Introduction: Going to Ground

When the Aqua skyscraper was completed in Chicago in 2010, by architect Jeanne Gang, it was lauded as a shining example of a building constructed for human occupation that also took into account the lives of other animals. Its wave-like facade and fritted glass were designed to stop birds flying into the building's windows, injuring or killing themselves. A low bar to set, perhaps, for an architecture that accommodates animals, but that is hardly surprising given our long history of seeing animals as outside of, even beneath, the human. More usually, animals are designed for only when they are deemed of use to humans, whether as livestock, domestic pets, spectacles to consume in zoos, menageries and aquaria, or objects of scientific manipulation in laboratories. If animals cannot be instrumentalized, they are usually ignored; if those animals take it upon themselves to inhabit buildings, they are invariably regarded as pests and removed or annihilated. When the global construction industry is one of the principal drivers of climate change and species extinction, there is an urgent need to transform our relationship with animals, to build with animals not just in mind, but also as cohabitants that seeks some measure of recompense for the long, sad history of human exceptionalism.

We need, in short, an animal architecture, the subject of this book. It will consider thirty different animals in order to open up new ways of thinking about the relationship between architecture and the more-than-human. It moves from some of the smallest visible organisms (insects) to the largest (elephants); from the domesticated (cats and dogs) to the despised (wasps and rats). What if architecture were to simply become

more deeply attuned to the other life forms that already use it? Examples in this book include spiders spinning their webs in the dark corners of rooms; swallows finding ideal purchase on brick walls for their saliva-mud-based nest cups; rats making their homes in the subterranean spaces of the city; beavers working alongside humans as landscape engineers; cats and dogs appropriating our furniture and fittings as their own places of rest. There is hardly any part of the human-built environment that cannot be inhabited or changed by non-humans, yet people are usually very selective as to which animals they allow in and which they diligently keep out or eliminate.

To open up space for animals in architecture is to first become aware of how non-human life is already enmeshed in both our buildings and our imaginations. By paying close attention to how animals produce and/or occupy both space and structures for themselves, this book asks what might be required to design with animals. By focusing on imaginative engagements with animals, it stretches the possibilities of solidarity with more-than-humans. At the same time, though, it provides an unflinching account of what non-human life gets sacrificed for human inhabitation: an opening up to more discomfort in the face of this; a moving towards rather than away from the mess and pain of entanglements that cannot be controlled. In short, *Animal Architecture* is about building in a world where humans and other animals are already entangled, whether we or they like it or not.

In this introduction I will sketch out some of the broader arguments that inform how this book explores the relationship between animals and architecture. These are, first, questions about origins in architecture and the latter's relationship with nature; second, arguments about why it's crucial that architects and planners move beyond a solely anthropocentric approach to building; third, why animals are important to consider in human constructions; and finally, why it is critical to start to care more about building for and with animals. The overarching aim of the book is to challenge prevailing understandings of the value of animals (and more generally nature) within architectural practice, namely as 'others' that are only ever construed in terms of their usefulness to humans. Undermining this holds open the possibility of a richer but uneasy approach to animals that lets go of instrumental thinking in favour of much more open understandings.

Architecture: destroyer of worlds

In what is the oldest surviving treatise on human construction – the multi-volume *De architectura*, compiled in the first century BCE and usually translated into English as *Ten Books of Architecture* – the Roman architect Vitruvius speculated on the origins of architecture. He set the scene by imagining a gathering of early hominids (always male) around a fire that they have recently created for the first time. Here, the men 'first began to make shelters of foliage, others to dig caves at the foot of mountains and yet others to build refuges of mud and branches in which to shelter in imitation of the nests of swallows and their way of building'.[1] When Vitruvius' writings were 'rediscovered' in Renaissance Italy, they precipitated a renewed obsession with the origins of architecture that lasted until the twentieth century. In the eyes of many different writers, the 'primitive hut' first suggested by Vitruvius was variously inspired by the boughs of trees, the older art of weaving branches and reeds, mud-built termite mounds, the excavations of ants and burrowing animals and the nests of birds.[2] According to architectural historian Joseph Rykwert, this preoccupation with the origins of architecture was rooted in attempts to renew the discipline, with the repeated stress on the examples in nature as inspiration for human building a way of affirming universal – even divine – sanction for a particular way of conceiving architecture.[3]

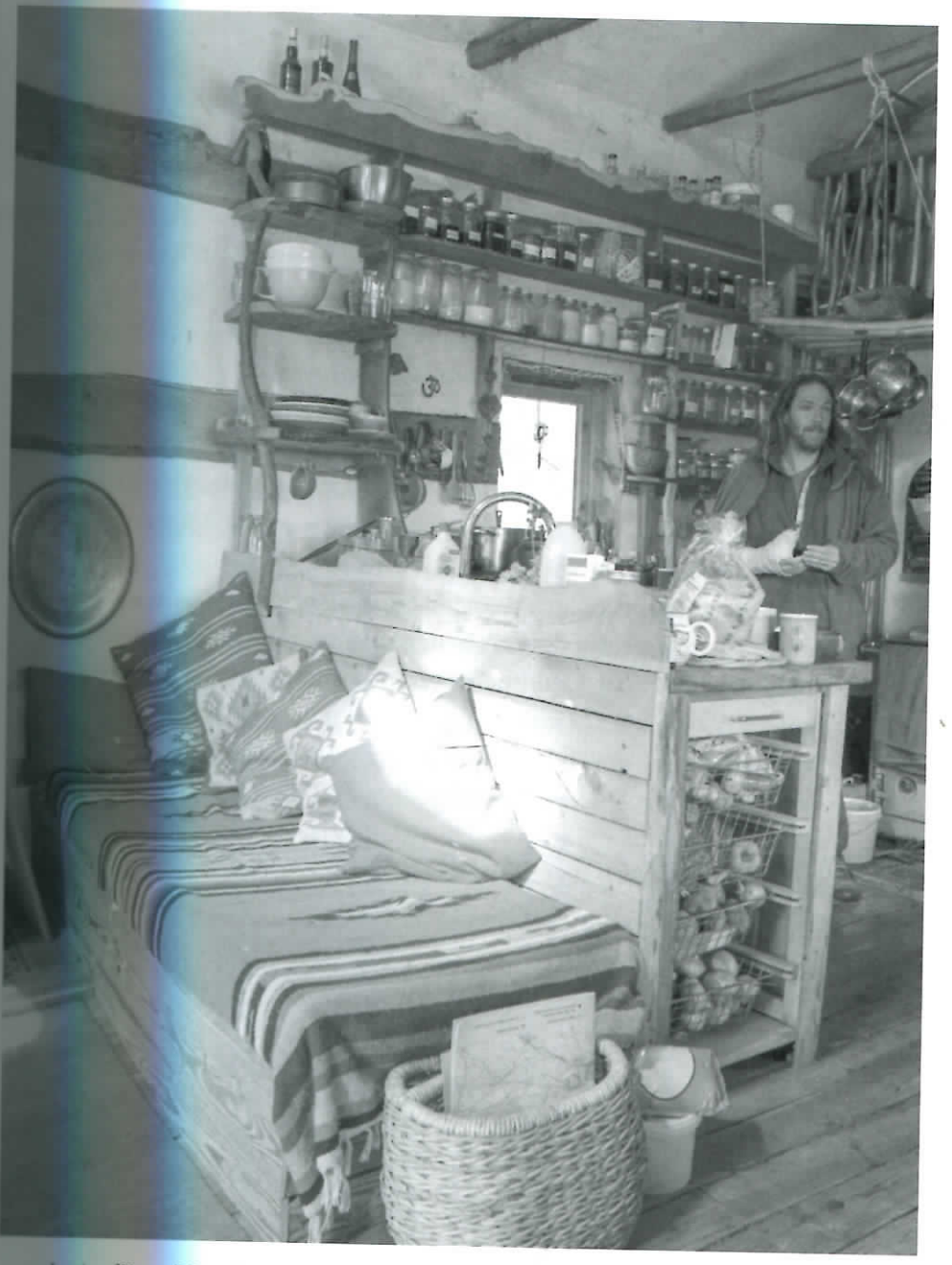
As Rykwert has pointed out, speculation on origins can also reinvigorate thinking by calling into question some of our basic assumptions. And who can argue that this is not an urgent task for the construction industry, which, even by the reductive standards of bald statistics, is a leading participant in the orgy of destruction that now characterizes human relations with the planet that are based on capitalist consumption? In 2021 the global construction industry accounted for 38 per cent of anthropogenic emissions of carbon dioxide, the highest percentage for any single economic sector, and a share that is expected to grow to 42 per cent by 2030. Every week, across the planet, a city the size of Paris is built, and only 1 per cent of the resultant buildings are assessed for their carbon footprints.[4]

Sometimes it takes an outsider to draw attention to the true scale and horror of the destructive impact of the construction industry. In his 2016 book *Vertical*, geographer Stephen Graham considered the ways in which

the human-built world has increasingly dominated the vertical axis of the planet, from satellites to bunkers. In the final chapter on mining, he brought to light how today's supertall skyscrapers are only made possible through an almost unimaginable level of destruction. Here, Dubai's 830-metre-high Burj Khalifa (until the completion of the Jeddah Tower in 2025, the tallest building in the world) is revealed as a monstrously destructive edifice – the Burj's 55,000 tonnes of steel, 250,000 tonnes of concrete, 700 tonnes of aluminium and 85,000 square metres of glass (not to mention tonnes of Egyptian marble and Indian granite for the interior fittings) all requiring the mining, extraction and processing of countless tonnes of other materials from all over the world, particularly iron ore and sand.[5] And these material statistics tell us nothing about the organic life annihilated as a result of these technologies of extraction and fabrication; that level of destruction is rarely, if ever, accounted for in the realization of a building. Viewed in this way, the spectacular shiny surfaces of the Burj (and almost every other skyscraper, however 'green' their credentials) are really just a very effective cover for the gigantic level of destructiveness required for their realization. These buildings are quite literally destroyers of worlds.

Given this intensely depressing reality, it is easy to understand the desire of some architects to revert to small-scale building in order to model something different. Thus the thousands of eco-villages that now exist around the world are predicated on creating 'restorative' environments where building grows out of immediate needs and renewable materials. For example, Tao and Hoppi Wimbush, two of the residents at the Lammas eco-village in Wales, founded in 2009, used locally sourced timber (where possible fallen trees from carefully managed woodland) as the principal construction material for their self-built house. The argument here, and in many other eco-villages, is that by returning human builders to a direct engagement with materials, methods of construction and also infrastructure, a new kind of relationship is struck with nature, that of respect and, moreover, mutual enhancement. However, even as the Lammas community have genuinely enhanced local biodiversity in their careful management of the land they occupy, it is impossible to circumvent architecture as a fundamentally destructive art.

Felling a tree for use as a building material means destroying a life-world (regardless of whether this act is offset by planting another tree in its place). Even if we do not consider a plant to be a living being (and most



Interior of Tao and Hoppi Wimbush's self-built house at Lammas in 2019.

plant scientists would now dispute this), a single tree nevertheless supports a huge array of animal life, from insects burrowing into its bark to birds nesting in its canopy. Using deadwood is arguably *more* destructive, given that fallen trees generally support more life than growing ones, as decaying wood provides sustenance to all manner of other animals, fungi and protozoa. Even the most primitive act of dwelling described by Vitruvius – excavating a hole in the ground or retreating to a cave – results in some level of destruction: other lives are always displaced and sacrificed for the sake of our own. Indeed, the very act of being alive, whether of a plant or animal, means an ongoing and unrecoverable expenditure of energy that will eventually result in the death of any organism. In this more realistic mode of understanding, speculating about the origins of architecture is not a way of imagining human building returning to nature (unless this refers to a thoroughly human understanding of nature), but rather the opposite, namely, retreating to a world inside by disconnecting from nature that is seen as threatening (the same applying to other animal architectures such as termite mounds and birds' nests). To build a shelter means to purposefully exclude what is outside: the very act of construction encloses and partitions the world, even as it also creates something new. The outside of the 'primitive hut' is precisely the 'nature' that, millennia later, would become so revered by those seeking to justify architecture's supposed 'natural' basis. Perhaps the more truthful question to ask about architecture's destructiveness is not whether the latter can somehow be 'solved' (namely, reduced to zero), but rather how it can be both accepted and mitigated – a far more troublesome question than that of finding sustainable or resilient architectural solutions.

Thinking of architecture's relationship with nature as a difficult negotiation as to what will inevitably be destroyed results in a different way of thinking about concepts such as sustainability. Anthropologist Tim Ingold has put forward the idea of 'correspondence' to describe how humans can relate more respectfully to the world they inhabit. Acknowledging that all living beings – human and more-than-human – are always enmeshed, correspondence 'goes along' with the world rather than seeing it as a series of problems to be solved. In this mode of understanding, 'lives, in their perpetual unfolding or becoming, simultaneously join together and differentiate themselves, one from another'.[6] A useful way of thinking about

architectural correspondences is to consider the nature of the ground; and Ingold does this himself in an essay responding to the makeshift dwellings created by artist Tim Knowles in the Scottish Highlands from 2015 to 2019. Here, Ingold recasts the origins of architecture as 'going to ground', that is, constructing a hide that aspires to invisibility because concealment offers the best form of protection against nature. Contrasting the characteristic way in which the built environment tries to make the ground impermeable – think of asphalt road surfaces or concrete floors – the hide is 'an intricately folded or crumpled volume of heterogeneous materials', where the human inhabitant 'nestles into a fold much as you would into a cradle, co-opting its existing features with only the barest of additions'.[7]

Architecture that is a folding into the world does not try to make an impermeable ground between humans and nature, but instead engages in creating correspondences. When I visited the Lammas eco-village in spring 2019, I was struck by the way those in the community are more open than is usually the case to accommodating animals in their buildings. For example, in the guesthouse where I stayed, a newly emerged queen wasp was beginning to construct a new nest on the ceiling. Most noticeable was the buzzing sound of her wings, vibrations that liquefied the wood pulp she had collected with which to build. Next door, in Tao and Hoppi Wimbush's timber-built house, a robin repeatedly flew through the open

One of artist Tim Knowles's shelters, created in the Scottish Highlands as part of his Howff Project from 2015 to 2019.