

Deep Dust / The Killing Dark: Extractive Landscapes and Emancipatory Futures

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The city of Johannesburg rests on the Witwatersrand (“Ridge of White Waters) Basin - known locally as the “Rand”—an almost 60 kilometre long scarp that also forms a continental divide, draining northern waters into the Indian Ocean and southern waters into the Atlantic. The city on this divide was (and still is) the site of many other divisions - with apartheid among the most famous of these and Johannesburg’s geological history an echo of its racial one. This paper reflects on a (now) two year research and studio teaching project that explores the extractive terrains (and the associated ecologies that link labor, wealth, dispossession, power and emancipation) and ontological readings and re-readings of Johannesburg’s grounds.

The studio reflects on the productive and critical role that representation - image making, and architectural and landscape image-making in particular - can embody and carry through the studio structure and assignments. Three initial studio assignments aimed to explore local subjectivities (through the work of photographer Santu Mofokeng), global views (critical and infrastructural mapping) and system ecologies (a machine/tool atlas). The last assignment explored (through a single, deep-section drawing) and proposed a reconciliatory landscape and architectural future. Collectively projects were a framework for thinking about how we might “un/build” understandings and artefacts that help uncover, identify, and propose a reconciliatory superfluity, to use Achille Mbembé’s word, of relations towards an ethical reclamations of landscape.

Beneath a plateau in southern Africa, late in the nineteenth century, miners crawl through miles of narrow tunnel – cut deeper underground here than anywhere else on Earth at this time – lugging ore from a sunken reef of gold. Some of these men, who have migrated to the area in their thousands to work, will die soon in rockfalls and accidents. More will die slowly of silicosis from breathing the rock dust down there in the killing dark, year after year. Here the human body is largely disposable in the view of the corporations

that own the mine and the markets that drive it: a small, unskilled tool of extraction to be replaced when it fails or wears out. The ore the men bring up is crushed and smelted, and the wealth it yields lines the pockets of shareholders in distant countries.

—Robert Macfarlane. *Underland* (2019)

INTRODUCTION

Deep Dust / The Killing Dark was a two year M.Arch Option Studio (2019-2020, 2020-2021)¹ that engaged with the extractive landscapes of Johannesburg, South Africa. The studio centered the grounds beneath our feet—the grounds that our architecture engages, sits on, interfaces with, turns away from, is rooted in, shores itself up against, retains, rejects, cores and excavates. Sited in the city’s reef landscapes, the studio took the geological, elemental and mineralic histories of the “Elusive Metropolis”² as a provocation to thoughtfully and curiously explore (through mapping, technical and narrative representation) the spatial implications of an extractive terrain through drawing as a medium of conceptual and critical inquiry. In doing so, the studio prioritised questions of the ground, of site, of labor, of how we look (on, through plan and at, through section), of representing and representation. Themes of superfluity³, excess and paucity, of movements on and through the ground, particles and sediments, resource (in)justices, extraction and resource capitalism were lenses to explore how we might reclaim the earth as a restitutive and reparative act.

CONTEXT

Johannesburg is built on gold and diamonds and dust. The city rests on the Witwatersrand (“Ridge of White Waters) Basin - known locally as the “Rand” - an almost 60 kilometre long north-scarp that also forms a Continental Divide, draining northern waters into the Indian Ocean and southern waters into the Atlantic. This divide is both an index and a threshold. It is a geological line that, with the Crocodile, Limpopo, Vaal and Orange rivers, marks a large portion of the hydro-geography and geo-morphology of South Africa. It is also a geological threshold separating cities, urbanity, people, and commerce above a ground beneath which an auric and diamantine terrain of reefs, seams, veins and “deposits” exist. The city, on this divide, was



Figure 1. Image A view of the Rand, with overburden mining piles in the distance . Image by author.

also (and still is), the site of other divides - some as vast and bitterly enduring as its geological one. The discovery of diamonds and gold, more than half a century before the Afrikaaner National Party established their “policy of good neighbourliness”⁴ has irrevocably marked the physical geography of the city. More than buildings and roads, the M2 highway for example, wraps around Johannesburg and was constructed on top of a series of mining overburden piles and dumps, (Figure 1), the legacies of colonial extraction that defined the “elusive metropolis” were the precursive logotype of the Apartheid City and of the Deep City: mining-dormitories and hostels for Black laborers, a bureaucratic, highly ordered system of passbooks and papers to regulate and identify miners, while also used to limit their access to the white city - the city of gold - “Egoli” in *isiZulu*. The physical (geology and architecture) and the infrastructural (systems and processes) drew Apartheid’s map, both its planometric urban design reality of zones, districts and neighbourhoods as well as its vertical realities: the physical and non-physical processes of deep extraction and of colonial capitalism. Both of these conditions are not seamless binaries of exclusion, but resulted rather in constant migrations and movements, or “people moving between the fragments of their lives.”⁵ Water seeps from ground to earth, minerals and contaminants leech from rock and mining machines, miners move from daylight to underlands, money and capital move from transnational corporations to holding companies, banks and deposit boxes.

The South African architect, academic and writer, Lindsay Bremner, in “Border/Skin” wrote that:

Any attempts it [apartheid] made to draw boundaries were fluctuating, porous, and ill defined. Its most concerted attempts to do so—the establishment of “Bantustans” (or “homelands,” as they were otherwise known) as self-governing or independent black labor reserves for white industry or “townships” and as temporary accommodation for those working in urban areas—produced nothing more than vague and constantly morphing blobs on land surveyors’ maps and an incessant migration of people moving

between the fragments of their lives. Instead it was the countless instruments of control and humiliation (racially discriminatory laws, administration boards, commissions of inquiry, town planning schemes, health regulations, pass books, spot fines, location permits, police raids, removal vans, bulldozers) and sites of regulation and surveillance (registration offices, health clinics, post offices, recruitment bureaus, hostels, servants rooms, police cells, courtrooms, park benches, beer halls) that delineated South African society during the apartheid years and produced its characteristic landscapes.⁶

Keeping the city white was paramount. Miners and labourers lived and were forced to live, were settled, and were re-settled near mines, with the constant swirl of mine-dust onto clothes, into mouths and into lungs. The artist and writer Heather Davis observed:

Every time we breathe, we pull the world into our bodies: water vapor and oxygen and carbon and particulate matter and aerosols. We become the outside through our breath, our food, and our porous skin. We are composed of what surrounds us...To be a human means to be the land and water and air of our surroundings. We are the outside. We are our environment.⁷

As a result, the earth itself became weaponized. Particles of quartz and sedimentary rock are now dust in the air, in lungs, on clothes. They are a constant drape of aerosolised earths and contaminants over those who must live and work in the swirls and vortices of this re-constituted ground/air, away from the shaded and green landscapes of white only gated suburbs: such as Rosebank, Hyde-Park and other leafy and irrigated Johannesburg environs.

This was a studio about the ground and about our relationship to it - through the minerals and elements we pull out of it, to the water table that rushes to fill the voids we leave, the equipment and infrastructure that we use to pump that water out,



Figure 2. Assignment 1: Localities Project Santu Mofokeng Photographs, (Left) + Student Microdrawings, (Right): work by R. Mpisaunga, M. Murphy and T. Nguyen.

to dig those tunnels deeper, to move us in and through the killing dark. It is a studio that explores the particles of gold and acid in our lungs; the scars on the earth in tailings ponds and overburden piles and crushers, excavators, dynamite. It was a studio situated in the hyper-flows of money and capital in and through banks and stock-markets and safety deposit boxes and off-shore-bank accounts; through the architecture and spaces created by resource extraction itself. The structures and tools of extraction are myriad and multi-scalar, and this studio embraced those shifts to leverage (and question) the roles that architectural and spatial image-making can take on in this context. How might we “build” or “extract” drawings that help uncover, identify, and propose reconciliatory relations, that enable an ethical reclamation of architectural grounds?

The studio was structured into four assignments, each building towards the final project: a single, deep-section, on a site of each student choosing, that explored the possibilities of an ethical and emancipatory architectural future. Initial projects aimed to emphasize local subjectivities (and critical personal ethnographies of position and place), how those are imbricated in larger systems, and how those systems are parts of complex physical and non-physical infrastructures that order and organize the worlds we know - or think we do. The final assignment was an attempt to engage with those scales in the proposal and design of a reparative landscape future.

ASSIGNMENTS AND PROJECTS

The six-week studio was structured into four assignments: *Localities*, *Map*, *Machine Atlas* and *Mine*. *Localities* was a running assignment, from the start to the end of the six-week studio. Here, each student was assigned a local “companion” - a single photograph by the South African Photographer, Santu Mofokeng, to investigate, sit-with, and explore over the course of the studio, producing five micro-drawings as part of each of the other assignments - resulting in 15 micro-drawings by the end of the term (Figure 2). These micro-drawings variously took the form of copies, translations and interpretations, all using particle-based medias of charcoal, graphite and conte dust. They were meant to serve as *immediate* and local counterpoints to the meta-scale of the *Map* assignment, as intimate and textured counter-drawings to the technical documentation of the *Machine Atlas*, and as an affirmation of the human scale of the final assignment which took the form of a deep section - a three-foot wide by six-foot high drawing. Where later assignments asked students to consider large scales (the geologic, the infrastructural and so on), the *Localities* assignment looked to bracket that scale with a close, fine-grained and blurred (but not imprecise) series of reflections on the human lives of landscapes. The work of William Kentridge and Julie Mehretu were conceptual (and methodological) muses for this assignment. These *Localities* drawings were broadly contextualised by Santu Mofokeng’s oeuvre and by the associated relationships that were uncovered from studio readings and discussions.⁸ Each micro-drawing was pursued through a “dust-medium” - graphite, charcoal, chalk, etc, and in turn recorded finger-prints, eraser swathes and torn paper from tape or masking fluids. Additionally, the micro-drawings were a way to develop a daily habit of intense study on a single image as a space of immediacy and humanity - particularly for a site that, in two years of studio offerings, only one student had traveled to.

The second assignment - *Map* (Figure 3) - required that students embrace geo-imaginaries (stratigraphic, mineralogical, geological, etc) as a way to draw their maps. Additionally, they were encouraged to sink into the geo-languages of the earth and mining (“scarp,” “reef,” “deposit,” “burden,” etc), which was also co-opted by apartheid planners in their manipulations of Johannesburg’s urban and architectural boundaries. Students could situate their triptych of maps at any point in Johannesburg’s time or history and could elect to pursue a theme (or not) across all three maps, testing out ideas at multiple scales, time-zones or consequences. Some elected to map the politics and implications of labor, the movements of minerals and materials, wind patterns of aerosolised (and toxic) dust and sand and earth. Another produced a many-temporalized map of Johannesburg’s mining infrastructure through its ages, another explored the movement of capital and industrial exchange.

Disconnected from our context (COVID de-railed an intended studio trip to Johannesburg), the *Map* assignment was an attempt to introduce students to the expansive challenges of a fraught landscape by asking them to focus on a very particular



Figure 3. Assignment 2: Maps. Student work by T. Nguyen, R. Mpsaunga, A. Won.

(albeit - 30,000 foot) view of a complex terrain. The first and second assignments were a way to get students thinking about multiple scales, by sitting with local/intimate and global/distant site engagements, with all their attendant challenges and opportunities.

The third assignment (*Machine Atlas*) asked students to explore the physical and non-physical infrastructures of mining landscapes. This assignment encouraged them to consider the expansive associated ecologies of these machines and tools, as extraction is augmented through both systems and machine as well as through processes and proxies reflected through changing technology and neoliberal epistemologies. Hands and basic tools are no longer enough for modern extractive systems. Although we may still use sifting pans and metal detectors, picks and hammers, the scale of contemporary extraction necessitates more complex proxies and processes: diggers, bucketwheels, excavators, smelting and processing infrastructures, conveyor belts, gold refining systems, smelters, computers, pumps, lines and so on. We need the *physical* extension - the augmentative prosthetic that the tool affords our extended digging, sorting and carrying capacities - as well as the spatial *and* infra-spatial augmentations of markets, events (the wedding, anniversary, the “gift,” etc). Our machines and tools of extraction are flows of capital as well as ideas, physical stuff as well as ideological positions.

Using Theo Deutinger’s *Handbook of Tyranny*⁹ as a visual and conceptual prompt, this project saw the development of a shared, studio-wide compendium: a compilation of the tools, systems and infrastructures deployed in service of mobilizing earth materialities. The studio generated, using a standard visual template (technical line-drawings of machines, their relevant plans, elevations or perspectives, always in conversation with a standard human scale figure) a collaborative catalogue of tools, machines, systems, technologies, ideas and positions for the mining and extractive landscape of Johannesburg. Each image in the atlas included indications of capacity (how much stuff, or volume, can this thing carry, move, shift?); an articulation of its range of motion (like a door-wing in plan, or the arm of the Hitachi ZAXIS drawing by Deutinger); its scale (the varied kinds of shoring strategies to retain earth, or to hold up mining tunnels); its velocity or speeds (elevator cages or conveyor belts...). Students were encouraged to Interpret and challenge the term “Machine” and “Tool,” for this exercise and explored other, unconventional examples of mining tools: a bank teller’s kiosk, an ATM, a diamond ring, a Stock Exchange, a local commodities market, a safety deposit box, gold-leaf appliqué tools. These sat in dialogue with conventional tools such as hammers, buckets, dredge machines, slurry pumps, tailings pond membranes, conveyor belts, dormitory rooms, lockers for mining equipment,, a breathing unit, a gas-mask, a flashlight and so on. Machines as



Figure 4. Assignment 3: Machine Atlas (18 of 108 pages); work by R. Mpsaunga and A. Wheeler

processes (not only as physical artifacts) included more “meta” level definitions of the term - encouraging explorations of ideological, epistemological and ontological tools. The *Machine Atlas* was an attempt to get students to more critically position their work (all work produced in the studio was open-source for students) in the associated ecologies of their sites of study, to both connect topics across the studio, and to expand them beyond what the studio could conceivably hold and do. It was an exercise of both becoming focused and also, becoming unsettled.

The final exercise (Figure 5) was a synthesis, extension and (depth) projection of previous work produced in the *Map* and *Machine Atlas* projects, coupled with the still on-going *Localities* assignment. Each student proposed a critical conceptual, architectural program of inhabiting (“filling”) the “cut,” the seam, the reef, the cavity, the void, the pocket, the chamber, etc. Visually Inspired by Douglas Darden’s *Condemned Building: An Architect’s Pre-Text*, and William Kentridge’s process of thinking and drawing through a changing landscape, students developed a mine drawing as an architectural proposition for moving in and out of the ground on a mining site (of their choosing) in Johannesburg. Douglas Darden’s pre-text was, with his drawings in the *Condemned Building* series, to invert the canon, which is analogous to the studio’s position on reclaiming the earth. Darden’s titled drawings in this series were inversions of a particular canon or assumed way of thinking. In the “Museum of Impostors” for example, where the canon was “Architecture posits the authentic,” Darden’s drawing asserted, rather, that “Architecture posits the fake.” Where the canon was “a house is for living,” the inverted dictum in his “Oxygen House,” declared rather, that “a house is for dying.” What, the studio asked, would each student’s mine become? What was the canon that their mines began to invert, challenge, sustain or liberate? Students were encouraged here, to return to the intellectual frameworks of the course - through precedents such as William Kentridge, Jennifer Beningfield, Lindsay Bremner, Mary Sibande,, Pamela Sunstrum, AbdouMaliq Simone, Sarah Nuttall, Achille Mbembe, Guy Tillim, Durant Sihlali and Santu Mofokeng. They were asked, in the end, to tell an architectural story about the ground, by situating a critical, conceptual and emancipatory drawing practice as an agent of speaking of, about, and with the ground.

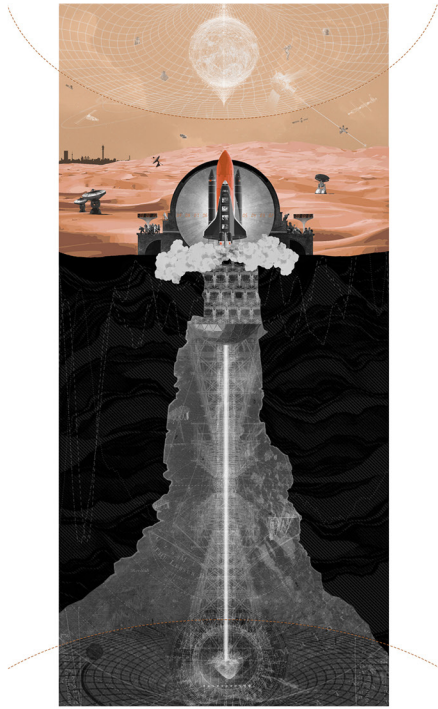
REFLECTIONS: SUCCESSES, FAILURES, OPPORTUNITIES AND MISTAKES

Work highlighted in this text comes from the 2020-21 offering of the studio, which had been offered as an M.Arch Options Studio the year prior. Building on previous feedback, the *Localities* project was a new assignments in this iteration of the course as a way to help situate a distant site and a disconnected studio. All of the 2020-21 course was online, through Zoom and Figma. The *Localities* project - which, for future versions of the course will become a major project, rather than a companion assignment - was aimed at helping students contextualise a global, distant and potentially un-grounded disposition with locality and immediacy. My intuition is all future studio assignments will need

to be grounded in the *Localities* assignment, so that it’s agency (and Santu Mofokeng’s tender and human human lens) allows students to better understand their own position and positional-ity, while foregrounding the humanity that the histories, people and communities held by their studio sites. This assignment in particular has, on reflection, much more potential power than was realised in the studio this last year and its lessons could have been leveraged with much more emphasis in the final assignment. My assessment is that the most productive aspect of this version of the studio was the first group of assignments (the *Machine Atlas* in particular) in getting students to realise, think through, and with the deeper implicated questions that entangle design, design research and how little architecture understands, at times, its associated ecologies. Where the *Map* assignment was immensely useful as a research project, the *Machine Atlas* managed to link spatial research into an infra-structural web, which helped prompt students to think more carefully about potential programs, associations and decisions for their final project.

The final assignment for the studio, the “deep section,” was in my assessment the least strong of the studio projects. Graphically competent, and in some cases beautiful, the work was very well executed in its visual aspects. There were some very compelling programmatic positions - including one that drew from architect Thandi Loewenson’s “taxonomy of flight” to propose a repurposed African Space Agency in Kimberly mine. Another explored a remediated landscape in the form of a constantly changing vertical nursery, and another that leveraged the mine as a giant orchestra - to “play the earth” as a kind of warning system to alert inhabitants and communities of toxic atmospheric and terrestrial conditions. While the final drawings were visually arresting, many would have benefited from linking their *Machine Atlas* ecologies, and the human impacts of their *Localities* micro-drawings as modes of thinking through their final studio programs. These observations fall more heavily to the pedagogical challenges of a six-week graduate studio, an intense and challenging topic taught online during a global pandemic. As the instructor (of South African background), I opted to step back a little in the final project, and in retrospect, should have have stepped *in* to help students pull forward their brilliant earlier observations when confronted with the shift to “architecture.”

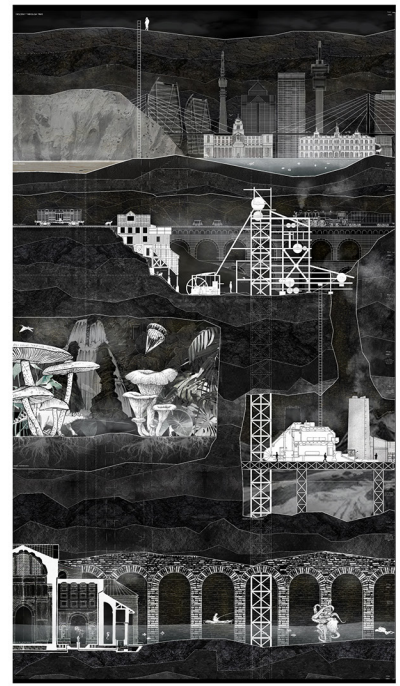
This is perhaps, the most relevant example of the ethical reclamation that the studio framework sought: the early work of the studio where students wrestled with their own distance, worry and desire to engage (with care) in a complex landscape resulted in early projects being the most meaningful: the *Localities* assignment (although too short) and the *Map* and *Machine Atlas* projects. The final assignment was, in the end, perhaps *too* conventional - and almost expected. It requires a significant rewrite for a future offering of the studio - with an even a stronger turn to the spirit and intent of the *Localities* assignment. The second reclamation was less about the studio work, but the realization



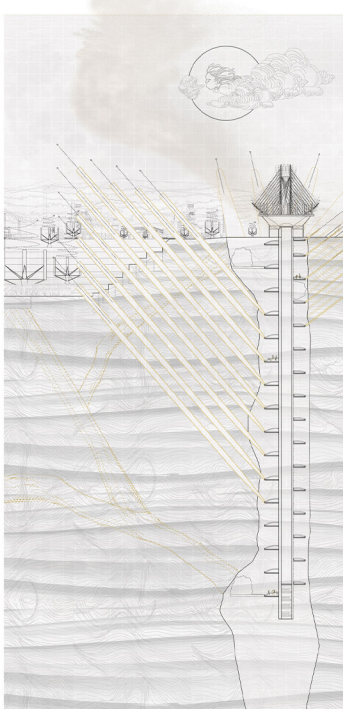
M. Murphy



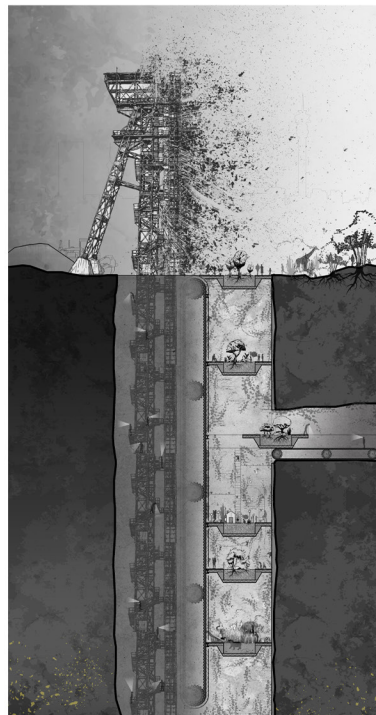
A. Wheeler



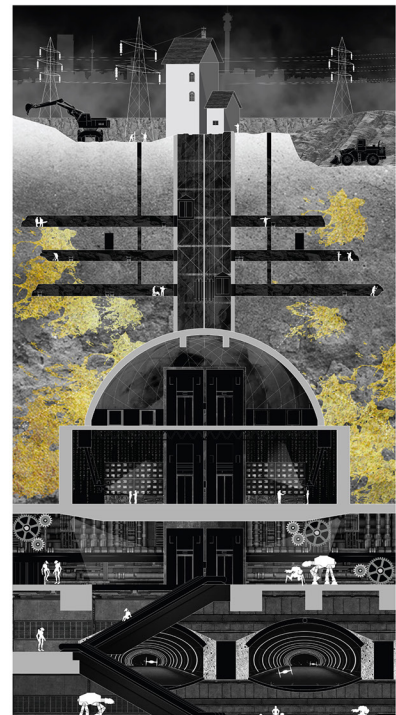
C. Merrick



R. Mpisaunga



S. Villeneuve



M. Burghed

Figure 5. Assignment 4: Mine; work by M. Murphy, A. Wheeler, C. Merrick, R. Mpisaunga, S. Villeneuve and M. Burghed

of my own (inadvertant) distance as a teacher (and someone who was very familiar with the context of the studio, its site, circumstances and histories). This was a learning and *unlearning* that helped me, as an instructor. This studio is, likewise, an on-going attempt to learn how geological and political history informs pedagogy that is deeply rooted in its own contexts - and how to teach that in global spaces.¹⁰

What was invaluable, given my now almost three decade separation from my home in South Africa (despite research interests, teaching and doctoral work) was very local guidance, encouragement and criticism. Just as the Santu Mofokeng photographs in the *Localities* assignment will become a critical project (perhaps even THE project) in a future version of the studio, local partnerships were key to continuing the important, grounded, and reparative learning that the studio offers. We¹¹ benefitted immensely from critical feedback throughout the six-week course with generous participation from Heinrich and Ilze Wolff, from Wolff Architects in Cape Town, from Dr. Mpho Matsipa (from Wits University in Johannesburg, and currently a Loeb Fellow at Harvard), from Thiresh Govender (architecture faculty at the Graduate School of Architecture in Johannesburg) and from Mokena Makeka in Cape Town (a principal at Makeka Design Works and Partner at Dalberg and Associates). Ilze and Heinrich Wolff, at our final review, gently encouraged me to think and act more like a DJ - helping the final project generate a collective rhythm, sound and engagement - rather than a studio instructor.

This is emancipatory advice well taken, I think.

ENDNOTES

1. The M.Arch Options Studios at Carleton University's Azrieli School of Architecture and Urbanism are hosted during the winter term (January - April) and are structured as four pairs of studios, each six-weeks long, separated by a week-long February reading break. Studios are conceptually themed, and have different instructors with different project briefs. Projects, deliverables and approaches vary, but all studios serve as bridges between the comprehensive design studio and the year long thesis that follows this term. They are meant to expand approaches to architectural design with an emphasis on topical, complex issues in architecture. This offering of the Deep Dust / Killing Dark Studio was paired with a second half studio, taught by Dark Matter University faculty Jelisa Blumberg and Curry Hackett.
2. This is also the title and description of Johannesburg by Sarah Nuttall and Achille Mbembe in their book, *Johannesburg: The Elusive Metropolis* (Durham: Duke University Press, 2008).
3. Achille Mbembé. "Aesthetics of Superfluity." *Public Culture* 16, no. 3 (2004): 373-405.
4. Hendrik Verwoerd, the leader of the South African National Party (and last Prime Minister of the Union of South Africa from 1958-1961) is often described as the "Architect of Apartheid," and described it in these terms.
5. Lindsay Bremner, "Border/Skin" in *Against the Wall*, ed. Michael Sorkin (New York: New Press, 2005), p 123-136.
6. Ibid.
7. Heather Davis, "The Land and Water and Air That We Are: Some Thoughts on COP 21," *New York Art Quarterly / Los Angeles Art Quarterly / San Francisco Art Quarterly (NYAQ/LXQA/SFAQ)*, March 15th, 2016. <<<http://sfaq.us/2016/03/the-land-and-water-and-air-that-we-are-some-thoughts-on-cop-21/>>> Accessed on December 29th, 2019.
8. The studio centered African writers, artists and architects to help students with the intellectual siting of their work. Readings included texts by Lindsay Bremner, Sarah Nuttall, Achille Mbembé, Phillip Harrison, Tanya Zach, Mpho Matsipa, Jason Larkin and Nadine Gordimer. The work of or William Kentridge, Santu Mofokeng, David Goldblatt, Mary Sibande and other African artists and photographers were considered the essential visual field for the studio.
9. Theo Deutinger. *The Handbook of Tyranny* (Switzerland: Lars Müller, 2018).

10. I am very grateful to the anonymous reviewers for their comments on an early draft of this text. Thank you for your kind and thoughtful feedback. I attempted to de-Faulknerize the overcomplicated bits. The observation on learning from geologic and political history is drawn directly from your advice.
11. I would like to acknowledge all the students who participated in the offerings of the Deep Dust Studio. From 2019-2020: Nicholas Bava, Angela Chiesa, Stephanie Chretien, Shannon Clark, Tasia Craig, Sally El Sayed, Walter Fu, Vedad Haghighi, Adrian Hong, Robin Hoytema, Michael Jaworski, Kristen Oyama, Camille Ringrose, Joel Tremblay and Freed Gomes. From the 2020-21 offering of the studio: David Bastien-Allard, Mira Burghed, Eric Goldstein, Claire Merrick, Rudo Mpisaunga, Minette Murphy, Thompson Nguyen, Saman Soltani, Shane Villeneuve, Anniek Wheeler, Alice Won, and Yakine Zerrad. Thank you all for helping me, also, (re)see my home through your work and ideas.