

Plasticity and Distortion

Exploring Office Obsolescence in Buenos Aires

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Abstract

This paper examines the adaptive reuse potential of obsolete office buildings within Buenos Aires' historic business district, known as Microcentro. Once a vibrant epicenter of finance and commerce, this area has experienced a progressive decline marked by increasing vacancy rates and urban obsolescence trends that were dramatically accelerated by the COVID-19 pandemic and the widespread adoption of remote work. Adopting a past-present-future structure, the study first traces the morphological evolution of the district, revealing how its dense, low-porosity fabric evolved through continuous infill and transformation over time. It then investigates the spatial and functional implications of vacancy through an integrated methodology involving field observation, GIS-based mapping, and archival analysis. Building on these insights, the paper introduces an analytical framework based on two complementary categories—plasticity and distortion—to assess the architectural adaptability of existing buildings. The framework not only enables a qualitative evaluation of transformation feasibility but also offers a transferable tool for identifying and prioritizing reuse opportunities. By translating architectural interpretation into a potential index of conversion candidates, the research bridges diagnostic and projective approaches, contributing to broader debates on adaptive reuse, urban resilience, and the sustainable reactivation of obsolete central business districts.

Keywords: Adaptive Reuse, Office-To-Housing Conversion, Urban Obsolescence

Introduction

In recent decades, central urban areas in many cities have undergone a significant transformation marked by increasing vacancy rates and the obsolescence of office building stock (Remøy & van der Voordt 2014). This phenomenon intensified following the COVID-19 pandemic, which accelerated the widespread adoption of remote and hybrid work models, drastically reducing the demand for traditional office space. This shift has revealed how obsolescence operates as a structural condition of urban development, emerging through cycles of innovation, devaluation, and reconstruction (Bryson 1997; Greenhalgh & Muldoon-Smith 2017; Abramson 2016). Economic and technological shifts continuously shorten the functional lifespan of office buildings, producing a landscape of underutilized properties, shuttered storefronts, and a growing loss of urban liveliness. Throughout the twentieth century Buenos Aires' financial district—known as Microcentro—evolved into a highly specialized district, concentrating the city's administrative, banking, and commercial operations (Vacas 2006). The concentration of high-value functions

progressively displaced residential uses, consolidating a mono-functional zone characterized by intense daytime activity and nighttime emptiness. The COVID-19 pandemic abruptly exposed the fragility of this monocentric model: empty offices, closed businesses and a visibly deteriorated urban fabric.

Since 2015, the Government of the City of Buenos Aires has introduced a series of strategies aimed at reversing this trend. The Plan Microcentro Prioritario (GCBA 2015) focused on improving public space. In 2021 the Plan de Transformación y Reconversión del Microcentro (GCBA 2021) was launched, aiming to reposition the district as a residential, cultural and sustainable neighborhood. Although the plan offered fiscal incentives, mortgage credits and regulatory changes to encourage office-to-residential conversions, its implementation was limited. By 2024 the plan was suspended due to fiscal constraints.

These shifts raise urgent questions for architecture and urban planning: Are vacant office buildings in Microcentro suitable for adaptive reuse? How can we assess their transformation potential? This exploratory study analyzes the district's urban form and the emerging office building typologies that shape its dynamics, adopting a past–present–future perspective to propose an integrated framework for evaluating urban transformation strategies. By introducing two analytical categories—plasticity and distortion—this research seeks to reframe how we understand, evaluate, and intervene in historic central business districts such as Microcentro. The main objective is to develop a projective methodology that enables the identification and assessment of adaptive reuse opportunities within deteriorated and mono-functional office areas.

Business and Urban Form

The morphology of Buenos Aires' Microcentro is the outcome of an extended process of urban consolidation established on a systematic foundational urban fabric. The colonial grid produced by the Law of Indias featured deep and narrow plots, creating a uniform parcel system that still organizes the urban fabric to this day (Diez 2021). Based on this framework, the city center densified not through large-scale renewal operations but through the gradual occupation of vacant parcels and the completion of party walls. This process gave rise to a highly compact and low-porosity environment.

From the mid-twentieth century onward, this urban matrix supported the consolidation of a dominant architectural typology: the mid-block office building. This type is defined by its structural rationality, deep and modular floorplates, centralized circulation cores, uniform floor heights and regular façades. Its logic responded to the functional demands of modern bureaucracy and to the intensive exploitation of buildable surfaces (Weissel 2002). A comparative analysis of three cadastral maps—Beare (1870) (Fig. 1), Goyeneche (1940) (Fig. 2), and GCBA (2018) (Fig. 3)—allows us to visualize this sequence of transformation. The first reveals a low-rise urban fabric with a strong residential presence. The second already reflects growing functional specialization and a process of verticalization. The most recent survey presents a densified center, morphologically consolidated and functionally homogeneous.

Between Vacancy and Obsolescence

In Buenos Aires, these structural shifts have found a focal point in the Microcentro, where the effects of teleworking intersected with a broader decentralization of tertiary functions

toward emerging business sub-centers across the city and the metropolitan region (Vecslir 2019). As a result, the area experienced a sustained increase in office vacancy: by 2022, the vacancy rate reached 17.9% of the total office stock—the highest figure since systematic records began (L.J. Ramos Brokers 2022). Simultaneously, commercial activity at street level declined sharply, with a proliferation of shuttered storefronts and a visible reduction in pedestrian flows, transforming the everyday urban atmosphere that once defined the district. To document the spatial extent of this transformation, a field survey was conducted in 2023 across thirty-five blocks within the area defined by the Microcentro Transformation Plan. The survey combined photographic documentation with a georeferenced GIS database integrating quantitative variables—such as plot size, height, and typology—and qualitative observations on ground-floor activity and public space interface, identifying more than eighty-five vacant or underutilized properties.

In parallel, a catalog of non-residential buildings, mainly office and mixed-use structures, was compiled from two influential Argentine architectural journals, *Revista de Arquitectura* and *Nuestra Arquitectura*. Cross-referenced with cadastral maps from 1870, 1940, and 2023, this archival dataset established a diachronic record that connects architectural production with successive phases of regulation and urban morphology. Together, these materials trace how programmatic demands were expressed architecturally over time and reveal a spectrum of adaptive responses shaped by changing regulatory frameworks.

The convergence of these two sources, the field-based diagnosis and the archival catalog, enabled the development of an index of potential case studies. This index serves as the empirical foundation for selecting buildings to test the analytical framework introduced later in this study.

Analytical Framework: Plasticity and Distortion

The growing interest in converting obsolete office buildings into housing has prompted the development of various assessment tools, most of which rely heavily on quantitative indicators (Geraedts & van der Voordt 2007). Building upon interpretive approaches that emphasize architectural reading as a key to adaptive reuse (Plevoets & Van Cleempoel 2019), this study proposes an alternative analytical framework grounded in architectural interpretation and organized around two complementary categories: plasticity and distortion. Together, they enable a qualitative reading of adaptability that links morphological, technical, and regulatory dimensions.

Plasticity refers to a building's intrinsic capacity to accommodate new uses. In architectural terms, it emerges from attributes that allow transformation without compromising structural or spatial coherence. These include structural clarity, the proportion between depth and façade width, sufficient floor-to-ceiling height to support new programs, permeability of the perimeter, and access to natural light and ventilation. Assessing plasticity involves identifying and weighting these attributes to estimate how well an existing building can support residential or hybrid functions. Plasticity thus captures the architectural flexibility embedded in the original design.

Distortion, by contrast, describes the accumulation of conditions that hinder or obstruct transformation. While plasticity relates to the potential for change, distortion expresses resistance to it. Distortions may be physical, such as structural degradation or obsolete systems; functional, such as inefficient layouts or missing service cores; or regulatory, including



Fig. 1. Cadastral Map of Microcentro (Peter Beare, Museo de la Ciudad, 1860–1870)



Fig. 2. Cadastral Map of Microcentro (Arturo Goyeneche, Municipality of Buenos Aires, 1940)



Fig. 3. GIS-based height map of Microcentro (author's map based on GCBA open data (2023))

heritage protection or zoning constraints. Beyond material decay, distortion represents the growing misalignment between built form and contemporary expectations—a process that renders buildings operationally, economically, or socially obsolete. Evaluating distortion therefore entails diagnosing the degree to which existing constraints limit adaptation. To visualize the interplay between these dimensions, a bidimensional diagram (Fig. 4) is introduced, plotting plasticity on the vertical axis and distortion on the horizontal one. Their intersection generates four interpretive quadrants: (Q1) high plasticity / high distortion—latent potential constrained by technical or regulatory barriers; (Q2) high plasticity / low distortion—optimal candidates for low-effort conversion; (Q3) low plasticity / high distortion—critical cases of low feasibility; and (Q4) low plasticity / low distortion—transformable buildings with limited strategic value.

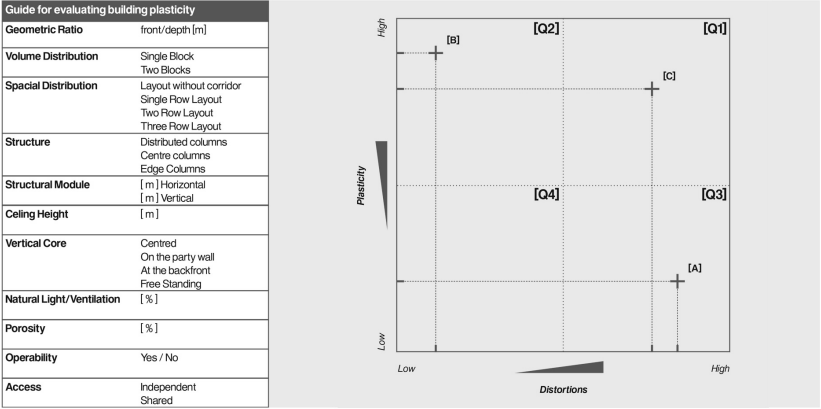


Fig. 4. Plasticity–Distortion diagram (developed and drawn by the author)

Three buildings—Viamonte 769 (Fig. 5), Lavalle 557 (Fig. 6), and Lavalle 526 (Fig. 7)—were selected from archival sources (*Revista de Arquitectura* and *Nuestra Arquitectura*) as pilot tests to refine this framework. Each case was re-drawn from original publications and municipal archives, standardized to a common scale and analyzed through a tabulated index of spatial and structural attributes related to plasticity. Fieldwork complemented this analysis by recording on-site distortions such as obsolescence, alterations, and infrastructural deficiencies. While preliminary, this dual approach—archival reconstruction and empirical documentation—established a replicable analytical protocol.

Preliminary observations from these pilot cases illustrate distinct configurations of adaptability across three representative office types within the Microcentro’s built fabric. Viamonte 769 (Fig. 5) occupies an elongated plot with a front-to-depth ratio of approximately 0.5, corresponding to a two-row layout with offices organized around a central corridor and a rear courtyard. The structure combines distributed and edge columns with a regular horizontal module of 5.20 m and a vertical module of 3.10 m, resulting in generous ceiling heights and high spatial plasticity. The vertical core is located at the rear, limiting transversal permeability, while natural light and ventilation reach approximately

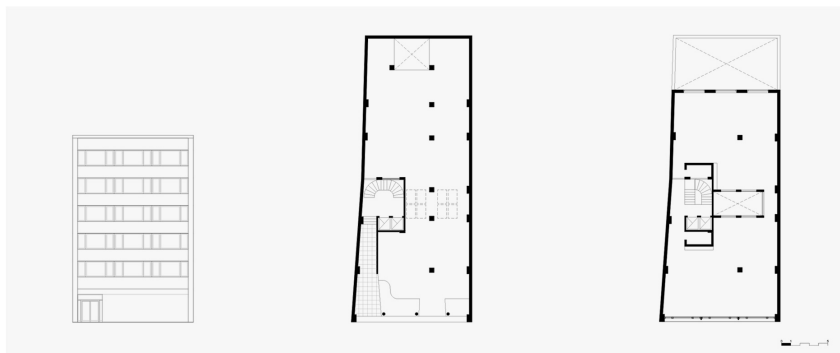


Fig. 5. Viamonte 769, Buenos Aires (redrawn from original plans by the author)

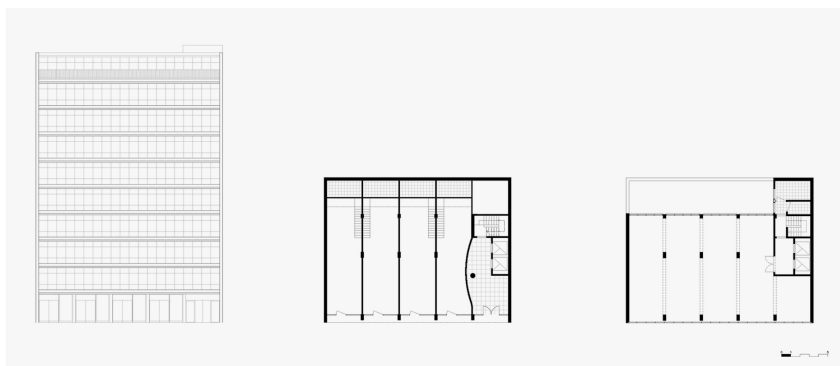


Fig. 6. Lavalle 557, Buenos Aires (redrawn from original plans by the author)

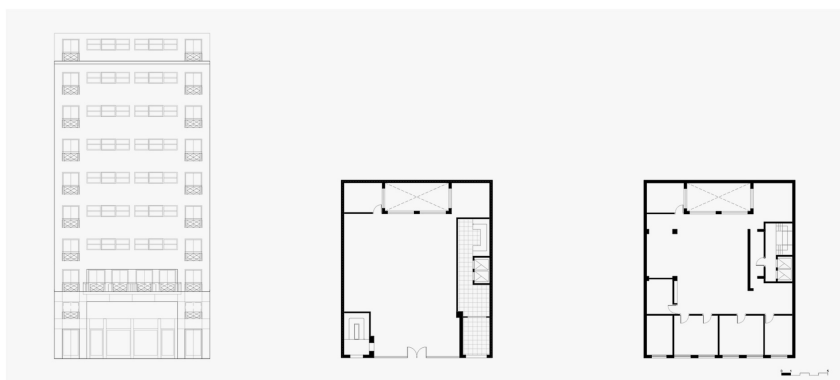


Fig. 7. Lavalle 526, Buenos Aires (redrawn from original plans by the author)

40% of the floor area. Despite these favorable spatial proportions, technical obsolescence in service cores and enclosures generates moderate distortion. Lavalle 557 (Fig. 6), by contrast, is built on a wider double lot with a front-to-depth ratio greater than 1. Its single-row layout spans the full width of the façade, achieving greater porosity and improved daylight conditions—estimated at 55 % of the floor area. The column grid follows a distributed system with a 4.50 m module and clear heights around 2.80 m. The vertical core is placed along one party wall, allowing more flexible subdivision of interior spaces and independent access to upper levels. The building exhibits balanced geometric and structural proportions, resulting in moderate plasticity and low distortion. Lavalle 526 (Fig. 7) represents a more compact condition, with a nearly square lot (front-to-depth ratio ≈ 1) and a two-row layout organized around a deep central bay. Its structural grid features centre columns with a 5.00 m horizontal module and ceiling heights of 2.70 m. The vertical core is located on the party wall, reducing transversal circulation and natural ventilation (approximately 30 %). While its structural system remains legible and coherent, the deep plan and low porosity limit spatial transformation, placing it in the low-plasticity, high-distortion quadrant of the framework. Together, these cases illustrate how variations in plot geometry, column distribution, ceiling height, and core placement directly condition adaptive reuse potential. The comparative reading of these attributes clarifies the relationship between geometric proportion and environmental performance, demonstrating that plasticity and distortion can be measured not only through typological classification but through a precise analysis of morphological and structural parameters.

Beyond classification, the framework operates as both a diagnostic and generative tool, revealing latent capacities of the existing city and supporting design-oriented strategies for adaptive reuse at multiple scales.

Conclusions

The framework of plasticity and distortion proposed in this study offers both a conceptual and methodological contribution to the understanding of adaptive reuse in obsolete office districts. By placing architectural interpretation at the core of evaluation, it challenges the prevailing reliance on quantitative performance metrics and emphasizes the role of design intelligence in confronting urban obsolescence. Rather than treating vacancy as a symptom of decline, the approach reframes it as a spatial condition that exposes the city's capacity—or incapacity—to adapt to change.

Applied to Buenos Aires' Microcentro, the framework reveals the intersection between morphological rigidity, regulatory inertia, and shifting socio-economic dynamics. It demonstrates how a fabric once optimized for administrative efficiency now demands new forms of domesticity and collective life. Through its two analytical categories, the method uncovers heterogeneous responses embedded in the district's building stock, identifying architectural opportunities and systemic barriers that condition transformation feasibility. The pilot cases demonstrate that adaptability is primarily conditioned by geometric and structural parameters rather than by typological classification. Variations in front-to-depth ratio, ceiling height, column distribution, and core placement directly influence spatial plasticity and environmental performance. Beyond its analytical scope, mapping plasticity and distortion points toward the creation of an operational tool: an index of buildings with transformation potential.

Bibliography

- Abramson, Daniel M. *Obsolescence: An Architectural History*. Chicago: The University of Chicago Press, 2016.
- Bryson, John R. "Obsolescence and the Process of Creative Reconstruction." *Urban Studies* 34(9), 1439–1458, 1997.
- Diez, Fernando Esteban. *Buenos Aires y algunas constantes en las transformaciones urbanas*. 2a ed. Ciudad Autónoma de Buenos Aires: Fernando Esteban Diez, 2021.
- Geraedts, Rob P., and Theo J. M. van der Voordt. "A Tool to Measure Opportunities and Risks of Converting Empty Offices into Dwellings." In *ENHR Sustainable Urban Areas*, edited by Peter Boelhouwer, Daniëlle Groetelaers, and Eveline Vogels, 1–22. Delft: ENHR / Onderzoeksinstituut OTB, 2007.
- Gobierno de la Ciudad Autónoma de Buenos Aires. *Plan Microcentro*. Buenos Aires: Gobierno de la Ciudad Autónoma de Buenos Aires, 2015.
- Gobierno de la Ciudad Autónoma de Buenos Aires. *Plan de Transformación y Reconversión del Microcentro Porteño*. Buenos Aires: Gobierno de la Ciudad Autónoma de Buenos Aires, 2021.
- Muldoon-Smith, Kevin, and Paul Greenhalgh. "Situations Vacant: A Conceptual Framework for Commercial Real Estate Vacancy." In *24th Annual European Real Estate Society (ERES) Conference*. Delft, The Netherlands, 2017.
- Plevoets, Bie, and Koenraad Van Cleempoel. *Adaptive Reuse of the Built Heritage: Concepts and Cases of an Emerging Discipline*. London: Routledge, 2019.
- Ramos Brokers Inmobiliarios S.A. *Informe oficinas. Clase B Q4 2022*. Buenos Aires: L.J. Ramos Brokers Inmobiliarios S.A., 2023.
- Remøy, Hilde, and Theo van der Voordt. "Adaptive Reuse of Office Buildings into Housing: Opportunities and Risks." *Building Research & Information* 42(3), 381–390, 2014.
- Vacas, Juan Pablo. "La densidad de la city porteña." *UR 2(Conversar)*, 44–61, 2006.
- Vecslir, Lorena. "Centralidad y periferia en Buenos Aires: La transformación de las áreas de oficinas en la era de la metrópolis dispersa." In *Transformaciones metropolitanas en América Latina*, 119–134. Los Polvorines: Universidad Nacional de General Sarmiento, 2019.
- Weissel, Marcelo N. "Arqueolocos en Antropocity: una mirada sobre la reconstrucción del microcentro porteño en el espacio histórico." *Intersecciones en Antropología* 3, 87–97, 2002.
- Revista de Arquitectura (Buenos Aires). *Various issues, 1940–1970*. Buenos Aires: Sociedad Central de Arquitectos.
- Nuestra Arquitectura (Buenos Aires). *Various issues, 1940–1970*. Buenos Aires.