

**Document Version**

Final published version

**Citation (APA)**

Cantero, A. (2025). Lived-In Doubles: Post-Occupancy and the Rewriting of Architectural Authorship. *COTAA*, (2), 329-348.

**Important note**

To cite this publication, please use the final published version (if applicable). Please check the document version above.

**Copyright**

In case the licence states "Dutch Copyright Act (Article 25fa)", this publication was made available Green Open Access via the TU Delft Institutional Repository pursuant to Dutch Copyright Act (Article 25fa, the Taverne amendment). This provision does not affect copyright ownership. Unless copyright is transferred by contract or statute, it remains with the copyright holder.

**Sharing and reuse**

Other than for strictly personal use, it is not permitted to download, forward or distribute the text or part of it, without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license such as Creative Commons.

**Takedown policy**

Please contact us and provide details if you believe this document breaches copyrights. We will remove access to the work immediately and investigate your claim.

**COTAA**

**THE DOUBLE**

2/2025

**Editorial board for COTAA 2/2025**

Ştefania BOCA  
Silviu BORŞ  
Miruna MOLDOVAN

**Scientific Committee**

Şerban ȚIGĂNAŞ, *TU Cluj-Napoca, Faculty of Architecture and Urban Planning*;  
Dragoş DASCĂLU, *TU Cluj-Napoca, Faculty of Architecture and Urban Planning*;  
Irina DAVIDOVICI, *ETH Zurich, gta Archive*;  
Kevin DONOVAN, *Technical University Dublin*;  
Alberto FERLENGA, *IUAV, University of Venice*;  
Hilde HEYNEN, *KU Leuven, Urban Studies Institute*;  
Imola KIRISZAN, *TU Cluj-Napoca, Faculty of Architecture and Urban Planning*;  
Adriana MĂGERUŞAN, *TU Cluj-Napoca, Faculty of Architecture and Urban Planning*;  
Andreea MILEA, *TU Cluj-Napoca, Faculty of Architecture and Urban Planning*;  
Horia MOLDOVAN, *'Ion Mincu' University of Architecture and Urban Planning Bucharest*;  
Dana OPINCARIU, *TU Cluj-Napoca, Faculty of Architecture and Urban Planning*;  
Françoise PAMFIL, *'Ion Mincu' University of Architecture and Urban Planning Bucharest*;  
Virgil POP, *TU Cluj-Napoca, Faculty of Architecture and Urban Planning*;  
Cristina PURCAR, *TU Cluj-Napoca, Faculty of Architecture and Urban Planning*;  
Raf De SAEGER, *KU Leuven, Urban Studies Institute*;  
Smaranda TODORAN, *TU Cluj-Napoca, Faculty of Architecture and Urban Planning*;

**Core Group**

Ştefania BOCA, *TUCN, Faculty of Architecture and Urban Planning Cluj-Napoca*;  
Silviu BORŞ, *TUCN, Faculty of Architecture and Urban Planning Cluj-Napoca*;  
Marius INDREI, *TUCN, Faculty of Architecture and Urban Planning Cluj-Napoca*;  
Miruna MOLDOVAN, *TUCN, Faculty of Architecture and Urban Planning Cluj-Napoca*.

**Cover**

Marius INDREI

**Typeset & DTP**

Ştefania BOCA

**Collaborators**

Emilia ȚUGUI, *Ozalid Publishing House*  
www.ozalid.ro  
contact@ozalid.ro

**Printed and bound**

IDEA Printing S.A., December, 2025

**ISSN 3061-4236**

**ISSN-L 3061-4236**

**Website:** www.cotaa.ro

**E-mail:** office@cotaa.ro

*The editors of COTAA and this issue's contributors have tried to contact all copyright holders of the illustrations that appear in this issue, with limited results. If you claim your ownership of any of the illustrations appearing in this issue and have not been properly credited, please contact us. Reproduction in whole or in part, multiplication by any means and in any form, such as photocopying, scanning, transposition into electronic or audio, making available to the public, including via the Internet or other computer networks, permanent or temporary storage on devices or systems with the possibility of retrieval of information, for commercial purposes or free of charge, as well as other similar acts committed without the written permission of the copyright owner is a violation of the legislation on the protection of intellectual property and is punishable under criminal and/or civil law in accordance with the laws in force. COTAA journal review process is a double-blind peer-review system. The reviewers were required to adhere to the principles of our journal's ethics statement and to present to the editorial board any conflicting or competitive interests with those of the authors of the papers. All received information and papers are considered confidential. The list of reviewers will always be a dynamic one, as the journal continuously aims at providing a diverse and high-quality group of professionals. COTAA uses Noto Serif as open-source typefaces. COTAA aims to be published once a year.*



**COTAA**



**EDITURA OZALID**

## CONTENTS

- 7 Daniel Tudor MUNTEANU**  
Editorial. *The Double*
- 19 Ștefania BOCA, Silviu BORȘ, Marius INDREI, Miruna MOLDOVAN**  
Drawing is always already a double
- 33 Charles HOLLAND**  
I'll Be Your Mirror: Criticality and Contextualism in The Work of Robert Venturi and Denise Scott Brown
- 53 Eva GUSEL**  
Plečnik and his Double: Repetition as Architectural Operation
- 81 Dale Allen GYURE**  
Two Views of the World Trade Center, or The Doubles of Minoru Yamasaki
- 103 CRYPTIC.K (Roberta FRUMUȘELU UNTARU & Eduard UNTARU)**  
House of Earth (the Second Glance)
- 127 Ștefan SIMION**  
Inner Duality. Livio Vacchini's School of Architecture in Nancy
- 155 Francisco PORTUGAL e GOMES**  
Sigurd Lewerentz: *the Unity of the Work* and Diversities of *the Double*
- 177 Radu-Mihai MĂLDĂRESCU**  
Alexander Brodsky: An Architect's Double
- 193 Christina DELUCHI**  
A Set of Matching Images and the Desire for "European-ness" in Tirana
- 215 Marta ROCHA MOREIRA & Ana Sofia PINTO**  
A Chimney, Two Chimneys, *Twin Chimney*. Uses and Architectonic Expressions of a Cooking Space
- 233 Eleni HAN**  
Reflective Cities: Cinema, Surface, and the Architecture of Simulation
- 255 Andrew LUMMUS**  
Richard Serra's False Double
- 275 EX FIGURA (Barbara STALLONE & Francisco SILVA)**  
In Continuum
- 289 Cosmin O. GĂLĂȚIANU**  
Roark's Double. An Architectural Background to a Story of Human Integrity
- 309 Pedro DUARTE BENTO**  
Architectural Counterfeit —The art of Bad Copying
- 329 Antonio CANTERO**  
Lived-In Doubles: Post-Occupancy and the Rewriting of Architectural Authorship
- 349 Laura del PINO**  
Phantom and Flesh
- 371 Robert Louis BRANDON EDWARDS**  
The Double
- 381 Zeynep Gül BAĞAN**  
Mimesis as an Escape Route in Architecture: Hilde Heynen's Perception of Mimesis and its Critique
- 405 Cristiano TOSCO**  
Architectural Chrysalises. Building Sites as Multipliers of Meaning
- 425 Regin SCHWAEN & Nick WICKERSHAM**  
PANTHEON 2.0 or: Finding a Copy of the Original Drawings for a Temporary Tower and Formwork of the Dome and then Rediscovering them Again + Extrapolating the Method of Constructing the Dome
- 453 Johanna IRANDER**  
Dimensions
- 471 Call for Papers: The Double**

## Endnotes

1. Gilles Deleuze, *Difference and Repetition*, trans. Paul Patton (London: Continuum, 2004; first published 1968), 1.
2. “What has been will be again, what has been done will be done again; there is nothing new under the sun.,” Ecclesiastes 1:9, c.450 BCE
3. As, in a recent example, the conference *The Architecture of Copies | Copies of Architecture*, Aarhus, 22-23 September, 2022; or Winy Mass; Felix Madrazo, *Copy Paste, The Badass Architectural Copy Guide*, The Why Factory, Holland, 2017.
4. As quoted by Eduardo Souto de Moura, in *INDESEM, Theme: Boundaries*, 2023, 13’21” mark, url: <https://www.youtube.com/watch?v=w3yETDiHq3E>. Accessed 29.05.2025
5. Harold Bloom, *The Anxiety of Influence: A Theory of Poetry*, 2nd ed. (New York: Oxford University Press, 1997; first published 1973).
6. As described by Eduardo Souto de Moura, in Nuno Grande, “Homecoming: An Interview with Eduardo Souto de Moura,” *El Croquis*, no. 146 (Madrid, 2009), 10.
7. Nuno Grande, “Theaters of the World,” *El Croquis*, no. 146 (Madrid, 2009), 25.
8. Antoine-Chrysostome Quatremère de Quincy, “Type,” in *Encyclopédie Méthodique. Architecture*, vol. 3 (Paris: Bibliothèque Nationale de France, Département Littérature et Art, 1825), 543–44, author’s translation.
9. Jean-Nicolas-Louis Durand and Jacques Legrand, *Recueil et parallèle des édifices de tout genre, anciens et modernes* (Paris, 1801).
10. Jean-Nicolas-Louis Durand, *Précis des leçons d’architecture données à l’École Polytechnique* (France, 1802–5).
11. Étienne de Condillac, *L’Essai sur les origines des connaissances humaines* [1746], quoted in Antoine Picon, “From ‘Poetry of Art’ to Method: The Theory of Jean-Nicolas-Louis Durand,” introduction to *Texts & Documents* (Los Angeles: Getty Research Institute Publications Program, 2000), 21.
12. The comparative exercise between his plans in Lessons (Plate 15, for instance) and certain floor plans by Mies van der Rohe or Craig Ellwood, would explain it. Author’s note
13. Jorge Figueira, “Capelas (Architettura per i musei),” in *Souto de Moura*, ed. Nuno Graça Moura and Francesco Dal Co (Matosinhos: Casa da Arquitectura, Centro Portugues de Arquitectura, 2019), 59–60, author’s translation.
14. Charles Jencks, *The Language of Post-Modern Architecture* (New York City: Rizzoli International Publications Inc, 1977), p. 9
15. As chronologically aligned in Ana Vaz Milheiro et al. (Ed.), *Eduardo Souto de Moura, Vinte e Duas Casas*, VI Bienal Internacional de São Paulo, Ordem dos Arquitectos, Lisboa, 2006
16. “From this starting point, ESDM knew how to blend the *miesian* inspiration with the Californian experiences from the 1950/60s celebrated in the Case Studies House program [...]” Jorge Figueira, *Capelas, (Architettura per i musei)*, in Nuno Graça Moura, Francesco Dal Co, (Ed.) *Souto de Moura, Casa da Arquitectura*, Centro Portugues de Arquitectura, Matosinhos, 2019, p. 64, Author’s trans.
17. “Fue la primera vez que dibuje venanas,” Eduardo Souto de Moura, in *Cátedra Acciona SUR*, conference, 2015, 07’51” mark, <https://www.youtube.com/watch?v=fQlxj7Alqzg>. Accessed 22.05.2025
18. “Para no hacer un unico volumen, y no hacer una casa monodireccional, con una vista, que era lo yo hacia antes, cajas abiertas en vidrio dirigidas a un paisaje,” Eduardo Souto de Moura, in *Cátedra Acciona SUR*, conference, 2015, 06’055” mark, <https://www.youtube.com/watch?v=fQlxj7Alqzg>. Accessed 22.05.2025
19. Nuno Grande, “Homecoming,” 13.
20. Nuno Grande, “Theaters,” p. 25.
21. Nuno Grande, “Homecoming,” 10-13.
22. *Ibidem*, 9.
23. Nuno Portas, Preface, in ‘Casas de Sonhos’, Roselyne de Villanova, et al., Edições Salamandra, Lisbon, 1995, p. 9
24. Pedro Duarte Bento, ‘A Casa Genérica, Uma nova casa popular portuguesa, 1960-1986’, Ph. D. Thesis, Faculdade de Arquitectura da Universidade de Lisboa, Lisbon, Portugal, 2024.
25. 1970:46.082; 1980: 75.111; 26.7407. Source: <https://info.dgeec.medu.pt/75anos-estatisticas-educacao-portugal/522/>. Accessed 03.06.2025
26. Pierre, Bourdieu, *Distinction: A Social critique of the judgment of taste* [1979], (Cambridge, Massachusetts: Harvard University Press, 1984), trans. Richard Nice.
27. Diogo Freitas do Amaral, *Projecto de Lei de Revogacao (Parcial) do DL 73/73*, n/d, p. 6.
28. Lei 31/2009 (Art. 10, point 2), with the exception of some civil engineers (Art. 25, point 7).
29. Around 500 in 1969, in Diogo Freitas do Amaral, *op. cit.*, p. 3; 11.911 in 2005.
30. Ana Vaz Milheiro, *A minha casa é um avião*, Relógio d’Água, Lisbon, 2007, p. 112.
31. Source: <https://observador.pt/2024/10/09/ordem-dos-arquitetos-pondera-medidas-mais-duras-face-a-baixos-salarios-e-alta-emigracao/>. Accessed 22.08.2025
32. Nuno Grande, “Homecoming,” 9-13.

## Lived-In Doubles: Post-Occupancy and the Rewriting of Architectural Authorship

Antonio CANTERO

Delft University of Technology, Netherlands  
a.cantero@tudelft.nl

**Keywords:** post-occupancy evaluation; oral history; architectural theory; adaptive reuse; user-centred design.

### Abstract

In architectural narratives, the completion of a building often signals the culmination of authorship. Yet post-occupancy transformations challenge this closure, revealing a duplicated reality in which users operate as co-authors through lived experience. This paper explores the duality between the projected and the lived in Le Corbusier’s Quartiers Modernes Frugès in Pessac, using Philippe Boudon’s *Lived-In Architecture: Le Corbusier’s Pessac Revisited* (1972) as both subject and method. Based on interviews with residents and design actors, Boudon’s investigation implicitly articulates a post-occupancy evaluation (POE)—one where user-driven transformations overwrite the architectural original with spatial adaptations. Revisiting Boudon’s study through the lens of POE, the paper examines how occupation produces a ‘second architecture’: a lived-in, inhabited version of the project that exists in tension with its intended form. Drawing on contemporary POE frameworks, the study positions Boudon’s work as an early exploration of spatial authorship divided between the architect and the inhabitant. By comparing evaluative methods and resident modifications, the paper reveals how the building becomes a double of itself: the designed and the transformed, the envisioned and the lived. Far from being mere deviations, these user interventions offer an alternative authorship—a reflective counterpart to architectural intention. In doing so, the paper reframes POE not as critique, but as a mechanism for revealing architectural duplicity: one rooted in the coexistence of occupation and design. This theoretical repositioning aligns with broader inquiries into architectural doubles, suggesting that the lived environment is always already a twin to its uninhabited self.

### Introduction

Architectural authorship is traditionally understood as the creative prerogative of the architect, culminating at a building’s completion. In conventional architectural narratives, once construction is finished and the designer’s vision is realised in built form, the story of authorship is considered complete. Yet the life of a building does not freeze at the moment of handover. Post-occupancy transformations, the alterations and adaptations made by inhabitants over time, challenge

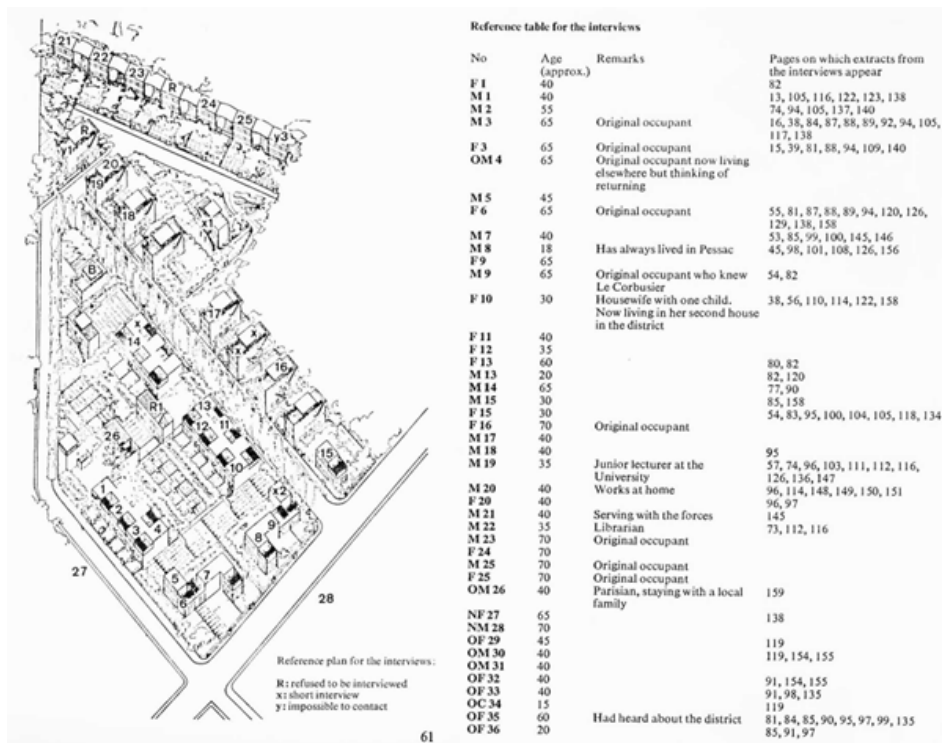


Figure 1: Quartiers Modernes Frugès. Reference plan and table for the interviews. Source: Philippe Boudon, *Lived-In Architecture: Le Corbusier's Pessac Revisited* (Cambridge, MA: MIT Press, 1972).

the closure of the architect's authorship. They reveal a duplicated reality in which users effectively become co-authors of the built environment through the act of living in and changing the space. Instead of a singular creation preserved in time, a building often exists in two states: the intended design as completed by the architect, and the lived form continually rewritten by its occupants. These two versions frequently diverge, sometimes subtly and sometimes dramatically, creating an architectural double: an inhabited twin of the original conception.

This paper explores the duality between the projected and the lived-in architecture, using Le Corbusier's housing project at Pessac (Quartiers Modernes Frugès, 1925) as a case study. Few projects illustrate the tension between design intent and lived reality better than Pessac. Designed as a model workers' housing estate by Le Corbusier, the Pessac development was intended to manifest the architect's progressive ideals: a machine-for-living paradigm of efficient, standardised dwellings. However, once inhabited, the residents of Pessac famously modified their houses in defiance of those

original principles. Over the ensuing decades, Pessac's flat roofs sprouted pitched covers, its pristine white façades were repainted or adorned with ornamentation, open terraces were enclosed, and machines for living were personalised into homes. These post-occupancy alterations, initially seen as disfigurements of Le Corbusier's work, have come to be reinterpreted as meaningful transformations that overwrite the architectural original with spatial adaptations. In Pessac, the users quite literally rewrote the architecture, raising important questions about who authors a building's final form and use.

Revisiting Pessac through the lens of post-occupancy evaluation (POE) and user agency allows us to reframe questions of authorship and originality. This paper positions Philippe Boudon's study *Lived-In Architecture: Le Corbusier's Pessac Revisited* (1972) as both subject and method for examining Pessac's dual life.<sup>1</sup> Boudon's investigation, based on extensive interviews with the residents and other stakeholders involved in the project, was among the first to systematically document how a building's inhabitants reshape architecture after completion (Figure 1). Implicitly, his work performed an early form of POE, treating the lived experience and modifications at Pessac not as failures or aberrations, but as rich data with which to evaluate and understand the architecture's performance and meaning. By drawing on Boudon's study and situating it within contemporary theoretical frameworks, we can understand Pessac's user-driven transformations as a form of alternative authorship: a collaborative process wherein the architect's design and the inhabitants' adaptations together produce the complete work.

In the following, this paper first outlines a theoretical framework for understanding post-occupancy changes and architectural authorship. It then presents an analysis of the Pessac case, describing the original design vision and the subsequent modifications documented by Boudon's post-occupancy study. Finally, it discusses the implications of viewing architecture as a "lived-in double," a dual entity comprising both the designed and the inhabited, and argues that post-occupancy transformations can be reframed not as mere deviations or critiques of the original design, but as integral to the production of architectural meaning. By doing so, the paper aligns with broader inquiries

into architectural doubles and calls for a more inclusive notion of authorship that acknowledges the inhabitant as an active partner in the making of architecture. The lived environment is always already a twin of its uninhabited self, and it is in the dynamic interplay between the two that architecture ultimately resides.

### **Post-Occupancy, User Agency, and Architectural “Doubles”**

Post-occupancy evaluation (POE) is defined as the examination of the effectiveness for human users of occupied, designed environments.<sup>2</sup> POE has been around in various forms for at least sixty years. One of the earliest formal uses of the term and practice is linked to Tom Markus and the Building Performance Research Unit (BPRU) at the University of Strathclyde, who evaluated about fifty schools in Scotland in the late 1960s. Around the same time, the Royal Institute of British Architects (RIBA) developed its *RIBA Plan of Work*, initially launched in 1963 and published in 1964, establishing frameworks for design and construction evaluation.<sup>3</sup> Traditionally, POE has been employed as a post-construction evaluation. Building professionals and researchers carry out surveys, interviews, and observations months or years after occupancy to determine which design features have succeeded or failed, often with the aim of informing improvements in future projects or adjustments to the existing building. This approach implicitly acknowledges that a building’s narrative continues beyond its completion: the period of use is a fundamental phase in the building’s lifecycle, and studying it can uncover discrepancies between design assumptions and the realities of occupation.

While traditional POE has often focused on functional performance measures such as thermal comfort, space utilisation, and user satisfaction, its philosophy opened the door to recognising users as important stakeholders in defining architectural success. Roland Barthes argued in “The Death of the Author” (1967) that texts do not have fixed meanings determined solely by their creators. Instead, meaning arises from the experience and interpretation of the reader.<sup>4</sup> Juan Pablo Bonta, in *Architecture and Its Interpretation* (1979), argued that architecture is an interpreted art.<sup>5</sup> The significance of a building evolves through the interpretations and actions of its users and critics rather than solely through

the intentions of its designer. Bonta demonstrated that inhabiting a space involves interpretation that can reinforce, modify, or challenge the architect’s original design. Thus, users influence the meaning and form of architecture both through their narratives and physical alterations.

This understanding opens the way to consider user modifications as a form of authorship. If architecture is not a fixed object but a social artefact subjected to use and interpretation, the traditional idea of a single architectural author begins to lose ground. The notion of the solitary architect-genius creating a timeless work is challenged by a growing body of scholarship that emphasises the inclusion of multiple voices in architectural discourse. In practice, these voices include the building’s occupants, whose lived experiences and needs lead them to adapt spaces in ways the original designer might not have anticipated. Sociologist Henri Lefebvre, whose work on the production of social space informs much of this theoretical shift, was an early advocate for recognising everyday user practices. Lefebvre argued that inhabitants appropriate space through daily routines and alterations, thus becoming producers of space in their own right, a concept he developed in *La production de l’espace* [*The Production of Space*] (1974). From Lefebvre’s perspective, architecture is always co-produced: the architect provides an initial framework, but the work is completed through use and habitation<sup>6</sup>

Lefebvre’s viewpoint is clearly expressed in his preface to Philippe Boudon’s *Lived-In Architecture*, where he reflects on the case of Pessac. He asks: “What was Le Corbusier trying to do at Pessac? [...] And what did the occupants do?”<sup>7</sup> Lefebvre explains that Le Corbusier designed a series of houses intended as affordable, hygienic machines for living. However, in reality, the architecture lent itself to conversion and ornamentation, and the occupants did not simply settle passively into the houses as they were given. Instead, they decided to live actively, taking the structures provided by the architect and modifying them through conversion and addition. In doing so, they demonstrated what it truly means to live in a house: an activity. The residents added their needs to the buildings, created distinctions, introduced personal qualities, and ultimately constructed a differentiated social

whole within the initially uniform estate. This passage emphasises the idea that life itself continues the design process. While the architect may design for living, it is only through the act of living actively that architecture fully achieves its social reality. Lefebvre concludes that by writing the Pessac study, Boudon inaugurated a new form of architectural research, one that treats residents' contributions not as infractions to be criticised but as data to be understood, revealing how architecture functions in the context of real life.

During the 1960s and 1970s, design theory questioned the exclusive control of architects over buildings. Yona Friedman, in *Toward a Scientific Architecture* (1975), argued that users should be able to select and adapt their places from options provided by architects.<sup>8</sup> Cedric Price, in *Generator* (1977), proposed that occupants could continually modify spatial layouts to suit changing needs.<sup>9</sup> John Habraken, in *Supports* (1972), distinguished between the architect's role in designing the structural framework and the occupant's role in adapting the internal components, thus sharing responsibility for the building.<sup>10</sup> These ideas emphasised openness and user participation. Subsequently, Stewart Brand, in *How Buildings Learn* (1994), argued that buildings are ongoing processes rather than finished products. He maintained that the most successful buildings are those that adapt over time or allow users to adapt them without losing their essential character. Brand highlighted the importance of a building's second life after the architect's involvement, when the design's true performance becomes evident.<sup>11</sup>

Within this theoretical framework, the concept of the architectural double can be introduced: the viewpoint that every building has two overlapping identities, the projected or intended identity provided by the architect, and the actual or lived identity that emerges through use. This notion echoes the literary idea of a text's double, where the written word contrasts with its interpreted meaning. However, in architecture, it is tangible. The divergence can often be observed physically by comparing the architect's drawings or photographs of a pristine new building with the same building after years of occupancy. They remain recognisably the same building, yet they are also not the same, much like twins or doubles that share a common origin but develop distinct personas. Traditionally,

architectural discourse has privileged the first identity, the designer's intentions, and the as-designed form. However, with an evolving understanding of user agency, the second, lived identity can be recognised as an equally valid facet of architecture. It forms a parallel narrative alongside the design narrative. Embracing this duality, the coexistence of occupation and design, allows for a deeper understanding of architecture as not a fixed object but as an ongoing process and dialogue between designers and users over time.

Acknowledging the lived-in double of architecture fundamentally redefines the role of post-occupancy studies. Rather than serving solely as a critique or evaluation of whether the architect achieved their intent, POE can be understood as a tool to reveal architectural duplicity, understood neutrally as the coexistence of two overlapping realities. It exposes how the original design is translated, modified or even subverted through the process of inhabitation, thus uncovering the full complexity of a building's existence. The objective is not to dismiss the architect's authorial intent outright but to place it within a continuum of authorship that extends throughout the building's occupancy. As one recent study puts it, incorporating occupants' voices and experiences through methods such as oral history transcends the drawn or built construct of architecture, providing insights beyond what plans and formal design alone can reveal. User interviews serve as a vital connection between the built environment and its inhabitants, demonstrating the importance of lived experience as a bridge between architectural theory and practice. By treating testimonies and alterations by occupants as critical data, architects and historians can create a more inclusive architectural history, one that acknowledges often silenced experiences and forgotten knowledge as essential components of a building's narrative.

This paper's theoretical framework can be summarised in several key points. First, buildings are dynamic artefacts that continue to evolve after occupation, often in ways that designers cannot predict. Second, users act as co-authors of architecture through both their interpretations and physical alterations. Third, the idea of a single architectural author is problematic; instead, architecture is a collaborative and cumulative work created over time by multiple agents, including

architects, occupants, and maintenance personnel. Finally, the “double” of architecture—the designed versus the lived—should be recognised and studied, rather than viewed as a threat to the purity of design. With these concepts in mind, the case of Pessac demonstrates how post-occupancy transformations can rewrite architectural authorship and enrich our understanding of a building’s full lifecycle.

### **Le Corbusier’s Pessac – From Machine for Living to Lived-In Architecture. Design Intentions at Pessac**

The design intentions, construction process, and early reception of Pessac are thoroughly documented with archival material, period photographs, and municipal records.<sup>12</sup> In 1924, Henry Frugès commissioned the architect Le Corbusier to design a workers’ housing estate on the outskirts of Bordeaux, in the suburb of Pessac. This development later became known as the Quartiers Modernes Frugès or Cité Frugès and was conceived as a testing ground for Le Corbusier’s ideas on housing. Frugès explicitly instructed Le Corbusier that Pessac must be a laboratory for affordable housing innovation. The project included approximately 51 houses out of an originally planned 135, featuring various prototypes refined by Le Corbusier, including terraced houses, duplexes, and small apartment blocks arranged in a garden-city inspired layout. Employing a standard modular grid and repetitive elements, Le Corbusier aimed to show that mass production and construction methods could produce high-quality, affordable dwellings for the working class. Key features of the design included flat roofs intended as roof terraces or garden terraces, open-plan interiors, horizontal ribbon windows, and an overall rational approach to housing.<sup>13</sup> The houses were painted in a bold polychrome palette featuring ochres, blues, and greens to emphasise their geometric forms and avoid monotony in the repetitive structures.

Le Corbusier’s vision for Pessac followed his well-known principle of the house as “a machine for living in”<sup>14</sup>. These dwellings were intended to provide healthy and efficient living conditions, with ample light and ventilation through large horizontal windows and roof terraces, standardised components to reduce construction costs, and flexible interiors to meet the

basic needs of families. This represented a utopian approach for its time, offering, within the 1920s, social housing that broke with traditional styles in favour of a new architectural approach. Le Corbusier’s authorship at Pessac must be understood within a collaborative and client-driven framework. Pierre Jeanneret co-designed the estate, and Henry Frugès, as patron and initiator, explicitly framed the commission as an experimental “laboratory” for economical, standardised dwellings. The project’s type-catalogue and polychromy were presented by Le Corbusier as part of a didactic demonstration of serial production and hygienic domesticity, rather than as a closed aesthetic object. Within this matrix, authorship already appears distributed: architect and co-designer as proposers of a system, and client as programmatic driver. Subsequent tensions between ideal and execution—technical, financial, and municipal—were therefore not accidents at the margins of a singular intention, but embedded conditions of the work’s original conception.<sup>15</sup>

Practical difficulties emerged early in the project. Construction encountered problems with untested techniques, such as sprayed concrete, which had to be abandoned in favour of conventional masonry. Costs greatly exceeded initial estimates: by the time the houses were completed around 1926, they cost about twice as much as comparable traditional homes and three to four times more than originally planned. These financial and technical challenges caused the intended working-class occupants to hesitate or refuse to move in, finding the design unconventional and the cost prohibitive. As a result, Frugès, who was under financial pressure, sold many units to higher-income buyers shortly after completion. Additionally, the estate lacked basic infrastructure; it was not connected to the municipal water supply until 1929, leaving the houses vacant and vulnerable to deterioration in the meantime.<sup>16</sup>

By the end of the 1920s, Pessac had already diverged from Le Corbusier’s original plans in social and economic terms. The intended occupants, mainly industrial workers, were largely absent and replaced by residents who did not necessarily share the architect’s original vision. Even before significant physical changes, this shift shows that architectural authorship can be rewritten simply by changes in user demographics or patterns of use. Le Corbusier’s idea of a workers’

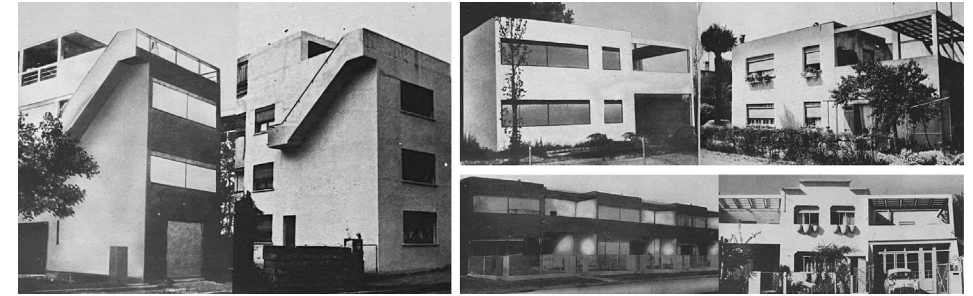
community embracing everyday living was altered when the expected residents did not settle. Instead, the new inhabitants had more conventional lifestyles and were often confused or dissatisfied with the design and practical issues of the houses. Contemporary local press and public opinion reportedly expressed scepticism toward the design. In summary, the stage was set for a conflict between architectural intent and occupant reality.

### Post-Occupancy Transformations: Users Rewrite Pessac

Once occupied in 1929, residents quickly began altering both the interiors and exteriors of their homes (Figure 2). These modifications responded partly to technical shortcomings in the original construction and partly to cultural preferences, as occupants sought to make the austere spaces more liveable and personalised. Over the following decades, significant changes included adding pitched roofs to replace problematic flat terraces, enclosing open terraces and loggias to increase interior space, and resizing or replacing windows to improve usability and comfort. Interior layouts were adapted with partitions to meet family needs, creating additional rooms and dividing spaces where originally open plans prevailed.

Additional structures such as sheds and porches were constructed, while some carports and external staircases were removed or repurposed. Decorative elements like shutters, pitched eaves, and traditional ornamentation were introduced, softening the original façades. The colour schemes also evolved, with many houses repainted in different hues or faded to neutral tones, creating a patchwork effect that contrasted with Le Corbusier's original palette. Recent restoration efforts use colour to differentiate preserved from altered houses, restoring some façades to their original appearance while leaving heavily modified ones in neutral shades. These transformations demonstrate how residents actively reinterpreted and adapted the original design to better suit their needs and lifestyles.

While homeowners constitute the most visible agents of transformation, occupation at Pessac historically included rental and temporary tenancies. Modifications ranged from resident-driven, do-it-yourself repairs and



seasonal enclosures to works commissioned from local contractors. This spectrum nuances agency: multiple hands, including residents, tradespeople and occasional municipal interventions, co-produced the built “double.” Recognising this continuum avoids reducing authorship to a binary of “architect versus user” and instead situates it within the everyday modalities of maintenance, adaptation, and care.

By the 1960s, the extensive user-driven modifications had transformed Pessac into a landscape hardly recognisable as Le Corbusier's original design. The estate appeared as a layered record of architectural intentions, where the initial experiment was layered with vernacular adaptations. Signs of ageing and deterioration were evident. At one point, local authorities considered demolishing the entire quarter, as was common for early estates regarded as failures. In the early 1970s, demolition was seriously proposed due to the estate's poor condition. However, a preservation movement emerged, recognising Pessac's significance. This began with one house being listed as a historic monument in 1980, followed by gradual protection for the entire site. Even before official heritage recognition, Philippe Boudon's study in the late 1960s had already highlighted Pessac's importance.

### Boudon's *Lived-In Architecture*

In 1967, Philippe Boudon conducted a pioneering post-occupancy study of the Pessac housing estate, published in French in 1969 and later in English as *Lived-In Architecture: Le Corbusier's Pessac Revisited* in 1972. His research combined archival investigation with extensive interviews of residents and individuals involved in the original project, enabling a thorough comparison between Le Corbusier's design intentions and the lived reality decades later. Boudon approached

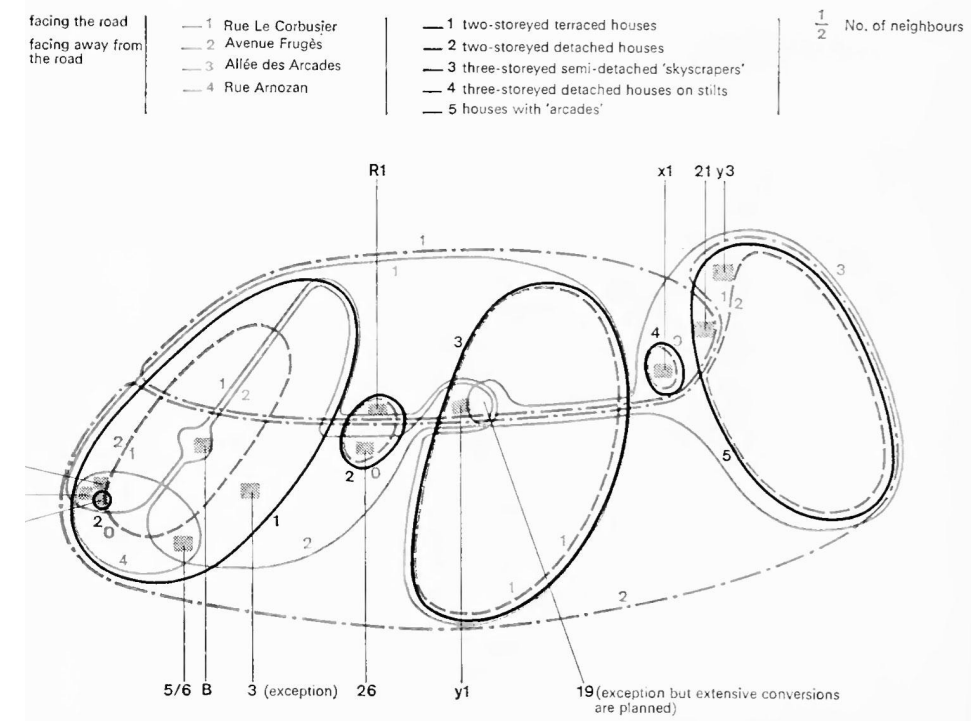
Figure 2: Pessac houses before and after user modifications. Source: Philippe Boudon, *Lived-In Architecture: Le Corbusier's Pessac Revisited* (Cambridge, MA: MIT Press, 1972).

the estate as a dynamic entity, emphasising the coexistence of projected architecture and inhabited space. This dual perspective was essential to understanding how user modifications transform architectural meaning and form over time.

Boudon's interviews register motives in the residents' own terms—weatherproofing, privacy, domestic custom and identity—rather than as mere stylistic dissent. Terraces were enclosed for thermal comfort; pitched roofs and eaves mitigated leakage and driving rain; shutters and ornament reflected local domestic codes. Read this way, the estate's transformations are not rhetorical oppositions to the modern project but situated practices that translate an abstract programme into lived domestic life. Boudon found that residents' alterations were deliberate adaptations responding both to functional needs, such as enclosing terraces, adding pitched roofs to solve waterproofing issues, resizing windows for comfort, and reconfiguring interior layouts, and to cultural preferences aimed at softening the austere original aesthetic with decorative elements. These changes followed consistent patterns, reflecting the residents' efforts to make their homes more practical and personalised. Through visual and diagrammatic analyses (Figure 2), Boudon demonstrated that Pessac had become a built palimpsest, where original features coexist with vernacular adaptations.

Conceptually, Boudon redefined these transformations as a reallocation of architectural authorship, with residents acting as co-authors who created a second architecture alongside Le Corbusier's original design. His study anticipated contemporary post-occupancy evaluation approaches by focusing on occupant experiences and valuing user-driven changes as meaningful feedback rather than design failures. This challenges the notion of architecture as a finished product and instead presents it as an ongoing process shaped by habitation. It is often observed that lived experience ultimately takes precedence over the architect's original vision, as buildings are shaped by their occupants.

By the late 1960s, Pessac exemplified the complex relationship between architectural design and lived experience. While the estate's structural framework and



original layout remained discernible, decades of user-driven modifications had produced a heterogeneous environment. These changes reveal the active role of inhabitants as co-creators of architectural meaning, challenging the traditional singular notion of authorship attributed solely to the architect. Such adaptations reflect a continuous negotiation between the formal design and the practical, cultural, and social needs of residents. This evolving process highlights architecture not as a static product but as a dynamic, participatory practice shaped by multiple agents over time.<sup>17</sup>

### Post-Occupancy Rewriting and the Notion of Architectural Authorship

The case of Pessac, emerging from post-occupancy transformations, prompts a reconsideration of architectural authorship that marks a substantive shift in the discipline, moving the focus from the original design to the ongoing process of habitation and adaptation. This perspective acknowledges architecture not as a fixed object or completed product, but as a dynamic phenomenon continuously shaped over time by multiple agents, including architects, occupants,

Figure 3: Diagram illustrating the groups of houses in Pessac and those at their intersections that were transformed by occupants. Source: Philippe Boudon, *Lived-In Architecture: Le Corbusier's Pessac Revisited* (Cambridge, MA: MIT Press, 1972).

maintenance staff, and communities. User modifications reveal functional, cultural, and symbolic dimensions that initial designs often fail to anticipate, thereby adding layers of complexity and realism to architectural evaluation. Incorporating these viewpoints is essential for a holistic understanding of architecture that integrates formal design with everyday practices and lived experiences.

For analytical clarity, “authorship” is employed here in three distinct senses. First, legal-moral authorship (originating in copyright and moral rights) is largely reserved for the architect(s) of record and collaborators. Second, project authorship encompasses all parties shaping the work through design and delivery—here including Pierre Jeanneret’s co-design role and Henry Frugès’s programmatic authorship as client and commissioner. Third, lived authorship describes the cumulative, situated agency of occupants and other actors who modify and interpret the work over time. Pessac makes these layers legible in one place: architect/co-designer and client initiate a system; users and stewards extend it in use. The “double” registers not a replacement of one author by another but a reconfiguration of authorship across time.

Traditionally, authorship has been attributed exclusively to the architect, reflected in naming buildings after their designers and restoring them according to original intentions. However, the post-occupancy changes at Pessac reveal that a building’s final form results from a collaboration between architect and occupants. Rather than a failure, this dual authorship is intrinsic to architecture, which is inherently subject to transformation through use. The concept parallels the literary idea of text and reader: once a building is completed, the architect’s control diminishes and occupants gain agency to interpret and modify the space within its physical constraints. For example, while Pessac residents could not alter the concrete structure fundamentally, they adapted windows, roofs, façades, and interiors, reshaping the experience and appearance of the original design.

This understanding challenges conventional architectural criticism, which often focuses on design authenticity and completion. Post-occupancy

realities—altered, lived-in, and imperfect—are frequently dismissed. Yet the success of architecture depends on its adaptability and usability in real life; lived use often recalibrates design premises. Users’ modifications at Pessac, therefore, represent a second authorial layer, refining and sometimes correcting the original design. From a post-occupancy evaluation perspective, recognising user interventions as co-authorship encourages a constructive approach. Rather than viewing changes as alteration, they become feedback illuminating the design’s strengths and weaknesses. Boudon’s study identified patterns such as the widespread addition of pitched roofs, indicating practical limitations of the original flat roofs, while other elements remained intact due to their alignment with user needs. Such modifications form a material critique, translating tacit user knowledge into architectural discourse.

The heritage status of the estate intensifies these questions. In 2016, the Cité Frugès – Le Corbusier was inscribed within *The Architectural Work of Le Corbusier, an Outstanding Contribution to the Modern Movement* on the UNESCO World Heritage List.<sup>18</sup> Local management documents acknowledge a necessary balance between restitution of 1920s intentions and preservation of significant traces of inhabitation.<sup>19</sup> The “double” therefore acquires institutional form: conservation policies mediate between the idealised authorial image and its lived counterpart, requiring nuanced criteria to judge which alterations constitute historic value and which warrant reversal.

The dual nature of Pessac’s architecture raises preservation challenges. Should restoration prioritise the architect’s original vision or preserve the marks of inhabitation? While some houses have been restored to their 1920s condition, erasing later modifications in pursuit of authenticity, this risks losing the social history embedded in the users’ alterations. Documentation and interpretation can help preserve this history alongside physical restoration, acknowledging architecture as both designed artefact and lived experience. Pessac’s influence extends to broader architectural practice. The recognition of user participation and adaptability gained prominence in the 1970s and 1980s, inspiring architects to involve occupants in design and anticipate change. Post-occupancy evaluation became

a professional tool, encouraging iterative learning. Concepts such as design for flexibility and adaptive reuse rest on the understanding that user-driven change is inevitable and can enhance a building's relevance. The Pessac experiment demonstrated the value of openness to appropriation, despite initial disappointment at alterations.

Socioculturally, Pessac illustrates the tension between architectural ideals and the everyday needs of residents. The occupants sought comfort and familiarity, adapting the homes with traditional elements to reflect personal identities. This phenomenon is common worldwide, supporting sociologist John Turner's argument that self-determination in housing produces better outcomes than top-down imposition.<sup>20</sup> Pessac exemplifies early evidence of this principle, showing that inhabitants adjust their environment to better fit their lives. Ultimately, these modifications are acts of empowerment rather than disobedience. The political dimension of user agency has gained recognition, framing control over one's living space as democratic.<sup>21</sup> Once criticised as a failure, Pessac is now viewed as a success in user empowerment and a cautionary example of ignoring occupant needs. The post-occupancy rewriting by residents illustrates that architecture is a dialogue between designer and user, with altered façades representing the visible voice of inhabitants.

This perspective encourages a shift towards viewing buildings as evolving entities shaped by ongoing social and environmental factors. It underlines the need for architects to engage with users' experiences continuously, fostering adaptability and inclusivity in design that responds to real-world complexities over time. Such an approach recognises that architecture is not static but a process that must accommodate changing needs, behaviours, and contexts throughout a building's life, ensuring relevance and usability beyond initial construction.

## Conclusion

Le Corbusier's Pessac housing and Philippe Boudon's *Lived-In Architecture* collectively present a significant narrative on how architecture is continuously authored and re-authored over time. This analysis focuses on the duality between the projected architecture, as conceived by the architect, and the lived architecture, as modified by its occupants, with the Pessac case providing a detailed illustration of this relationship. Post-occupancy perspectives demonstrate that the completion of a building marks not an endpoint but the commencement of a new phase wherein occupants engage in the ongoing development of the architecture. At Pessac, these user-led interventions fundamentally altered the original architectural intentions; examples include the replacement of flat roofs with pitched ones, the subdivision of open-plan interiors, and the personalisation of otherwise uniform volumes. These modifications were deliberate and meaningful, constituting a form of alternative authorship that reflects the needs, values, and identities of the inhabitants within the inherited architectural framework.

Reconsidered in light of contemporary scholarship, Boudon's work may be regarded as an early form of post-occupancy evaluation that goes beyond assessing performance metrics to explore the nature of architectural occupation. Supported by Lefebvre's theoretical insights, Boudon reinterpreted the changes at Pessac not as failures but as manifestations of architectural duplicity, the coexistence of two legitimate forms of architecture: the one imagined in plans and the one continuously produced and transformed by residents. Acknowledging this coexistence enriches the conception of authorship, positioning the architect's role as one component within an extended continuum of design agency. Users, consciously or unconsciously, participate in this process over time, shaping and reshaping the built environment well beyond the architect's initial intervention.

Taken together, Pessac and its afterlife demonstrate that the architectural "double" need not be framed as opposition or failure. It is better read as the ordinary condition of works that are both projected and inhabited. Distinguishing legal-moral, project, and lived authorship clarifies how responsibility and agency shift

without cancelling the architect's role; it also explains why some alterations merit recognition as part of the work's significance while others invite correction. This moderation strengthens rather than weakens the argument: authorship broadens in time, not in name.

This understanding carries several implications. For practice, it encourages embracing design strategies that prioritise adaptability and openness. Accepting that inhabitants will alter spaces suggests the importance of flexible design solutions, the use of materials that accommodate change, and an attitude that views architecture as a framework for ongoing user creativity rather than a fixed product. Additionally, it underscores the value of systematic post-occupancy evaluation as a tool for continual learning. Projects such as Pessac demonstrate that user appropriation often reveals insights into design performance and resilience. In research and historiography, recognising user contributions supports a more inclusive architectural history, one that incorporates oral histories, ethnographic studies, and the lived experience alongside traditional design analysis.

Architecture should be understood as inherently plural and dynamic rather than singular and static. Each building contains latent potentials that are realised through use. The lived environment acts as a counterpart to the designed environment, emerging with occupation and coexisting with the original design. At Pessac, although the two twins diverged significantly, they remain inseparable facets of the estate's identity. The most fruitful understanding arises from examining the interaction between design and lived reality, how one shapes and is shaped by the other. This interplay constitutes the true essence of architecture, situated in the space between intention and use.

As contemporary architectural discourse increasingly addresses themes of user participation, adaptability, and sustainability, Pessac's example remains profoundly relevant. It serves as a caution against overconfidence in design and as a testament to the power of human (and non-human) agency. Architectural success should therefore be measured not solely by physical form but by the capacity of buildings to live and be lived in. The concept of the lived-in double should be embraced as a fundamental reality

rather than an anomaly. Recognising post-occupancy transformations as collaborative authorship honours the full lifecycle of architecture and opens new horizons for design, moving from imposing singular visions to facilitating environments that accommodate the complexities of life. Pessac shows that architecture is completed in use. Recognising inhabitants as co-authors or co-producers of use clarifies how authorship extends from design into occupation. In this light, the double, projected and inhabited, serves as a conceptual premise for evaluation, interpretation and heritage.

## Endnotes

1. Philippe Boudon, *Lived-In Architecture: Le Corbusier's Pessac Revisited* (Cambridge, MA: MIT Press, 1972).
2. Craig M. Zimring and Marilyn C. Reizenstein, "Post-Occupancy Evaluation: An Overview," *Environment & Behavior* 12, no. 4 (1980): 429–450.
3. Nigel Oseland, *A Practical Guide to Post-Occupancy Evaluation and Researching Building User Experience* (London: Routledge, 2020), 3.
4. Roland Barthes, "The Death of the Author," in *Image–Music–Text*, trans. Stephen Heath (London: Fontana, 1977), 142–148.
5. Juan Pablo Bonta, *Architecture and Its Interpretation: A Study of Expressive Systems in Architecture* (New York: Rizzoli, 1979).
6. Henri Lefebvre, *La production de l'espace* (Paris: Anthropos, 1974).
7. Henri Lefebvre, "Preface," in Philippe Boudon, *Lived-In Architecture: Le Corbusier's Pessac Revisited* (Cambridge, MA: MIT Press, 1972).
8. Yona Friedman, *Toward a Scientific Architecture* (Cambridge, MA: MIT Press, 1975).
9. Cedric Price, *Generator* (London: Architectural Association Publications, 1977).
10. John Habraken, *Supports: An Alternative to Mass Housing* (London: Architectural Press, 1972).
11. Stewart Brand, *How Buildings Learn: What Happens After They're Built* (New York: Viking Press, 1994).
12. Marylène Ferrand, Jean-Pierre Feugas, Bernard Le Roy, and Jean-Luc Veyret, *Le Corbusier. Les Quartiers Modernes Frugès / The Quartiers Modernes Frugès* (Basel: Birkhäuser, 2015).
13. Fondation Le Corbusier, "Cité Frugès, Pessac, 1924–1926," Fondation Le Corbusier, accessed 27 June 2025, <https://www.fondationlecorbusier.fr/en/work-architecture/achievments-cite-fruges-workers-housing-estate-pessac-france-1924-1926/>.
14. Le Corbusier, *Toward an Architecture*, trans. John Goodman (Los Angeles: Getty Research Institute, 2007).
15. Le Corbusier and Pierre Jeanneret, *Œuvre complète, 1910–1929, vol. 1* (Zurich: Girsberger, 1929; various reprints).
16. Fondation Le Corbusier, "Cité Frugès."
17. Lucia Martín López and Antonio Cantero Vinuesa, "POE in Pessac Oral Experiences. Model for the Systematic Comparison of Post-Occupancy Evaluation Housing Cases," *ACE: Architecture, City and Environment* 17, no. 51 (2023): 11801, <https://doi.org/10.5821/ace.17.51.11801>
18. UNESCO World Heritage Committee, *The Architectural Work of Le Corbusier, an Outstanding Contribution to the Modern Movement*, World Heritage List, inscribed 2016, <https://whc.unesco.org/en/list/1321>
19. *Plans de gestion locaux – Pessac*. Management plan document for the Le Corbusier World Heritage property, October 2019. <https://lecorbusier-worldheritage.org/wp-content/uploads/2019/10/plans-de-gestion-locaux-03.pdf>
20. John F. C. Turner, *Housing by People: Towards Autonomy in Building Environments* (New York: Pantheon Books, 1976).
21. Stephen Bayley, "Corbusier's Vertical Hold on History," *The Guardian*, 5 October 2008, accessed 27 June 2025, <https://www.theguardian.com/artanddesign/2008/oct/05/architecture>

## Phantom and Flesh

Laura DEL PINO

Wenzhou-Kean University, Wenzhou, China | Kean University, Union, New Jersey, U.S.A.  
ldelpino@kean.edu

**Keywords:** architectural simulacra; imitation architecture; hyperreality; duplitecture.

## Abstract

It looks like wood, but it feels cold to the touch. What seemed like a traditional wooden column in a Chinese temple is, in fact, a panel-cladded replica with a concrete interior. The illusion is seamless until the senses betray the eye. The double becomes a precise imitation that maintains the image of authenticity while concealing its true nature beneath the surface.

In a country where duplicates are not just accepted but encouraged, architecture has evolved into a digital mirror of its drawn form. Buildings are no longer singular coherent objects but layered constructs, where materials and finishes are substituted by more standardised, cost-efficient versions of themselves. The result is an uncanny sense of disorientation, a space where reality and imitation blend so completely that distinction becomes irrelevant.

China's architecture manifests through layering. Like a digital model, layers are stacked and, sometimes, reshuffled, and only the joints reveal the true nature. A temple column, once carved by hand, now emerges through a process of digital fabrication and industrial assembly, its essence fragmented and patched. This superposition of layers is an echo of the digital version of the project. The built world becomes a materialised rendering, an architectural doppelgänger of what was imagined. In this space of shifting identities, the boundary between the original and its copy dissolves because the objective is not the experience of the space itself but its reproduction in social media. The copy of the shadow.

## Theoretical Framework: Aura, Simulacra, Shanzhai

In the Western tradition, originality has long been considered sacred, with copies viewed as derivative, inferior, or deceptive. Walter Benjamin famously argued that mechanical reproduction diminishes the aura of an artwork — its unique presence in time and space. "That which withers in the age of mechanical reproduction is the aura of the work of art," he wrote, lamenting the loss of singular authenticity when a work is endlessly replicated.<sup>1</sup>

Jean Baudrillard extended this logic into the late 20th century, proposing that in the age of media and