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POST-DOMESTIC  
HABITAT  
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**0. EDITORIAL #25**

**Post-Domestic Revolution** **006**  
by Michela Bassanelli & Vera Sacchetti

**I. MORE-THAN-HUMAN PERSPECTIVES. COHABITATION, TECHNOLOGY, ARTIFICIAL INTELLIGENCE**

**Biotopia. The Design of Decentered Domesticities** **020**  
by Jacopo Leveratto

**Transhuman Identities. Rewiring the Domestic Subject** **038**  
by Vanessa Galvin

**Post-Domestic Living. The Challenge of Adapting Domestic Spaces to the Evolution of Digital Technologies** **051**  
by Silvana Donatiello & Mariarita Gagliardi

**Extractivism, Gendered-Computing and Online Queer Spaces. The Case of the Sims and Liquid Nitrogen Overclocking** **073**  
by Cyrus Khalatbari, Lucrezia Perrig & Guillaume Guenat

**RGB Tour. Exploring of the “YouTube Bedroom” Type** **098**  
by Nicolas Bailleul

**Rethinking Carceral Domesticity. Electronic Monitoring, Punishment and Home as Prison** **121**  
by Ece Canli

**II. DOMESTIC DEVICES. HOW INTERIOR ARCHITECTURE AND DESIGN REACT TO THE CONTEMPORARY SCENARIO**

**Habitat as a Service. From Bespoke to Custom Interiors** **149**  
by Raffaella Fagnoni, Davide Crippa & Annapaola Vacanti

**Flexibility in the Workplace. Envisioning the Role of Domestic Spaces in the Era of Hybrid Work** **169**  
by Sofia Cretaio & Paolo Tamborrini

**Vicarious Domestic States. The Post-Domestic Turn of Digital Twinning Habitual Settings** **193**  
by Gerhard Bruyns, Daniel Elkin, Andrea Navarrete & Veronica Ching Lee

**The Scenography of Everyday Theater. A New Narrative of Domesticity** **209**  
by Jiarui Cui

- Vanity Chamber. Reflecting Upon Domestic Boundaries and Frontiers for a Post-Pandemic Home** 227  
by Nicholas Thomas Lee
- Post-Domestic Ageing. Living Indoors (Without) Looking Outside? Architectural Design and IT Devices for a New “Ageing in Place”** 254  
by António Carvalho, Tianqin Chen & Jingya Zhou
- Redefining Paradigms. How Technology Shapes Interior Spaces in the Age of Drones and Flying Cars** 283  
by Anna Barbara & Elena Baharlouei

### III. BIOGRAPHIES

- About the Authors** 303



**MORE-THAN-  
HUMAN  
PERSPECTIVES**  
COHABITATION, TECHNOLOGY,  
ARTIFICIAL INTELLIGENCE

# Biotopeia

## The Design of Decentered Domesticities

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### Keywords

More-Than-Human Design, Posthuman Architectures, Expanded Cohabitation, Climate Change, Ecosystem Entanglement.

### Abstract

Although the term *habitat* represents one of the most crucial ecological concepts for describing the relationship between some species and their environment, it is also one of the vaguest. This is why, in the past few years, it has often been replaced by more specific ones, which could clearly identify the relationships at stake. This is the case, for instance, of the term *biotope*, which recently, with the increasing awareness of ecosystem interconnectivity, has taken more and more relevance in comparison to the previous one. Whereas a habitat, in fact, is the sum of the physical and biotic resources of a place that allows the survival and reproduction of a particular species, a biotope represents the habitat not of a specific population, but of a whole biotic and *sympoietic* community. A feature that perfectly describes the characteristics of a new design approach, generally called *more-than-human*, here analyzed from both a theoretical and methodological standpoint, which today, to tackle major environmental challenges, focuses on building architectures in which multiple species can find some terms for cohabitation. And which, therefore, not only entails addressing a new class of subjects but also challenges the role of architects and other practitioners in this field by requiring new ways of designing that enhance interspecies coexistence and collaboration.

Ever since the Enlightenment, Western philosophers have shown us a Nature [...] [as] a backdrop and resource for the moral intentionality of Man, which could tame and master [it] [...]. [In the last few years] several things have happened to undermine this division of labor. First, all that taming and mastering has made such a mess that it is unclear whether life on earth can continue. Second, interspecies entanglements that once seemed the stuff of fables are now materials for serious discussion among biologists and ecologists, who show how life requires the interplay of many kinds of beings. [...] Third, women and men from around the world have clamored to be included in the status once given to Man. (Lowenhaupt Tsing, 2015, p. vii)

## 1. The Project of Expanded Cohabitation

Over the last ten years, even in the field of spatial and environmental design, few books have been more influential in giving hints *On the Possibility of Life in Capitalist Ruins* than Anna Tsing's anthropological study of the interspecies relationships in Japanese forests (2015). And probably, one of the main reasons lies in her recurring use of the term *entanglement*, which, in Tsing's words, not only reframes perfectly the range of human agency in its constructive relationship with the world but also represents a precise strategy of "collaborative survival" to subvert the logic of the current model of growth. The same logic that brings Tsing, as a form of opposition, to promote different forms of "making world together" among different subjects, be they humans, pines, or even fungi, as the ability to do so, in her view, "is not limited to humans" but belongs to "all organisms [that] make ecological living places" (Lowenhaupt Tsing, 2015, p. 22).

Through projects that often overlap, conflict, or leave room for other subjects, but which must be considered, in any case, as part of that complex process of multispecies world-making, sometimes unconscious or unintentional, documented also by other contemporary studies in the field. Like those by Isabelle Stengers (2015) or Donna Haraway (2016), for example, who, in the same years, by looking at the world through an extraordinary collection of stories of mutual survival and ecological animism, showed how the Earth is co-inhabited and built not by individuals but by a myriad of entangled and “sympoietic” existences (Haraway, 2016, p. 58). And which therefore, today, not only call scientists for studying humans as part of multispecies and symbiotic communities but also ask designers to rethink the world as built *by* and *for* these communities. Thus pushing them to reconsider the traditional idea of *habitat* that consolidated over the years and, with it, one of the longest-debated ecological concepts for describing the relationship between some species and their environment.

This is because, although the word *habitat* represents one of the most used terms to indicate such a complex environmental relationship, it is also one of the vaguest. As much as its consistency, within life sciences, had already been a matter of discussion since 1959, when Miklos Udvardy, one of the fathers of biogeography, began to study the topic. Before that date, in fact, the word, which had been in use since the mid-eighteenth century, was such a commonly accepted term that few ecology textbooks, above the elementary level, bothered with a clear definition, while most of them employed it in a very generic way, often as being synonymous with others, like *niche* or *biotope*.



Udvardy, on the contrary, traced back the history of their development to define the limits of their proper usage, describing, on the one hand, a habitat as the sum of the physical and biotic resources of a locality that allows the survival and reproduction of a particular species, and a biotope, on the other, as the habitat not of a specific population but of a whole “biotic community” (Udvardy, 1959, p. 726). Thus paving the way for a more precise employ of the term biotope that, in the second half of the twentieth century, with the increasing awareness of ecosystem entanglement, would have taken more and more relevance (Toepfer, 2011, pp. 305-319). By being distinguished not only for what concerned an expanded subject of reference, but also according to a specific scale, local instead of territorial, a high level of mutual connections among different biotopes, and the human presence within them, which would often have been of great importance for their healthy functioning. All features that, besides perfectly matching Tsing’s later observations on multispecies world-making, long anticipated one of the most recent, although uncoordinated, global redirection in the field of design, which today, to tackle major environmental challenges, focuses on building architectures in which these species can find some terms for cohabitation.

## 2. More-Than-Human Design

In this regard, everything began to take hold in 2021, even though it is hard to tell whether it was a coincidence or not. First, in January, a highly diffused reader edited by Andrés Jaque, Lucia Pietroiusti, and Marina Otero Verzier openly promoted a relational way of “designing-with” “more-than-human” entities to expand the notion of cohabitation.

Then, in May, Olafur Eliasson responded to Hashim Sarkis's invitation to the Venice Biennale by issuing a *More-than-Human Chart* and calling over fifty participants, as new planetary representatives, to form a *Future Assembly* for "more-than-human stakeholders" (Studio Other Spaces, 2021). And finally, at the end of June, a board of eighteen experts, including architects like Kengo Kuma and Bjarke Ingels, presented to the European Commission the *New European Bauhaus Concept Paper*, which was opened by the recommendation to designers to "adopt a more-than-human ... culture" (NEB High-Level Round Table, 2021). Thus sanctioning, from an institutional perspective, what would be further developed, from that year on, by other theoretical contributions, like Ron Wakkary's book on the *Design for More-than-Human-Centered Worlds* (2021), and a whole constellation of outstanding practitioners working on the topic. Major offices like Studio Other Spaces and Office for Political Innovation, for example, but also emerging practices like Studio Ossidiana and Atelier Dalziel, researchers and artists like Joyce Hwang and Alexandra Daisy Ginsberg, or non-profit agencies like Prostorož. All borrowing the "more-than-human" terminology that Stanislav Roudavski introduced three years earlier to designate the creation of artificial habitats to replace natural ones (2018), and using it to describe all the different attempts to decentre design that, even today, after several declarations and manifestos, still struggle to fit a clearer definition than that of an open container of experimentations.

More-than-human, however, is not only a captivating designation, elusive enough to be freely adopted. On the contrary, from a theoretical standpoint, it represents one of the most

recent developments of a precise critical position that takes the name of “posthuman” (Braidotti, 2013). A current of thought that has taken shape in the last twenty years from the progressive convergence of non-anthropocentric and post-humanistic theories in their refusal of the modern ideology of *man* as the interpretative limit of reality, and which today, due to a greater awareness of the human impact on the natural balance of the planet, mainly focuses on the promotion of a fundamentally biocentric perspective that considers the whole living environment as having some basic rights to flourish, regardless of its instrumentality. The same idea which also the term *more-than-human* refers to, by making additionally clear, in its affirmative reformulation of the prefix *post*, that its aim is not the exclusion of human subjectivity from the picture but its inclusion in an expanded technologically mediated continuum between nature and culture. And which therefore asks design to imagine the world from a perspective of interspecies coexistence and collaboration, which not only entails a new subject of reference, either in terms of fruition or agency, but also challenges the role of the practitioners in this field, by requiring the definition of a holistic approach that, considering the entanglement of ecosystems, can effectively build spaces in which multiple species can find some terms for cohabitation (Leveratto, 2021). Without focusing on finding working *solutions* for building more-than-human habitats, which in light of what Stengers called the “intrusion of Gaia” would be essentially impracticable, but by devising some sorts of “objectors” to the current logic of development, which could explore “connections with new powers of acting, feeling, imagining, and thinking” (Stengers, 2015, p. 24).

### 3. A Short Catalog of Objectors

Solutions, in fact, are not only partial, sectoral, and sometimes ethically questionable, but they also imply an idea of control that when applied to complex systems like natural ones, as perfectly explained by Michel Serres in his *Natural Contract* (1992), is simply unrealistic. And even though this may look like entailing a complete reversal of the traditional design method, relevant references in this regard are not missing at all, given that a possible history of such an approach, although unconscious or unexpressed, dates back much earlier than the recent appearance of the more-than-human trend. More precisely, it dates back to the two years, two months, and two days of 1844 that Henry David Thoreau, in the first acknowledged philosophical progressions “from homocentrism to biocentrism” (Buell, 1995, p. 38), spent in solitude amidst a forest of Concord, Massachusetts, to escape the normative limits of civilization in a cabin he built by himself. Not in the form of a house, as he did not conceive it to *domesticate* the environment by adapting it to his life, nor as a simple shelter, since it was not aimed at making him survive in hostile territory. But just as a bedroom abruptly thrown into the woods, specifically designed to place his most intimate dimension into direct communion with the “Universal Being” that Ralph Waldo Emerson, his mentor, saw permeating each thing (1836, p. 13). In the constructed belief that dwelling, for the first time, could be something different from the Kantian idea of raising a “rampart against the dread” of the exterior world (Edelman, 1984, pp. 25-26), and that a house, by consequence, in direct anticipation of the decline of the bourgeois idea of dwelling that took place in the following century,

could also represent a tool to “accommodate [humans] to the natural order rather than seek to overwhelm and transform it” (Worster, 1995, p. 76).

It was only, however, during the early 1970s, when the long wave of protest of the previous decade merged with a global economic recession and the first awareness of the *Limits to Growth* (Meadows et al., 1972), that Thoreau’s experiment began to be considered a tangible answer to Richard Buckminster Fuller’s call for an *Operating Manual for Spaceship Earth* (1969). On the one hand, as a methodological reference for all the manuals of self-construction that, from Stewart Brand’s (1969) to Johan van Lengen’s (1980), provided “access to tools” on self-sufficiency, ecology and alternative education. And on the other, as a conceptual guide for a whole series of *radical* design proposals that suddenly had to be confronted with the *explosion* of the house and with the idea that the act of dwelling needed other models to survive (Ambasz, 1972). No longer a shelter but rather, as Herbert Muschamp later wrote, a “shelter from a shelter” (1998), like Superstudio’s gigantic *Super-surface* (1972), specifically designed to re-inhabit the world in a nomadic and primitive way, or Ettore Sottsass’ *Metaphors* (1974), all devised and built to “re-establish a physical connection with the cosmos [...] and the sense of [one’s own] position” (Carboni & Radice, 2002, p. 9). Not to mention the whole series of experiments that, over thirty years, from Jan Szpalkowicz’s house in the woods (1971) to Marco Casagrande and Sami Rintala’s burning one (1999), would question the idea of domesticity in its relationship with nature by deconstructing the same idea of the house. Nor that which, from Alexan-

der Pike's *Autonomous House* (1974) to Atelier Van Lieshout's *Autocrat* module (1997), would try to rebuild this idea in terms of sustainability, openness, and mobility. Even though it was only in the early 2000s that the idea of dwelling without domesticating began to be translated into that of creating a living space for a biotic community, and not by simply building working habitats for other species but mainly by increasing the affordance of the built environment to life and to expanded forms of cohabitation.

Also in this case, the concurrent factors for such a conceptual shift are different and not coordinated. In 2002, for example, a largely diffused article by Paul Crutzen, which first featured the term "Anthropocene", opened a global debate on the legitimacy and the future sustainability of the anthropocentric perspective in its constructive relationships with the world. And the year later, precisely when Gilles Clément published his *Manifeste du Tiers paysage* (2003), a highly impactful CNN story documented the impressive resurgence of primary habitats in the Korean Demilitarized Zone, thus indirectly sponsoring Clément's claim on the biological necessity of reserving spaces for nature and its spontaneous evolution. But it was only after the global economic crisis of 2008 and an increasing number of extreme climatic events that these precedents began to be taken as a reference for the construction of new and living biotopes. At first implicitly, like in the case of Marco Casagrande's *Ruin Academy* (2010), which transformed an industrial building of Taipei into the *compost* of a *third* form of urbanization. And then explicitly, with Junya Ishigami's water garden in Nasu (2018), for instance, composed of one

hundred and sixty artificial biotopes for as many biotic communities, or Raumlabor's Floating University (2018), which turned a nineteenth-century retention basin of the Tempelhof Airport into a laboratory for building, in a participated way, new possibilities of being together and *becoming-with* different subjects of reference. Even though, from a design standpoint, few projects can better exemplify the change in the idea of domesticity that this biocentric perspective entails than that devised, along with Miguel Mesa del Castillo, by Office for Political Innovation, the studio led by Andrés Jaque, for a new kind of residence, called *Rambla Climate-House*, in Molina de Segura, Spain (2021).

#### 4. The Study of a Biotope

The story, in this regard, began in 2018, when local architect Mesa del Castillo was asked by his brother and sister-in-law to build them a home in a formerly rural county of Murcia that, since the 1980s, had been radically transformed by a suburban development, which had almost completely flattened its rich territorial system of ravines and turned it into a catalogue of “cookie-cutter neo-Mediterranean villas, [...] imported palm trees, swimming pools, and plastic lawns” (Ayers, 2022). Mesas's idea, by contrast, which aimed to second his brother's family's desires to live in closer contact with nature, was to design a house that could act as a sort of reparation for the environmental damage caused by over-urbanization, and which could also be considered as a manifesto in relation to climate change. The ravines of the area, in fact, which had been carved by seasonal rainfall, had traditionally represented corridors of humidity, biodiversity, and ecolog-

ical entanglement, and before their partial destruction, they had played a crucial role in the climatic balance and in the soil stability of that ecosystem. For this reason, after calling his old friend Jaque to work on the topic, they began to work on the project of the house by starting from the site, which they treated, in contrast to the usual practice, not by flattening the terrain but by creating an artificial mound, made of the soil excavated for the carport, which they imagined as a fragment of the preexisting ravine. Thus, around this elliptical section, which they left to a spontaneous process of re-naturalization, they built a lightweight steel structure on stilts, which they aligned with the top of the mound without touching it, clad with either galvanized steel on the outer façade, resembling a jagged shed, or floor-to-ceiling glass on the interior one, like in a passive patio house. A structure which they equipped like a monitoring laboratory, with tanks for rain and greywater to be sprayed onto the *garden* by means of humidity sensors designed to activate an automatized meteorology, and meet the needs of the reparation process meant to regenerate the former ecologic constitution of the area.

Very coherently, then, they organized the house itself in its layout like a sort of observatory of the natural environment there recreated, with a flowing system of open rooms, radially articulated in a counterclockwise sequence around the inaccessible oval of the patio, from which they had to receive almost all the light. Each one with its individual volume, distinct from the others, slightly emerging from the straight profile of the exterior enclosure, roughly quadrangular, but unified by the same finishes, which had to oppose to the coarse face of the outer



façade a shiny material board, making use of mint green paint, splashes of red, gold-tinted frames with rose-tinted glass, and a ring of pink marble for the outdoor flooring. In a hybrid mix of scientific rigor and playful livability that perfectly reflects the spontaneous process of natural resurgence, radical inclusivity, and *interspecies justice*, as designers pointed out in their manifesto, which the construction of the house was not aimed at controlling but simply at initiating, by partially renouncing the final responsibility of the formalization process in favor of other kinds of agencies. The same that, following the reparation of the hydro-thermal conditions of the site, after only a one-year period, prompted the first traces of its former more-than-human life to rapidly re-emerge, as much as, in 2021, the year of its completion, the house was hosting spontaneous native grass, myrtles, mastic trees, fan palms, oleanders, and fire trees growing in its strange patio, while insects, birds, and lagomorphs were naturally finding shelter in it. Thus making the house an excellent demonstrative device both for the growing grassroots movement claiming climate reparation in Murcia and for the architectural global debate in its complexity, which was looking for new lines of research, in relation to the domestic field, to tackle climate change-related issues, beyond the rhetoric of sustainability.

The design of the *Rambla Climate-House*, in fact, was not aimed at sustaining the current idea of dwelling but at proposing an alternative one, which, moreover, refuses the anthropocentric perspective that is at the base of the concept of sustainability. Like Thoreau's cabin, it is not a house, as it was not conceived to *domesticate* the environment by adapting it to

people's lives, but it is not even a garden, as it was not meant to keep a distillation of nature for human purposes. Rather, it is a sort of reserve, or a sanctuary, designed to protect from the outside the natural balance there emerged, essentially untouchable, with a sort of "inhabited fence" that, also from a formal point of view, does not precede the biological diversity that is at its center but depends on it. As if human livability represented just one of the effects and not the purpose of the design, which was instead imagined to give shape to a real ecosystem by taking care of the soil that is its very fundament. Always considering that in a biotope, however unintentional, nature's resurgence often needs a human act of "disturbance to enhance diversity and the healthy functioning of ecosystems" (Lowen-haupt Tsing, 2015, p. 152). Which explains why this particular one, in its final configuration, ended up being at once a highly artificial environment, fashioned by means of invasive processes and technological artefacts, and an undisputable natural and living ecosystem, growing over time according to its own inherent dynamics. Those, in other words, of a whole community of more-than-human inhabitants, which is undecided, in constant evolution, and open to heterogeneous forms of cross-fertilization, as well as determined, on the one hand, by unconstrained patterns of natural growth and, on the other, by a precise political recognition concerning its biological necessity for the whole ecosystem to work.

## 5. Conclusions

What is particularly interesting in the project of the *Rambla Climate-House*, in summary, is that it not only offers a literal interpretation of a decentered domestic space, like, for

instance, also Kersten Geers and David Van Severen's Solo House did before (2017). But it is mainly the fact that it perfectly reflects a process of decentering design that is entirely in line with a more-than-human perspective and with a *biotopic* way of seeing the relationship between different species and their environment. Like one of Stengers' *objectors*, for example, instead of trying to offer solutions, it was simply aimed at increasing architecture's receptivity to biological diversity by making room for it, without any other purpose and beyond any predetermined hierarchy. And like in Tsing's theory of *disturbance*, it was based on the awareness that not only design, in most cases, is strictly necessary to initiate the process of making space for more-than-human subjects but also that, however deliberate in its intentions, it frequently ends up being entirely unintentional in its effects. This is why the project has been developed not as an answer to a specific program but as a catalyst for new and unpredicted ones, within an operative field that, while obviously remaining that of the project, considered it as a proposal rather than a pre-determination. And not because of an intended informality, but due to the understanding that, when dealing with interspecies relationships, design outcomes are largely unforeseeable, and that their quality mainly resides in the multiple opportunities of appropriation they enable for heterogeneous inhabitants. By interpreting programs, for instance, in terms of interconnection rather than division, openness rather than segregation, and indeterminacy instead of specialization. But even by showing architecture as a form of collaborative construction, defined by the idea of radical inclusion that is implicit in a more-than-human vision of the world.

At the same time, however, what is equally relevant to notice is that, unlike what one might expect, this project, like many others adopting a more-than-human design approach, also challenges the contemporary theory that emphasises an eco-scientific approach to systems and metabolisms, and restore an idea of architecture as a historically constituted symbolic system. In that, from a certain point of view, as any other reconstructive reading of nature, the *Rambla Climate-House* complicates “the claim that contemporary ecological, bio-mimetic, and geo-mimetic work operates in a post-representational regime” (Gissen, 2011, p. 456), by promoting an architectural interpretation that, while considering all the systemic processes and exchanges involved, de-emphasises physical interrelations to focus on a specific formal archetype and its symbolic power. And in this way, it offers the house, in its poetic expression, not only as a device to tackle urgent environmental issues but mainly as a true and realizable “promise of happiness” (Leveratto, 2021, p. 210). A promise probably utopian and certainly far from being perfect, given its inherent susceptibility to failure, which, however, from a political point of view, is even more important than its actual realization. Not only to provide a historically grounded framework for future explorations of nature in architecture, but mainly to promote a more-than-human vision of the world that could be socially accepted and, in so doing, challenge the current model of development in ways that could be increasingly culturally perceived. By showing how, for instance, a house may be a means to adapt oneself to the natural order rather than a tool to transform it, and how biodiversity, besides being a scientific concept, may also represent the most beautiful way of inhabiting the world that one may imagine.



**Figure 1.** Andrés Jaque / Office for Political Innovation + Miguel Mesa del Castillo, Concept poster of the Rambla Climate-House, Molina de Segura, 2018-2021.

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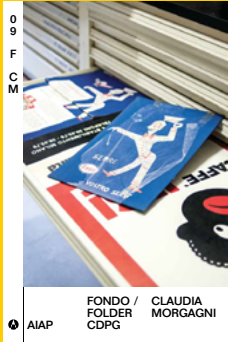
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