

Geologic Architecture and its Extraction Landscapes

Visions for demodern, sustainable architectures

ABSTRACT Capitalist architecture sits at the top of a massive extraction system fueled by global supply chains (Wigley in *Space Caviar* (Ed.), 2021). This extractive industry is sustained by the legacies of modernity and coloniality that rely on land disappropriation, exploitation of peoples, and pollution of environments. The field of architecture is alienated from these practices which sustain it, and fails to recognize its involvement in the creation of unsustainable environments and societies, defuturing the world (Vazquez, 2017). Through the geologic turn (Ivanchikova, 2018), I propose architecture as the product of terraforming—collaborating with the environment to create an habitable Earth—by practising a decolonial, or rather, demodern, sustainable architecture. Therefore, I advance an investigation that draws from the field of postcolonial ecology, posthuman anthropology, as well as from decolonial and demodern theory.

KEYWORDS Geologic turn, terraforming, decolonial, demodern, sustainable architecture

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INTRODUCTION This essay is the third of a series, preceded by 'On Permeance' and 'On Polluted Art', returning full circle to the discipline of architecture. Following this interdisciplinary excursus—through which I grounded myself within my positionality, understood the knowledge which needed to be deconstructed, and established an artistic research methodology—I will depict, in this introduction to geologic architecture, possible paths for advancing a decolonial, or demodern, sustainable architecture. The past writings contributed to depicting the vastness of the industry of architecture, the extent of its implications within environments and communities, as well as the interrelatedness of struggles at different scales. With this essay I strive to delineate my position and involvement in the field of architecture, and outline the intent of my future commitments as an architect.

1. The Architectures of the Earth

"Architecture comes to life, vibrates, breathes and transpires, absorbs and disgorges, becomes calcified and oxidised. Its structures become overgrown with moss and all sorts of organic matter, germinate and flower, and get colonised. It also trembles, burns, corrodes and erodes, collapses, becomes flooded, silted up with sand and mud, breaks up, scatters, and is erased. As soon as architecture forms, only just emerging from the mind's reasoning, it changes, alters, and forms all over again in the ceaseless impacts of matter and living organisms. Architectures are pieces of the Earth already metamorphosed and still transforming, fragments that make the world."

(TVK, 2021, p. 167)

Human forces have been recognized to be dominant geomorphic agents, equal to the geologic movements that contribute to the shaping and have a lasting impact on the Earth's crust. More precisely, the extent of the human industriousness could be better identified in the expanded definition of Bruno Latour's critical zones (See Image 1 below), stretching from the upmost "thin, porous and permeable layer where life has modified the cycles of matter by activating or catalysing physical and chemical reactions", to include the thickness of the lower atmosphere, the bedrocks, the Earth's mantle and core (Latour et al., 2018). This de-flattening of the biofilm view of the critical zone reveals the complex interrelations and global mechanism of earthly phenomena, contextualising the reactivity of our environments as well as the fragility which have become the central preoccupations in the era of the Anthropocene (Latour et al., 2018). Yet, anthropogenic terraforming constitutes merely a

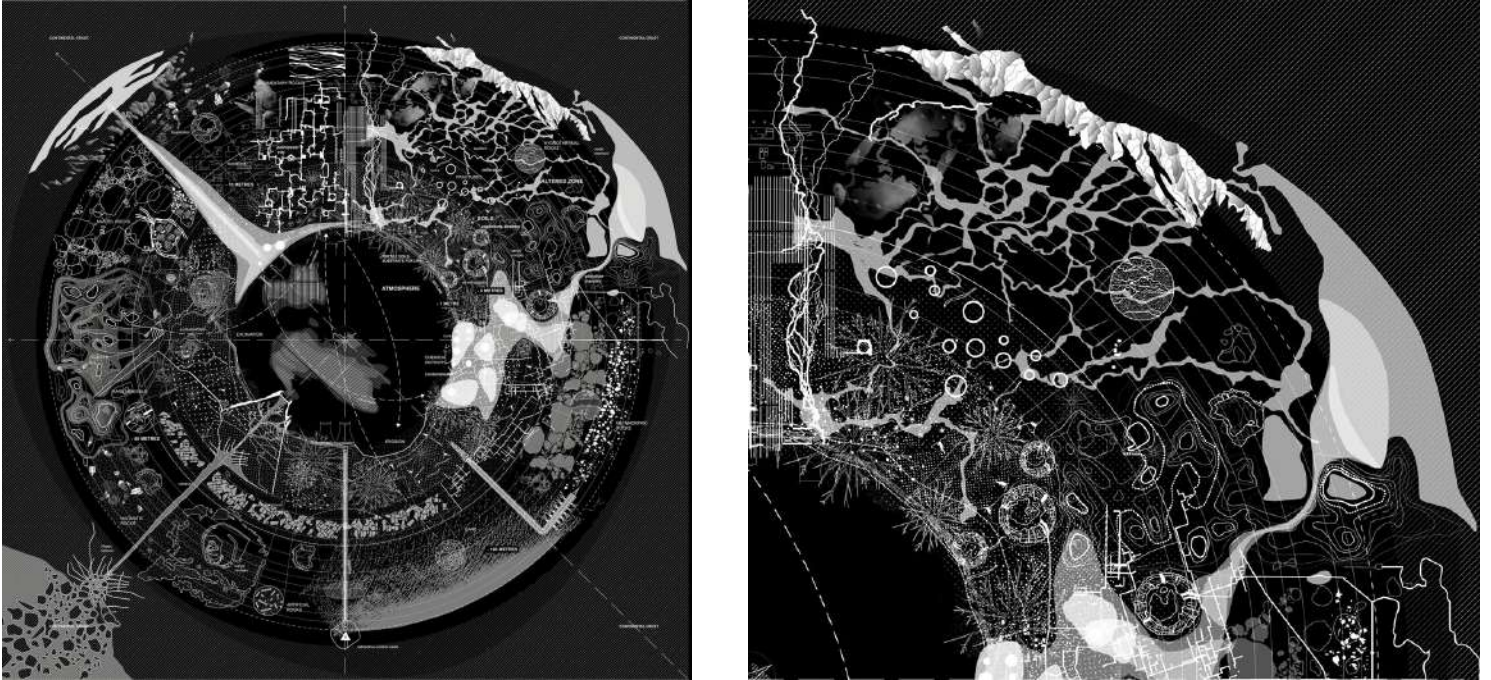


Image 1. Alexandra Arénes, Terra Forma. Retrieved from <http://s-o-c.fr/index.php/object/terraforma/>

fraction of all the happenings that perpetually shape the planet. Indeed, Earth is a common site in continuous construction, (trans)formed by actions and reactions of material elements and living organisms alike (TVK, 2021). As Latour (2017) points out, us humans cannot escape the participation to this living and non-living ensemble, together composing and decomposing the architecture which is Earth (TVK, 2021). However, the modern shapings by humans have become disproportionate and exceeded the resilience of earthly ecosystems. As a response to the impact of the Anthropocene, Ivanchikova (2018) highlights a rising interest in geologic perspectives that tie humans to Earth histories and timeframes. As Ellsworth and Kruse (2013) punctualize, this geologic attunement can be detected in art, design and architecture, as well as social studies, and can be identified as a 'geologic turn' which concerns itself with interspecies and, living and non-living interactions within an ecological framework.

Through this new lens, we can view human architectures as the product of terraforming: the effort to create a habitable Earth by means of the movement of earthly matter. Every building then becomes "a summit, a spur or promontory, a depression, a fold, a ditch" and "every town and city is a range of mountains, a basin, or a valley" (TVK, 2021). All constructions are formed by extraction, displacement, assemblage of elements of the Earth, and therefore, architecture has an inherently geologic necessity to exist (TVK, 2021). Cities, thus, are made up of voids and solids of Earth's geologies (TVK, 2021), each



Image 2. Nobuo Sekine, Phase-Mother Earth, 1968.

Retrieved from <https://www.artsy.net/news>

building being equal to a pit (See Image 2) tying architecture to its extraction landscape (Malterre-Barthes in *Space Caviar* (Ed.), 2021). Cities are complex amalgamations of mined materials, and the convergence of supply chains, metaphorically rearranged in geologic anthropomorphic stratifications but oblivious to the origin of its parts (Lippard, 2014). Indeed, the discipline of architecture has yet to come to terms to its involvement and responsibility in playing a crucial role in the support of global extractive economies.

These necessarily telluric foundations of architecture call for an expansion of the notion of architecture itself, to comprehend all the processes construction materials undergo—and the environmental and social impact along the way—, from the mines through infrastructures to the industries, to construction and discharged waste sites. As the concept itself of human architecture might thus be inherently extractive, the necessity arises to reveal the ties and confront the discipline with the implicated violences on environments and people. Indeed, “architects are experts in veiling, especially veiling the fact that each building is but the tip of a massive extraction system”, as buildings are assemblages of massive quantities of matter “sustained by vast global supply chains—through which an unimaginable amount of materials is flowing [...] dependent on global systems of extraction” (Wigley in *Space Caviar* (Ed.), 2021). Situated at the intersections of flows of materials (image 3), buildings are highly dependent on the mines that feed them, in a sense, “buildings do not stand on the solid ground of the site in which they appear but instead in the holes of extractions from all the distant grounds that do not appear” (Wigley in *Space Caviar* (Ed.), 2021). Wigley (2021) calls for an expansion of the built environment,

delineating it—analogously to Bruno Latour’s critical zones—as “a map of all the gaps in the ground, underground, and on the forest and ocean floors”.

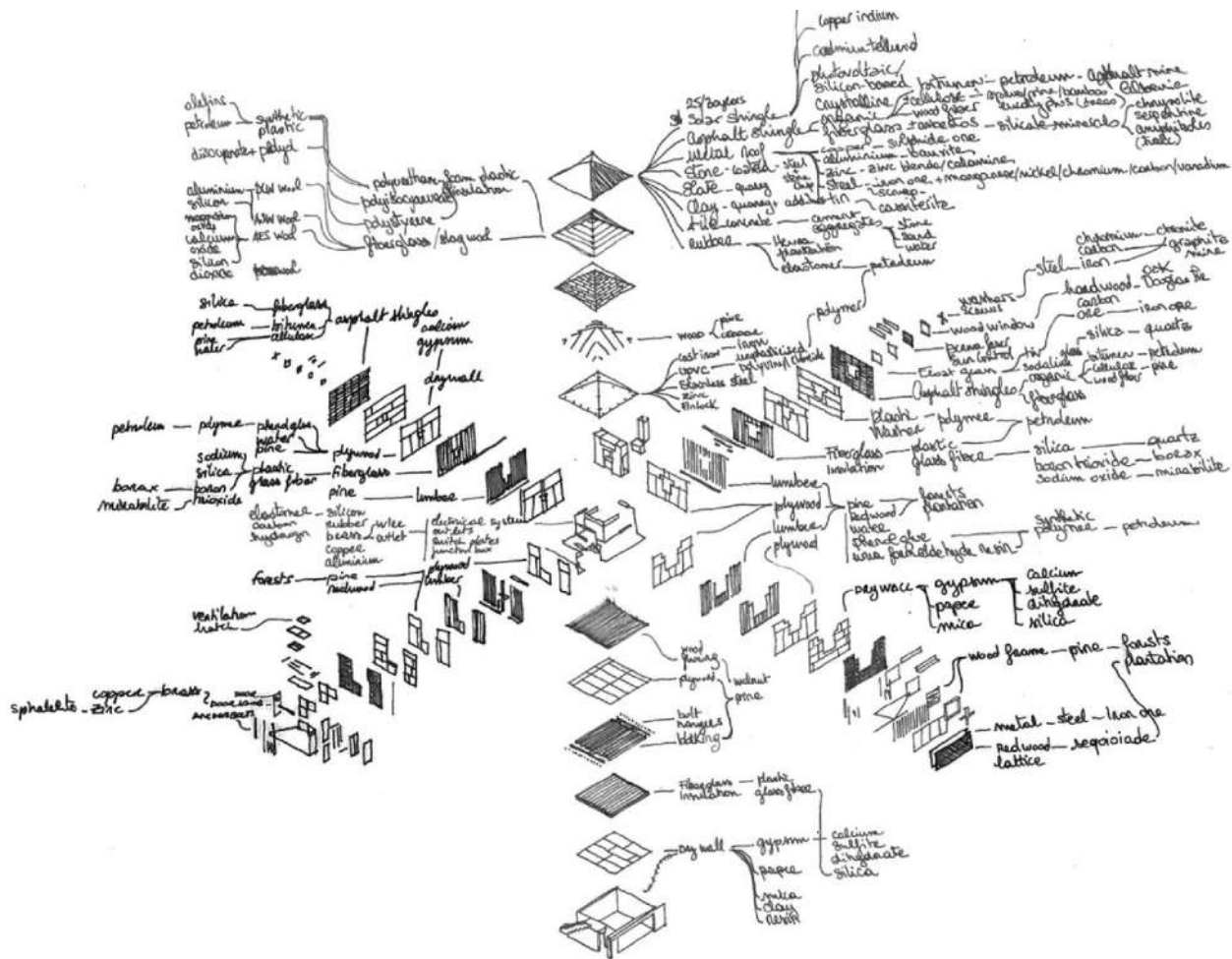


Image 3. Charlotte Malterre-Barthes, Scales of Extraction. Retrieved from <https://flash---art.it/2021/03/non-extractive-joseph-grima/#>

Constructing architecture as we do in the West, thus implies the denial of histories of colonialism, racial violence, extractivism and pollution, and the dismissal of the real consequences that occur widespread across the world in response to the production of materials for the architecture industry. The channelling of world resources into the built environment is fueled by an economic model of development which is rooted in a history of colonial expansion, and is maintained by exploitative and alienating capitalist modes of extraction (Malterre-Barthes in *Space Caviar* (Ed.), 2021). This capitalist architecture of consumption does not account for the unpaid costs of environmental and social damage, disregarding the externalities it produces to different locations or future times. As Di Leone (in *Space Caviar* (Ed.), 2021) states, the failure of architecture’s economy to recognize the

role of energetic and material production, is caused by a break between economic models and extractive practices, which can lead to an unsustainable form of economy detached from reality. In fact, capitalism, according to Graeber (2011), can only sustain itself through a continuous growth that fuels infinite production, and, consequently “endless cycles of destruction do seem to be, necessarily, the other side of this”. As architects we need to recognize that “there is no construction without destruction” (Wigley in *Space Caviar* (Ed.), 2021). Also, architects should reclaim responsibility over the discipline’s implications: every architecture is an intertwinment of materials with origins in sites of extraction that leave a trace on landscapes and communities (Pevzner in *Space Caviar* (Ed.), 2021, p. 99). In tune with the geologic turn, geoeconomics implies a “conceptual shift from seeing resources as bound to a sovereign territory to resources as bound to the planet as a totality” (Di Leone in *Space Caviar* (Ed.), 2021). Therefore, I propose a conceptual shift for both architecture and its fueling economies, complemented with a radical critique of the destructive and extractive processes of growth and development. Furthermore, rethinking holistically the architecture discipline must stem from an anti-colonial and anti-racist project which decolonizes the imaginary from limitless growth.

If architecture is generated through processes of terraforming—constructing habitable worlds—then the actual course of capitalist architecture is all but a practice of terraformation. Through the depletion of resources, the pollution of environments and the triggering of social crises, the world is becoming less and less habitable, for both humans and beyond. As a result, architecture has reached the opposite stage of terraforming, namely defuturing—a reduction of liveable worlds.



Image 4. The Hambach lignite surface mine, Germany. (Own photo)

2. Defuturing: a Modern Colonisation of the Future

Broadly speaking, the architectural practice has yet to come to terms with its involvement in the colonial shaping of the world and adopt a postcolonial critique. Postcolonial theory has recently reached the fields of theoretical architecture, where an understanding of spatial and social processes in a relational approach has emerged (Heynen, 2013). However, the built environment is still largely influenced by the admiration for Modernism and the actualisation of its aspirations. Any effort to understand how architecture is implicated in complex ecological, social and political dynamics calls for an investigation of the modern colonial histories which have shaped civilizations and cultures in the last centuries. Therefore, I propose a critical analysis of modernity and coloniality, with a particular reliance on architectural, postcolonial and decolonial theory.

Moving away from the past and progressing towards the future, modernity is an era that clearly distinguishes itself from previous periods (Heynen, 1999). Yet, modernity is understood not only as a period in time, but also as a project of unlimited progress of a civilization. Indeed, modernity developed on an evolutionary ideology which was implemented through processes of “dehumanisation, destruction and environmental degradation”, and resulted in the assault on local knowledge and indigenous communities (Scott, 1998). In other words, modernity affirmed its model through the conquest and colonisation of its alterity, the non Western other (Mignolo, 2018; Vazquez, 2017; Said 1978). In doing so, it required a forceful negation, an active movement of erasure, suppression of otherness and also the careful concealment of this oppression (Vazquez, 2017; Said, 1978). Colonialism was thus an integral part of Europe’s actualising modernity (Heynen, 2013), and operated according to Eurocentric and Anthropocentric visions of the world (Vazquez, 2017). Built on the partition between civilization and barbarism, the human and non-European’s modernity oppressed people and their worlds through forms of racial classification, temporal discrimination, enslavement, exploitation, and extermination (Vazquez, 2017). In particular, the Anthropocentric construct of modernity was expressed by the division of human and nature, which was enforced by forms of classification, appropriation, extraction, consumption and pollution which required the “negation of Earth itself” (Vazquez, 2017). Through these operations, modernity limited all possible futures to one movement of progress. Indeed, Vazquez (2017) writes, while Europeans thought of themselves as ‘pioneers of civilization’ promoting their colonial welfare state, they invaded foreign territories causing a disruption of the native’s own future horizon and an abrupt destructuralization of their customs and manners of living. This destruction of people and environments Vazquez calls a process of defuturing the world from a “future which can be sustained”, i.e. a reduction of livable futures (Vazquez, 2017). An understanding of how

modernity and coloniality operate by reducing the future—defuturing—is crucial; it is the preamble for a sustainable practice in architecture, to decolonise and to counter the loss of diversity. Understood in these terms, sustainability aims at increasing future possibilities, which means to diversify and vitalize a wide array of evolutions, rather than reducing the possibilities to one, more vulnerable, future. The field of architecture has yet to recognize that subsequently to the process of decolonization, the essence of the modern colonial project was transmuted into the narrative of development. To this day, the ideals that fuel modern capitalist architecture rely on the legacies of colonial land disappropriation, and exploitation of peoples and environments. Only then can a form of sustainable, decolonial architecture be achieved, which remains within the social and ecological boundaries of Earth.

3. The Sustainable Decolonial/Demodern Urgency of Architecture

To reinvent a sustainable architecture I am persuaded that one needs to comprehensively address both the social and the environmental. Therefore, I propose to draw on literature from the field of postcolonial ecology, posthuman anthropology, as well as from decolonial and demodern theory to develop strategies of research that could lead to the decolonization, or rather demodernization, of sustainability in architecture. While decoloniality is the effort to undo the colonial difference, to speak about demodernization means to understand and overcome modernity's way of defuturing the world, enhancing, rather than reducing the possibility of a future which can be sustained (Vazquez, 2017). Demodernization too confronts the legacies of coloniality, but does so situating it and acting from the European context. From my architect's perspective, demodernization represents working with, against or by means of misuse, the inherited Western modern knowledge to achieve—similarly to decoloniality—the quest of futurity for plural worldviews.

It is in this frame of thought where I would like to place architectural sustainability, as a model to oppose the defuturing of modernity (Fry, 2009). The unrestrained exploitation of the Earth, largely as a direct result of both the Industrial Revolutions and the colonial policies, made the ecological consideration the more urgent, and also revealed the need for a cross-disciplinary effort to regain a global ecological equilibrium. My future engagements as an architect will set out to investigate the modalities to achieve a decolonial/demodern sustainability for the extended field of architecture by operating outside the confines of the discipline, and offer a kaleidoscopic perspective which captures the complexity of the issues of modern capitalistic architecture. As Wilson Harris observes “a civilization which is geared towards progressive realism cannot solve the hazards and dangers and the pollution which it has inflicted upon the globe” (Harris in Deloughrey, 2011). In other words, any response to the operation of modernity on social processes, that

promotes the commodification of nature, also has to adopt a two-track approach, which considers the intertwinement of ecological and social circumstances. The fields of postcolonial ecology and posthuman anthropology offer complementary insights to the social matters faced through decolonial and demodern theory. Anthropologists such as Haraway, Tsing, Latour, Ingold, and Kohn provide fundamental awareness that should be extended to the field of architecture. Indeed, the 'geologic turn' introduced in chapter 1, calls for a posthuman and interspecies approach which is alert to the impact of the industry on more-than-human, as well as non-living entities. Anthropology is a discipline that contributes to refining a sensibility which listens to the voices of non-humans, a perspective that has to be taken into account if we truly wish to create sustainable futures.

The commitment I intend to pursue as an architect is the investigation of the entanglements of the capitalist industry of architecture together with settler colonialism and the ideals of modernity, and understand how their legacies still manifest as sites of resource extraction, industries for material manufacturing, and the production of waste and environmental degradation. The aim is to extend the field of architecture to include the geologic perspective of the discipline, by revealing the necessary counterside of it: extraction. It urges to produce architecture as terraforming, that is to say, a sustainable and decolonial practice that creates habitable worlds by acknowledging the global interrelations between environmental and social issues, and bringing vis-à-vis distant geographies through the tangle of the material streams of capitalist architecture. Ultimately, I wish to encourage fellow architects to step outside of the discipline, to view it from an unfamiliar perspective which seeks to unhinge a sense of responsibility and possibility to intervene in different moments of the creation of architectures.

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