (GDF, 2009, p. 138). The study demonstrated a map defined in the Public Edict of the Terms of Reference for contracting the PPCUB in November 2007, with a polygonal area of Heritage Interest as the area of influence for the protected area. However, it emphasized that "the contours of the protected area, its surroundings and influence must be confirmed, altered or improved so that they produce the desirable effects in safeguarding the protected good" (GDF, 2009, p.138), demonstrating an opening for further discussions.

**Figure 14:** Study for creating the Preservation Plan for the Urban Ensemble of Brasilia.

With the imminent arrival of the Unesco inspectors from the monitoring mission in 2012, Iphan, based on more recent studies (VERÍSSIMO, 2005 and the Visibility Map of the Horizon in the Plano Piloto of Brasilia) published Iphan Ordinance No. 68 tracing a surrounding polygon corresponding to the Environmental Unit of the Paranoá Hydrographic Basin:

Despite the announced management difficulties - the basin, in addition to being gigantic, sheltering both densely occupied neighborhoods and the remaining unoccupied areas of great interest to the real estate market - IPHAN, pressed by the reduced deadline, anticipated the slow processing of the PPCUB, and to everyone’s surprise, published Ordinance No. 68, on the eve of the Unesco monitoring visit. From the process, it may be noted that the links with local government were minimal, despite the impact of the new instrument over a vast expanse of territory, the planning of which was attributed to the GDF (GOULART, 2017, p.171).
Figure 15: A sectorization map of the surrounding areas. Iphan Ordinance n°68.

4.1. The second route

The second stage of the route for recognizing the urban landscape was taken along the DF Highway – 001, EPCT. In the first stage of the route, seven viewing locations were defined. It is important to emphasize that in the field there are long stretches where there is no possibility of viewing the CUB, such as along the limits of the Riacho Fundo II - it is assumed that there the DF Highway - 001 does not coincide with the summit of the Basin, being positioned beyond it, which makes viewing difficult even with low-rise buildings, as previously mentioned by Goulart (2017). Along these stretches, where the topography and occupation make it impossible to see anything, no locations were demarcated; the other locations were defined due to the clear possibility of viewing the Plano Piloto, for which four locations were defined; and another three were defined because they are natural vegetational barriers that make up a kind of “green belt” that protects the Plano Piloto.
Locations 2, 5 and 6 will be addressed first since these are more densely occupied areas (Location 2) and that make up the east amphitheater that frames the Plano Piloto (Locations 5 and 6). These areas in the Federal District's PDOT are located in zones named Urban Zone of Expansion and Qualification (location 2) and Urban Zone of Controlled Use I (Locations 5 and 6). According to reports by the Unesco monitoring missions carried out from 1993 onwards, recommendations were made for the implementation of a green belt foreseen for the immediate surroundings of the Plano Piloto, through the institution of a non aedificandi area, emphasizing the relevance of such an area for safeguarding the formal individuality of the Plano Piloto. The zoning proposed by the PDOT (2012) made it difficult to implement the green belt (GDF, 2009), the maps from the Land Regularization Strategy and Housing Offer Areas have areas demarcated as Housing Offer Areas, with maximum utilization coefficients of 4.5 in Controlled Use Urban Zone I; as well as the Map of Strategies for Road Structuring, Implementation of Multifunctional Hubs, Dynamoization of Urban Spaces and Revitalization of Urban Complexes, mentioned above in item 3.1.
Figure 17: Map 1 The Zoning.

Source: State Secretariat for Urban Development and Housing - SEDUH (2012)

Figure 18: Map 2 - Land Regularization Strategies and Housing Offer Areas.

Source: State Secretariat for Urban Development and Housing - SEDUH (2012)
According to Iphan Ordinance No. 68, location 2 is demarcated in the SE – 3 – Consolidated Urbanization Sector and locations 5 and 6 are demarcated in SE – 5 – Controlled Occupation Sector II. For these sectors, any projects that exceed the following criteria must be submitted to Iphan: for SE - 3 there is a gradation of height templates ranging from 4 floors (12 m) for lots located within a 500 m strip parallel to the EPIA roadway and along the ridge strip of the Lake Paranoá Basin; 10 floors (34 m) for lots located at elevations below 1090 m; 7 floors (21 m) for lots located between elevations of 1090 m to 1175 m; 4 floors (12 m) for elevations above 1175 m and for the Águas Claras Administrative Region, any construction that exceeds 25 floors (80 m) must be submitted for approval by Iphan. For the SE-5, buildings that exceed 9 meters and in the Lago Norte Activity Center, buildings that exceed 16 m.

Location 2 is positioned inside Taguaparque (Taguatinga) (Figure 20). From there, it is possible to see Vicente Pires, the Guará, and some of the higher buildings in the Plano Piloto, such as the Hospital das Forças Armadas (HFA) in Cruzeiro and in the background the Complexo Brasil 21. This location has great potential for remaining and appreciating the CUB, therefore, the template parameters with 4 floors contribute to maintaining this viewpoint, since this area is within the Housing Offer Area provided for in the PDOT.
Figure 20 – Location 2.

It is possible to see Vicente Pires (Administrative Region XXX) at point 1, the Digital TV antenna at point 2, the Radio and TV Antenna in the Plano Piloto at point 3, Guará at point 4 (Administrative Region X) and Águas Claras at point 5 (Administrative Region XX). Aerial image captured by UAV at an altitude of 88 m.

Location 5 is positioned in a tourist spot, which is the main viewing point for the Ensemble, the digital TV Tower (Figure 21), called “Flor do Cerrado”, which, however, despite already representing a location to remain in, is closed to visitors. From this location, even being on the natural level of the land, there is a privileged view of the natural amphitheater. It is possible to see the Plano Piloto, its urban scales and the surroundings.

Figure 21: Location 5.

View from the parking lot of the Digital TV Tower to the CUB. Point 1 is the National Congress, point 2 the Ministry Esplanade and point 3 the North Wing. Aerial photo captured by UAV at an altitude of 30 m.

The same view for the CUB captured with a manual camera. It is possible to see the Ministry Esplanade and the Radio and TV Tower.

From Location 6 (Figure 22), at the intersection of the Solar de Brasília Condominium, it is possible to see the Botanical Garden, the Juscelino Kubitschek Park Road (EPJK), the JK Bridge, the preserved slopes of the Dom Bosco Ecological Park and, immediately after the EPCT, a low-rise occupation begins, although already heavily densified, at this limit it is still possible to identify occupation control enforced by the highway. From that point onwards, visualizing the Plano Piloto from the limits of its surrounding preservation polygonal is no longer possible.
Figure 22: Point 6.

View from the intersection of Solar de Brasília Condominium. It is possible to see the Botanical Garden at point 1; the Park Road JK Bridge (EPJK) at point 2; the JK Bridge at point 3, the preserved slopes of the Dom Bosco Ecological Park at point 4, and at point 5, immediately after the EPCT, there is a low occupation, although heavily densified. At this limit it is still possible to identify a control of the occupation because of the highway.

Source: Authors (2021)

Locations 1, 3, 4 and 7 were grouped lastly as they are the Water Source Protection Area (APM) (Location 1), the Environmental Protection Area of the Brasília National Park (Locations 3 and 4), and the Botanical Garden (Location 7), which ultimately form a “green belt” of preservation. Despite not having planned the expansion of the city of Brasília, in his report for the Plano Piloto submitted to the competition for the new capital in 1957, Lucio Costa predicted that the later growth of the modernist city would occur after reaching between 500 and 700 thousand inhabitants. From then on, the planned occupation of the territory would take place. Later, however, concerned with the disorderly expansion of the population, Lucio Costa defended the creation of two protection rings around the Plano Piloto: “the first of them would be an 'internal belt' destined to agricultural activities and farms [...]; the second ring would be for industrial activities” (DERNTL, 2019, p.30).

From a viewing location on the flyover at the intersection of DF - 001 and DF - 003 (Location 1) with a good lens and camera in hand, it is possible to see a beautiful panorama of the CUB. It is possible to see some skyscrapers on the horizon, located between Taguatinga (Administrative Region III) and Águas Claras (Administrative Region XX) and a more horizontal occupation referring to the Riacho Fundo (Administrative Region XVII) (Figure 23); the Park Way (Administrative Region XXIV) and the interstate bus station marking the boundary of the protected area (Figure 24); the superblocks, the tallest buildings in the central area, the National Mané Garrincha Stadium (Figure 25), the TV tower marking the monumental axis, the Digital TV tower at the top of the horizon, the Cathedral of Brasília, the National Congress and the JK Bridge (Figure 26).

Figure 23: Location 1.

In the foreground is the DF Highway – 003, at point 1 it is possible to see the Taguatinga Shopping Mall among the tallest buildings, then Águas Claras (Administrative Region XX); and at point 2, the Riacho Fundo (Administrative Region XVII).

Source: Authors (2021)
Figure 24: Location 1.

At point 1 it is possible to see the Park Way, an occupation with low-rise buildings, and at point 2, the interstate bus station marking the boundary of the protected area.

Source: Authors (2021)

Figure 25: Location 1.

Continuing the panoramic view, looking towards CUB, at point 1 there is the interstate bus station and at point 2 the National Mane Garrincha Stadium.

Source: Authors (2021)

Figure 26: Location 1.

At point 1, it is possible to see the TV tower marking the monumental axis; at point 2, the Digital TV tower at the top of the horizon; at point 3 the Cathedral of Brasília; at point 4 the National Congress and at point 5 the JK Bridge.

Source: Authors (2021)

After this location, there is a long route in which it is not possible to see the Plano Piloto - at the limit of Riacho Fundo II -, it is assumed that there the DF Highway - 001 does not coincide with the summit of the Basin, being positioned beyond it, which makes viewing difficult even with low-rise buildings.

In Brasília, the green belt was designed to ensure agricultural production and urban containment; it was predicted that country homes, farms and small holdings would provide the city with poultry, eggs, vegetables and fruits (DERNTL, 2019). Lucio Costa's project, winner of the competition for the new capital, proposed ideals for the implantation of his plan based on the garden cities in England at the beginning of the twentieth century and on ideals inspired by the works of Le Corbusier (Une ville contemporaine, 1922; and La ville radieuse, 1935), materializing in a city project surrounded by a green belt, projected as a park city:

Over the years, Lucio Costa's original idea of having the Plano Piloto isolated by a green belt, beyond which satellite cities would be located, joined to the central nucleus
only by highways, proved difficult to maintain. This conception, imbued with a strong symbolic character, and further underlined by environmental rationale, once considered the technical-financial limitations for the final disposal of sewage within the Paranoá basin, ran into other practical reasons (SALVIATI, 2016, p.152).

Although a green belt was not implemented in the immediate surroundings of the Plano Piloto, there are currently topographic barriers of vegetation to contain the advance of occupation, the Brasília National Park (Locations 3 and 4), and the fauna and flora conservation units (Location 7), together with the vegetated slope along the Paranoá reservoir. These barriers maintain the environmental balance of the region, protecting the sources of the Paranoá Basin as a condition for the Lake's survival. They also act in maintaining atmospheric humidity in the region, which endures long periods of drought (GDF, 2009, p.112).

**Figure 27:** Location 3.

![Panoramic view from DF-001 looking southeast towards CUB. Detail for the Torto/Santa Maria reservoir in the center, in the middle of the Brasília National Park and for the EPCT (DF-001) on both sides of the Park. Aerial image captured by UAV at an altitude of 275m. Source: Authors (2021)](image)

**Figure 28:** Location 4.

![Eastern limit of the Brasília National Park. The image shows the Torto/Santa Maria reservoir and Lake Paranoá, and the banks of the EPCT in both corners of the image. Aerial image captured by UAV at an altitude of 137m. Source: Authors (2021)](image)

**Figure 29:** Location 7.

![Panoramic view of the limits of the Botanical Garden and areas of the Special Ecological Interest in Capetinga/Taquara, and the edges of the EPCT in both corners of the image. Aerial image captured by UAV at an altitude of 251m. Source: Authors (2021)](image)
5. Final considerations
The surroundings of the CUB were defined using the limits of the Lake Paranoá Hydrographic Basin, seeking to encompass the urban context, its geographical setting, its social, cultural and economic practices, and all that is understood in association with the notion of ambience and sustainability. An extremely current challenge. However, it has not yet been possible to overcome older challenges that have attempted to combine Cultural Preservation and Urban Development. In practice, preserving the surroundings of protected heritage is far from reaching the full meaning attributed to it in studies on preservation, and the understanding of ambience is ultimately restricted to specialists, sounding vague and subjective to the general public.

Since the construction of Brasilia began, the occupation of what should have been the “green belt” has existed, through the encampments of construction companies, or through independent provisional settlements. Several studies have indicated the practice of “favela extinction” (OLIVEIRA, 2008) conducted in the process of urban occupation around the Plano Piloto, and the institution, by the Federal District Government, of the Campaign for the Eradication of Invasions (CEI) at the beginning of the 1970s, always emphasizing the occupation of peripheral spaces instead of the densification of the Plano Piloto (PAVIANI, 1991). However, these drastic and far from democratic attitudes have been insufficient to resolve issues of territorial planning.

For at least 15 years, the Paranoá Basin has shown signs that it is reaching its limits for the occupation established within its area (VERÍSSIMO, 2005), and indeed, government efforts to contain the occupation either by preserving water resources or for hygienist reasons, have not proved fruitful. Today, part of the population inserted into the Paranoá Basin receives water from the so-called “Reservatório do Descoberto” [discovered reservoir] in another hydrographic basin, which does not comply with sustainable principles.

Lastly, the Ordinance established preservation criteria based on being able to view the heritage, however, in several stretches of the polygon it is not possible to obtain this view. In other sections, the criteria established by the GDF conflict with those defined by IPHAN. This Institute was concerned with covering a generous area of protection for the CUB, but in practice the tool for protecting the surroundings is still imprecise, which thereby compromises its effectiveness. In short: the visual axes mentioned by the Ordinance do not allow us to see clearly how they are working to preserve the CUB.

6. Acknowledgements
The authors would like to thank the National Historical and Artistic Heritage Institute (IPHAN) and the 2nd Geoinformation Center/Geographic Service Directorate (DSG) for their support in remotely consulting the archives and to the Postgraduate Program in Architecture and Urbanism at the Universidade de Brasília for the financial support for the production and research of this article.

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Editors: Maria Fernanda Derntl e Carolina Pescatori

2021, © Copyright by Authors. DOI: http://doi.org/10.18830/issn.1679-0944.n31.2021.08