

# Log

Winter/Spring 2022  
Coauthoring

54

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WINTER/SPRING 2022

Coauthoring

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Sumayya Vally, Counterspace, the choreography of a maqam – lines 1–4 of Qaul, performers and listeners. Developed in response to pages of *Sufi Music of India and Pakistan*, by Regula Burckhardt Qureshi, and in conversation with Moad Musbahi.

# Deep and Shallow Timescales of The Builtsphere

The unprecedented global challenges we are facing today demand radical and new temporal accountability. This entails a paradigmatic shift by which what we call “the globe” (home to our ever-globalizing cultures and economies) and “the planet” (this very old cosmic entity we’ve been inhabiting of late) are seen as entangled and unfolding in *shallow* (human) and *deep* (planetary) time simultaneously.<sup>1</sup> Inevitably, recognizing deep time as part of human nature, and hence as integral to the architectural condition, will reposition architecture “in the web of life and in the connected but different histories of the globe and the planet.”<sup>2</sup> This daunting but necessary transformation will change the ways we think about architecture, the ways we design and build, the ways we, architects, account for worlds.

In his 1934 book *A Foray into the Worlds of Animals and Humans*, biologist Jakob von Uexküll challenged established ideas about the relation between a subject and the environment, and while intended for the field of biology, his theories may be helpful in reimagining architecture in planetary terms. According to Uexküll, every organism inhabits its own distinct perceptual universe, or *Umwelt*, which integrates the *Merkwelt* (perceptual world) and the *Wirkwelt* (action world).<sup>3</sup> The *Umwelt* can be thought of as a broader instantiation of agency, one that presents perception as a critical factor in the act of world making. Uexküll defines, for instance, the sea urchin *Umwelt*, the oak tree *Umwelt*, and the human *Umwelt* – to which he did not give priority as an environment-making agent. What is interesting here is how each of these unique *Umwelten* comes with its own way of experiencing time; how, according to Uexküll, there is not only one time but as many times as there are subjects; how, in this theory, “time as a succession of moments varies from one *Umwelt* to another, according to the number of moments experienced by different subjects within the same span of time.”<sup>4</sup>

1. When discussing historical time and deep time, historian Dipesh Chakrabarty refers to the “planet,” which decenters humans and whose timescales relate to the Earth System, and the “globe,” which is a human-centric construct operating at the shallow timescale of globalization and capitalism. See Dipesh Chakrabarty, *The Climate of History in a Planetary Age* (Chicago: University of Chicago Press, 2021).

2. *Ibid.*, 91.

3. Jan J. Koenderink, “World, environment, Umwelt, and Innerworld: a biological perspective on visual awareness,” *SPIE Proceedings* 8651: Human Vision and Electronic Imaging, XVIII (March 14, 2013).

4. Jakob von Uexküll, *A Stroll Through the Worlds of Animals and Men*, trans. C. Schiller (New York, International Universities Press, 1957), 29.

From this perspective, adopting a more sensitive relation to time might open us up to more diverse subjectivities, leading to a better understanding of the various agents involved in architectural production. When turned to the largest scales, this sensitivity brings into view deep time, and with it the possibility of a planetary Umwelt whose subject is the Earth. The notion that the whole planet could be conceived as a singular subject can be traced back to geologist James Hutton, who coined the term *superorganism*, a system in which independent individuals are so tightly integrated that they possess features analogous to those of a single organism, including collective cognition. Hutton conceived the Earth as a superorganism, a sort of macroperceptual system that, in light of Uexküll's theories, would then be embedded in its own Umwelt, which, as with every other Umwelt, has its own time.<sup>5</sup>

In 1788, in *Theory of the Earth*, Hutton presented the first account of deep time and with it the temporal dimension of the Umwelt of the Earth.<sup>6</sup> In this new dimension of time, the present is the moment when vastly different deep and shallow time trajectories intersect. This applies not only to the present of superorganisms like the Earth but also to the time experienced by the tiniest earthly creatures. For instance, in deep time, the shallow six-to-12-hour lifespan of cyanobacteria intersects with a deep 3.5-billion-year timeline, back to the time when these bacteria became the first organisms to populate the Earth. In deep time, therefore, these microorganisms ought to be seen as a major agent in architecture, not because they are actors, for instance, in the deterioration of building facades but because without them there would be no oxygen in the atmosphere and therefore no life – no humans, no buildings, no facades.

In deep time, the superorganism of “the Earth,” as Bruno Latour writes, “has now taken back all the characteristics of a full-fledged actor.”<sup>7</sup> This actor deploys its agency through the Earth System, a self-regulating complex structure that works to perpetuate the conditions for life on the planet.<sup>8</sup> Traditionally subdivided into four main geological paradigms – geosphere, atmosphere, hydrosphere, and biosphere – the Earth System has developed a new sphere: the *anthroposphere*, composed of “the total mass of human-generated systems and materials, including the human population, and its interaction with the Earth's systems.” Like every other sphere, the anthroposphere operates through a series of interconnected subsystems (among others, the “technosphere”).<sup>9</sup> If we examine closely the role that architecture plays as the

5. “According to the historian D.B. McIntyre (1963), James Hutton, often known as the father of geology, said in a lecture before the Royal Society of Edinburgh in the 1790s that he thought of the Earth as a superorganism and that its proper study would be by physiology.” James E. Lovelock, “The Earth as Living Organism,” in *Biosphere*, ed. E.O. Wilson and F.M. Peter (Washington, DC: National Academies Press, 1988), 486.

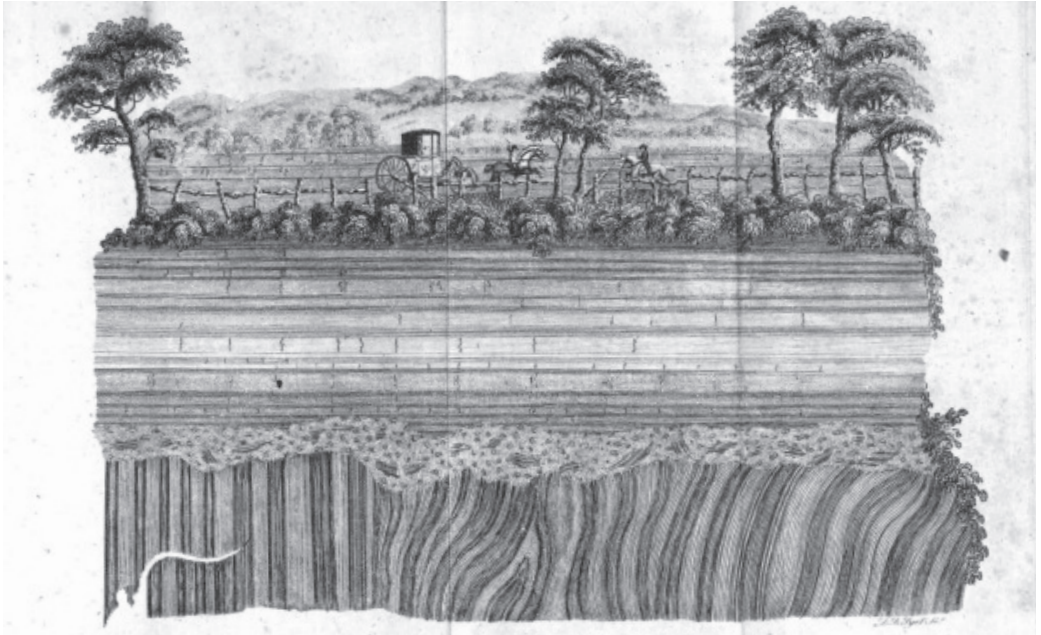
6. Although the term *deep time* was officially coined by nonfiction pioneer John McPhee in his book *Basin and Range* (1980), Hutton had extended the Earth's age far beyond the prevailing biblical theory of 6,000 years in his *Theory of the Earth*, first published in 1788. See Cristina Parreño Alonso, “Deep-Time Architecture: Building as Material-Event,” *Journal of Architectural Education* 75, issue 1 (March 2021): 142–44.

7. Bruno Latour, “Agency at the Time of the Anthropocene,” *New Literary History* 45, no. 1 (Winter 2014): 1–18.

8. See James E. Lovelock and Lynn Margulis, “Atmospheric Homeostasis by And for The Biosphere: The Gaia Hypothesis,” *Tellus* 26, issue 1–2 (1974): 2–10.

9. The atmosphere, for instance, is divided into the subsystems troposphere, stratosphere, mesosphere, thermosphere, and exosphere.





John Clerk of Eldin, *Unconformity at Jedburgh*, engraving, volume 1, plate III, in James Hutton, *Theory of the Earth*, 1795. Image courtesy Linda Hall Library.

part of the anthroposphere that constitutes “the built,” the result of all the activities and technology involved in the processes of construction and deconstruction for which humans are collectively responsible, the *builtsphere* emerges as a new geological paradigm in its own right. As such – as with every subsystem of the anthroposphere – it requires a new way of conceiving the human, not as the main actor but as one of the many components of Earth’s agency. Indeed, we can apply to the builtsphere the exact argument that geologist Peter K. Haff uses for the technosphere:

*Certainly, the [builtsphere] could not exist without its human component. On the other hand, neither can any other system maintain its existence without the participation of its components – the hydrological cycle could not exist without the supporting activity of its water molecules, the rock cycle without its mineral components, and so on. That the [builtsphere] requires for its function the participation of certain critical parts, even if they are people, does not by itself distinguish it from other geological paradigms.*<sup>10</sup>

To embrace the builtsphere’s independence from simply human agency is to adopt a new perspective in which architecture’s agency becomes a complex formation that involves humans and more than humans, including, for example, the geological substrate that allows it to be. That is, a new conception of agency that situates architecture in a world of entanglements between geological, technological, human, animal, and viral bodies coproducing the environment.

10. Peter K. Haff, “Technology as a geological phenomenon: Implications for human well-being,” *Geological Society London Special Publications* 395, no. 1 (May 2014): 301–09.

Consider, for example, the bedrock of Manhattan. About 450 million years ago, a collision between the continental plates formed the supercontinent Pangaea. The impact of this deep time material event shaped the bedrock that is now Manhattan into dips and folds, becoming a major agent in the coproduction of the city's skyline. Tall buildings are only possible in the north and the south of the island, where the bedrock is closer to the surface, but not in the middle of Manhattan, where a deep valley is filled with unstable glacier deposits accumulated during the Ice Age.<sup>11</sup> In deep time, architecture and geology, as environmental historian Jason W. Moore writes, are "neither social nor environmental processes, as conventionally understood. They *are* bundles of human and extra-human nature whose fundamental connections turn on the configuration of power and re/production in the web of life."<sup>12</sup> Holding only a deep time perspective, with its metatheory of humanity as a collective agent, prevents seeing the role of the financial district – made possible through geology as a coproducer – operating at the shallow (human) timescales of capitalism and the uneven responsibility for current social and environmental crises. But what is important here is the idea of the entanglement of the deep and the shallow and the awareness that even the seemingly shallowest architectural intervention can begin to connect with the roots of deep time.

For instance, my project Deep Time Stories of Jamaica Plain is a rehearsal of this type of architectural multitemporal accountability in a small intervention in Hyde Square in Jamaica Plain, Massachusetts. The project taps into the bedrock of this neighborhood of Boston to develop three architectural installations made of puddingstone. This rock – a resident of Jamaica Plain for the past 600 million years – bears its own deep time narratives while simultaneously connecting to shallower human stories, rendering them in the built form of this neighborhood's streetscape as well as the foundations of its houses. The project aims to spatialize the identity of Jamaica Plain, portraying the members of its community as creatures of this planet whose history is mixed with the history of the Earth – its geology.<sup>13</sup>

For architecture to account for difference in individuals' lives, cultural practices, ideologies, and social arrangements, it needs to acknowledge the coexistence of multiple and irregular time trajectories that converge in the polytemporal built-sphere. Only by recognizing the complexity of these multiple temporal dimensions will architecture begin to address issues

11. John McPhee, *In Suspect Terrain. Annals of the Former World* (New York: Farrar, Straus and Giroux, 1981).

12. Jason W. Moore, *Capitalism in the Web of Life: Ecology and the Accumulation of Capital* (New York: Verso Books, 2015).

13. The project Deep Time Stories of Jamaica Plain is the result of a Request for Proposals by the City of Boston to create a piece of public art in Hyde Square in partnership with the Public Works Department, the Mayor's Office of Arts and Culture, the Boston Art Commission, Hyde Square Task Force, Three Squares Main Street, and local residents. The project is a collaboration between the author and Amin Tadsjoleiman with the participation of Melika Konjicanin, Vanessa Pipitone, Carolyn Tam, Patricia Dueñas Gerritsen, and Natalie Pearl.

14. Mark Rifkin, *Beyond Settler Time: Temporal Sovereignty and Indigenous Self-Determination* (Durham: Duke University Press, 2017), preface.

15. Nira Yuval-Davis, "Situated Intersectionality and Social Inequality," *Raisons Politiques* 58 (May 2015): 91–100.

of equity, race, gender, and justice. This is why, for instance, in *Beyond Settler Time*, Mark Rifkin reminds us of "the need for not just a more expansive or inclusive version of 'history' or the 'present' but an examination of the principles, procedures, inclinations, and orientations that constitute settler time as a particular way of narrating, conceptualizing, and experiencing temporality."<sup>14</sup> It is also why feminist theorists have developed tools based on an awareness of temporality to confront long-standing inequality and oppression, generated by equations of time and money that have, for instance, devalued, and even punished, women for having children.

Deep and shallow timescales need to be considered simultaneously when reckoning with the built sphere. While architecture, as a geological agent, must take responsibility for its far-reaching ecosystemic consequences in deep time, it is through a radical multitemporal accountability that it may be able to address urgent "situated intersectionality"<sup>15</sup> issues of equity, climate, and justice as they relate to the evolving built sphere. Understanding the entanglement of these disparate timescales implies an architecture able to operate from a planetary deep-time consciousness without losing sight of the multiple subjects integrated and entangled in the all-encompassing Umwelt of the Earth.

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