

Typological Affordances

Drawing Adaptions Over Time

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Abstract

This paper is about a recently co-authored book on architectural affordances and adaptive reuse. As a collection of drawings on transformation projects the book proposes *typology-as-affordance* as a conceptual and operative framework for adaptive reuse. Amid the climate emergency and the fiscal, legal, and cultural pressures reshaping architectural practice, adaptive reuse has moved from the margins of conservation to the center of design intelligence. Building on canonical debates (Quatremère, Argan, Rossi, Aymonino, Vidler) and ecological theories of perception (Gibson), we argue that architectural types are not fixed templates but enabling structures whose affordances—possibilities for action sustained by form, material, and spatial configuration—mediate longevity, resilience, and cultural meaning across time. Here, drawing is advanced as an epistemic instrument that makes these affordances legible and projective: through analytic mapping, comparative redrawing, and “yellow–red” overlays of subtraction and addition, designers can disclose a building’s latent capacities and design their transformation with precision. Synthesizing an atlas of cases organized along three life-cycle categories—1. long-duration typologies with minimal intervention, 2. nineteenth-century institutional and industrial buildings undergoing deeper programmatic shifts, and 3. mono-functional twentieth-century structures requiring typological reconfiguration—the thirty examples in the book *Architectural Affordances – Typologies of Umbau* demonstrate how typological clarity correlates with carbon-light transformation and future adaptability. Pedagogically, typology-as-affordance reframes studio and research as laboratories for *Umbau* (transformative reuse), especially in the peripheral and “low” typologies that constitute the bulk of contemporary building stock. Ultimately, typology is recast not as an instrument of normativity but as a designerly ethics of care: an economy of attention to what already exists, mobilizing form as shared civic memory while designing uncertainty into the future.¹

Keywords: Architectural Design, Affordances, Typology, Adaptive Reuse

Introduction

In the last two decades, adaptive reuse has consolidated into a distinct field of design practice and research, entangled with but irreducible to heritage conservation. It addresses the climate imperative to *reduce, reuse, recycle*—but does so not as a moral slogan alone; it offers a design paradigm that treats the existing as both constraint and opportunity. The operative claim of this paper is precise: buildings with strong typological clarity—where structural logic, volumetric order, and spatial organization form a recognizable pattern—tend to be easier to adapt with fewer resources, lower embodied carbon additions, and

greater openness to future uses. By contrast, buildings whose original conception occludes typological legibility often demand more invasive, less reversible, and more materially intensive transformations. In short, typological clarity is correlated with spatial resilience. To make this claim operative, we couple typology with *affordances*, understood (following environmental psychologist James J. Gibson) as the actionable possibilities an environment offers to situated agents.² In architecture, affordances name the concrete and imaginal ways a building invites occupation, circulation, subdivision, aggregation, lighting, servicing—in short, *inhabitation*. A type resiliently affords new uses when its configurational logic is generous enough to host difference without losing identity. This is less a return to functionalism than a renewal of type as *epistemology*: an embodied, transmissible knowledge that organizes continuities between past uses and future potentials. The *Atlas of Typological Affordances*—a research-through-drawing initiative foregrounding analytic redrawing and speculative variation—furnishes a comparative ground for this argument.

From Type to Affordances

The debate on type has shadowed modern architecture from the Enlightenment to the present. Quatremère de Quincy's distinction between type—an open schema—and model—a fixed exemplar—already framed the nineteenth century's oscillation between historicist citation and structural invention. Through Argan, Muratori, Quaroni and, later, Aymonino and Rossi, typology moved from art-historical classification to urban morphology: the city as palimpsest, where types sediment social practices and collective memory.³ Rossi sharpened this into a critique of postwar functionalism: against the doctrine that form should flow directly from program, he proposed the endurance of autonomous formal structures that can absorb programmatic change.⁴

Anthony Vidler, noting the exhaustion of both “nature” (the primitive hut) and “machine” (the functionalist metaphor), diagnosed a “third typology” in the 1970s with La Tendenza's recourse to urban morphology—the city's *longue durée* as the reservoir of architectural meaning.⁵ Today, under climatic pressure and in the face of an enormous existing building stock, a “fifth” condition is emerging after the discipline's “fourth” fascination with digitally assisted, continuously variable geometries. This new condition is not a fresh essence of type but a shift in where typological work takes place and what it must do. Rather than privileging monuments or canonical exempla, typological thinking must operate across also the so-called “low” and peripheral stocks—retail sheds, warehouses, office floors, health infrastructures—reading their structural and spatial patterns not as defects to erase but as capacities to re-script.

Affordances sharpen this pivot. A type becomes not merely a classificatory label but a field of potentials that designers can activate or expand through careful intervention. This is close to Alan Colquhoun's 1969 essay “Typology and Design Method,” which rejects both “biotechnical determinism” (architecture's supposed “outside”) and the romance of pure intuition (the architect's genius). For Colquhoun, type names the substrate of design: a mode of formal and spatial reasoning grounded in the materials of architecture and its prior solutions—an engine of repetition, experiment, and transformation.⁶

Our emphasis falls on the drawing as the surface where these materials are tested, negotiated, and integrated—that is, where affordances are made explicit. Not a euphemism for the open plan or vague flexibility, affordance names a concrete, relational, typological

negotiation: a deep structural bay affords a mezzanine without heavy surgery; a continuous perimeter wall affords acoustic separation for new uses; tall rooms afford stack ventilation and volumetric subdivision; a double-loaded corridor affords housing conversion at certain depths but not others. Affordances are thus measured (by spans, thicknesses, heights) and imagined (through social practices, atmospheres, rituals), at once material and cultural. In this dual register, typology escapes dogma: less an a priori taxonomy than an evolving index of what a building can do—now, and later.⁷

Drawing as Epistemic Instrument

If typology-as-affordance is to guide practice, it must become legible, comparable, and teachable. *Architectural Affordances* therefore advances drawing not merely as representation but as a research instrument. The protocol is simple: contributors reconstruct transformations through a standardized set of measured drawings—plans, sections, elevations—accompanied by concise historical notes. Interventions are diagrammed with overlays: yellow for demolition/subtraction, red for addition/insertion. By normalizing scale and notation, projects can be compared across periods, uses, and geographies without erasing difference; types appear not as stylistic families but as recurring configurational resources. This designerly empiricism counters the vagueness that often haunts reuse discourse and clarifies where carbon-intensive work is (and is not) structurally necessary. The insistence on drawing is not nostalgic but methodological. Drawing enables “place–time discontinuities” (Schoonderbeek): it suspends a building from its immediate contingencies to analyze internal order, before re-situating it along a historical vector of change. It also aligns with pedagogy: students learn to treat types not as prescriptive templates but as operative hypotheses—tools for structuring design decisions under uncertainty. Finally, drawing furnishes a public rhetoric of reuse: by making visible what is kept, removed, and added, it renders the ethics and economies of transformation explicit—and therefore open to debate.

Three Life-Cycle Categories

(1) Long-Duration Types – Minimal Intervention, Maximum Resilience

Some structures sustain centuries of transformation with modest material input because their typological imprint is exceptionally robust. The palazzo, monastery, cloistered college, and certain courtyard houses exemplify this: where structure, enclosure, and circulation coincide in a legible order, new uses can settle with minimal conflict. *Palazzo Gravina* (Naples, 1549–2023) offers a paradigmatic case: from private residence to mixed housing to public administration to architecture school, its morphological core—the courtyard, thick perimeter walls, axial stair, and generous rooms—afforded programmatic accretions without structural trauma. The measured history of modifications shows that where typological clarity remained legible, interventions were relatively light, while opportunistic densifications and infills clustered at edges and interstices. The result is a long life with low episodic carbon spikes—a material record of typology’s ecological dividend. Two lessons follow. First, typological identity is not a nostalgic essence; it is a *working structure* that stays recognizably itself while becoming other. Second, urban value correlates with this persistence: buildings that remain editable without fragile uniqueness are also

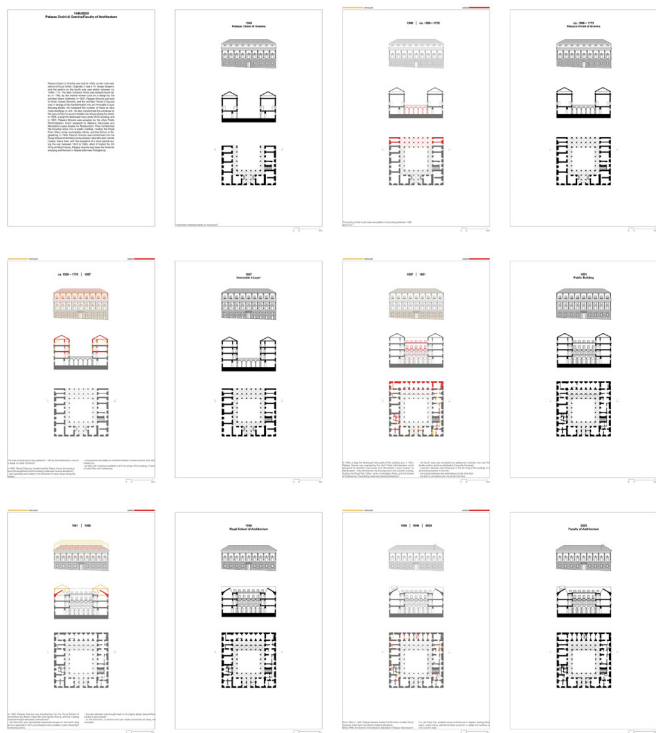


Fig. 1. Palazzo Gravina (1549–2023) in Naples, Italy, exemplifies a typologically driven evolution, transitioning from a private residence to a multi-functional public space and ultimately to a school of architecture. The image illustrates the standardized documentation format applied across all case studies, featuring page spreads that detail each transformation, annotated plans highlighted in yellow and red, and interpretative text that includes key historical data (© Gennaro Postiglione).

those most conducive to public institutions across time. The *Atlas*'s normalized drawing spreads—annotated plans and sections—reveal these convergences across multiple long-duration cases.

(2) Nineteenth-Century Institutional/Industrial Stocks: Deep Shift, Stable Frames

A second family comprises nineteenth-century buildings born of emergent types (hospitals, museums, barracks, stations, factories). Their structural rationality—orderly spans, repetitive bays, clear circulation—often survives program obsolescence. Consider the *Pousada de Viseu* (former Hospital de São Teotónio, 1842–2023), transformed by Gonalo Byrne into a hotel. The hospital's deep plan and structural regularity afforded re-clustering of rooms, servicing shafts, and public spaces without erasing the original frame. Here, “deep” transformations work *with* type: the project calibrates cuts and insertions to keep the frame's rhythms legible, thereby preserving the building's future editability. Reuse

becomes not a one-off conversion but a step in an extended life cycle.

These cases articulate a concept of *typological affordance* as a renewable resource. Where the nineteenth-century rationalizes plan and section, later designers can reposition cores, redistribute loads, and weave new services in ways that honor the grammar of the original. The ecological benefit—less structural demolition, more reversible assemblies—aligns with a cultural dividend: continuity of civic presence, a thickening of urban memory rather than its erasure.

(3) Mono-Functional Twentieth-Century Stocks: Reconfiguration as Type-Making

The third family includes late-modern and postwar buildings conceived for mono-functional performance (office floors with sealed façades, single-use retail boxes, deep-plan warehouses). These often lack the legible “hinges” (courtyards, cloisters, thick structural walls) that underwrote pre-modern editability. Adaptive reuse here is less *adjustment* and more *re-typologization*: a design operation that *makes* a type where little was explicitly present. *ED.G.E.* (Milan, 1973–2022; Onsitestudio) exemplifies the strategy: through footprint reconfiguration, selective structural intervention, and re-articulation of façade and cores, the project transforms an inert hotel organism into a building with generative order—creating volumetric generosity and legible circulation where none was evident. The outcome is not merely a new use but a building newly endowed with affordances for future adaptation.

Designers working on mono-functional stocks face recurring problems like deep plans starved of daylight; servicing strategies that preclude re-zoning; and envelope systems that prohibit porosity. The typology-as-affordance approach addresses these by carving sectional voids to re-introduce light and stack effect; relocating or multiplying cores to create multiple tenancy scenarios; and replacing opaque curtain systems with high-performance, operable skins aligned to new occupancy patterns. The goal is not to simulate historical cohesion but to fabricate new legibility with low structural trauma, opening the building to multiple futures as today’s design challenge.

Affordance, Resilience, and Time

Buildings change at different speeds. Stewart Brand’s “shearing layers”—site, structure, skin, services, space plan, stuff—remain a potent heuristic: long-life layers (structure) should be separated from short-life layers (services, partitions) to avoid unnecessary coupling and waste.⁸ In adaptive reuse, the question is how to *decouple after the fact*—how to excavate a path back to reparability. Typology, reframed through affordances, is a guide here: it tells us where the long-life order *is*, so that designers can unglue short-life accretions without rupturing the core. The *Atlas*’s overlays make this visible: yellow and red annotate where change concentrates (and where it should not), quantifying the surgical economy of intervention. Designing for uncertainty follows. If affordances are possibilities, not certainties, then reuse projects should *increase* the range of viable futures while meeting present briefs. Practically: prioritize reversible assemblies; avoid bespoke geometries that foreclose later subdivision; keep spans, heights, and servicing routes generous; forego hyper-specific spatial tuning in favor of compositional clarity. The test is temporal: can the building accept a topological re-wiring of use without expensive structural repentance? Our claim is not that typology guarantees resilience, but that typological clarity *raises the*

probability that future designers can act with lighter touch. Culturally, this is an ethics as much as an economics. To sustain affordances is to sustain civic memory in use—not as fetishized patina, but as a materially intelligent continuity. Rossi’s insistence that the city is a repository of memory echoes here, but with a twist: memory is not just represented; it is *operated* through enabling structures that keep buildings public, editable, and open to re-appropriation.⁹ The peripheral city—logistics sheds, ring-road complexes, commercial strips—demands this ethic most urgently, not because it is picturesque, but because that is where the ecological and social dividends of reuse will be largest.

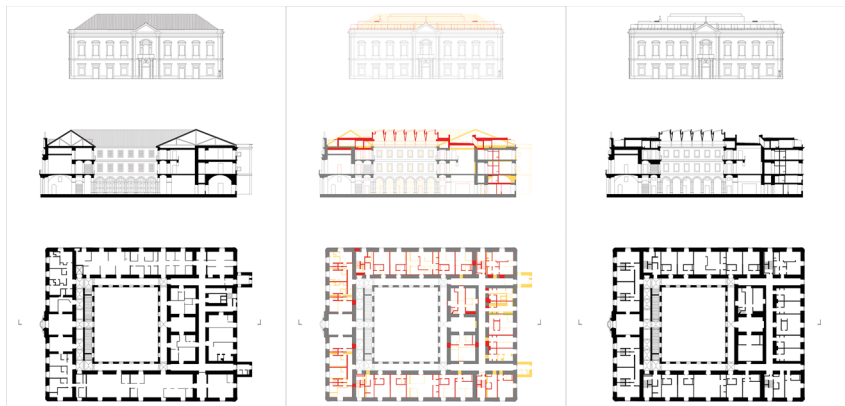


Fig. 2. Pousada de Viseu Hotel (1842–2023) in Viseu, Portugal (© António Carvalho, Guan Kaiyue).

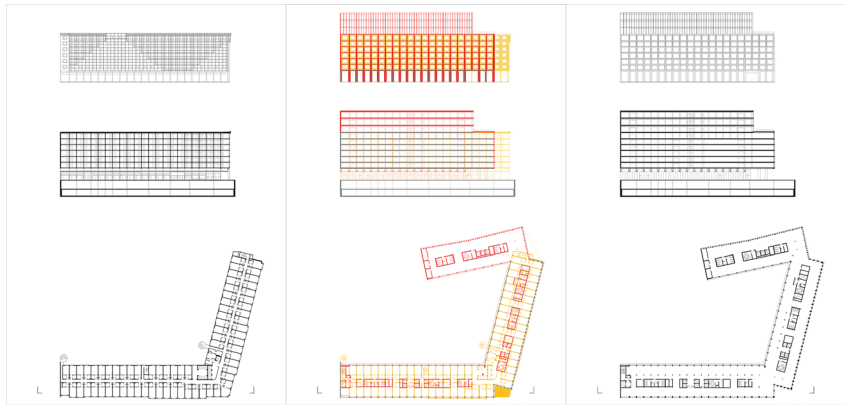


Fig. 3. Office building EDG.E. (1973–2022) in a transformed 1970ies hotel in Milan (© Onsitestudio).

Pedagogy and Discipline

If typology-as-affordance is to shape the discipline, it must reconfigure pedagogy. We propose three linked instruments for studios and doctoral research:

1. Genealogy – Redrawing: Students reconstruct a building's life by redrawing its key states at a common scale, isolating the core pattern (structure, circulation, figure/void) that persists through change. This trains the eye to read type as order-in-time, not a static diagram.
2. Analogical Classification – Affordance Mapping: Rather than classifying by function (school, office, housing), projects are clustered by shared affordances (deep bay with daylight potential; linear spine with cross-ventilation capacity; reticulated frame affording mezzanine densification). The classifying act is projective: students learn that “type” is an index of possible transformations.
3. Design as Inference – Reversible Detailing: Proposals are judged not only by present performance but by their capacity to host multiple future programs with bounded resource input. Detailing emphasizes reversibility and legibility (what is added can be subtracted), tuned to the building's core pattern.

Research-through-drawing sustains this pedagogy because it foregrounds evidence (measured plans/sections) and argument (what is kept and why). It also complements computational approaches: while AI can detect pattern families across large corpora, the architectural judgment of which affordances matter—civically, thermally, structurally—remains irreducibly designerly. The *Atlas of Architectural Affordances* thus positions drawing as the hinge between archives (what we already know) and inference (what we can responsibly do next). Institutionally, the framework answers pressures facing schools: the demand for measurable research, the erosion of architectural theory chairs, and the need to align design imagination with ecological metrics. An atlas indexed by typological affordances

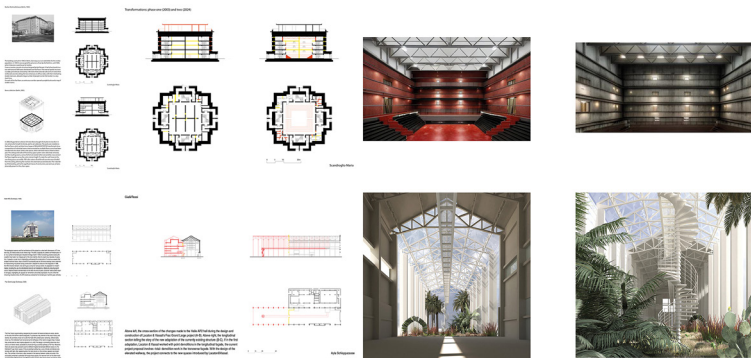


Fig. 4: Two works from a 2024 PhD workshop lead by the author. The candidates adaptively reuse well known adaptive reuse projects. Ayla Schiappacasse transforms Frac Grand Large (Dunkerque, 2009 by Lacaton & Vasall) through adding a transparent extrusion. Maria Scandroglio transforms the WWII Bunker of the Boros Collection (Berlin, 2003 by Realarchitektur) into a theatre.

is both a scholarly contribution and a public instrument: it can inform municipal retrofit policies, guide portfolio-scale decisions by owners, and make a case for keeping the “theory of building” central to architectural education—not as scholasticism, but as the critical intelligence of reuse.

Conclusion – Toward a Designerly Ethics of Care

Typology-as-affordance reframes adaptive reuse as neither conservationist scruple nor developer’s expedient. It is a disciplined practice of reading and rewriting: reading the spatial grammar that has sustained a building’s life and rewriting it to expand the building’s capacity to host future lives. The empirical claim—supported by comparative drawing—is that typological clarity correlates with lower-carbon, lighter-touch, more reversible transformations. The theoretical claim is that typology, once criticized for normativity, can operate as a critical pedagogy of uncertainty: an epistemology that binds historical continuity to ecological responsibility without aesthetic dogma. The civic claim is that buildings matter because they keep open the infrastructures of public life, especially where the city is least charismatic. This is *Umbau* not as emergency repair but as a long politics of care: designing with what we have so that others, later, can keep designing with it.

Notes

1. Andreas Lechner, Gennaro Postiglione, Francesca Serrazanetti, Maike Gold, eds. *Architectural Affordances – Typologies of Umbau*, Naples: Thymos Books 2025. On *Umbau* as a design intelligence that foregrounds continuity and transformation rather than rupture, see Hermann Czech’s broader cultural stance in the essay “Transformation” (Orig. “Umbau” from 1997). Both the book and this present extend Czech’s ethos with the operational lens of affordances.
2. James J. Gibson, “The Theory of Affordances,” in *Perceiving, Acting, and Knowing*, ed. Robert Shaw and John Bransford, Hillsdale, NJ: Erlbaum, 1977, 67–81.
3. See Giulio Carlo Argan’s reading of Quatremère de Quincy and Carlo Aymonino’s and Aldo Rossi’s reorientation of typology toward urban morphology. For a synthetic history, see Rafael Moneo, “On Typology,” *Oppositions* 13 (1978), 23–45.
4. See Aldo Rossi, *The Architecture of the City*, Cambridge, MA: MIT Press, 1984 [1966].
5. Anthony Vidler, “The Third Typology,” *Oppositions* 7 (1977), 13–16.
6. Alan Colquhoun, “Typology and Design Method” (1969), in: *Essays in Architectural Criticism; Modern Architecture and Historical Change*, Cambridge, Mass.: Oppositions Books, The MIT Press, 1991.
7. Andreas Lechner, *Thinking Design – Blueprint for an Architecture of Typology*, Zurich: Park Books 2021.
8. Stewart Brand, *How Buildings Learn: What Happens after They’re Built*, New York: Penguin, 1994. For recent design implications in adaptable systems, see Van Ellen et al., “Adaptability of Space Habitats,” *Acta Astronautica* 211 (2023): 764–780.
9. Rossi’s city-as-memory remains indispensable, but the affordance lens insists on *operability*: memory put to work through enabling structures. On critiques and reformulations of functionalism in adaptive reuse, see Francesca Lanz and J. Pendlebury, “Adaptive Reuse: A Critical Review,” *The Journal of Architecture* 27 (2022), 441–462.

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