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# Interspecies design

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## Abstract

We now live in the "Anthropocene" era, which makes us think that this is how it has always been, and that human domination is the only way we can inhabit our planet. We usually refer to green architecture as a small patch of grass in front of our ten-story concrete buildings or as planting a few trees in a public space. In reality, our design approaches are human-centric and integrate nature in a purely visual way, still very empty of natural behavior, that I believe could offer immense ecological and social benefits. My key question is: Why do humans design only for themselves on a planet inhabited by many other species, especially in the face of a severe ecological crisis? And why don't humans use nature in a comprehensive way to enhance their way of living? Interspecies design is a new collaborative approach in the architectural field that aims to use all the knowledge currently available to us, to design smarter solutions for both animals and humans, taking all species into equal consideration.

This paper explores how interspecies design can foster collaboration between architects, engineers, artists, and botanists in order to innovate the way we build, aligning with the conference theme "Convergence." Through case studies, I analyze how collaborative architectural processes can produce new urban and architectural design solutions that provide "shelter" or "function" for more than just humans.

**Keywords:** More-than-human, Sustainability, Collaboration, Co-Habitation

## Introduction

This paper explores how architecture can foster collaboration and interdisciplinary practice toward designing for more-than-human users, an approach known as interspecies design. The goal of the paper is to create a deeper understanding on how we can change our built environment in order to facilitate also other species and how can design choices impact our worldview and the way we inhabitant it. It shows how collaboration can amplify the efficacy of architectural outcomes. We now live in the Anthropocene era, defined by human domination, where our force is shaping the planet, often disrupting natural processes that have existed for millennia. Humans have destroyed a tenth of Earth's wilderness in twenty-five years. As philosopher Bruno Latour notes, this period challenges the traditional separation between nature and society, concept more and more visible in how our build environment looks and behaves. Our cities are purely designed for us, not even us, but standardized versions of what it means to be human, making our environment a highly polluted place, that lacks any true natural ecosystems, biodiversity or wilderness. Sustainable urbanization is thus emerging as a major contemporary environmental global challenge and, therefore, new forms of interspecies responsibility should guide our future practices. When we talk about architecture and building something we use the term and notion of scale in our practice. We measure everything according to human size and proportions, we then choose an architectural program that accommodates only and primarily our needs, and we dress everything up in a material that is firstly suitable and convenient for us and our wishes. Yet, paradoxically, this often leads us to flee our own cities, seeking refuge in the wildest places possible to heal from burnout and illnesses caused by the very environments we have created. While our cities have become thriving centers of economic growth, innovation, and knowledge production, an urban lifestyle is

typically associated with detachment from nature, rising health problems, chronic stress, and mental fatigue.

## Literature Review

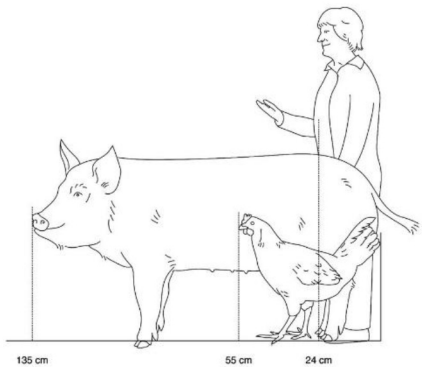


*Fig. 1: Scale of human vs chicken,* ***Handbook of Interspecies Cohabitation (****Cargo Collective)*

Architectural scale has historically been defined by the human body, reflected in models such as Le Corbusier's *Modulor* or Henry Dreyfuss's ergonomic measurements. **This modernist theory of a standard body has been highly criticised as it expresses the paradox of a body that was supposed to represent all bodies but in fact is nobodies body.** Interspecies design challenges this anthropocentric logic by asking: *What would design look like if we accounted for other bodies and species smaller or larger, making us to think from both micro and macro perspectives?* For example, the Elephant Museum in Thailand, built by Bangkok Project Studio, thoughtfully accommodates both humans and elephants by integrating dual-scale architecture: expansive outdoor pathways and courtyards for elephant movement, alongside raised seating platforms designed for visitors, making it possible to accommodate in the same space both human and elephants. Whether it's bees inhabiting wall cavities, birds nesting in façades, or microfauna thriving in porous materials, scale becomes a

tool not for control or monumentality, but for shared occupation. The materials we use are usually block nature from passing or inhabiting the structures, even if we opt for wood, bamboo, recycled materials and Low-VOC paints and finishes, the final built environment it's lacking natural behavior or real benefits. We must question the impacts of materials beyond sustainability labels, considering effects on biodiversity, animal habitats, and ecological cycles if we want our cities to be less polluted and more healthy. This is why in order to foster co-habitation between species and to include that in the design practice, we need to take into consideration the impressive findings that have been made by developing materials that allow the growth and inhabitation of non-human species.

*Fig. 2 Bee bricks/ by Green&Blue*

For example, a very accessible and wildly spread product are bee bricks, that have been developed by Green&Blue a company that creates products for integrating birds, bats, and bees into buildings. These blocks replace a brick in the wall and provide a nesting place for solitary bees. This product creates intentional nooks and crannies for these species to find homes. While there has been some debate on the effectiveness of these bricks by scientists, there is hope that this is an opportunity to foster biodiversity. Another accessible and wildly spread multispecies façade system, are insect hotels. They are man-made structures, made out of materials like wood, bamboo, bark, and straw combined in different box like shapes that provide safe shelters

and nests for pollinators and natural pest controllers such as solitary bees, ladybugs, lacewings, and beetles. For example Mellor Primary School project done by Sarah Wigglesworth Architects, features an insect hotel façade, that was constructed using natural and locally-sourced materials.

*Fig. 3 Insect Hotel Primary School/ Sarah Wigglesworth Architects*

This type of inhabited façades can also improve the environmental performance of the building by contributing to microclimate regulation and natural pest control. It is highly suitable for school architecture program because it has an educational and ecological feature that reflects a commitment to sustainability and coexistence with non-human life.

*Fig. 4 Silk pavilion by Neri Oxman "Millions of eggs produced by silkworms in pavilion"*

These kinds of material and technological advances have been made possible only through interdisciplinary research, where architects, botanists, zoologists, ecologists, and other experts collaborate to explore new ways of designing with and for nature. A leading example of such a research-driven practice is Neri Oxman's work, which merges design, biology, and engineering to develop materials and structures that are both innovative and ecologically integrated. Her research focuses on new materials such as programmable bio composites for digital fabrication or experiments with structures built by animals such as the silk pavilion that explores how can humans collaborate with other species to create new materials and structures without depleting natural resources. In this fabrication method animals are no longer seen as resources but as active collaborators in the design process. This kind of approach emphasizes the material intelligence of nature and introduces the potential for self-regulating and adaptive architecture, responsive through the instincts of living organisms.

## Methodology

This study uses qualitative analysis of interspecies-design projects and research in the field of architecture to explore how interdisciplinary practices focused on sustainability and ecological approaches can be a tool for reshaping our relationship with nature when rethinking our cities. The methodology is structured around three key categories: SCALE, by questioning anthropocentric standards and including multispecies dimensions and micro/macro scale creating; MATERIALS, by examining biologically integrated or responsive substances like silk or mycelium; and PROGRAM, by analyzing architectural functions that intentionally include non-human users, such as insect habitats in facades. Aligned with the conference theme *"Convergence,"* this approach emphasizes the

integration of knowledge across disciplines to propose more inclusive, ethical, and ecologically resilient urban and architectural solutions.

## Results

These kind of interventions and design methods can contribute to the rewilding of urban spaces, transforming them into ecologically vibrant and ethically inclusive systems. By integrating new possible materials and using the research that is being conducted all over the world now with the aim to reduce the carbon print and to break the paradigm of using only concrete or classic materials, we can start thinking of using materials that are **responsive**, **biodegradable**, or **biocompatible**, that may decay or transform over time. Also, this kind of practice can enhance metal health, pollution rates and

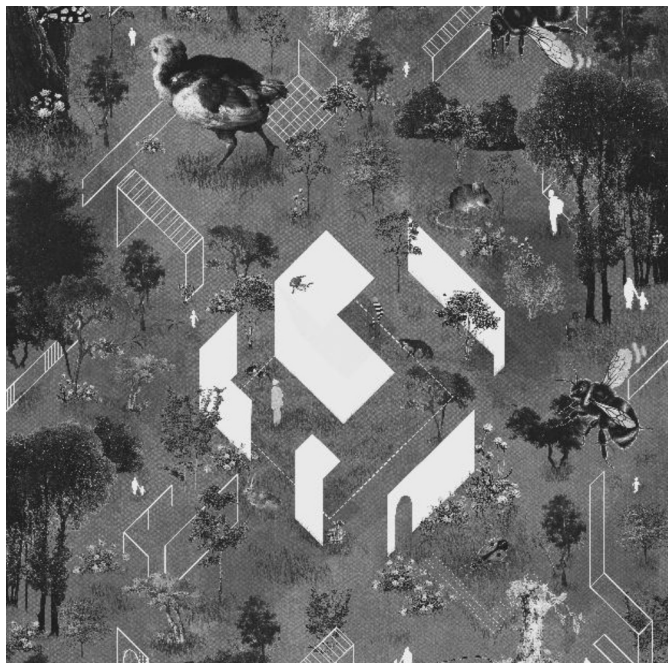

*Fig. 5 Interspecies design manifesto, personal artwork Panduru Simona*

## Discussion

The findings suggest that architecture can foster *convergence* by reframing the built environment as a shared habitat rather than human dominant place. Interspecies design presents a new ethical framework, one that positions architecture as a tool for coexistence rather than standardization. It moves beyond the binary mindset of "built" versus "natural" environments, challenging the rigid zonification that comes with it and that has divided human functions from ecological ones. Real-world examples, such as façades that incorporate insect habitats or nesting modules, prove that buildings can be spaces of co-habitation, that help enhance the biodiversity of an area and that support the natural world, that needs our help more than ever. This design approach addresses the separation characteristic of the Anthropocene era by demonstrating that more-than-human species can and should be considered across all major pillars of decision-making—from who we design for, to the materials we use, the intended users, and the purposes we serve. Approaching design in this way helps repair our relationship with nature and contributes to the creation of more ecological and sustainable cities.

Animals are often perceived as intrusive or even damaging to our buildings, and tend to be avoided or eliminated from interacting with the built environment. However, this perspective overlooks the potential benefits that animals can bring to the built environment. Birds, bees, bats, and other species can contribute to pollination, pest control, seed dispersal, and even building ventilation or ecosystem regulation. We can create healthier, more resilient, and ecologically balanced environments by including non-human species leading us to increased wellbeing and psychological benefits, shrinking the gap between humans and nature.

## Conclusion

This paper demonstrates that architecture can become a mediator between species, creating environments that are functionally, materially, and spatially shared by fostering collaborative and interdisciplinary practices. By expanding the understanding of scale beyond the human body, integrating responsive and ecologically sensitive materials, and rethinking architectural programs to intentionally include non-human users, architecture can actively contribute to restoring biodiversity and rewilding urban spaces.

## References

Bjarmar. (n.d.). *Interspecies cohabitation*. Cargo Collective. https://cargocollective.com/bjarmar/Interspecies-Cohabitation

Bonilla Huaroc, C. (2024, January 21). *Interspecies design: Developing materials that allow the growth and inhabitation of non-human species*. ArchDaily.

Domnitch, M., Gelfand, D., & Manzini Ceccotti, A. (2021). *Interspecies design*. Academia.edu. https://www.academia.edu/49325573/Interspecies_Design

Domusweb. (2021). *Elephant museum in Thailand: The revenge of Ganesh and the values of an ancestral culture*. Domus. https://www.domusweb.it/en/architecture/gallery/2021/08/19/elephant-museum-in-thailand-the-revenge-of-ganesh-and-the-values-of-an-ancestral-culture.html

Jaque, A. (Ed.), Otero Verzier, M. (Ed.), & Pietroiusti, L. (Ed.) (2021). *More-than-Human: A reader*. Het Nieuwe Instituut; Office for Political Innovation; Serpentine Galleries; Manifesta Foundation.

Lyster, C. (2018). *Notes on more-than-human architecture*. *Architectural Design*, ResearchGate. https://www.researchgate.net/publication/330160668_Notes_on_more-than-human_architecture

Oxman, N. (2013). *Silk Pavilion I*. Oxman.com. https://oxman.com/projects/silk-pavilion-i

## Design interspecii

(rezumat)

Trăim acum în era „Antropocenului", ceea ce ne face să credem că așa a fost dintotdeauna și că dominația umană este singurul mod în care putem locui pe planeta noastră. De obicei, ne referim la arhitectura verde ca la o mică suprafață de iarbă în fața clădirilor noastre de beton cu zece etaje sau ca la plantarea câtorva copaci într-un spațiu public. În realitate, abordările noastre de design sunt centrate pe om și integrează natura într-un mod pur vizual, încă lipsit de comportamentul natural, care, cred eu, ar putea oferi beneficii ecologice și sociale imense. Întrebarea mea cheie este: De ce proiectează oamenii doar pentru ei înșiși pe o planetă locuită de multe alte specii, mai ales în fața unei crize ecologice severe? Și de ce nu folosesc oamenii natura într-un mod cuprinzător pentru a-și îmbunătăți modul de viață? Designul interspecii este o nouă abordare colaborativă în domeniul arhitectural, care își propune să utilizeze toate cunoștințele disponibile în prezent pentru a proiecta soluții mai inteligente atât pentru animale, cât și pentru oameni, luând în considerare toate speciile în mod egal. Această lucrare explorează modul în care designul interspecii poate încuraja colaborarea între arhitecți, ingineri, artiști și botaniști pentru a inova modul în care construim, aliniindu-se cu tema conferinței „Convergence". Prin studii de caz, analizez modul în care procesele arhitecturale colaborative pot produce noi soluții de design urban și arhitectural care oferă „adăpost" sau „funcție" pentru mai mult decât doar oameni.

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