Landscapes of care
the emergence of landscapes of care in unstable territories

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Reshaping the Island: architectures of extraction

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Abstract

Urban environmental agency is visible through its materialization, nonetheless, the technological systems behind its production often remain concealed. Buildings and infrastructures, as technological products, are just a small visible part of a complex system – the excavation, exploitation, consumption, erosion, and transformation of basalt stones are among some of the technological procedures behind the physicality of landscapes. The extraction of raw materials from which the island is built leads to operations of material addition or subtraction – and the island *reinvents itself*, within a network of sites of exploitation and provision.

Through a photographic testimony of a basalt quarry in S. Miguel Island, this paper intends to explore the intertwinement between the extraction sites and its architectural manifestations. In this light, the acknowledgment of these invisible production sites is understood as a form of care for the possible futures of the island's materialities.

Today, as the concern for the environmental impacts of construction is ever more present on the global agenda, along with a shortage of many resources for civil construction activities, a critical awareness of the territories' building materials urges. In this sense, to interrogate the island's dependencies through an urban lens seems to be essential for a control of architectural materials. These landscapes disclose part of the extractions that *produce* the island, and considering that material and environmental impacts are *also located* in the future, this analysis seeks to engage urban production with a practice of care.

Keywords: island; basalt quarry; non-fungible territories; extraction site; externalities.

Note: all the translations belong to the author.

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Out of sight, out of mind

Almost in the middle of the Atlantic Ocean, the Azorean islands emerged from a zone of divergence of the American, Eurasian, and African tectonic plates, forming several volcanic complexes.[1] The geological constitution of these islands, substantially distinct from the Portuguese mainland, is mostly formed of basalt. The volcanic rock is among the materials commonly used in the construction industry in the archipelago. Through a photographic testimony of a basalt quarry in S. Miguel Island, this paper intends to explore the intertwinement between the extraction sites and its architectural manifestations.

Urban environmental agency is visible through its materialization, nonetheless, the technological systems behind its production often remain concealed – *we* are so familiar with such infrastructures that, paradoxically, *we* forget about them. In other words, *what constructs* those infrastructures (for instance, which materials are used, and which labor is employed) is frequently ignored. The basalt quarry depicts a sacrificed landscape which is usually outside the imaginaries. To claim the recognition of "unseen" production sites such as this quarry, inscribes itself within the need for an "urban theory without an outside".[2]

The use of common expressions such as "consolidated city", "city center" – or even simply "city" – plays a normalization role on the concepts of "dense" and "close", which are understood as being the "core" of urbanization.[3] The antithesis to this agglomeration, or rather what is left *outside* the dense urban nucleus, is seen as an opposite kind of environment. This contrast, I suggest, is conspicuous in the islands because of the perception of the dominance of "nature", or the "rural". To put it differently, the "elementary city" as opposed to "nature" or "rural" seems to be a dichotomy that leaves the externalities that produce the "city" doomed to oblivion. These external constituents are nonetheless essential for the archipelagic urban condition. In this light, the quarry could correspond to an *extended* form of urbanization, as opposed to a *concentrated* one.[4]

If the landscape is the visible part of the territory,[5] the extractive landscape depicted throughout this paper is just the tip of an extractive and productive system. It unveils an arrangement that is beyond the strictly measurable, thus, it is also part of the insular territory. Consequently, the territorial concealment as a result of *out of sight, out of mind* politics conducts to an inquiry absence around issues of extraction.

1 S.D. Caetano, E. A. Lima, S. Medeiros, J. C. Nunes, T. Braga, "Projecto GEOAVALIA – Um Primeiro Passo para Definição de Politicas Territoriais de Aproveitamento de Recursos Minerais nos Açores", n. d., n. p.

2 Brenner, Neil, ed, *Implosions / Explosions: Towards a Study of Planetary Urbanization* (Berlin: Jovis, 2014), 14–15.

3 Ibidem.

4 Martín Arboleda, "Spaces of Extraction, Metropolitan Explosions: Planetary Urbanization and the Commodity Boom in Latin America", *International Journal of Urban and Regional Research* 40, no. 1 (January 2016): 99, https://doi.org/10.1111/1468-2427.12290.

5 Álvaro Domingues, *Paisagens Transgénicas* (Lisbon: Museu da Paisagem, 2021).

Productive landscapes

A study developed to define the "territorial policies for the use of mineral resources in the Azores"[6] referred to their geographical distribution as the following: "the most frequent location of mineral mass extraction zones is in rural areas, although close to urban centers".[7] This means that these extraction zones are perceived as being outside the "urban", coupled with "a host of less-visible extractive processes to procure minerals and materials".[8] Nevertheless, as Martín Arboleda aptly puts it, "resource extraction (especially minerals) could be among the most spatially immobile economic activities: besides being eminently place-specific, it requires vast amounts of investment in fixed capital in the form of machinery and infrastructures".[9] These almost secretive sites unfold massive landscapes which, despite being "central to development above the surface", "are out of sight and often external to urban representation".[10] The rocky horizon, cranes and trucks, power lines and heavy machinery expose part of the infrastructural system that supports the extraction activity (fig. 1).

As previously highlighted, the geographical abstraction of this quarry seems to be directly linked to an idea of confinement of the urban, even if this landscape is at the basis of the construction *of that same urban*. As such, it constitutes a "productive landscape",[11] an expression specific to the contemporary urban condition.[12] Besides being "absent from the urban landscape and the urban consciousness, these sites of production represent a kind of invisible counter-architecture that is carefully ignored by the design profession".[13] In this sense, to request for the recognition of the geographies of contemporary resource extraction might start by questioning the "urban" concept:

> "The confinement of the urban process to the 'city' does three things: 1] it abstracts the materialities of urban systems – its dimensions' attributes; 2] it leaves out the associated geographic transformations of deployment of such environmental technologies; 3] it does not attend to the politics of consensus or dissensus on how to organize and distribute resources. So when geography is reduced to a thin line, the territory is detached from the technological, geographic, and political attributes of infrastructure".[14]

6 Caetano et al., "Projecto GEOVALIA", n. p.

7 Ibidem.

8 Charlotte Malterre-Barthes, "The Devil is in the Details", in *Non-Extractive Architecture, Volume 1: On Designing Without Depletion*, ed. Space Caviar (Berlin: Sternberg Press; and Moscow: V-A-C Press, 2021), 88.

9 Arboleda, "Spaces of Extraction, Metropolitan Explosions", 105.

10 Rania Ghosn and El Hadi Jazairy / Design Earth eds., *Geostories, Another Architecture for the Environment* (New York – Barcelona: Actar Publishers, 2019), 30.

11 Daniel Daou and Pablo Pérez-Ramos, eds. *New Geographies 08: Island* (Cambridge: Harvard University School of Design, 2016).

12 Arboleda, "Spaces of Extraction, Metropolitan Explosions".

13 Malterre-Barthes, "The Devil is in the Details", in *Non-Extractive Architecture*, 83.

14 Rania Ghosn, "The Image of the Oil Territory", in *Elements for a World: Stone*, ed. Ashkan Sepahvand (Beirut: Sursock Museum, 2016), 22.

The basalt quarry is, therefore, part of the bundle of socio-technical systems essential to urbanity. This often-ignored landscape is indeed a site of production, a source of territorial materialization, fundamental to interrogate how extraction shapes geographies.

Non-fungible territories

> ''As a black basalt I rest within myself, brooding in my milieu as if it were a night made of stone''.[15]

The discomfort of emptiness underlined in some conceptions around the urban is profoundly challenged in the presence of this landscape. The massive voids sculpted in the terrain, enormous machinery, dusty air, constant noises, and the aridity of the terrain, displayed a huge dimension of a productive site. The use of the mandatory mask helped filtering the particles that nonetheless I felt in my eyes. When walking above the last layer of removed strata, it felt like sort of a terrestrial immersion. I could not see beyond the walls of stone, some of them fell whilst I looked at it, at a slow cadence. Simultaneously, I started to imagine the morphology of the land before all the technological operations took place – although the limits of former ground were already somehow unimaginable.

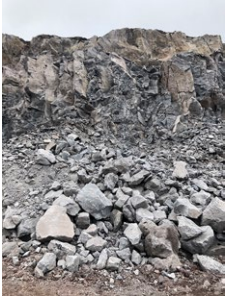
In contrast to the discernment of an urban cluster, here, the urban manifests in the subtraction of the landscape: these materials are going to be added somewhere else, most likely in the same island. In essence, it is through an unbuilding apparatus – a kind of an *ungrounding* activity – that the building operation continues elsewhere.

15 Peter Sloterdijk, *Bubbles: Spheres Volume I: Microspherology* (South Pasadena, CA: Semiotext(e), 2011), 347.

[Fig. 1]
Quarry, S. Miguel Island, 2021. Author's photo

The deconstruction and subsequent construction of the island establish a terraforming process, through which occurs an exhaustion of soils, land, ground. The geological layers of stone as living material cannot be substituted: the island is extracted *from itself*, until the extraction possibilities in that site are complete. In other words, the dynamics of over-extraction is the over-exploitation of the *is-land* itself.

The nine islands that constitute the archipelago imply nine distinct scenarios for the use of mineral resources,[16] and each seems to be managed as an "insular technological object".[17] After depletion, these geographies of stone are extinct: the combination of sediment, time, material, and space is not replaceable *in the same site*. As these reserves are exhausted, and projects become larger, the need for other sites grows, encompassing a constant quest after land appropriation. The quarry is incorporated into economic circuits until achieving the scarcity of stone, more precisely, the actual scarcity of the *terrain*, evidencing "the radical circularity of processes linking urban ruination and the manufacturing of ground".[18]



In a mineral-rich island, "a stunning array of commodities is wrested from the earth" (fig. 2).[19] In fact, "less obvious than the increased capital flows across territories is the flow of territory itself".[20] In the Azorean archipelago there is, on average, one extraction site (either active or abandoned) per four-square kilometer, a relevant figure considering that the same area corresponds to a population density close to four-hundred inhabitants.[21] The search for other extraction geographies cannot proceed endlessly, and it becomes clear within a *land-contained* territory such as an island. Even if they are substitutable within an economic and political frame, the geological one is not fungible. These are, I propose, non-fungible territories.

16 Caetano et al., "Projecto GEOVALIA", n. p.

17 Ghosn, "The Image of the Oil Territory", in *Elements for a World: Stone*, 21.

18 Stephen Graham, *Vertical: The City from Satellites to Bunkers* (London – New York: Verso, 2018), 310.

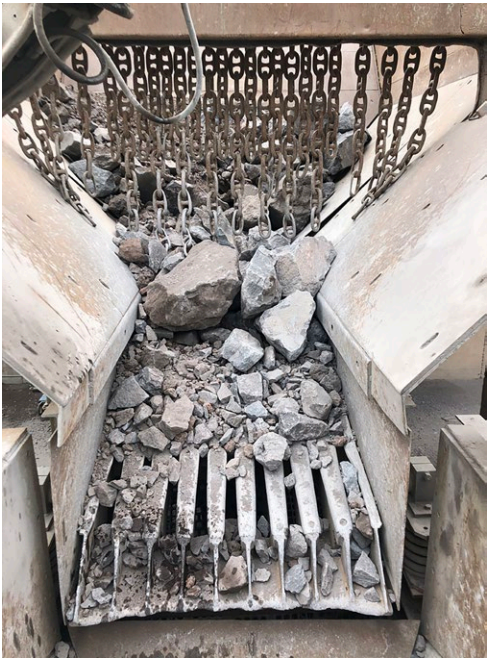
19 Gavin Bridge, "Contested Terrain: Mining and the Environment", *Annual Review of Environment and Resources* 29 (November 2004): 206, https://doi.org/10.1146/annurev.energy.28.011503.163434.

20 Graham, *Vertical*, 298, citing Joshua Comaroff, "Built on Sand", 2014, 138.

21 Caetano et al., "Projecto GEOVALIA", n. p.

Reshaping the island

As Rania Ghosn accurately puts it, we are "geographical leviathans" (fig. 3).[22] In recognition of the fact that the construction production is at the basis of the urbanity, it begins with the extraction of raw materials from which the island is built. From the sites of extraction to the construction sites, there are processes of subtraction and addition of sediments and materials. "Building" something necessarily means "unbuilding" somewhere else, an asymmetrical transaction operation. These processes portray a permanent "engineering of new ground"[23] as an action of alteration of the land, through the modification of the lithosphere.



22 Ghosn, "The Image of the Oil Territory", in *Elements for a World: Stone*, 28.
23 Graham, *Vertical*, 297.

[Fig. 2 and 3]
Quarry, S. Miguel Island, 2021. Author's photo

This "territory of territory extraction"[24] encompasses, on the one hand, *ground* alliances: deeply exploited, modified. On the other, it embraces territorial – *terra* – discontinuity. Those exploitations will necessarily reach an end. The terrain is not endless. Certainly, "as territory itself becomes a tradeable and moveable commodity",[25] finding new land is central to the insular strategy. The land-making goes in tandem with island-making, within a process of reinvention of the island.

One of the essential resources for the construction of basalt territorialities is sand. Its extraction, exploitation, fabrication, transformation, culminates by transferring it into new sites and into building forms. Therefore, reconceptualizing extraction "as not only those operations that intervene into the Earth, but as the full-scale territorialization of space by technology"[26] fosters the awareness of the island as a technological object. In this, "the stratum of some future geology"[27] is disturbed, moved, suppressed. The *terror* operated on the *terrain*, on *terra*, is a segment of a much larger and extended activity, dependent on extraneous components. The extraction of raw materials leads to operations of material addition or subtraction – and the island *reinvents itself*, within a network of sites of exploitation and provision.

Island's externalities

Buildings and infrastructures, as technological products, are just a small visible part of a complex system – the excavation, exploitation, consumption, erosion, and transformation of basalt stones are among some of the technological procedures behind the physicality of landscapes (fig. 4). This arrangement comprises the island's material supply chains, some of which are island-contained, others imply external dependencies. Within this frame, extractivism is thought of in terms of an interconnected phenomenon.[28]

If to think about the basalt quarry *as being outside the city* disconnects it from its environmental, urban, economic, sociological implications – so does thinking about the materials that disembark regularly in this productive site. Simply put, the invisibility of the sites of production further conceals the invisibility of its externalities. Even if, on the one hand, the products of these industrial and technical processes are discernible: buildings, infrastructures, pavements; on the other, there are contingencies more difficult to grasp: labor, pollution, waste disposals, consequences to fauna and flora, as examples. In other words, an invisible site conceals an invisible system.

24 MAS Context, "Fall Talks 2021, Territories of Territory Extraction", accessed March 25, 2022, https://www.mascontext.com/events/mas-context-fall-talks-2021/territories-of-territory-extraction/.

25 Graham, *Vertical*, 298.

26 Ashkan Sepahvand, ed., *Elements for a World: Stone* (Beirut: Sursock Museum, 2016), 7.

27 Namik Mackic, "Becoming-Amber", in *Elements for a World: Stone*, ed. Ashkan Sepahvand (Beirut: Sursock Museum, 2016), 34.

28 Martín Arboleda, "De la fábrica global a la mina planetaria: entrevista con Martín Arboleda", *Jacobin América Latina*, no. 3 (Autumn – Winter 2021): 64–74.

S. Miguel Island retains almost all the extractive materials for construction – meaning *in itself* – such as sand and stone.[29] However, it requires external elements to complete the productive chain as it is formulated at present. Even if the sand and stone are obtained through local extraction, the production and manufacturing complexes that sustain the island's urbanities is offshored – namely regarding some cement components and steel.[30]

29 Information gathered in conversations with engineers.

30 SREA, *Statistics Azores*, "Produção e Venda de Cimento", accessed March 24, 2022. https://srea.azores.gov.pt/Conteudos/Relatorios/detalhe_relatorio.aspx?idc=27&ida=1712&lang_id=1.

[Fig. 4]
Quarry, S. Miguel Island, 2021. Author's photo

The ecological-insular bubble, when thought of in a Sloterdijkian fashion,[31] unleashes the observation of *what is outside*. Built environment as a form of multiscale investigations relates with the fact that "local resources are no longer the condition of development, since they are mobile, transportable, storable".[32] In this connection, *we* often only recognize the infrastructural system that sustain *us* when it fails. In practice, construction is possible through this outsourcing, permitted by the "erasure of geography" of these productive sites, which "is a 'designed' misrepresentation that externalizes the costs of the urban process and conceals disagreements on how to organize the world and its resources".[33] The false externalization of the interconnected processes, profoundly inherent to the infrastructures of mediation that compose the industrial activities, could be handled instead as a recognition for the need to change the arrangement *as it is*. To interrogate the island's dependencies through an architectural lens means that, as architects, we have a significative agency on controlling economic and ecological issues.

Off-site footprints

The extractivism is a project that sustains itself at the expense of others, which means that a great deal of the externalities being produced is affecting somewhere and someone else. In recognition of "material as matter and resource",[34] the ways in which these materials are entangled with distant geographies seem to be of a significant concern.

Let us consider concrete, its production requires cement, sand, water, and aggregates. Today, its environmental effects are known, being one of the primary sources of the carbon dioxide in the atmosphere.[35] The most pollutant component of it is cement, an island-external burden: even if it is significantly produced locally, it requires imported raw materials, such as clinker, supplied from the Portuguese mainland.[36]

31 Sloterdijk, *Bubbles*.

32 Fanny Lopez, *L'ordre électrique. Infrastructures énergétiques et territoires* (Genève: MétisPresses, 2019), 30.

33 Ghosn, "The Image of the Oil Territory", in *Elements for a World: Stone*, 28.

34 Neyran Turan, "Nine Islands", in *New Geographies 08: Island*, eds. Daniel Daou and Pablo Pérez-Ramos (Cambridge: Harvard University School of Design, 2016), 133.

35 Keegan Ramsden, "Cement and Concrete: The Environmental Impact", PSCI Princeton, November 3, 2020, https://psci.princeton.edu/tips/2020/11/3/cement-and-concrete-the-environmental impact.

36 SREA, *Statistics Azores*.

In 2020, in the Azores, there was an increase in certified construction companies,[37] complemented with a rise in both the production and cement sales, continuing the same pattern up to February 2022.[38] The substantial investment in the public construction sector explains this tendency, in particular, the intervention conducted in several ports across the archipelago. Furthermore, it is worth to emphasize that within the scope of the archipelagic territorial cohesion, cement is referred to as an "essential good", along with "fuel, sugar and flour".[39]

The three significant companies behind the concrete trade in S. Miguel Island are Marques, Tecnovia and Sacyr Somague. Essential to their productions, is the sand supply, provided almost exclusively by Albano Vieira company. The "fabricated sand", as their product is called, is extracted from volcanic tuff, and covers around 90% of the island's construction industry.[40] This type of sand differs from the one obtained out of the seabed, and since there are no sand quarries with the dimension of the ones found in S. Miguel, the other islands developed vast dredging processes to obtain sand deemed appropriate to the construction sector. Even if the granulometry of the "sea sand" is more heterogeneous, and thus more suitable for concrete production than the "fabricated sand", its high salt content is improper for construction purposes, requiring more effort and costs to remove it.

The interdependency of extractive systems and productive ones discloses the interrelatedness between the *terrain* and the product. By underlining cement as one of the preeminent off-the-island impositions because of its composition – along with steel[41] – the challenge, as defended by the architect Joseph Grima, is to produce an architecture that is not dependent on some form of exploitation. This proposition transcends the well-known need to reduce the carbon dioxide footprint of buildings and infrastructures.[42] His reasoning goes further by stating that the necessary change goes up to shaping the architects' figure, and the same vision is reflected throughout the recent book by the architect Pedro Gadanho, titled *Climax Change!*.[43]

37 RTP-Açores, "Venda de cimento cresceu em 2020", Facebook, February 2, 2021, https://www.facebook.com/rtpacores/videos/not%C3%ADcia-venda-de-cimento-cresceu-em-2020-rtp-açores/404303783965662/.

38 SREA, *Statistics Azores*.

39 Presidency of the Regional Government of the Azores, "Melhorar a Sustentabilidade, a Utilização dos Recursos e as Redes do Território", *Official Journal of the Autonomous Region of the Azores*, 1st series, no. 55, April 9, 2020, 1385.

40 Information gathered in conversations with engineers who work in the extractive industry.

41 SREA, *Statistics Azores*.

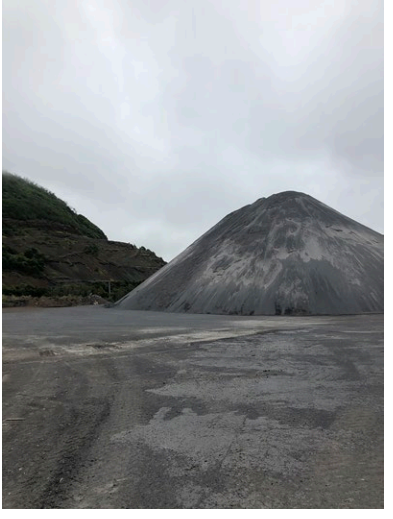
42 Joseph Grima, "Introduction", in *Non-Extractive Architecture, Volume 1: On Designing Without Depletion*, ed. Space Caviar (Berlin: Sternberg Press; and Moscow: V-A-C Press, 2021), 8–22.

43 Ibidem; Pedro Gadanho, *Climax Change!: How Architecture Must Transform in the Age of Ecological Emergency* (New York - Barcelona: Actar Publishers, 2022).

Becoming architecture, becoming waste

> ''Then there is the maintenance, retrofitting, and demolitions of buildings, all involving further ongoing extractions. (...) It is about extractions to sustain extractions to sustain extractions''.[44]

In the light of Paulo Tavares' theory, ''land is archive''.[45] It might be added that land is also repository. After the extraction operation, the extracted material *returns* to the island (fig. 5). However, the strata do not exist anymore in its original state, and the material *comes back* as buildings, infrastructures, pavements. The materials stretch ''from mine to market'',[46] encompassing economic, political, and environmental actions, which are ''constructed through our technological relations with the materials of the Earth, or what we refer to as 'resources' and 'wastes'''.[47]



44 Mark Wigley, ''Returning the Gift'', in *Non-Extractive Architecture, Volume 1: On Designing Without Depletion*, ed. Space Caviar (Berlin: Sternberg Press; and Moscow: V-A-C Press, 2021), 48.

45 Online lecture ''Homes on Fields'', on March 3, 2022.

46 Bridge, ''Contested Terrain'', 206.

47 Ghosn, ''The Image of the Oil Territory'', in *Elements for a World: Stone*, 28.

[Fig. 5]
Quarry, S. Miguel Island, 2021. Author's photo

The extraction, transformation, and transportation of most of these materials are very energy-intensive, enforcing the use of large quantities of water resources; in addition, it produces large amounts of greenhouse gas emissions.[48] Consequently, "the cycles of investment associated with the built environment"[49] generate waste from extractive exploitation.

To return the extraction, as put by Mark Wigley, should be first and foremost accompanied by the acknowledgment that "architects are experts in veiling, especially veiling the fact that each building is but the tip of a massive extraction system".[50] Even if the construction industry opacity is frequently noted,[51] its effects are clear – "after all, no building is simply added to a site".[52] The futurity of digging, extracting, reshaping and removing operations remains a haunting spectrum within territories, given that "every building actually constitutes a commitment to, or dependency on, a certain kind of future".[53] Moreover, and "trivially, every material's environmental impact is conditional on future conditions".[54]

If *becoming* architecture often involves a proceeding of making "the culture of extraction comfortable", "the buildings veil this fact, and it is the veiling that gives form".[55] As Luke Jones argues:

> "Architecture has felt itself losing control of its materials at just the moment that they have become most consequential. Since the transformation of building structure during industrialization – from reassuring masonry to insubstantial steel and glass – architectural authority has been stalked by the specter of dematerialization".[56]

Ordering the extraction

As already mentioned, when resources are exhausted, or their use is no longer viable, research and exploration will still be required in another site with a favorable geological environment. In 2011, an inventory project titled GEOVALIA identified five hundred and eighty-one extractive activity sites in the archipelago; it also stated that "all islands have extractive activity in protected or classified natural areas".[57]

48 Ramsden, "Cement and Concrete".

49 Stephen Cairns and Jane M. Jacobs, "Fallow: A Comparative Reflection", in *New Geographies 10: Fallow*, eds. Michael Chieffalo and Julia Smachylo (Cambridge: Harvard University School of Design; and New York: Actar Publishers, 2019), 24.

50 Wigley, "Returning the Gift", in *Non-Extractive Architecture*, 46.

51 Space Caviar, *Non-Extractive Architecture*; Lopez, *L'ordre électrique*, 30.

52 Wigley, "Returning the Gift", in *Non-Extractive Architecture*, 49.

53 Luke Jones, "Carbon Tectonic", in *Non-Extractive Architecture, Volume 1: On Designing Without Depletion*, ed. Space Caviar (Berlin: Sternberg Press; and Moscow: V-A-C Press, 2021), 119.

54 Ibidem.

55 Wigley, "Returning the Gift", in *Non-Extractive Architecture*, 47.

56 Jones, "Carbon Tectonic", in *Non-Extractive Architecture*, 113.

57 Caetano et al., "Projecto GEOVALIA", n. p.

The search for an appropriate land is defined through a legal redefinition of the excavation zones, as regulated in the sectorial policy instrument for extractive activities, henceforward called PAE.[58] The regional decree-law states that "[the extraction areas] correspond to units/spaces where extractive activity took place (licensed or not), and no recovery procedure at an environmental level has been implemented after the extraction activities have ceased".[59] In this connection, the designated "Management Areas" "correspond to the unit of planning and aim to maximize the exploitation of non-metallic mineral resources compatible with the adequate functional structuring of the territory".[60]

PAE therefore seeks the optimized commodification of both resources and the site of extraction, or putting it differently, there is a spatial efficiency goal. This tool, together with the Municipal Plan, PDM, currently recast geographies of extraction. Its operative effects somewhat imply a militarization of territorial management through property strategies. Within this logic, the concession zone is the territorial unit of extraction: when one unit is in its *active* form – or simply producing – another parcel of land awaits a new investment cycle.

In fact, planning the extraction perimeters means to force the steadiness of those configurations. In this light, PAE proclaimed the acknowledgment of a somewhat flexible unit to be added to the "Management Areas", the so-called "Management Areas and the Limited Reinforcement Mechanism", which entails a legal instrument that appears to consider the compensation of the too-confined areas.[61]

The land use planning stated in these legal instruments seems reduced to an arrangement exercise. If determining the simultaneity between extractive and industrial activities with protected "natural areas" appears relevant, what seems to be missing is the unseen relations behind this industry: labor, environmental impacts, supply chains, in brief, the interdependencies that sustain it. Fundamentally, if the need for the regulation of the extractive operations seems to be undeniable, within it the analytic approach appears to be overshadowed by the ordering one.

The basalt quarry as a "working landscape"[62] is indeed part of the system, whose technical and legal tools organize the extraction, circulation and transformation of raw materials mostly on an insular scale, but also on an archipelagic and national dimension.[63] In essence, these extractive environments are produced through political-legal arrangements, among which the

58 Regional Secretariat for the Environment and Climate Change, *Plano Setorial de Ordenamento do Território para as Atividades Extrativas da Região Autónoma dos Açores* (PAE), Phase D, volume 1, final report, 2013, 28.

59 Regional Legislative Decree no. 19/2015/A, "Plano Setorial de Ordenamento do Território para as Atividades Extrativas da Região Autónoma dos Açores (PAE)", *Diário da República*, Series 1, no. 158, August 14, 2015, annex 1, 1.1.

60 Regional Legislative Decree no. 19/2015/A, annex 1, article 1.2.1.

61 Regional Secretariat for the Environment and Climate Change, PAE, 45.

62 Erle C. Ellis, "Distancing the Anthropocene", in *New Geographies 10: Fallow*, eds. Michael Chieffalo and Julia Smachylo (Cambridge: Harvard University School of Design; and New York: Actar Publishers, 2019), 93.

63 Information gathered in conversations with engineers who work in the extractive industry.

most visible regime, the concession, is admitted as depicting space as "a political, legal, and economic category: it is owned, distributed, mapped, calculated, and controlled".[64] Furthermore, "the concessionary territory, as an object of surveys, maps, and a myriad of representations, is central to and necessary for nature's renewed legibility and its material appropriation".[65]

After the extraction, land remediation

What happens after the extraction? What are the outcomes after an intense anthropogenic activity such as this one?

In these sites, there is no possible fallowness: in short, "the condition of a resource or productive force set aside to accumulate potential value to be extracted or realized afterward" does not exist.[66] As soon as ground resources run out, the potential value as extracted capital ceases. This means than when a property terminates its activity, it becomes *out of duty*, it no longer allows the accomplishment of its purpose within the exploiting field. Within this panorama, PAE's decree states that the aim is "to promote the recovery of environmental and degraded landscape areas as a result of the cessation of extractive activities of non-metallic mineral resources".[67]

Even if the repair plan asserts the need for an "hierarchy of the recovery of abandoned extractive activity areas considering Visual Sensitivity",[68] an aesthetical concern seems not enough within a network of interdependencies far more complex than that. As previously emphasized, if an active and productive past already conceals its core interdependencies – which needs to be addressed – at the same time, a process of recovery should clearly unveil the future scenarios envisaged for those sites. It might be coupled with a disclosure of present and future extractive practices, given that a full public access brings forth accountability.

Today, as the concern for the environmental impacts of construction is ever more present on the global agenda, along with a shortage of many resources for civil construction activities, a critical awareness of the territories' building materials urges. In this sense, to interrogate the island's dependencies through an urban lens seems to be essential for a control of architectural materials. These landscapes disclose part of the extractions that *produce* the island, and considering that material and environmental impacts are *also located* in the future, it is suggested to engage urban production with a practice of care.

64 Ghosn, "The Image of the Oil Territory", in *Elements for a World: Stone*, 21.

65 Ibidem.

66 Álvaro Sevilla-Buitrago, "Antinomies of Space-Time Value", in *New Geographies 10: Fallow*, eds. Michael Chieffalo and Julia Smachylo (Cambridge: Harvard University School of Design; and New York: Actar Publishers, 2019), 17.

67 Regional Secretariat for the Environment and Climate Change, PAE, 28.

68 Regional Secretariat for the Environment and Climate Change, PAE, 42.

Towards a practice of care

The acknowledgment of the invisible production networks is understood as a form of care for the possible futures of the island's materialities. As Charlotte Malterre-Barthes argues, "every decision designers take in a project has an impact not only on the site of construction, but also on the site of extraction".[69] Through the recognition of these sites, architects and designers might "think of landscapes of ecological production and extraction as potentially working in concert with one another".[70]

In this context, the relationship of care is not egalitarian. It is first extracted, then depleted, and finally remediated. The association between care and equality is a very complicated one, said Boris Groys.[71] What does it mean to take care? In this case, the actual protection is performed after the damage is done. After soil distress, comes the rehabilitative procedures. When the terrain achieves depletion, exhaustion, it means that the effort has ended: the production was the goal.

In essence, the extraction operation and its reconversion strategies are deeply asymmetrical: what is taken is far more substantial than what is given. As it is at present, caring seems merely corrective. Furthermore, the so-called "phantom resources" designate, simultaneously, those resulting from unequal ecological exchange and those that are invisible in architecture.[72] In other words, the incipiency revealed through an incomplete analytical frame obstructs further scrutinization.

Drawing attention to Bruno Latour's term, "to land" — or better transmitted through the original term, *atterrir*, — it brings immediately to mind the necessity to redefine terrestrial depictions. The Latourian theory calls for accurate policies, which necessarily bring forward the description of the *terrains* that have become invisible.[73]

It is common knowledge today that "what was lived as a rather abstract possibility, the global climatic disorder, has well and truly begun".[74] And if architecture is always a climate actor, as asserted by Pedro Gadanho,[75] architects can advocate for more equitable supply chains, thus, for a more sustainable view on the embodied costs of construction. Moreover, and instead of only considering an energy efficiency scheme, Joseph Grima proposes the evaluation

69 Malterre-Barthes, "The Devil is in the Details", in *Non-Extractive Architecture*, 87.

70 Stephanie Carlisle and Nicholas Pevzner, "The Thin Thread of Carbon", in *Non-Extractive Architecture, Volume 1: On Designing Without Depletion*, ed. Space Caviar (Berlin: Sternberg Press; and Moscow: V-A-C Press, 2021), 101.

71 On an online lecture at the International Conference of the Igor Zabel Award, December 3–4, 2020.

72 Lopez, *L'ordre électrique*.

73 Bruno Latour, *Où aterrir? Comment s'orienter en politique* (Paris: Éditions La Découverte, 2017), 175.

74 Isabelle Stengers, *In Catastrophic Times: Resisting the Coming Barbarism* (Open Humanities Press and meson press, 2015), 20, http://www.openhumanitiespress.org/books/titles/in-catastrophic-times/.

75 Gadanho, *Climax Change!*.

of externalities as a metric of sustainability.[76] Actually, "recalibrating our thinking about architecture's relation to the environment will not solve climate change in itself but will allow us to formulate an architectural response to the new environmental normal of precariousness and wild unpredictability".[77]

Towards a practice of care within the architectural extractive industries, one ought to summarize what has been approached in this paper in three main engagement propositions: to take accountability; to disclose the practices; and finally, to represent its consequences.

Material (and immaterial) impacts are also *deposited* in the future, thus, to reflect on care is paramount. Care is awareness, is to advocate for a control of architectural materials, for a careful management. To care is to expose the interconnectedness between extractive activities and contemporary political, economic, social, and ecological concerns; to care is to display the futurity of territorial impacts, human and more-than-human ones. An architectural practice of care might derive out of a critical awareness of the island's building materials (fig. 6 and 7). After all, the aftermath of extraction is not merely the memory of it, as the reconversion strategies seem to imply. It is mostly its long-lasting territorial consequences, in and off the island.

76 Grima, "Introduction", in *Non-Extractive Architecture*.

77 Formlessfinder, "Toward a Formless Ecology", in *New Geographies 08: Island*, eds. Daniel Daou and Pablo Pérez-Ramos (Cambridge: Harvard University School of Design, 2016), 129.

[Fig. 6 and 7]
Basalt, S. Miguel Island. © SIARAM

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