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Research Article

Reconstructing Literary Space Using Artificial Intelligence-Enhanced Architectural Representation Methods: Georges Perec And The Plassaert Apartment

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Abstract

Positioned at the intersection of literature and architecture, this study explores how abstract spaces constructed in literary texts can be reconstructed using architectural representation tools and artificial intelligence technologies. The focus of the research is the Plassaert apartment in Georges Perec's Life: A User's Manual, which details the space through everyday objects and lists, and the users of this space across different periods. The object-human relationships, hoarding tendencies, and the psychological weight of the space described in the text have been transformed into architectural representations through artificial intelligence (ChatGPT, Gemini, Copilot). The study's methodology is based on a spatial accumulation model constructed around the parameters of Actor, Space, and Time. The 5-Level Prompt Model has transformed these literary data into a visual language, producing the spatial counterpart of each actor in their own time. Within the scope of the findings, the layering created by the material concerns, psychological and social states of space users through objects has been concretised through spatial indicators. The narrative structure in Perec's literature (chess and jigsaw puzzle metaphors) has been represented through conceptual collages. In the final stage, plan and section planes were superimposed simultaneously, developing a representational model where the temporal traces left by different actors in the same physical space can be read in a multi-layered manner. In conclusion, this research demonstrates that literature offers a multi-layered research field for architectural analysis and representation; it also reveals that AI-supported tools can play a supportive role in visualizing this layered structure.

Keywords: Architectural Representation, Artificial Intelligence, Georges Perec, Layering, Life: A User's Manual.

Corresponding Author: ozdemirbeyza707@gmail.com
Received: 15.06.2026 - **Accepted:** 05.10.2026

Cite: Özdemir, B., & Özen Yavuz, A. (2026). Reconstructing literary space using artificial intelligence - enhanced architectural representation methods: Georges Perec and the Plassaert Apartment. *DEPARCH Journal of Design Planning and Aesthetics Research, 5*(2), 167-183. https://doi.org/10.63673/DepArch.2026.50

INTRODUCTION

The discipline of architecture approaches space not merely as a structural phenomenon bounded by physical limits, but also as a multilayered field of experience where social narratives, individual memory, and everyday practices intersect (Bachelard, 2014). In this context, literature constitutes a fundamental field that expands the boundaries of spatial thought and provides rich data for architectural analysis. In the process of transforming a textual narrative into an architectural data source, Georges Perec's Life: A User's Manual (La Vie mode d'emploi) serves as a significant example in its inventory of space through small details, lists of objects, and daily rhythms.

The translation of spatial descriptions in literary texts from the mental realm to a visual and architectural representational plane shares similarities with the translation process. Producing an architectural counterpart for the described objects, actions, and atmosphere requires subjecting them to spatial analysis (Jakobson, 1959). However, this representational process often carries the risk of remaining abstract. Reading an author's poetics through a single section (the Plassaert apartment) and transforming this reading into an architectural representation necessitates methodological clarity in the transition from text to image. Conventional architectural representation tools—ranging from manual drafting and physical collages to contemporary digital environments such as CAD and Building Information Modelling (BIM)—fundamentally rely on metric precision, Euclidean geometry, and static temporal conditions. While these traditional media excel at codifying physical boundaries, material assemblies, and functional zoning, they inherently struggle to register the intangible dimensions of spatiality: the psychological weight of everyday rituals, subjective domestic atmospheres, and the temporal sedimentation of human presence. In contrast, literary narratives construct space through fragmented inventories, emotional states, and sequential occupancies that resist static orthographic projection. The unique contribution of this study to the discipline of architecture lies in bridging this epistemological gap. By introducing an AI-augmented Actor–Space–Time methodology, the research expands the traditional boundaries of architectural representation beyond metric documentation into a form of narrative spatial archaeology.' This approach allows architects not only to visualize the non-metric and affective nuances of narrative environments but also to decode unbuilt, erased, or multi-temporal spaces that conventional representation methodologies cannot systematically transcribe.

To establish this operational clarity, this study proposes a generative framework grounded in the triad of Actor, Space, and Time, centring on the Plassaert apartment in Perec's Life: A User's Manual. By systematically translating domestic accumulation, personal inventories, and sequential occupancies into spatial prompts, the research demonstrates how Generative AI tools (ChatGPT, Gemini, Copilot) can reconstruct literary narratives into layered architectural representations. The primary objective is not merely illustrative rendering, but the critical exploration of how the act of reading can be transformed into spatial analysis through the simultaneous overlay of architectural plans, cross-sections, and narrative collages.

To address this objective, the research is guided by three fundamental research questions:

RQ1: How can non-metric, qualitative spatial descriptions, character psychology, and everyday object inventories in literary texts be systematically translated into architectural representational media (plans, sections, and collages)?

RQ2: What is the operational and theoretical role of Generative AI within this translation process? Specifically, does it function merely as an automated visualization engine, an interpretive mediator, or an emergent method of architectural representation?

RQ3: To what extent can the three-parameter framework (Actor–Space–Time) provide an adaptable and generalizable methodology for decoding narrative space across broader literary contexts beyond Perec's specific narrative structure?

THEORETICAL FRAMEWORK

Architectural Representation and the Digital Transformation of Representational Tools

Representation, in its broadest sense, is the act of substituting for something, or re-presenting it through another medium, language, or form (Mitchell, 1990). In philosophical and artistic contexts, representation is a mental, critical, and interpretive reconstruction of the perceived or imagined world (Goodman, 1978). In this context, within the discipline of architecture, representation goes far beyond merely showing or communicating what is to be built; it is recognized as the very act of thinking and designing itself (Allen, 2000). Expressing a space through tools such as plans, sections, collages, or perspectives actually makes the atmosphere, objects, and traces of the user's experience within that space legible. Thus, architectural representation is a field of production where abstract ideas and textual constructs are rewritten in a spatial language.

Throughout history, architectural representation tools have undergone a profound evolution, shifting from conventional manual drawings to digital modelling (CAD/BIM) and algorithmic design. Traditional and early-stage digital tools typically rely on precise metric data, geometric coordinates, and predefined rules generated by the designer. However, the integration of AI-based algorithms into architectural representation is bringing about an epistemological shift in how representation tools are used and understood (Leach, 2022).

As an architectural representation tool, artificial intelligence (ChatGPT, Gemini, Copilot) possesses the ability to convert textual data (prompts) and semantic relationships into visual data. This makes artificial intelligence an ideal tool for translating spatial descriptions—particularly in fields like literature, which rely on words and are open to interpretation—into architectural representations. AI-supported representation tools transform the clusters of objects and lived experiences within the space described by the author into a new architectural representation.

In recent years, the integration of Generative AI into architectural representation has shifted computational discourse from rule-based parametric modelling toward semantic, multimodal translation (Leach, 2022; Picon, 2021). Current scholarship highlights that diffusion models and Large Language Models (LLMs) fundamentally challenge conventional orthographic drawing by treating representation as an open-ended, synthetic dialogue (As et al., 2018; Carta, 2021). However, utilizing AI within scholarly architectural research presents distinct epistemological and technical limitations. First, generative text-to-image engines lack intrinsic geometric coordinates and Euclidean dimensional rigor; they interpret spatial depth purely through probabilistic visual patterns rather than orthographic metric logic (Del Campo, 2022; Leach, 2022). Second, these models are prone to visual hallucinations, semantic drift, and inconsistent spatial orientation across sequential prompt iterations (Ploennigs & Berger,

2023). Consequently, Generative AI cannot operate as an autonomous design authority. To achieve scientific validity in architectural inquiry, generative tools require a structured, rule-based methodological scaffold—such as controlled multi-tiered prompting and systematic parameter pairing—that constrains computational stochasticity and aligns generative outputs with rigorous architectural intent.

Georges Perec

In Georges Perec's literary universe, space is not a fixed plane. It is defined as a constant source of doubt and a territory to be conquered. In his work "Espèces d'espaces" (Spaces), the author argues that space can only exist through marking and definition. Perec's practice of constructing space focuses not on major historical events but on the microscopic details of daily life, which he terms "infra-ordinary." A table, a drawer, a room, or a forgotten object are, for Perec, the foundational elements of the narrative (Perec, 1974/2017). This approach reveals that Perec's spaces function as spaces constructed through objects and lists.

Hoarding, Layering, and Spatial Memory

In spatial theory, the relationship between human psychology and physical space is fundamentally mediated by material culture and domestic objects. While Bachelard (2014) approaches domestic space through the poetic lens of intimate memory and oneiric verticality, contemporary spatial theory and narrative architecture argue that lived space is an active social and material construct rather than a passive container (Psarra, 2009; Rendell, 2006). Literary narratives provide unique analytical access to this dynamic; as Ricoeur (1984) and Spurr (2012) articulate, narrative architectures materialize character consciousness through spatial syntax and mundane domestic possessions. In Georges Perec's structuralist poetics, the domestic interior is not an empty volumetric void to be furnished, but an archaeological deposit formed by everyday life, routine practices, and physical accumulations (Sheringham, 2006). Objects in Life: A User's Manual operate as material indices of time, financial anxieties, and psychological distress. However, traditional architectural analysis frequently separates the physical fabric of the room from its subjective material sediments. Bridging narrative theory with spatial analysis therefore requires an interpretive medium capable of treating literary inventories as spatialized behavioural data.

In Perec's narrative, the construction of characters is achieved indirectly through the material environment and objects, rather than through traditional psychological analyses. As seen in the example of the Plassaert apartment, the hoarding tendencies exhibited by the users experiencing the space, the constant layering of objects, and the resulting stratification within the space are the primary elements shaping the spatial experience. The space functions almost like a warehouse where past lives and daily practices accumulate. This layered use of space is deepened by the presence of different characters:
The Plassaert family's identity as collectors and their material concerns are reflected in the space through specific object choices, such as keeping flowers that do not wilt or are already dead. The cramped nature of the space dictates the characters' rhythms of life through physical constraints, such as the bed not being able to open unless the table is closed (Perec, 1978/2023).

Grégoire Simpson: The character's mental state is not explicitly described in the text using the word "depression." Instead, it is conveyed indirectly through spatial indicators, such as his lying in bed with his knees drawn up to his chest and his using an old slipper as an ashtray (Perec, 1978/2023).

Troyan: The fact that Troyan, the previous tenant who was a used bookseller, has filled the attic with piles of books and objects reaching up to the ceiling represents the layers of memory within the space (Perec, 1978/2023).

In conclusion, in Perec's poetics, objects assume a more dominant role than characters, becoming the carriers of memory and identity. This two-way relationship between space and the user expresses a dynamic process that results in the space coming to resemble its user and the way the user lives their life over time. To operationalize these theoretical notions within the architectural analysis, the core terminology is structured across behavioural, physical, and temporal registers (Table 1). While 'hoarding' denotes the behavioural mechanism of accumulation and 'layering' describes its spatial stratification, 'sediment' is conceptualized not merely as a passive physical deposit, but as the tangible material residue left by temporal traces within the domestic envelope over successive occupancies.

Concept	Operational Definition / Usage in Study
Hoarding	Behavioural accumulation pattern
Layering	Spatial-stratigraphic condition
Sediment	Material residue of temporal occupation
Accumulation	Overarching spatial-temporal process

Table 1. Key Concepts Used in the Study

METHOD

The methodology operates as a structured operational pipeline translating non-metric literary narratives into architectural representations across three sequential phases (Figure 1):

Phase 1: Conceptual Categorization. The literary text (Life: A User's Manual) is systematically parsed to identify textual descriptions of domestic accumulation and temporal residue, establishing the core conceptual framework.

Phase 2: Parametric Translation. These conceptual notions are operationalized into architectural design criteria by pairing textual behaviours with analytical axes: actor (hoarding/inhabitation tendencies), space (physical spatial boundaries and layout), and time (chronological succession and temporal depth).

Phase 3: Computational Synthesis. The parametric inputs are processed through an iterative 5-Level Prompt Model utilizing artificial intelligence engines (ChatGPT, Gemini, Copilot), progressing from character-specific visual atmospheres to multidimensional superimposed plan-section drawings (Figure 1).

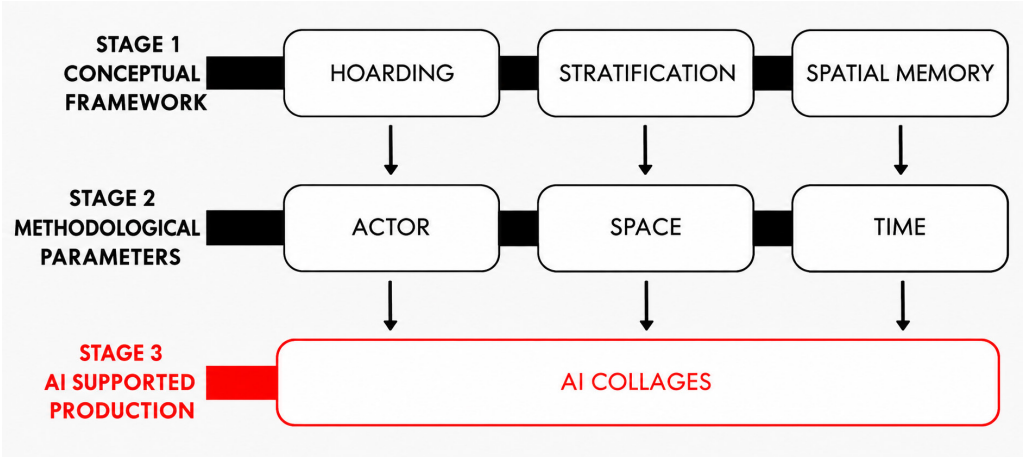


Figure 1. Flowchart of the Three-Stage Methodology for the Reconstruction of Literary Space (Image created by the authors).

Spatial Accumulation Through Actor, Space, and Time Parameters
Data Selection and Textual Coding Process

To establish methodological transparency, the textual dataset was extracted from Georges Perec's Life: A User's Manual based on two criteria: (1) explicit inventories of material possessions and (2) clear descriptions of spatialised daily routines. Centring on the top-floor Plassaert apartment, the study selected three narrative sequences representing distinct temporal layers and occupant profiles: the Plassaert family, Troyan, and Grégoire Simpson (Chapters 53, 54, and 72).

The qualitative literary data were codified into architectural parameters through a structured coding matrix (Table 2). Descriptive textual excerpts were parsed into 'Behavioural/Material Indicators,' which were subsequently translated into 'Spatial Parameters' (spatial density, surface condition, vertical stratification) to feed directly into the prompt architecture.

Table 2. Textual Coding and Parameter Extraction Matrix

Actor & Chapter	Textual Excerpt / Narrative Cue	Thematic Code	Architectural & Spatial Parameter
Grégoire Simpson (Ch. 53)	"...lying in bed, knees drawn up to his chest, smoking... using an old slipper as an ashtray."	Spatial inertia, physical isolation, negligence	Low horizontal density, messy central core, neglected surfaces, dark atmospheric tone
Troyan (Ch. 54)	"...piles of books and papers reaching up to the ceiling, leaving narrow corridors to walk."	Professional hoarding, archival storage	High vertical density, labyrinthine circulation, linear floor-to-ceiling boundaries
Plassaert Family (Ch. 72)	"...the table could not be unfolded unless the bed was closed... vases with wilted and artificial flowers."	Economic constraint, utility-driven accumulation	Functional spatial conflict, overlapping furniture layouts, artificial material textures
Temporal Synthesis (All)	The shared physical shell of the apartment occupied across successive time frames.	Multi-temporal sedimentation	Layered section planes, isometric superposition, simultaneous temporal depth

The methodological framework of this study is structured around three fundamental parameters: Actor, Space, and Time (Table 3). The concepts of accumulation and layering prominent in Georges Perec's narrative were not interpreted merely as the gathering of objects. Instead, they were approached as a holistic reading of the traces left by different actors within their own temporal frames on the same spatial plane (the Plassaert apartment)(Table 3). In the initial phase of the production process, the multi-layered structure of the literary text was broken down into its components. The three main actors experiencing the Plassaert apartment (the Plassaert family, Troyan, and Grégoire Simpson) were analyzed independently of one another. Each actor's use of space, inventory of objects, psychological state, and material concerns were represented as separate collages of the apartment's current state at that moment, with the assistance of artificial intelligence (Figures 2, 3, 4, 5).

Within this analytical framework, the domestic accumulations within the apartment are interpreted not as clinical diagnoses or empirical facts, but as plausible behavioural inferences derived from textual indicators (Table 4). For the Plassaert family, spatial congestion can be interpreted as an accumulation reflex shaped by economic constraints and material anxieties, manifested through utilitarian objects and non-perishable decorations. For Grégoire Simpson, spatial negligence and immobility are read as narrative indicators of psychological inertia and depressive isolation. For Troyan, the ceiling-high stacks of books and papers are framed as spatial traces of professional identity and archival accumulation. These inferences do not claim definitive psychological truths; rather, they serve as operative conceptual parameters to structure the architectural prompts.

Table 3. Methodology

Basic Parameter	Analysis	Artificial Intelligence Function and Narrative	Architectural Representation
Actor (Plassaert Family, Troyan, G. Simpson)	Independent examination of each actor's hoarding tendencies and psychological states	Transformation of textual descriptions into character-specific visual prompts.	Independent spatial collages reflecting only the actors' own experiences (their own states).
Space (Plassaert Apartment)	Identifying that different actors actually share the same physical space.	Compiling the resulting inventories of objects and actor silhouettes onto a common spatial substrate.	Experiments in conceptual layering where objects overlap within the physical boundaries of the space.
Time (Temporal Depth)	Reinterpreting accumulation as the buildup of actors within the space over their own times.	Overlaying plan and section planes based on the logic of simultaneity and parallelism (Interstellar reference).	A multidimensional architectural representation with temporal depth that dissolves all actors and their lived experiences into a single plane.

Table 4. Actor Motivations and Temporal Layering

Parameter	Actor	Hoarding Motivation (Authors' Inference)	Spatial Correspondence
ACTOR	Plassaert Family	Financial Concerns	Artificial/dead flowers, utilitarian objects.
ACTOR	Grégoire Simpson	Depression and Inactivity	Dirty ashtrays, a messy bed, spatial neglect.
ACTOR	Troyan	Professional Identity (Bookseller)	Piles of books and paper reaching the ceiling.
TIME	Synthesis	Temporal Accumulation	The overlapping of all motivations within the same physical boundary.

Transition from Text to Prompt

In the first stage of the AI-driven collage production process, the original descriptions of the setting from the book were directly imported into the ChatGPT tool to convert these texts into visual generation prompts. These prompts were then transferred to the Gemini and Copilot tools to create the first AI-generated collages of the setting.

Visual Backgrounds, Object Inventory, and Collage Composition

In subsequent stages of collage production, the goal was to go beyond the textual narrative and add a subjective interpretation to the setting. In this regard, a suitable visual background capable of expressing the space's layered nature was identified, and a detailed inventory of objects was compiled using the Gemini tool based on the descriptions in the texts.

While constructing the collage, the structural characteristics of the literary work were symbolically integrated into the visual composition. Given his role as the work's creator, Georges Perec is represented in the collage as an integral element, albeit in an abstract form. Additionally, drawing on the author's structuring of the narrative through the knight's move in chess, the knight figure has been used as a key symbol in the collage. The resulting inventory of objects, along with this abstracted image of the author and the chess knight, was processed onto a predefined background via the Gemini tool, thereby uniting the text's physical and conceptual dimensions within a single visual plane (Figure 7).

Five-Level Prompt Model

Based on the necessity for a good prompt to be clear, goal-oriented, and context-sensitive, a systematic method was followed in transferring textual data to artificial intelligence. This process—in which what is desired is clearly stated, the format is defined, the tone and style are selected, a specific role is assigned to the AI, and constraints are added—was structured using an analytical layering model. During the production process, by adding a new function to the request at each level, the quality of the visual representation was guided toward a disciplinary architectural interpretation (Table 5).

Table 5. 5-Level Prompt Generation Method

Level	Function	Representation Result
1	General Topic	Superficial Scene
2	Focus	Spatial Readability
3	Context	Atmosphere
4	Analysis	Temporal Layering
5	Perspective	Disciplinary Interpretation

Computational Workflow and Prompt Architecture

The generation pipeline divided analytical tasks across specific AI tools according to their computational strengths:

ChatGPT (GPT-4): Used for qualitative semantic parsing, extracting narrative keywords, and converting textual quotes into structured descriptive prompt frameworks.

Gemini: Utilized for cross-referencing object inventories, structuring spatial hierarchies, and generating contextual architectural collages with authorial metaphors (chess knight, puzzle).

Copilot (DALL-E 3 engine): Deployed for high-fidelity spatial synthesis, rendering architectural section-perspectives, planar overlays, and atmospheric textures.
To demonstrate reproducibility, Table 6 illustrates the operational application of the 5-Level Prompt Model using Grégoire Simpson's room as a representative log.
Using this model, the process was transformed into multilayered visuals that ensured spatial legibility step by step, captured the atmosphere of the era, reflected the psychological states of characters such as Grégoire Simpson through objects, and ultimately produced an interpretation at the intersection of architecture and literature.

Table 6. Operational 5-Level Prompt Log (Representative Case: Grégoire Simpson)

Level	Operational Target	Input Prompt Structure (Syntax)	Representation Target
Level 1	Base Context	"A small attic room in a Parisian apartment, 1970s, domestic interior."	Broad volumetric layout
Level 2	Spatial Enclosure	"...cramped garret space, sloped ceiling with dormer window, peeling wallpaper, unmade iron bed."	Orthographic/spatial legibility
Level 3	Atmospheric Tone	"...dim light entering from the window, heavy and dusty atmosphere, melancholic tone, worn parquet floor."	Materiality and sensory tone
Level 4	Narrative Sediment	"...scattered cigarette butts, an old slipper used as an ashtray next to the bed, unwashed coffee cups on the floor."	Behavioural indices and object inventory
Level 5	Disciplinary Synthesis	"Architectural collage style, section-perspective view, combining ink drawing textures with conceptual planar overlay, muted color palette."	Final disciplinary architectural representation

Visual Selection and Quality Assessment Criteria

Because generative diffusion engines produce stochastic outputs across identical prompt runs, a systematic four-tier selection protocol was implemented to curate the final representations from iterative image batches (approximately 15–20 iterations per scene):

Narrative-Spatial Fidelity: The visual must explicitly register the primary object inventories and character behaviours cited in Perec's text without introducing unrelated modern artefacts.

Architectural Legibility: The generated scene must maintain recognizable architectural boundaries (demarcating walls, openings, sloped roof geometry, and floor planes) rather than dissolving into purely abstract digital art.
Atmospheric and Material Consistency: Textures, light distribution, and object densities must accurately reflect the specific psychological and temporal condition attributed to the occupant (e.g., depressive stagnation vs. archival book piles).

Disciplinary Representation Value: For planar and sectional overlays, priority was given to outputs that preserved orthographic and isometric conventions, enabling simultaneous reading of horizontal circulation and vertical volume.

PROCESS AND FINDINGS

Object-Human Relationship

During the text analysis process, the most prominent finding regarding object-human relationships within the Plassaert apartment is that users experiencing the space exhibit hoarding tendencies. The accumulation of objects, resulting in a layered and stacked condition within the space, is visualized as the primary factor shaping the spatial experience. The visualizations depict the users' hoarding tendencies and the layered arrangement of objects within the apartments (Figures 2-5).





Figure 2. Grégoire Simpson's Apartment (Image generated by artificial intelligence)

Figure 3. The Plassaert Family's Small Apartment (Image generated by artificial intelligence)





Figure 4. The Troyan Apartment (Image generated by artificial intelligence)

Figure 5. The Plassaert Family's Other Apartment (Image generated by artificial intelligence)

The Construction and Visualization of Psychological Space

The psychological weight in Perec's text reaches its peak when we examine the condition of the character Grégoire Simpson. Perec does not use clinical terms such as "depression" to describe Grégoire Simpson's condition. Instead, the narrative indirectly conveys psychological withdrawal through spatial behaviours and physical postures. Simpson's posture—lying in bed fully clothed with his knees drawn up to his chest and using a discarded slipper as an ashtray—is interpreted in this study as a textual manifestation of depressive spatial inertia (Perec, 1978, 2023). Although alternative literary interpretations exist, this specific interpretation has been functionalised as a spatial parameter to guide the creation of an atmosphere of spatial neglect and domestic confinement (Figure 6). Perec describes the character of Grégoire Simpson and his state of mind as follows:

One day, at two in the morning, his right-hand neighbor, a young student named Troyan, noticed that the light in the student's room was still on as he was returning home; he knocked on the door but received no answer; he knocked again, waited a moment, pushed open the door—which wasn't quite closed—and found Grégoire Simpson in bed; with his knees drawn up to his chest, fully clothed, his eyes open, smoking a cigarette clamped between his middle and ring fingers; he was using an old slipper as an ashtray. When Troyan entered, he didn't look at him; the bookseller asked, "Are you sick? What happened? Do you want some water? Do you need anything?" He didn't answer, and only when Troyan lightly touched his shoulder to make sure he was dead did he suddenly turn toward the wall and mutter, "Leave me alone" (Perec, 1978, 2023, p. 284).

The Abstract Representation of the Object Inventory and Narrative Structure

The spatial analysis of the Plassaert apartment has been deepened through the visualization of the concepts of "play" and "constraint" that guide Perec's narrative. Two distinct conceptual collages have been created to represent the complexity of the object inventory described in the text and the author's mental construct.



Figure 6. The transformation of Grégoire Simpson's actions into spatial indicators (Image generated by artificial intelligence).

In the first visualization (Figure 7), a spatial composition is presented that deepens and fragments toward the centre in the shape of a circular vortex. At the centre of this composition is the "knight's figure from chess," representing the constraint Perec used to navigate between apartment rooms while writing * Life: A User's Manual *. The author's position observing the space from above, combined with everyday objects scattered around (ashtray, typewriter, clock, record player), forms a map of the literary text's inventory of objects. Differences in colour and layers are used to distinguish each user of the apartments.

In the second visualization (Figure 8), a triangular geometry (roof form) is centred, referencing the space's location on the top floor. Filling the interior of the triangle with a jigsaw puzzle pattern symbolizes the main character's jigsaw puzzles in the work. The jigsaw puzzle, which contains the space's past and current occupants (Grégoire Simpson, Troyan, and the Plassaert family), conveys this in a dramatic manner. The "Please Close Your Eyes" sign, anchored by the text in the room, and the piles of objects surrounding it are blended with a black-and-white, engraving-like texture, freezing the space's layers within a single frame (Figure 8).





Figure 7. The inventory of objects in the Plassaert apartment and an abstract representation of Perec's chess move narrative (Image generated by artificial intelligence)

Figure 8. Visualization of the characters' spatial silhouettes through the puzzle metaphor of the attic form (Image generated by artificial intelligence)

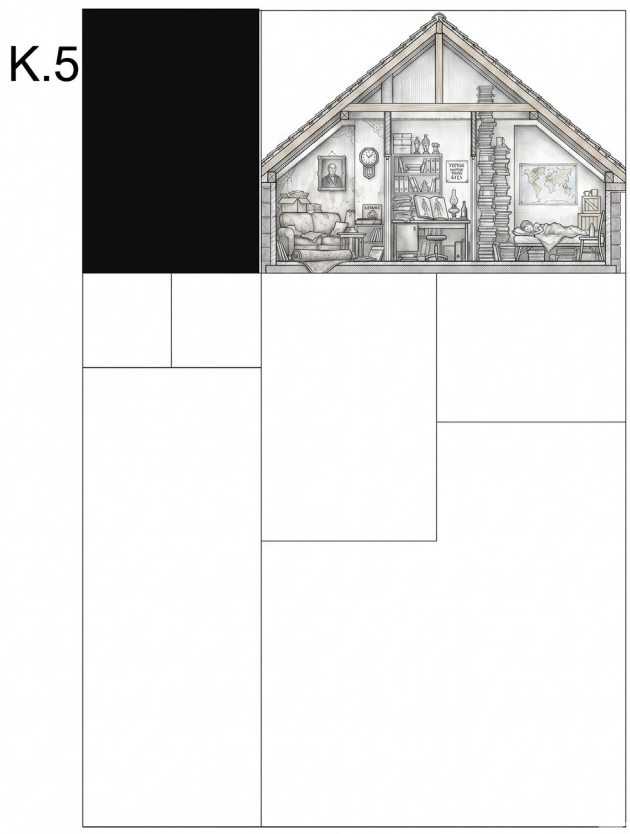
Multidimensional Representation: The Simultaneous Overlap of Plan and Section

The visual findings obtained following the separation process revealed that all these distinct lives and actors actually share the same physical boundaries (the Plassaert apartment) and converge through the parameter of time. This observation necessitated the use of the time factor as a unifying plane during the artificial intelligence phase. In this context, the visual productions have been transformed into a multidimensional temporal depth narrative through artificial intelligence. By simultaneously merging all actors and their lived experiences across different time periods into a single plane, the literary space's multi-layered and profound spatial accumulation spanning from the past to the present has been represented (Figure 7).

In the final phase of the study, the aim was to translate the simultaneous, holistic, and multi-layered structure present in Perec's literature onto an architectural plane. In this regard, drawing on previously generated plan and section visuals, the goal was to achieve an overlay resembling the multi-dimensional parallelism logic seen in the film "Interstellar". Plan and section, traditional tools of architectural representation, typically present space from a single-dimensional perspective. However, the Plassaert apartment is a space where the past and present lives of various actors—such as Grégoire Simpson, Troyan, and the Plassaert family—converge within the same physical boundaries, and where time is layered and spatialised (Figures 9, 10).

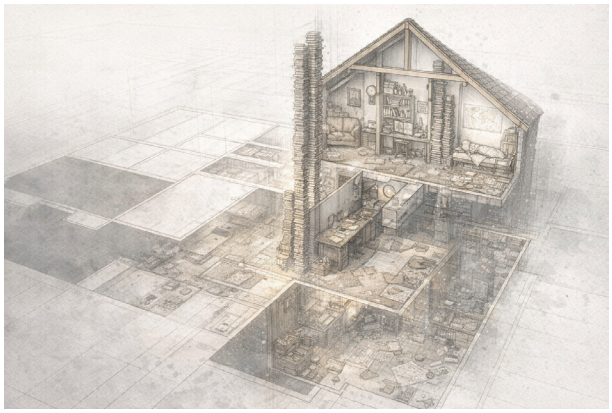


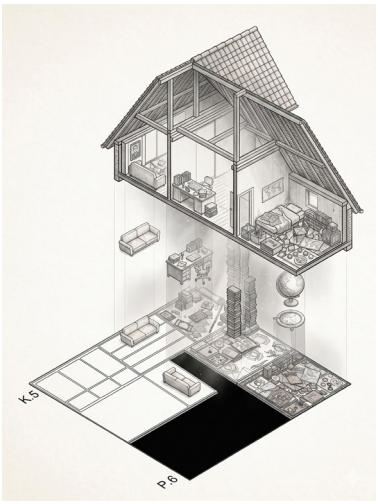
Figures 9. Plan and section planes generated with AI assistance (Images created by AI).



Figures 10. Plan and section planes generated with AI assistance (Images created by AI)

To visualize this complex structure, floor plans and sections previously generated by artificial intelligence were synthesized with the tesseract structure from the film "Interstellar". The primary motivation for choosing this reference is the conceptual framework provided by the scene in the film where parallel universes are depicted, allowing time to be experienced simultaneously as a layered space (tesseract). Just as the film visualizes the past, present, and future as overlapping in an infinite and sequential series of chambers, departing from a linear timeline, temporal layering in this study is also treated as a series of interconnected spatial units. In line with this approach—seen as the most powerful way to express experiences from different time periods simultaneously—new prompts entered into AI tools have synchronously overlaid the horizontal life map of the plan with the vertical physical depth of the cross-section. Through this model, spatial data belonging to the actors have been materialized in a multidimensional manner on a single plane (Figures 11, 12)





Figures 11-12. Multidimensional overlay of plans and sections generated by AI assistance, inspired by the film *Interstellar* (Images generated by AI).

DISCUSSION AND CONCLUSION

Throughout this study, the question of what architectural representation represents has been reopened for discussion in the process of reinterpreting Georges Perec's narrative structure through artificial intelligence. Analyses conducted on the Plassaert apartment have shown that space is not so much a static structure defined by physical boundaries, but rather a layered memory field where users' psychological states, economic concerns, daily habits, and temporal traces accumulate. In this context, the phenomenon of hoarding examined in the study has been interpreted not merely as the proliferation of objects, but as the sedimentation of time within space. In particular, the repeated filling of the same physical boundary by different actors across different periods has revealed that space is, in fact, a structure that is constantly being rewritten.

This situation demonstrates that, in Perec's understanding of space, the relationship between the user and the space is not one-sided. The user is, in fact, a producer who transforms the character of the space by imprinting their own life, mood, and daily rhythm onto the physical environment. Objects and traces of use that accumulate over time make the lived quality of the space visible. Thus, the Plassaert apartment transforms into an archive that preserves the traces of past users, layers them upon one another, and is reshaped with each new user.

In this context, the visuals produced in the study do not represent a completed state of the space but rather make visible a process of accumulation that is

constantly evolving and never reaches a final form. In particular, the multi-layered representational experiments achieved by superimposing plan and section views break the traditional structure of architectural drawing, enabling the simultaneous reading of different times within the same space. Thus, the space is treated as a temporal density carrying the residues of past lives. Rather than representing a completed state, the act of interpreting a constantly evolving and never-finalized process of accumulation is directly related to the structural framework of Georges Perec's * Life: A User's Manual *. Perec's deliberate decision to end his novel at the ninety-ninth chapter, without reaching the hundredth, demonstrates his conscious rejection of the narrative as a complete, closed, and flawless whole. This missing final piece, much like the puzzle metaphor in the work, implies that the whole can never be fully attained. For this reason, the representations produced do not aim to depict the space in its completed state. On the contrary, by making visible the missing pieces, the overlapping experiences, and the unresolved temporal residues, they translate Perec's deliberate practice of omission into the architectural representational plane.

To understand the broader implications of this research for architectural practice and theory, the proposed AI-supported workflow must be critically situated against traditional architectural representation paradigms. Conventional orthographic media (plans, sections, axonometrics) and contemporary parametric BIM models prioritize spatial clarity through singular snapshots in time and precise geometrical coordinates. However, they typically exclude lived experience, emotional deterioration, and the historical buildup of inhabitation within identical physical perimeters. Manual architectural collages, while more capable of handling evocative atmospheres, remain static and heavily dependent on isolated subjective manual assemblages.

The unique methodological contribution demonstrated in this study operates on three distinct disciplinary levels: Temporal Simultaneity over Static Metrics: Unlike CAD/BIM setups that isolate revisions into distinct, non-overlapping design options or phases, the AI-driven tesseract-inspired overlay enables the simultaneous visual coexistence of asynchronous occupants (Grégoire Simpson, Troyan, and the Plassaert family) within a single spatial register.

Translation of Non-Metric Qualitative Data: The workflow establishes a systematic bridge between literary description and architectural spatialisation, translating qualitative conditions—such as depressive spatial inertia, domestic hoarding, and professional accumulation—into spatial textures and densities without forcing them into premature dimensional grids.

Generative Analytical Tool for Conceptual Design: Beyond retrospective literary analysis, this framework provides architects and architectural students with an operative design medium. It enables designers to treat narrative, memory, and occupant psychology as generative parameters during the formative phases of architectural design, expanding representation from a tool of post-facto presentation into an active instrument of spatial inquiry.

Regarding the operational role of artificial intelligence in this translation process (addressing RQ2), the findings demonstrate that Generative AI is neither a passive image generator nor an autonomous spatial author. Instead, it functions as an interpretive cognitive mediator and an emergent representational medium. Operating within human-defined architectural constraints, the AI engines (ChatGPT, Gemini, Copilot) process qualitative, non-metric textual descriptions through the 5-Level Prompt Model, translating latent psychological and spatial

relationships into tangible visual syntax. The agency remains firmly anchored in the researcher's analytical framework, while AI acts as a computational bridge between textual narrative and spatial representation.

Furthermore, regarding the broader applicability of the methodology (addressing RQ3), while this study specifically investigates the Plassaert apartment in Georges Perec's Life: A User's Manual, the conceptual logic of the Actor–Space–Time framework is theoretically adaptable rather than strictly case-bound. Perec's text provides an ideal laboratory due to its exhaustive inventories and structured spatial constraints. However, because the study's empirical testing is limited to this single setting, its universal validity remains to be demonstrated across diverse literary works. Nonetheless, the core operational pipeline—deconstructing narrative cues into behavioural motivations (Actor), architectural perimeters (Space), and temporal accumulation (Time)—offers a transferable methodological scaffold. This structure provides a potential analytical framework for future inquiries investigating narrative environments where material culture, everyday routines, and spatial memory are foregrounded.

Limitations and Future Research Trajectories

While the proposed methodology demonstrates a systematic framework for narrative spatialisation, several intrinsic limitations must be acknowledged. First, because the computational outputs were curated and evaluated based on qualitative architectural criteria established by the authors, the findings inherently carry an interpretive dimension. Future research could enhance evaluative objectivity by integrating multi-expert panels (e.g., Delphi methods with architects and literary critics) or empirical user-perception studies to assess the atmospheric fidelity of AI-generated spatial representations. Second, the empirical scope of this study was intentionally restricted to a single architectural volume—the Plassaert apartment in Georges Perec's Life: A User's Manual. While this single-case focus enabled an exhaustive, micro-spatial analysis of domestic accumulation, testing the cross-applicability and robustness of the Actor–Space–Time model requires expanding the workflow to broader narrative settings, urban-scale literature, and varied literary genres with differing structural constraints.

Consequently, this study reinterprets the Plassaert apartment from Georges Perec's "Life: A User's Manual" through a methodology developed based on the parameters of Actor, Space, and Time, thereby demonstrating how literary space can be materialized using architectural representation tools. Thanks to the method employed in the study, the traces left by different users in the same physical space, object relationships, and temporal stratifications were evaluated together; a multi-layered representational language was developed through plans, sections, collages, and AI-assisted visualizations. In this context, the research demonstrates that the relationship between literature and architecture can constitute a methodological and representation-focused field of production.

Conflict of Interest:

No conflict of interest was declared by the authors.

Financial Disclosure:

The authors declared that this study has received no financial support.

Ethics Committee Approval:

Ethics committee approval was not required for this article.

Legal Public/Private Permissions:

Not applicable for this study, as no data collection requiring permissions from participants was conducted.

Authors Contribution:

All authors contributed equally 1) participated in the design process, collecting data and analysing the data examined, 2) participated in writing the draft and critically evaluating the content, 3) approved the final version of the article and took all responsibility for this manuscript.

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