17TH INTERNATIONAL ARCHITECTURE EXHIBITION
LA BIENNALE DI VENEZIA
PAVILION OF TURKEY

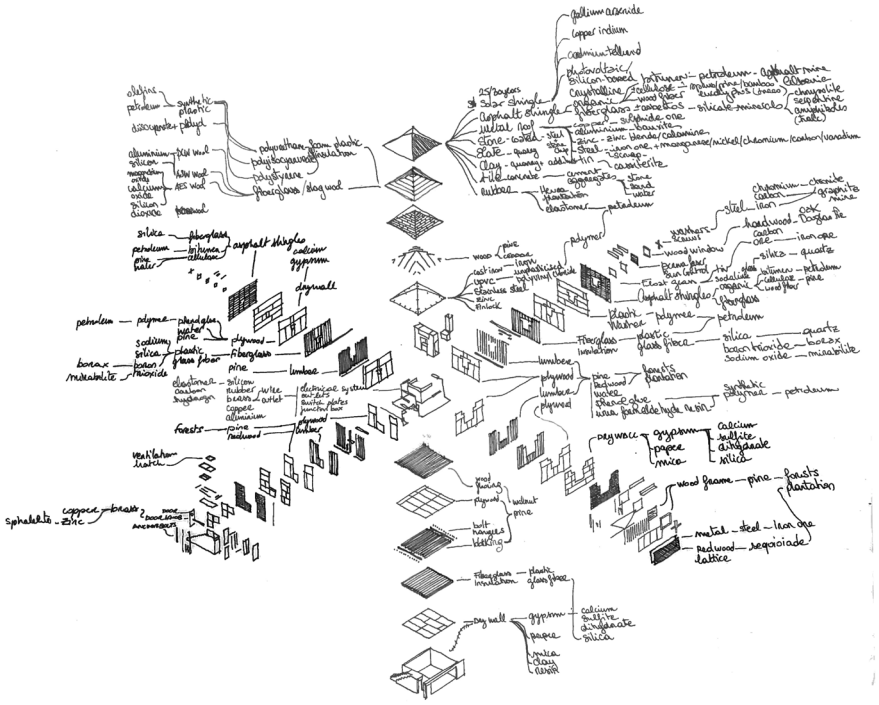
↳ POLITICIZING ARCHITECTURAL DETAILS

Paperwork 37

CHARLOTTE MALTERRE-BARTHES

Architecture 12 as 2 Measure 7
Ölçü 4 Olarak 6 Mimarlık 8

WWW.
PAVILIONOFTURKEY21
.IKSV.ORG



Bangstad, Sindre, and Nilsen Torbjørn Tumyr. “Thoughts on the Planetary: An Interview with Achille Mbembe.” New Frame (2019). https://www.newframe.com/thoughts-on-the-planetary-an-interview-with-achille-mbembe/.
2 Morphosis, “Tectonics, Fragments, Aggregates, and a Sense of the Unfinished Percolate into Everyday Life,” 2-4-6-8 House (1978). https://www.morphosis.com/architecture/30/ (accessed October 20, 2020).

Every decision architects, urban designers, and planners make has an impact when implemented, not only on the site of construction, but also on the site of extraction and of production. From the window frames of a house to the concrete pillars of a highway bridge, from the wood flooring of a living room to the asphalt of our streets, and from the steel bolts of a door to the tree species of a park, choices about the materiality of the built environment have a global knock-on effect.

The asphalt shingles on your roof are made of cellulose, wood fiber, and bitumen, which comprises petroleum extracted either from crude oil or from asphalt mines.[1] They are attached to rain gutters manufactured out of copper, which is found alongside zinc in sulfide-rich ore and extracted via underground (or hard rock) mining, which, once exposed to air and water, generates poisonous sulfuric acid. The additional joint isolation between shingles is made of synthetic rubber derived from petroleum-based elastomer. The insulation panels under the shingles are made of foam (polystyrene or polyurethane, typically—both derived from crude oil) and fiberglass-slag wool (aluminum, silicon, calcium-oxide). Aluminum is made out of bauxite, which is extracted via strip-mining processes that obliterate top-soil and, therefore, wildlife habitats. The roof framework is constructed of wood, typically cedar or pine. Supply for these woods comes from industrial forestry, responsible for the clearcutting of carbon-dense older forests that releases carbon dioxide into the atmosphere. The structural elements holding the framework together are made of steel, which is composed of iron ore and coke (a coal-based fuel) extracted through underground mining, then mixed in a blast furnace. This process alone is responsible for generating some 9% of the carbon dioxide emissions globally.

Interior partition wall layers are typically fashioned from plywood (sheets of pine adhered together using water and a petroleum-based glue),

1 This text is an excerpt from the author’s recent article titled “The Devil is in the Details: “Who is it that the Earth belongs to?” in Non-Extractive Architecture: On Design without Depletion, ed. by Space Caviar (Moscow and Berlin: V-A-C Foundation and Sternberg Press, 2021).

alongside fiberglass insulation made of plastic, borax, and mirabilite. Borax is mined in open-pits, while mirabilite comprises sodium sulfate harvested from lake beds. The windows and their frames are made of float glass, which, in turn, is composed of soda lime, glass, silica, quartz, and metal (either tin or iron ore). Silica is sourced from sand and quartz, both of which are extracted in open pit mines. Drywall is made of gypsum (calcium, sulfite, and silica). Electrical wiring and heating systems are in metal (copper, aluminum) and plastic (silicon, elastomer-petroleum based). The foundations are built with cement brick and concrete (limestone, sand, gravels, and other aggregate). Concrete, which even its own industry representatives recognize as unsustainable, remains the most prevalently used construction material in the world.[2]

This non-exhaustive, somewhat naïve, and simplified listing of the materials necessary to build a house derives from my current research on architectural details and their physicality. Using a previous exploded axonometric drawing titled “Parts” produced by the Californian office Morphosis—which is a precise inventory of each element used in the details of a house constructed following North American construction protocols of the 1970s-1980s—as a template, this critical new drawing seeks to establish a methodology on building construction by bridging the distance between design and extraction. Morphosis’s catalogue of architectural details is not preoccupied with the origins of the materials employed, but rather provides “a Revell-model-like” format that details each aspect of the building’s construction “in a form any layperson could comprehend.” [3] Only once it has been “politicized” by accounting for the sources of each details’ material, does this document make visible patterns that determine how biophysical attributes of space production are combined, produced, and sourced—refracting views into the political economy of construction.

The detail is still considered by designers a neutral, strictly performative entity. What this alternative interpretation of the detail offers is an important diagnostic, conveying the distance established by designers between their architecture and the forms of aggression and violence that the extraction processes necessary for its materialization generate. Symptomatic of the disassociation between the choice of a design solution and its material reality, this detachment ensures a retreat from the responsibilities of the real world. Yet the inexorable association between architecture and its geological genesis is plain to see as the materiality of the built environment relies on extraction. It is highly necessary to politicize details and components in order to connect them to contemporary forms of resource extraction and appropriation, as well as, ultimately, to rethink the production of our infrastructure, our cities, our homes, and our lives.

2 Tonathan Watts, "Concrete: The Most Destructive Material on Earth," The Guardian (2019). https://www.theguardian.com/cities/2019/feb/25/concrete-the-most-destructive-material-on-earth.

3 Morphosis, "Tectonics, Fragments, Aggregates, and a Sense of the Unfinished Percolate into Everyday Life," 2-4-6-8 House (1978). https://www.morphosis.com/architecture/30/.

About the author

Charlotte Malterre-Barthes is Assistant Professor of Urban Design at Harvard Graduate School of Design. Principal of the urban design agency OMNIBUS, she holds a PhD from ETH Zurich on the political economy of commodities on the built environment. She co-authored among other books Eileen Gray: A House under the Sun (Nobrow), Some Haunted Spaces in Singapore (Edition Patrick Frey), Migrant Marseille and Housing Cairo: The ~~Informal~~ Response (Ruby Press).