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Research Article

Inhabiting Space in Digital City Models. Exploring Immersive Design in Futuristic Digital Environments

Habitar el espacio en modelos de ciudades digitales. Explorando el diseño inmersivo en entornos digitales futuristas

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Abstract:
Introduction: Nowadays we find numerous virtual environments that challenge the limits of the imagination. An example of this challenge is the video game Cyberpunk 2077, whose scenario recreates a futuristic environment based on a vertical distribution scheme. In contrast to the horizontal distribution schemes that we normally observe in open-world digital environments, a new field of analysis opens up on how high-rise virtual cities are shaped and designed. **Objective:** The aim of the research is to extract and understand the design keys that allow the space to be experienced in the most dynamic and immersive way possible in these virtual spaces. **Methodology:** The methodology uses the case method and seeks to defragment the design codes that make up this digital city, extrapolating them to the physical experience of real architecture. **Results:** By decomposing the video game and its contents, a whole mapping of information is extracted that allows us to understand the established design links.

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Discussion: It is observed how the visual language graphed in plan is insufficient to understand the multiplicity of levels that the futuristic city presents, being relevant presence of the elevation when it comes to understanding the space and the magnitude of its interconnections.

Keywords: Spatial analysis; Open world; Cyberpunk 2077; Digital Design; Virtual environment; Virtual city; BIM; Parametric Design.

Resumen:
Introducción: Hoy en día, encontramos diversos entornos virtuales que desafían los límites de la imaginación. Un ejemplo de esto, es el videojuego Cyberpunk 2077, el cual plantea un escenario futurista basado en un esquema de distribución vertical. Frente a los esquemas de distribución horizontal que normalmente observamos en entornos digitales de mundo abierto, se abre un nuevo frente de análisis sobre cómo se conforman y diseñan las ciudades virtuales en altura. **Objetivo:** Se busca extraer y entender las claves de diseño que fundamentan experimentar el espacio de la forma más dinámica, inmersiva y real posible en estos espacios virtuales. **Metodología:** A través del denominado método de casos, se buscará desfragmentar los códigos de diseño que componen esta urbe digital, extrapolándolas a la vivencialidad física de la arquitectura real. **Resultados:** Al descomponer el videojuego y sus contenidos, se extrae todo un mapeado de información que permite entender los vínculos de diseño establecidos. **Discusión:** Se observa como el lenguaje visual grafiado en planta es insuficiente para entender la multiplicidad de niveles que presenta la ciudad, siendo relevante la ausencia de esta interpretación en alzado a la hora de entender el espacio y la magnitud de sus interconexiones.

Palabras clave: Análisis espacial; Mundo abierto; CyberPunk2077; Diseño digital; Entorno virtual; Ciudad virtual; BIM; Diseño Paramétrico.

1. Introduction: The Digital Utopian City

The city and its different ways of living have always been approached from a dreamy and utopian perspective, almost like a mirage resulting from expectations that have evolved over the years (Rodríguez García, 2020). *The image of the city* (Lynch, 1998) must be seen, remembered, cause delight. This is given by a clarity of structure and identity, thus forging a poetic and symbolic spatial memory. The idea of the futuristic city is constructed as a dream open to the imagination, probably dominated by artificial intelligence that, despite of it, must have soul and order to avoid falling into the grotesque and stratified. Applying coherence and logic when approaching the design of a complex environment frees us from falling into the nets of contradictory space. The *Production of Space* (Lefebvre, 2013) should be understood through event or action, not as abstract, detached and intellectual acts of decoding signs (Coleman, 2014).

Such a complex and interconnected idea of a city requires, when it comes to devising and materializing it, a meticulous and exhaustive graphic definition, so that disconnected and incoherent urban centres are not generated. There are a global pattern language[2] to be addressed which define a town or a community (Alexander, 1977). When talking about physical architectures, the understanding of space is richer when it is approached and represented from different perspectives:

[2] A pattern language is an organized and coherent set of patterns, each of which describes a problem and the core of a solution that can be used in many ways within a specific field of expertise.

> The problem is that with just an elevation you cannot define the complexity of a building. A collection of floor plans, elevations, sections, axonometries, and perspectives can provide enough information for an architect to understand the formal structure of an architectural organism. If they also have texture, color and shadows, it will only be enough to visit it to complete, through direct experience, the knowledge one has of it. (Sainz Avia, 1990, p. 153)

This approach leads us to ask ourselves the following question: How can we promote the graphic understanding of a non-physical digital environment, constantly changing? Although the body of architecture[3] (Zumthor, 2006, p. 6) of a digital medium does not have the presence of a real physical structure, it must move us in a certain way, its presence should not leave us indifferent. Modelling and materialising the unbuilt city (Preciado, 2022), this almost poetic idyll made possible as a virtual environment, is a challenge full of nuances that define the degree of veracity of the space created.

Due to its growing popularity, the structures that make up the aesthetics of digital architecture have recently begun to be graphed from a more analytical level. One of the first analyses was proposed by Lars Konzack (2002) elaborating a methodological framework of analysis by 7 layers from various angles and perspectives. There are several approaches and diverse points of view proposed over the last two decades. Aarseth, after making an exhaustive review of the current panorama, poses the following question, leaving the door open to establishing a consistent methodology: "How do we analyze games? It depends on who we are and why we do it: researchers, players, critics, developers..." (2007, p. 9). Therefore, each methodology is relevant in its field and based on the framework and context in which it is inserted.

Espen Aarseth (2021) argues that the configurative nature of a video game enhances this realistic dynamism because it encourages the succession of emergent events, thus avoiding rigid paths or predefined and predictable non-linear structures. The definition of chaos made algorithm generates adrenaline and humanizes these scenarios more. Therefore, when we immerse ourselves in a digital environment, behind the configuration of each space there is a component of randomness that balances together with another series of more rigid design guidelines that have been pre-established and repeated. It is in the balance of this sequencing of variables with identifiable invariant patterns that a more complete and balanced sensory experience is fostered, full of environmental information, as Gibson's theory of perception maintains (Plantinga, 2019).

The designed digital city is a perceptual experience that results from a multifactorial and complex set of parameters and, therefore, this complexity must also be reflected when it is mapped. These approaches to a most accurate graphic representation of interactive worlds have been addressed both at the urban level (Dimopoulos, 2020) and at the level of language and theory of the geographies and landscapes that make up a game (Caspar & Youkhana, 2022). This allows us to discover new routes that are out of the ordinary to help uncover any hidden secrets. Just as the exploration of the city in real life is a whole accumulation of sensations, nuances and complexities, navigating environments of digital utopia must also immerse us in that reality consciously, and can also move us.

[3] The material presence of the things proper to a work of architecture, of its structure.

2. Objectives

This research aims to respond to the need for a revision of the bases of representation of the digital city and urban space. In the same way that an exhaustive representation of it is made to understand a physical environment, it will also be necessary to graph as accurately as possible the digital information that makes up a digital space. In a medium like this, the multiplicity of information prevents us from clearly distinguishing design patterns. Breaking down and defragmenting a video game that is unique by its configuration following a scalar order of intervention and using an analysis methodology, will allow us to clarify the design guidelines that have been followed. It will also allow us to make an interpretation of them as a result of the cross-referencing of extracted data, as well as making it possible to draw relevant conclusions in the field of design of video game environments approached from a perspective of correct architectural planning adapted to these supports.

3. Theoretical framework: From horizontal distribution scheme to vertical disposition in open world video games

Cyberpunk 2077 is a video game released on December 10 (2020b) by Polish developer CD Projekt RED proposing an utopian and futuristic open world called the city of Night City. It is the dream of an American megacity, a modern world that emerges after the hypothetical collapse of the old United States, where there are no laws but control by corporations. It has its origin in the literary movement that coined the term Cyberpunk (Bethke, 1983), the paradigm of the use of technologies derived from these post-industrial dystopias triggers unexpected and changing scenarios for its creators. They start from a genuine premise exposed in the *Cyberpunk Artbook*: "We live in a dystopian world, my friends, brimming with crime, corruption and poverty. Ruled by powerful, power-hungry corporations and ruthless corrupt governments" (2020, p. 5). This genre of cyberpunk born as an idyllical space for filmmakers, writers and artists to express their vision of the future (Li, 2022).

The idyll of the chaotic city of the future, with infinite vertical mega-structures integrated into urbanism, was also an imaginary of Japanese Metabolists: "The philosophy of metabolic design is based on exchangeability, modular buildings, prefabricated parts and capsules. The units move, change or expand according to the needs of the individual, thereby creating organic growth" (Echavarria, 2005, p. 24).

Examples of these architecture projects formulated the longing to live in a capsule (Kurokawa, 1970) or an unreadable skyline for Tokyo, dominated by skyscrapers, elevated tracks, tunnels, and hangin steel connections (Tange, 1966). The English group Archigram also graphed this futuristic bias in its architectural comics, designing projects such as *Plug-in city* (Cook, 1964), *The instant city* by Jhoana Mayer or *The Walking City* (Herron, 1966). A virtual interactive reconstruction of this last-mentioned project has been carried out by Aparicio & Del Blanco (2022), where it is explained how recreating an utopian city present problems when it comes to face the large scale, exposing the need to work by areas. Large structural blocks, walking metropolises or mobile installations were a perfect setting to break with the traditional laws of architectural form and function, as well as classical composition rules, bringing a more brutalist and irrational perspective to the panorama, which led to subsequent trends in radical architectural designs (González Capitel, 2011).

In contrast to this concept of intensive models of vertical expansion that seek to optimize each square meter to the limit, there is another opposite imaginary, which proposes that such urban planning should occur expansively as horizontal metropolis (Barcelloni and Viganò, 2022), taking advantage of the extension of the land surface and prioritizing width over height. In contrast to the concept of the compact city, the concept of the diffuse city emerges, with low density and longer distances. It is a much more relaxed and rural floor plan. The previous open-world video game of the same company *The witcher III: The Wild Hunt* (2015) responded to this other scheme of imagery, which responded to the imagination through the saga of Geralt the Rivia (Sapkowski, 1992). The analysis of this other case study has been carried out previously within the framework of this research thesis both at the level of content and graphic timing using the same analysis methodology (García *et al.*, 2024). The large scale of design they wanted to address is relevant. They thus went from producing a map that promised to be massive in scale, at around 136 m^2, to a map of 106 m^2 of smaller size, but more congested in terms of levels in height, with a completely opposite urban planning approach (EdgeRunner Cold, 2020).

This twist in urban design so contrasted with its previous work by the company CD projekt RED makes *Cyberpunk 2077* the object of study of this research. It is of great interest to identify whether the design patterns followed in the vertical distribution model are different from those followed in the horizontal distribution model. The design of globes, block diagrams and 2D and 3D navigable maps, and the interaction with maps features it is also an interesting design guideline to be taken into account (Weber *et al.*, 2010).

It is also remarkable how the social stratification posed in the narrative of *Cyberpunk 2077* also determines its architectures. Modern society is not only technologically anticipated, but also constituted as a rigid class system that determines its territorial configuration based on the different social classes (upper class: rich and powerful people; middle class; lower class: indigents). Law and disorder also determine the experience of space and how the imaginary of this new digital reality is constituted. In *Townscape* (1961) Cullen´s intention was to draw attention to a whole set of anonymous design aspects and details that might pass unnoticed by the urban designers, incorporating them in his explanatory drawings (Montes & Alonso, 2015). This resumes the importance of having an analytic eye for small details and the importance of a visual coherence and organization around streets, buildings and spaces.

4. Methodology

This research applies the case method to the analysis of virtual environments. Thus, a review of the connections and links designed at different scales is used in order to address the whole and understand all its complexity. There will be three work strategies that will be followed according to three different scales:

1. The World Scale: This scale addresses the entire Night City map. Each of the districts, subdistricts and main locations between which you can travel (*Fast travel points*) are identified. In this way we can address in a general way and understand all the content available for the game. The following districts are identified:

    a. Watson. Composed of the following subdistricts:
        i. Little China
        ii. Kabuki
        iii. Northern Industrial District (DIN)
        iv. The coastline of Arasaka

b. Westbrook. Where the rich and powerful reside. Composed of:
   i. Japan Town
   ii. Chapter Hill y North Oak
c. City Centre. Night City's Economic and Financial Power Core:
   i. Corporate Center
   ii. Urban Center
d. Heywood: A neighbourhood of contrast, with a modern north and a dangerous and pour south:
   i. Wellsprings
   ii. The Valley
   iii. King´s View.
e. Santo Domingo. One of the oldest districts, home to refugees.
   i. Arroyo
   ii. Rancho coronado
f. Pacífica. Composed of:
   i. The West Wind and the coast
g. Outlying districts

2. The city scale. Within these case studies or districts, three different district sizes are chosen for analysis:
   a. Small-scale district: City centre (2 subdistricts, 15 main locations)
   b. Medium-scale district: Heywood (3 subdistricts, 26 main locations)
   c. Big-scale district: Watson (4 subdistricts, 36 main locations)

3. Building Scale. A building that is decisive on the map is analyzed. The apartment of the main character, called V, has been chosen within the small-scale city centre district.

Once the case studies to be addressed have been selected, the rubric of systematic analysis of these cases will be applied to obtain results that will later be cross-referenced as an analysis and general discussion.

Once the results are extracted, as a result of the data collection extracted from the maps of the proposed case studies, a series of graphs will be prepared that allow the interpretation of these, in order to extract results related to different parameters on each scale.

Table 1.

Chart typologies at each scale according to case methodology

	World Scale	**City Scale**	**Building Scale**
Data collection	1. General mapping (content–main location) a. With reference map b. Without reference map. Extracted parameters: • Locations • Contents by typology 2. Tables of results (location-general content)	1. General mapping by district (content-main location) a. With reference map. b. Without reference map. 2. Tables of results (location-general content)	1.General ground floor plan: - With reference map. Data collection on plans by hand in real time - Without reference map. 2D computer graphics. Extracted parameters: • Interaction elements • Lighting 2. Table of results: parameters at each city scale 3. General axonometry
Charts	List of number and typology	List of number and typology of	List of parameters

from cross referencin g data by case study	of content by location - Stacked bar charts - Pie charts	content by district - Stacked bar chart - Pie chart	- Bar chart
Charts from data crossing. General level	List of most repeated contents - Bar chart - Pie charts by location	Comparison of the proportion of content by scale.	

Source: Own elaboration (2024).

The graphic representations will be made with *2D and 3D design* BIM[4] software[5]. The data counting tables will be prepared with Excel, which together with automated *artificial intelligence* software[6] will generate the cross-referencing of data and the graphs derived from it included in table 1.

5. Results and discussion

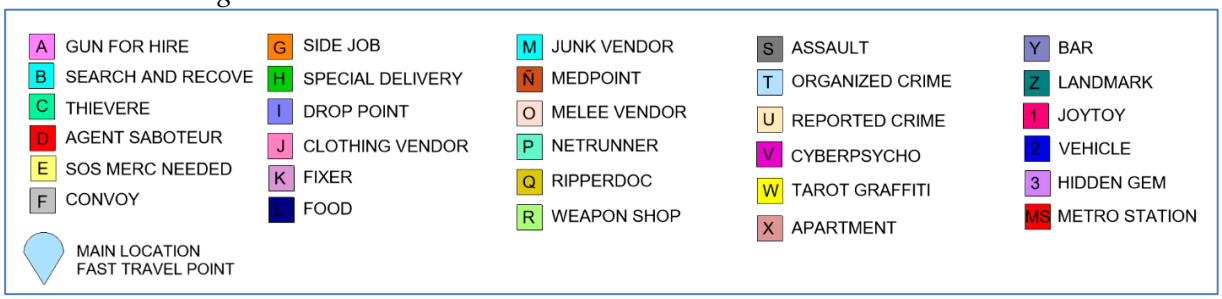
Next, the data relating to the general map (World Scale), the districts chosen (City Scale) and the selected dwelling (Housing Scale) are extracted.

5.1. World scale

The data results relating to the content provided in the game will be done based on an individual identification an algebraic coloured code. This will be the general contents legend (Fig. 1):

Figure 1.

General content legend



Source: Own elaboration (2024).

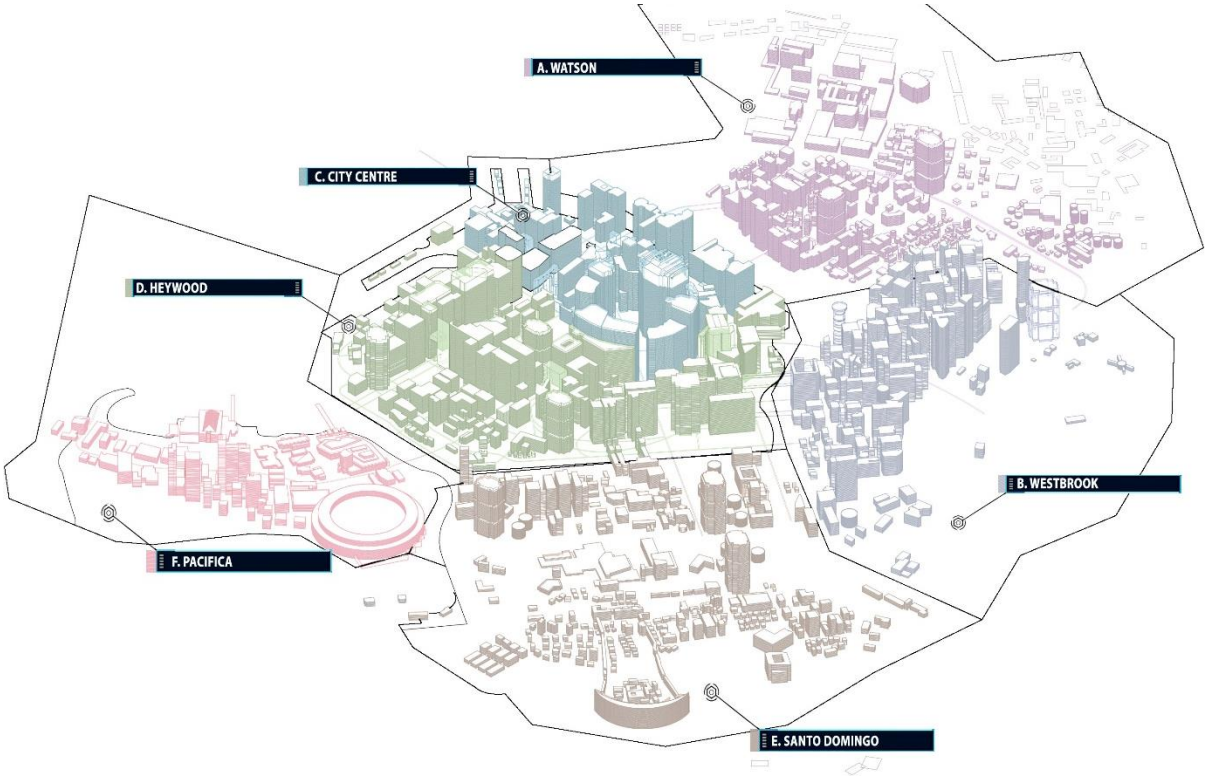
In turn, an identification code will be associated with each of the main locations of the map (See annex 1). We begin by analysing the volumetric definition of the complete map (Fig. 2), which allows us to observe the degree of overcrowding or depopulation relevant to each district. The buildings with the most volumetric presence will be the scenarios where part of the main plot will take place.

[4] *Building Information Modelling.*
[5] Autodesk Revit.
[6] Gepphi https://gephi.org/; Tableau https://public.tableau.com/app/discover; Raw graphics https://www.rawgraphs.io/; Wordcloud https://www.wordclouds.com/

Some of these main buildings have been simplified volumetrically, since the purpose of this analysis is to get a general 3d overview to understand the space and extract basic data. By simplifying, it will be easier to identify similar design patterns around the map. We can also understand spatial cartography and coexisting urban morphology at a glance.

Figure 2.

General axonometry of the Night City map. District differentiation



Source: Own elaboration (2024).

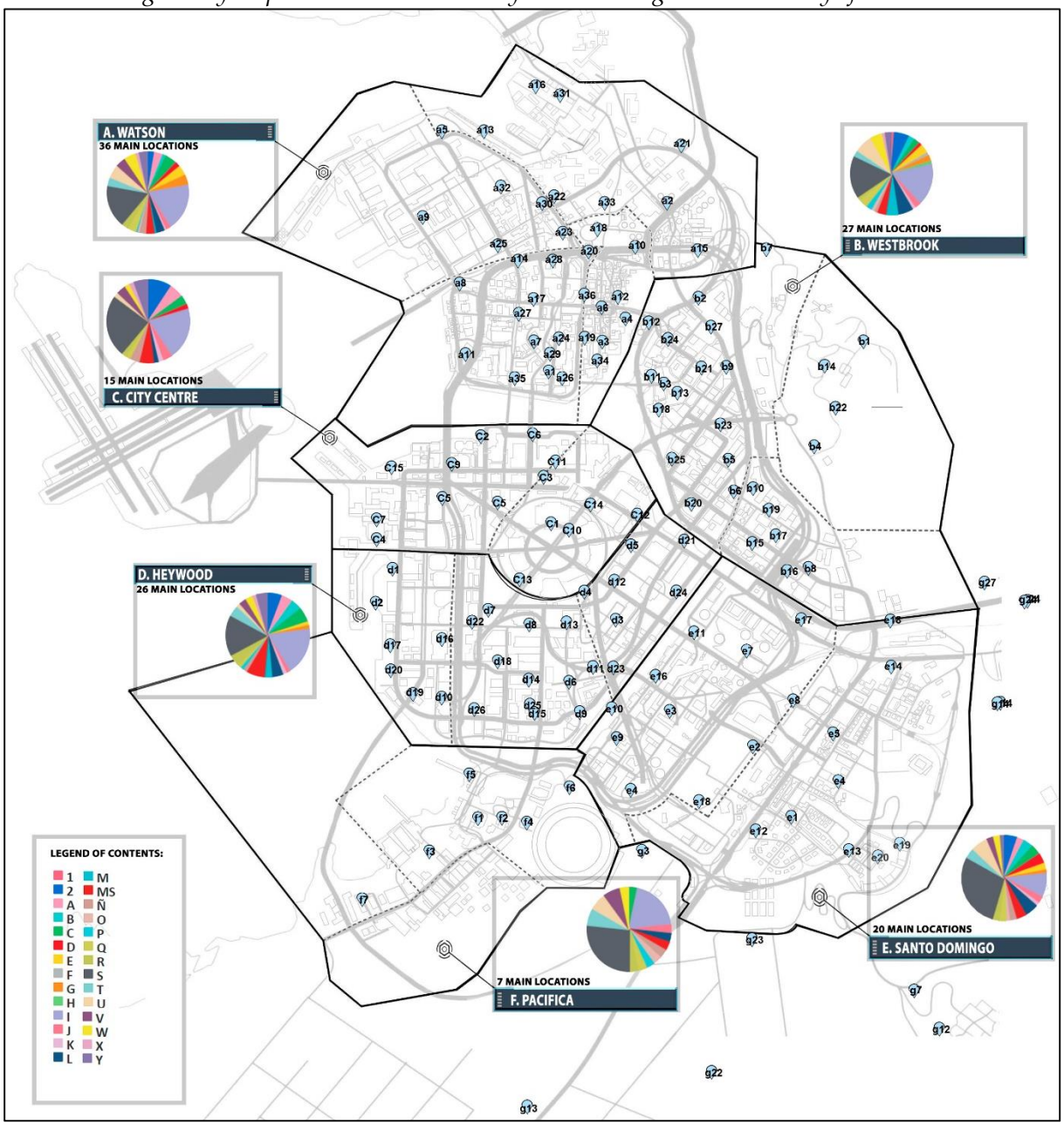
If we now proceed to analyse the map of the whole in plan (Fig. 3), we can see how the different reference points of the map are distributed, the so-called *fast travel*, which allow transmuting from one point to another without the need to travel the distance that separates them, which gives greater freedom when exploring the designed environment.

We can see a larger dispersion of these contents and locations as we move away from the central core of the map and approach the most outlying areas. This may show how the map is also associated with the social stratification of abundance (Central Districts) and poverty (Outlying Districts), as well as the fullness of interactivity in the central urban arrangements.

It should be noted that the game offers a single floor plan to explain the entire complex environment, instead of a plan referring to each spatial level, which makes it difficult to understand elevation and levels of space when walking. Although adding a floor plan for each level would make it difficult to understand the game, it would be interesting to complement the information with sections in elevation or more intuitive three-dimensional data that favor navigation and conscious exploration.

Figure 3.

Overview: Night City map with main locations by district and general summary of contents

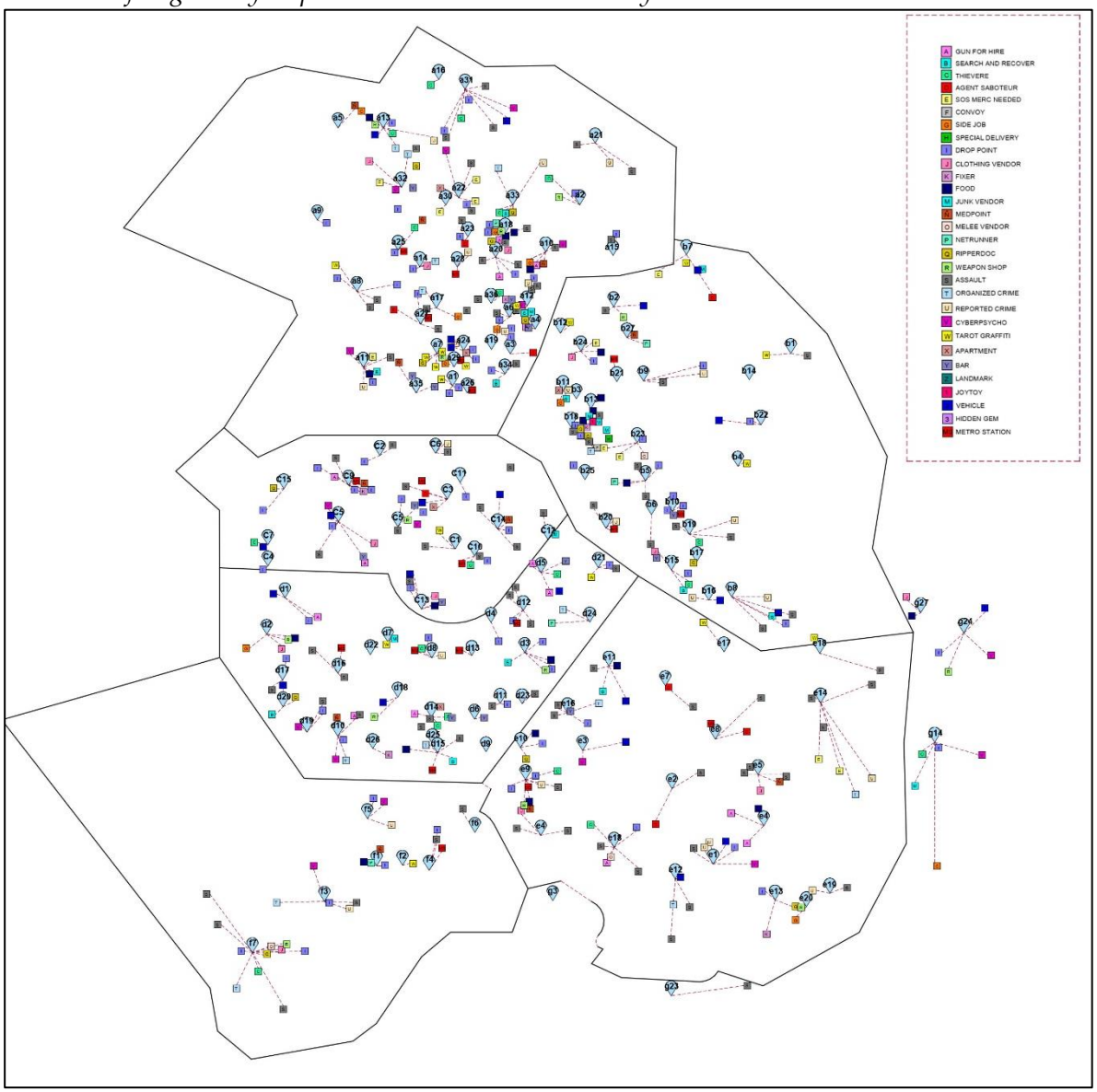


Source: Own elaboration (2024).

Once the different districts and locations have been extracted, the distribution of the different contents of the game is studied, associating each of them with the nearest main nucleus, measuring the distances to generate the most optimal link (Fig. 4). Each main core will thus generate a graphic network that reflects the degree of interaction that this location point can offer to the user who travels there, some structures being more complex and interesting than others. We observe longer distances to the contents as we approach the most outlying locations.

Figure 4.

Overview of Night City map with main contents linked to your nearest main location



Source: Own elaboration (2024).

Apart from the graphic visualization, an accurate quantification of contents by district is also carried out (Fig. 5). A reasonable proportionality is observed in terms of the number of locations, number of contents and size of the district. However, in the district of Pacifica, less amount of interactivity patterns can be observed compared to the rest of the districts.

The most repeated content is the assault (S), which appears a total of 114 times throughout the game, while there are some contents that only appears once or twice in total. The second most repeated content are drop points, a total of 82 times.

Figure 5.

Table of content count by location

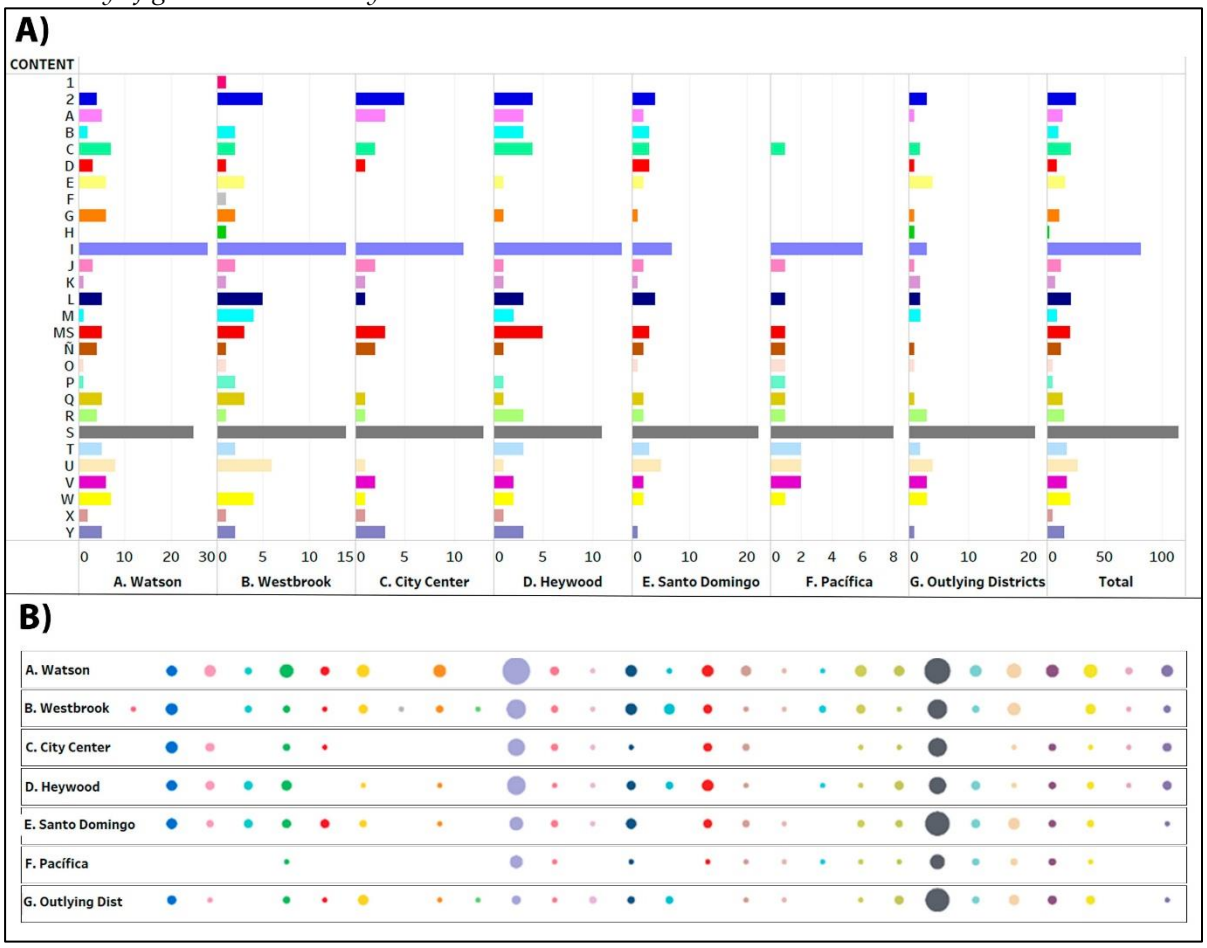
	A	B	C	D	E	F	G	H	I	J	K	L	M	Ñ	O	P	Q	R	S	T	U	V	W	X	Y	1	2	MS
A. Watson	5	2	7	3	6	0	6	0	28	3	1	5	1	4	1	1	5	4	25	5	8	6	7	2	5	0	4	5
B. Westbrook	0	2	2	1	3	1	2	1	14	2	1	5	4	1	1	2	3	1	14	2	6	0	4	1	2	1	5	3
C. City Centre	3	0	2	1	0	0	0	0	11	2	1	1	0	2	0	0	1	1	13	0	1	2	1	1	3	0	5	3
D.Heywood	3	3	4	0	1	0	1	0	13	1	1	3	2	1	0	1	1	3	11	3	1	2	2	1	3	0	4	5
E. Santo Domingo	2	3	3	3	2	0	1	0	7	2	1	4	0	2	1	0	2	2	22	3	5	2	2	0	1	0	4	3
F. Pacífica	0	0	1	0	0	0	0	0	6	1	0	1	0	1	1	1	1	1	8	2	2	2	1	0	0	0	0	1
G.Outlying districts	1	0	2	1	4	0	1	1	3	1	2	2	2	1	1	0	1	3	21	2	4	3	3	0	1	0	3	0
Total	14	10	21	9	16	1	11	2	82	12	7	21	9	12	5	5	14	15	114	17	27	17	20	5	15	1	25	20

Source: Own elaboration (2024).

We also obtain the graphical representation of this data count by district, to obtain a general perception of the distribution of contents (Figure 6).

Figure 6.

Summary of general contents by district



Source: Own elaboration (2024).

5.2. City/District Scale

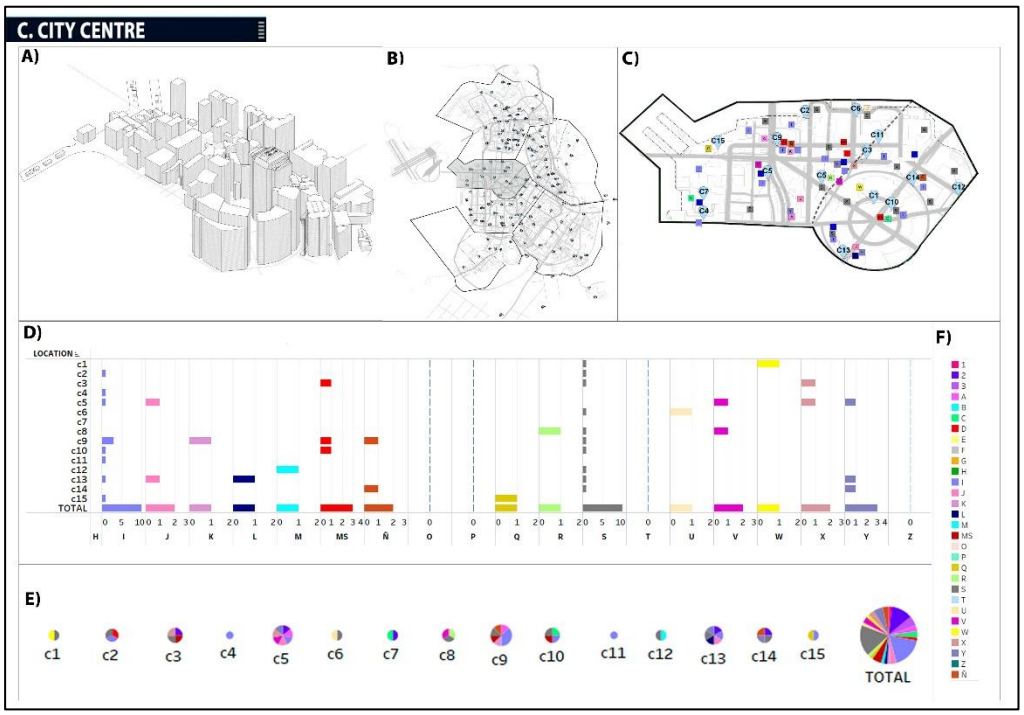
5.2.1. Small-scale district:

We start with the analysis of the district with the smallest size and the smallest number of locations on the map, and then increase its size and see if the content layout also grows proportionally. In this way, it will be possible to identify some design patterns, or on the contrary, disruptions in the distribution procedure followed. Also, it will be possible to identify the most repeated content pattern by district, and the variations with respect to the distribution of the rest of the elements that may happen. The repetition or absence of these provides us with relevant information about the design pattern followed.

First, as a small-scale district we will analyze the Central district (Fig.7):

Figure 7.

A) City Centre district axonometry. B) District location on general map. C) Content by location. D) Content bar graph by location. E) Distribution of content pie charts by location. F) General legend of contents.



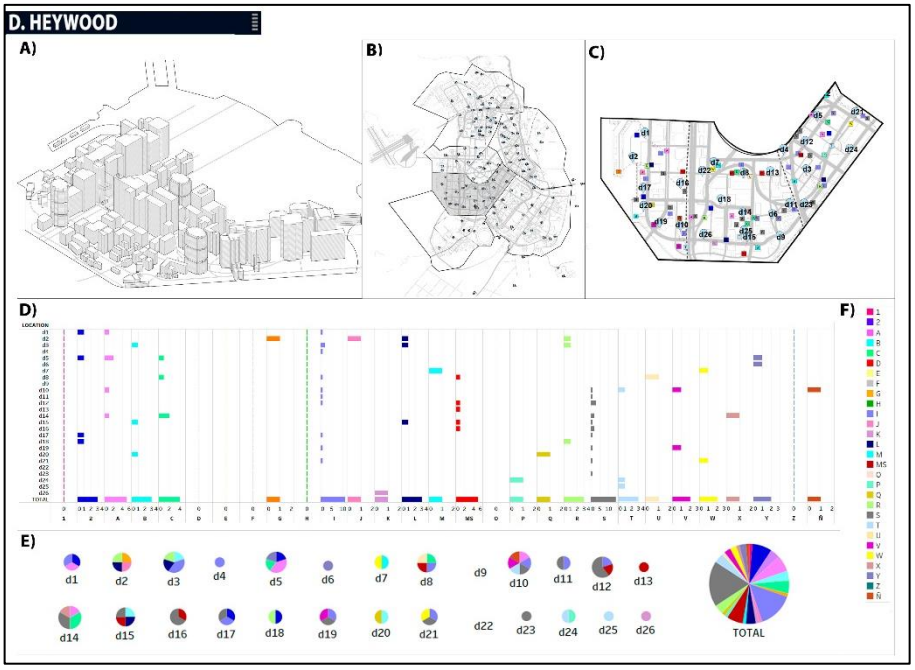
Source: Own elaboration (2024).

5.2.2. Medium-scale district: Heywood

The list of contents in Heywood district is analyzed up next (Fig. 8):

Figure 8.

A) Heywood district axonometry. B) District location on general map. C) Content by location. D) Content bar graph by location. E) Distribution of contents pie charts by location. F) General contents.

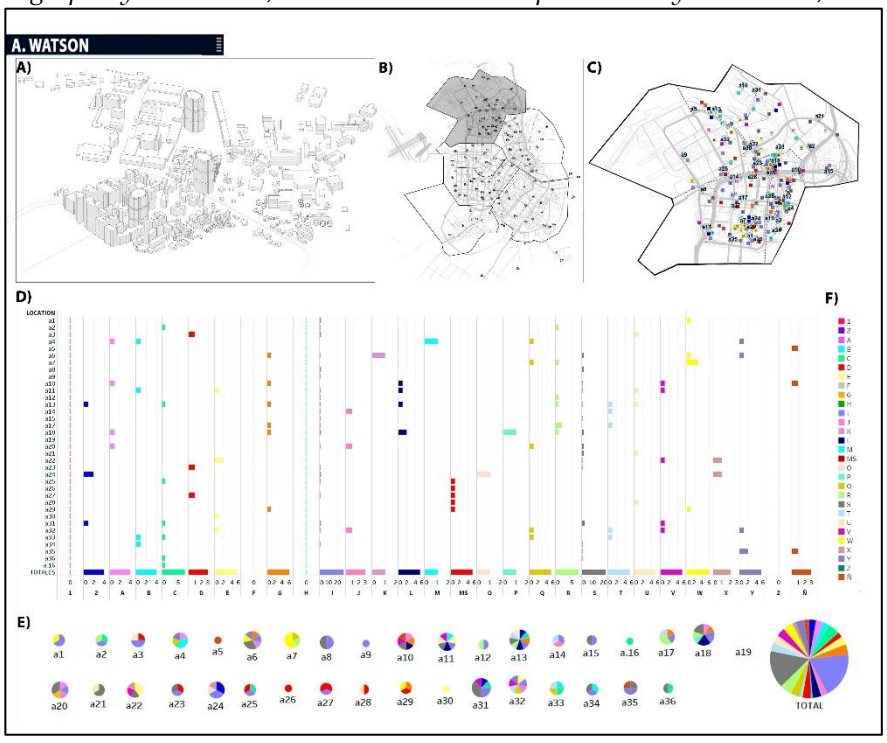


Source: Own elaboration (2024).

5.2.3. Large-scale district: Watson

Figure 9.

A) Watson district axonometry. B) Content location on general map. C) Content by location. D) Contents bar graph by location. E) Content distribution pie charts by location. F) General contents.



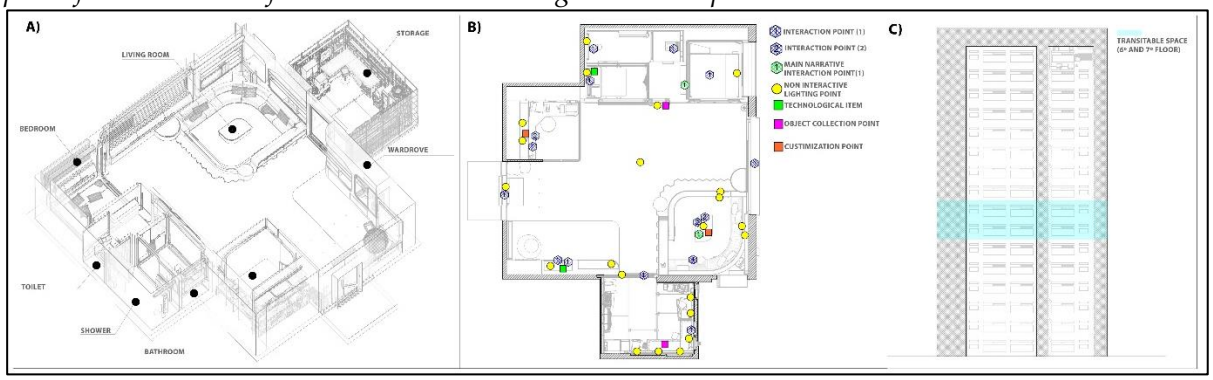
Source: Own elaboration (2024).

5.3. Building Scale

We now analyse the building scale of the main apartment of the game (Fig.10). The different spaces have been represented in axonometric and plan, and the points where the character has a continuous interaction throughout the game have been graphed, either for character customization functions or to satisfy vital functions such as sleeping. It can be seen how the apartment is inserted in a mega building of several floors, which is accessed by elevator to the service floor (Floor 07) or to the apartment floor (Floor 08). However, although you can walk through the corridors and common areas of these two floors, as well as the ground floor, it is not possible to access the rest of the floors. The sensation of a high-rise and highly complex building is simulated, but it is not possible to be toured in all its magnitude.

Figure 10.

A) apartment of V axonometry. B) Parameters location on plan and legend of contents. C) Elevation plan of the transitable floors within the building where the apartment is inserted.



Source: Own elaboration (2024).

After this analysis, a series of design patterns have been extracted that can be extrapolated to each of the three proposed scale levels. Likewise, a homogeneous distribution of content has been observed in most districts, when analysing their urban distribution throughout the territory in plan. However, it is very complex to understand the different levels in which each of these contents are inserted, at the level of architectural elevation. Each of these contents has been graphed based on distances measured in plan, quantifying that these links are at the same level, however, this is not the case. It would be necessary to identify at what height each of these elements are located, as this would provide more precise information about how these links to the main location nucleus are and how complex the distances that are really formed within each identified connection structure are.

This assessment after the analysis, which calls for the need to graph the coordinates in X and Y together with the dimension Z, highlights two shortcomings to be covered:

- On the one hand, the review of the methodology of analysis of the case method, proposing its improvement by incorporating and investigating new ways of graphing this other dimension complementing the stipulated conventional representations.

- On the other hand, the need for information by levels when designing a vertical city like this becomes clear. The absence of this dimension when moving in space makes it difficult to understand distances and confuses the player, making them feel lost in a complex system of levels and making it difficult for them to have an experience that a priori should be fast and intuitive.

6. Conclusions

When we immerse ourselves in a digital virtual world, the map that allows us to identify where we are located, always must be simple and intuitive, using a graphics that are far from the conventions of architectural representation such as the representation of thicknesses, installations, furniture, etc. The representation of elements that do not provide relevant information is dispensed with and the experience is simplified as much as possible in order to facilitate a quick understanding of the space.

Conventionally, open-world layouts are very well suited to this format of plan representation, and exploring the territory does not present any major difficulties. However, in the casuistry presented in this research, it is observed how the same system of representation has been adapted to a completely different city model, stratified and where an endless number of contents are given in practically the same space. This is confusing when it comes to understanding by the user aspects such as where this content is really located, since there is a lack of information related to the elevation or section of the building where it is inserted. The system of representation of vertical open world systems must be reviewed and encourage the incorporation of tools that clarify this other space-time dimension so relevant, in order to provide a more complete and dynamic experience at all times. Therefore, the fact that a plan representation is sufficient to understand space in a digital world of these characteristics is evident. An alternative representation of three-dimensional reinforcement is considered necessary, both at the project level as a design tool, and at the production level. This graphic element is claimed as a navigation assistant, a facilitator of the action of 'playing', as well as achieving a more complete experience for the player, favouring the development of their spatial capabilities.

This determination gives rise to future research, where the BIM work methodology in the design of virtual environments could lead to a more accurate, collaborative, efficient and sustainable representation. This would improve both the user experience and the game's development process. In turn, it would allow a large amount of information to be introduced and managed in the digital model and its geospatial referencing.

Annex 1.

Districts by location

A. Watson					
a1. Afterlife	a2. All foods plant	a3. Allen St. S.	a4. Allen Street	a5. Arasaka waterfront N.	a6. Bellevue Overwalk
a7. Bradbury & Buran	a8. California & Cartwright	a9. California & Pershing	a10. Charter St.	a11. Clarendon St.	a12. Creek Loop
a13. Docks	a14. Drake Ave	a15. East	a.16 Ebunike Docksa17. G. St.	a17. Goldsmith St.	a18. Kabuki Market
a19. Kabuki: Central	a20. Kennedy North	a21.Longshore North	a22. Martin St.	a23.Megabuilding H10	a24.Megabuilding H10: Atrium
a25.Metro: Eisenhower st.	a26. Metro: Ellison St.	a27. Metro: Farrier St.	a28. Metro: Med center	a29. Metro: Zocalo	a30. Northside Apartment
a31. Offshore St.	a32. Pershing St	a33. Pinewood Junction	a34. Pinewood St South	a35. Riot	a36. Sutter St.
B. Westbrook					

b1.Arasaja Estate	b2.Capitola St.	b3.Cherry Blossom M.	b4.Columbarium	b5.Crescent & Broad	b6.Dark Matter
b7.Drive-In Theater	b8.Dynalar	b9.Fourth Wall Studios	b10.Gold Niwaki Plaza	b11.Japantown Apartment	b12.Japantown West
b13.Jig-Jig Street	b14.Kerry Eurodyne´s R.	b15.Lele Park	b16.Longshore South	b17.Luxury Apartments	b18.Megabuilding H8
b19.Metro: Charter Hill	b20.Metro: Japantown South	b21.Metro: Monroe St.	b22.North Oaks Sign	b23.Redwood Market	b24.Sagan & Diamond
b25.San Amaro St.	b26.Silk Road West	b27.Skyline & Salinas			
C. City Center					
c1.Arasaka Tower	c2.Berkeley & Bruce Skiv	c3.Corpo plaza apartment	c4.Corportation St.	c5.Downtown Central	c6.Downtown North
c7.Gold beach Marina	c8.Halsey & MLK	c9.Metro:Downtown-A. St.	c10.Metro: Memorial Park	c11.Metro: Republic Way	c12.Petrel St.
c13.Reconciliation Park	c14.Ring Road	c15.Skyline & Republic			
D. Heywood					
d1.Berkeley & Bay	d2.Cannery Plaza	d3.College St.	d4.Congress & Madison	d5.Delamain HQ	d6.El coyote cojo
d7.Embers	d8.Glen Apartment	d9.Hanford Overpass	d10.Megabuilding H2	d11.Megabuilding H3	d12.Metro: Congress MLK
d13.Metro: Ebunike	d14.Metro: Glen North	d15.Metro: Glen S.	d16.Metro: Market St.	d17.Palms View Plaza	d18. Palms View way
d19.Parque del Mar	d20.Pumping Station	d21.Republic & Vine	d22.Senate & Market	b23.Redwood Market	b24.Sagan & Diamond
b25.San Amaro St.	b26.Silk Road West	b27.Skyline & Salinas			
E. Santo domingo					
e1.Almuñecar & Jerez	e2.Arasaka Industrial Park	e3.Hargreaves st.	e4.Kendal park	e5.Mallagra & Manzanita	e6.Megabuilding H4
e7.Megabuilding H6	e8.Metro: MegabuildingH7	e9.Metro: Wolleson St.	e10.Mission Waterfront	e11.MLK & Brandon	e12.PieZ
e13.Rancho Coronado East	e14.Rancho Coronado North	e15.Rancho coronado S.	e16.Red dirt bar	e17.Republic East	e18.San Amaro St.
e19.Tama Viewpoint	e20.Woodhaven Street				
F. Pacífica					
f1.Batty´s Hotel	f2.Chapel	f3.Grand Imperial Mall	f4.Metro: Stadium	f5.Pacifica Pier	f6.Stadium parking
f7.West wind apartments					
G. Oulying districts					
g1. 101 North	g2. Abandoned Fuel Station	g3. Abandoned parking Lot	g4. Autowerks	g5. Big Rock	g6. Border Checkpoint

g7. Dam	g8.Edgewood Farm	g9. Far Ridge	g10. Fuel station	g11. I-9 East	g12. Lake farm
g13. Las palapas Motel	g14. Medeski Fuel Station	g15. Mobile Camp	g16. Nomad Camp	g17. Oil Fields	g18. Old Turbines
g19. Protein farm	g20. Regional Airport	g21. Rocky Ridge	g22.Solar arrays	g23. Solar power station	g24. Sunset Motel
g25. Sunshine Motel	g26. Tango Tors Motel	g27. Trailer Park	g28. Wraith Camp		

Source: Own elaboration (2024).

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