BLIND NURSE: A Study of Fabrication, Decay, and Growth

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"There is a tougher, more critical edge to the acceptance of the decay of buildings and their inevitable ruin that places architecture in a unique position to inform our understanding of the human condition and enhance its experience. Chiefly, this is to include in design a degree of complexity, even of contradiction embodied in the simultaneous processes of growth and decay in our buildings, that heightens and intensifies our humanity." - Lebbeus Woods, "Inevitable Architecture"

INTRODUCTION

When architects consider a building's decay as carefully as they do its design and construction, they accept that a building is fundamentally part of our larger natural ecosystem, that it is not distinct from nature, but part of it. The Blind Nurse project points to a scenario in which architecture can participate more fundamentally in the natural cycles it often ignores. A building's obsolescence can be as thoughtfully considered as its construction.



Figure 1. The Blind Box Precendents. Image credit: By Authors.



Figure 2. Nurse Log. Image credit: Vancouver Big Tree Hiking Guide.





Figure 3. Permutations. Image credit: By Authors.

DEFINITIONS AND PRECEDENTS

In the world of collectibles, blind boxing is nothing new. Urbandictionary.com defines the blind box as the "packaging of vinyl toys, like dunny™, or kid robot™. They're called blind boxes (be)cause you don't know what you're getting." Much earlier blind box examples include things like baseball cards, Kinder™ eggs, or gumball machine toys. The key principle behind a blind box toy is that one cannot willfully select which toy one will receive. Specific characteristics are always a surprise.

According to the article Nurse Logs: Healers of the Forest, by Allie Wisniewski, nurse logs serve the larger purpose of ecological facilitation, where they nurture and make way for a new generation of living organisms. The key principle behind the nurse log is that it provides nutrients, support, and environment for future growth through its own decay.

Architecturally, we studied work from an exhibition at the Centre Pompidou called "La Fabrique du vivant" or "the factory of the living," where 3D printing and textile spinning technologies allow organic materials like mycelium, algae, and cocoon resin to produce household objects. Similarly, MIT's Mediated Matter Group explores 3D printing of light, water- and ligninbased structures that safely dissolve into soil. What is inspiring about this work is that it anticipates its own decay. Virtually all the materials in this research can catalyze the growth of future materials. Decay is considered something to embrace and to leverage as a potent driver of formal production. At the scale of buildings, we studied the Peter Zumthor's Bruder Klaus Field Chapel and the Truffle House, by Ensemble Studio. In the case of the chapel, craftspeople first built a wood frame from 112 tree trunks. Then, they poured and rammed layers of concrete over this frame. After the concrete cured, they set the wooden frame on fire, which left behind a hollowed blackened cavity and charred walls. In the case of the house, craftspeople similarly cast concrete over a sacrificial base of hay bales. Instead of burning the hay, they engaged "Paulina" (a calf) to consume it, leaving behind a hollow shell that became a house. In both precedents, the architects anticipated the consumption of a material as an essential part of the construction process. Material fed back into a much larger ecological cycle (burning or eating) to achieve a tactile or formal architectural objective.

DESCRIPTION

The Blind Nurse combines the blind box and nurse log to emerge as a thirty-inch cube of soil, enriched with tree seeds, and delivered in a thin paper wrapper. When placed outside in the elements, it erodes, gradually revealing a hidden object inside. Each hidden object in the Blind Nurse series is unique, threedimensionally printed from biodegradable lignin and shaped to anticipate the growing needs of a tree species.

METHODOLOGY

Collaboration with experts from plant biology, ecology, forestry, and fabrication inform the three-dimensionally printed objects inside the Blind Nurse. The material composition, size,

PROJECT

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Soil

"Leg" in foreground Possible

seed in well

Pulp

Figure 4. Surface Area Study of Blind Nurse. Image credit: By Authors.

Figure 5. Section Through Blind Nurse. Image credit: By Authors.





Figure 6. Growth & Decay Progression. Image credit: By Authors.



Figure 7. Wood Pulp Material Test. Image credit: By Authors.

and orientation of nurse logs, their contextual conditions, like humidity and temperature, and the species of sapling trees that typically thrive on them all inform our current inquiry. To develop a decay rate similar to that of nurse logs we are testing different 3D printable materials, along with various shape families and porosity levels.

Once we print a matrix of prototypes, we will systematically test them under controlled conditions to understand, first, the dissolving rate of each, and then, their capacity to house tree growth. We will also explore what larger purpose the objects might serve for human use. For example, they might serve as dynamically evolving landscape sculptures where appearance gradually migrates from inorganic to organic, and object to system. Alternatively, they might serve as temporary waterfront erosion protection, installed until larger tree roots can take hold to naturally control aggressive coastline erosion. Their purposes will evolve as we understand the research better.

CONCLUSION

Blind Nurse models how architects might expand their agency. It points to a strategy in which they might consider decay as a seed for future growth. It positions materials as nutrients for future growth. It acknowledges that buildings are rooted in a broad ecosystem, not distinct from it. It offers a scenario in which architecture can participate more fundamentally in the ecological cycles it often ignores. It asks questions like: If

Figure 8. Wood Pulp & Soil Material Test. Image credit: By Authors.

a building's obsolescence can be as thoughtfully considered as its construction, what might this mean for that building's conceptualization? What might it mean for its detailing and material selection? How might it lead to a deeper and broader engagement with its users, and with the environment?

We design most objects to last forever. Once produced, they exist statically in the world, unresponsive until we throw them away. Blind Nurse is purposefully temporal. Like any biological organism, it evolves and changes, from its birth to its death. It catalyzes and then yields to future growth. Its full purpose emerges slowly and its narrative only understood through repeated viewing and continuous monitoring. It is a dynamic, surprising, and ultimately emotional proposition, to which we can uniquely relate because, like architecture and like all of us, it will eventually wilt away.

ENDNOTES

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