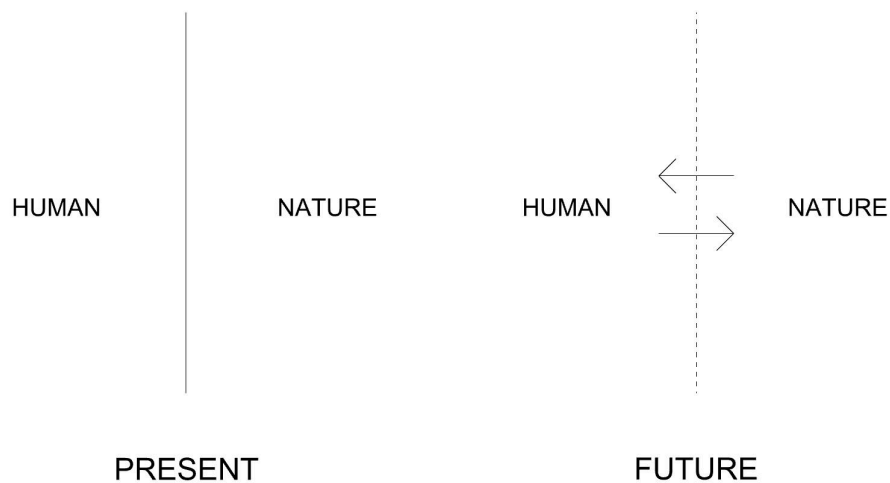


# A New Cyborg Manifesto for Designers

Heidi Jagus & Harriet Piirmets

Architecture was born as an act of separation. Walls distinguish inside from outside, roofs shelter from the weather, and property lines divide land into territories. Architecture sets the boundaries. It is a mediator between humans and the uncertainties of the natural world. The building becomes a protective shell, allowing culture to exist apart from nature.



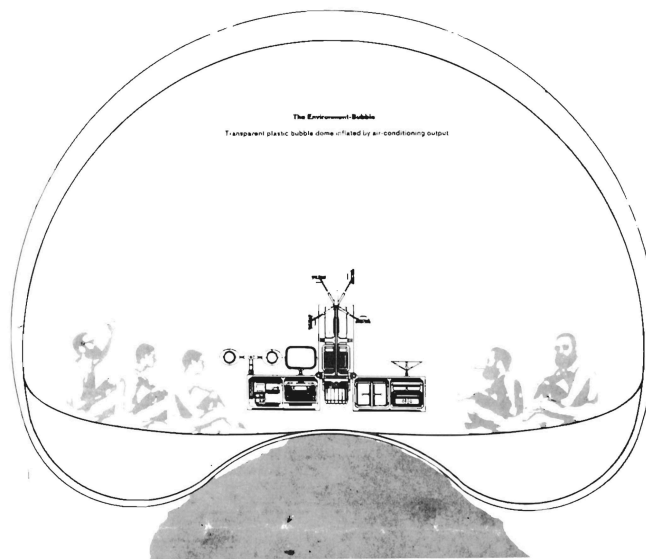
*Architecture should not be a separator but an opportunity for exchange.*

Yet contemporary ecological crises expose the limits of this worldview. Climate change, biodiversity loss, pollution, and mass displacement reveal that humans have never existed independently from the environments they inhabit. Air, water, microbes, animals, technologies, and weather systems continuously cross the boundaries that architecture establishes. The idea of separation increasingly appears unsustainable.

*“Why should our bodies end at the skin, or include at best other beings encapsulated by skin?” - Donna Haraway*

If the body does not end at the skin, then perhaps architecture does not end at the wall. Humans are hybrid beings, formed through relationships with technologies, surrounding environments, and other species. We do not exist in this world alone. There is no us vs them; there is just us.

Reyner Banham argues in his 1969 book “The Architecture of the Well-Tempered Environment” that there are two ways of controlling our environment. Either by building some kind of shelter, or by mediating the local environment, for example, with a campfire. “Campfire” has many unique qualities that architecture can not reach - it has freedom and variability. Humanity chose the perpetual option, but maybe we should re-explore our previous choices.



*"A Home is not a House", by Reyner Banham and François Dallegret, 1965*

*"When your house contains such a complex of piping, flues, ducts, wires, lights, inlets, outlets, ovens, sinks, refuse disposers, hi-fi reverberators, antennae, conduits, freezers, heaters – when it contains so many services that the hardware could stand up by itself without any assistance from the house, why have a house to hold it up?" - Reyner Banham*

Buildings can no longer be understood as isolated monuments. Architecture must instead be reconsidered as a living system situated within a network of human and non-human actors, continuously shaped through processes of exchange, adaptation, and co-evolution. How can architectural theory redefine the built environment not as dead matter, but as an active, living ecosystem and a hybrid extension of our collective multi-species embodiment?

## **THE COLLAPSE OF BOUNDARIES**

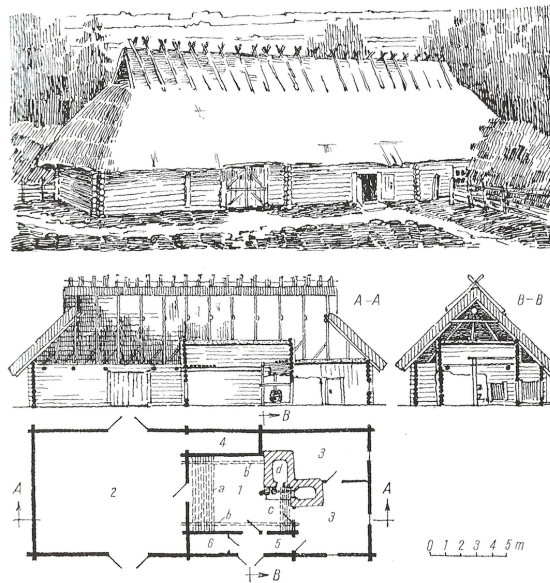
Throughout Western history, the world has been organized through oppositions: human versus animal, culture versus nature, mind versus body, machine versus organism. These categories have shaped not only how humans understand themselves, but also how they construct the environment. Architecture reflects these divisions through its reliance on enclosure, control, and separation.

The modern building often operates as a physical manifestation of these binaries. Nature is positioned outside the building while culture occupies the interior. Climate is treated as an external force to be excluded through insulation, barriers, and environmental control systems. Animals are considered intruders, weather is regarded as a threat, and materials are valued for their ability to resist change. Architecture becomes an instrument for maintaining distinctions between what belongs and what must remain outside. This divide keeps getting greater as humans keep distancing themselves from nature.



*An artist's reconstruction of a typical medieval longhouse, looking from the shippon towards the household's living area (© Historic England)*

In the medieval longhouse, during the winter, livestock were brought indoors, transforming the home into a shared space where animal body heat provided essential thermal regulation. These structures did not seek to conquer nature, nor did they use synthetic envelopes to hermetically seal out the world. Built from thick timber and thatched reed, they breathed with their surroundings, dynamically balancing moisture and temperature through natural porosity and responsive, exterior reed window mats. This was not mere survival but integration. During long, harsh winters, the thatched straw roofs were dismantled to feed the starving cattle. The house itself was a resource, a fluid "two-in-one" lifecycle of shelter and food.



*traditional Estonian barn-dwelling (rehielamu)*

1 – kiln-room, 2 – threshing floor, 3 – chambers, 4 – chaff-room, 5 – entrance hall, 6 – pantry, a – grain-trying poles, crossbars, b – joists, c – poles for drying firesticks, d – keris stove. (Source: Karl Tihane, "Eesti taluarhitektuur")

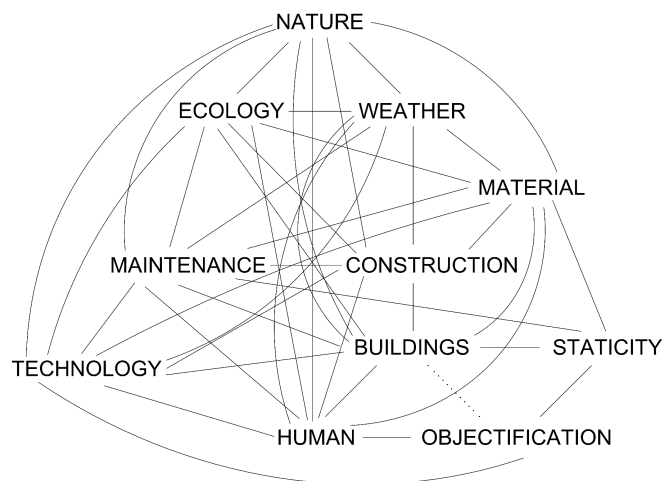
A building exchanges with its surroundings, collects moisture, hosts microbial communities, provides habitat for insects and birds, and responds to cycles. The wall is therefore not a definitive edge but a zone of interaction. Rather than separating two distinct worlds, it mediates ongoing exchanges between them.

From this perspective, architecture is no longer the construction of boundaries but the design of relationships. The distinction between inside and outside becomes less important than the flows that connect them. Architecture shifts from an object of separation to a system.

## ARCHITECTURE AS A (ECO)SYSTEM

In conventional architectural discourse and practice, buildings are overwhelmingly conceptualized as static, autonomous objects. They are still going to be there, even when everything else around it will change. Even materials covering them are stagnant. No sign of life or movement. The construction of buildings is viewed as a completed act. The natural environment is viewed merely as an external, often opposing condition acting upon an otherwise resolved structure. It intervenes and conflicts with stacticity. In this concept, architecture is something that is designed once and maintained against change.

Haraway suggests a different viewpoint on the case. Humans are woven into different networks and chains, woven into something that acts as a system. At first it might not seem like that, but everything around us, even the smallest particles are connected with each other. Each link has a role to fulfill. Therefore, architecture must also be part of these systems. Buildings are not isolated objects but rather small links that connect them into the structure. Both actors are equals, one is not better than the other.



*Chain of the system*

If architecture is re-conceptualized as an open ecosystem, the traditional authority of the architect as the singular author of space becomes untenable.

The architectural theorist Jonathan Hill problematizes this top-down authority with the statement that "rain is an architect." Hill's provocation suggests that the weather does not simply act upon architecture after the construction is complete. Instead, it actively continues the formulation of the spatial and material conditions. Rain patinas surfaces, erodes stone,

precipitates spontaneous botanical colonization, redirects human circulation, and continuously recalibrates the sensory experience of space. Consequently, design operations persist long after the primary architect vacates the site. The weather functions as an active, non-human co-author of the built environment.

Coming back to Reyner Banham's discussion of the campfire. Instead of defining architecture by permanent boundaries like walls or roofs, Banham suggests that space can be created through dynamic flows of energy. A campfire creates a perfectly usable, comfortable space without a single physical barrier. It creates a temporary climate just through the interaction of human beings, air, and heat. Architecture transitions from static objects to more fluid and environmental, even sociological conditions.

To see how this ecological co-authorship actually works in practice, we have to look past standard construction methods and focus on designs that blend biological processes with architecture.

### **The Living Root Bridges of Meghalaya**

In the mountainous, subtropical regions of Meghalaya, India, the Indigenous Khasi and Jaintia peoples practice an iterative, generational form of arboriculture to cross torrent rivers. Rather than deploying static timber or masonry infrastructure, they guide the flexible aerial roots of the rubber fig (*Ficus elastica*) tree across river chasms using hollowed-out trunks as directional conduits. This process requires decades of continuous stewardship before the structure achieves structural maturity.



*People walking on the living root bridge in Nongriat village. Photograph: David Talukdar/Alamy*

Crucially, while conventional engineering interventions exhibit a trajectory of entropic decline from the moment of completion, the living root bridge operates on an inverse trajectory. Through continuous interaction with monsoon cycles and riverine humidity, the roots undergo self-grafting and secondary growth, thickening and anchoring themselves more deeply into the surrounding geology. The biological agency of the tree operates in tandem with human guidance. The structural artifact is never finished, but remains a living, evolving infrastructure whose load-bearing capacity increases with age and environmental engagement.

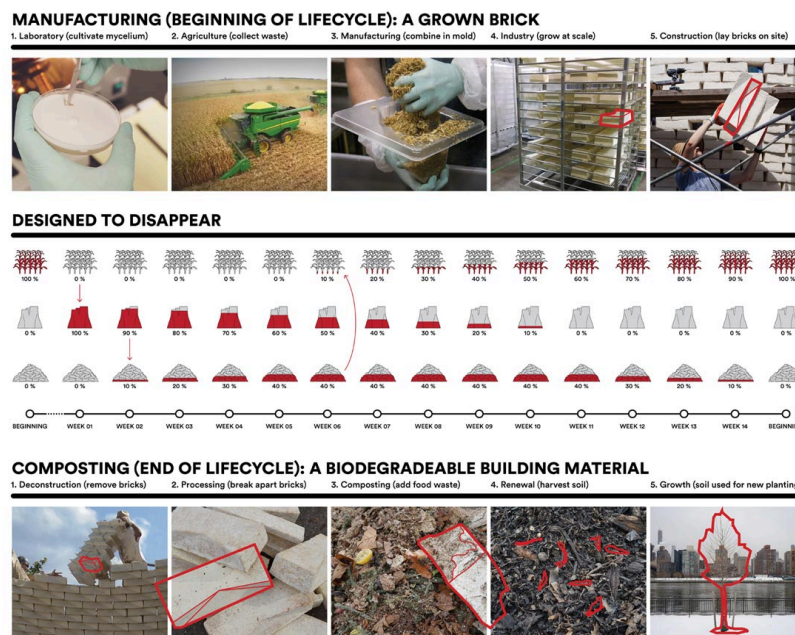
## Mycelium Cultivation and Hy-Fi (The Living)

Conversely, contemporary bio-fabrication practices apply this logic of living co-authorship through the lens of advanced biotechnology. A seminal precedent is the Hy-Fi tower, designed by David Benjamin's studio (The Living) at MoMA PS1. The project bypassed traditional, energy-intensive masonry manufacturing by utilizing an organic synthesis of agricultural byproducts (corn stalks) and mycelium - the vegetative, root-like structure of fungi. By introducing the fungal culture into modular molds containing the agricultural substrate, the biological organism digested and bound the organic matter, self-assembling into high-strength, lightweight structural blocks over a brief temporal window.



*Hy-Fi by David Benjamin of The Living. Holcim Foundation*

The production phase of Hy-Fi was explicitly a biological phenomenon. The architecture was literally grown rather than manufactured. Furthermore, the structural lifecycle was mapped onto ecological cycles. At the conclusion of its temporary exhibition, the tower was decommissioned, shredded, and entirely composted. The material reverted to nutrient-rich soil utilized by local community gardens, illustrating a circular material loop where the building represents a transient phase within an ongoing ecological system.



*The lifecycle of Hy-Fi. urbanNext*

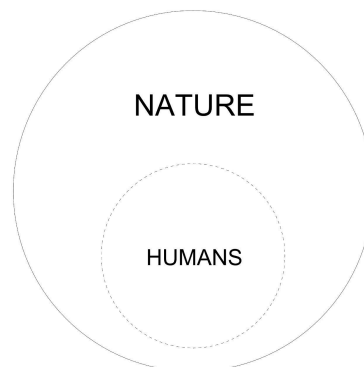
Ultimately, these precedents disrupt the Cartesian division between the artificial and the natural, challenging the absolute autonomy of the designer. When viewed through this socio-ecological lens, a building ceases to be a static, finished monument. It exists as an ongoing negotiation between multiple forms of life, technological systems, and non-human agency. Plants, fungi, microbiomes, atmospheric vectors, human occupants, and maintenance regimes all participate as co-authors in the continuous formation and transformation of the built environment.

No material is dead, new architecture should consider material as a living thing that changes over time.

## **DEATH OF THE STAR ARCHITECT**

To re-conceptualize architecture as a living system requires the deliberate, unceremonious death of the "star architect." For decades, contemporary architectural culture has worshipped the singular, heroic designer. We celebrate the day the keys are handed over as a project is finished, immortalizing it in photographs. From that exact moment onward, the building enters a tragic trajectory of entropic decline. We treat rust, patina, mold, and decay as failures of the architect's vision rather than as the world trying to reintegrate human interventions into its cycles.

The fiction of the star architect relies on a deeper psychological delusion: the belief that humans exist apart from the world. But we are no longer (and have never been) pure creatures. We are hybrids of our surroundings, constantly co-constituted by non-human actors. From the millions of microbes flourishing in our guts to the global technological networks in our pockets, we are always part of a collective.



*We are nature.*

If the machine, the microbe, and the weather system are baseline aspects of our daily embodiment, then architecture can no longer be viewed as dead matter. It must be redefined as an active, living ecosystem.

*"We are the body of this earth and what happens to it is what happens to our own bodies." -  
Perdita Finn*

This is not a call for humanity to submit to some romanticized, external wilderness out of guilt, nor does it imply we are inferior to nature. We are nature. Our buildings, our campfires,

and our complex technological networks are just as natural as a bird's nest, a beaver's dam, or a coral reef. The future architect, therefore, must step down from the pedestal of the supreme author.

In ecology, *succession* is the predictable, orderly process by which an ecosystem changes and develops over time. Because we are nature, our architectural interventions are not the end of an ecosystem, but a dynamic phase within it. When the ego of the star architect dies, design operations persist long after human construction crews vacate the site. The future architect does not design a finished, frozen monument; they design the initial conditions of an ecosystem, initiating a process of spatial development that will be co-authored by time, weather, machines, and non-human organisms over decades or centuries.

*“All that you touch You Change. All that you Change Changes you. The only lasting truth is Change.” - Octavia E. Butler*

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