**An encounter with stone**
**Designing with the aesthetic force of post-mining landscapes**

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**Abstract**
Quarries are inherently complex situations that offer a unique and timely challenge to contemporary landscape architects. Their inherently technical and operational nature tends to lead to an equally technical response by designers at the expense of engaging with the ethico-aesthetic potential of these confronting landscapes. Several designers and thinkers are responding to this problem through theorizing a revival of aesthetics that focuses on determining why certain landscape encounters occur, in order to use this as the basis to design from. While attention has been given to theorizing the role of aesthetics in a contemporary design setting, less so has been directed to the practices and techniques suited to designing with these forces or doings. This paper uses the Horokiwi Quarry in New Zealand as an example to explore how the aesthetic forces can be understood as emerging from concrete spatiotemporal relations between the body and landscape. In doing so, it argues that greater attention needs to be paid to the specific, not generic, causes of aesthetic encounters so that stronger, more sustainable relations with non-human entities can be developed.

**Keywords**
landscape aesthetics / quarry remediation / encounter / sublime / aesthetics

## Introduction

Quarries tend to escape the public's eye despite their scale, otherworldly geometries and material qualities. Given that the products derived from these landscapes of extraction structure almost every facet of our everyday rhythms, this is a peculiar phenomenon. The Horokiwi Quarry is no exception, despite being nestled between three large urban centres and a major motorway. An aggregate quarry in operation since the early 1940s, Horokiwi is one of the largest in New Zealand, yet few know it exists. Hidden behind opaque layers of safety and environmental regulations, quarries elude the public consciousness. The impacts of this seclusion will not be felt throughout the operational lifetime of the quarry, but it will drastically affect its future. By remaining distanced, a critical gap is created between ourselves—as individuals and as collectives—and the realities of extraction.

Post-mining landscapes are not uncommon areas of inquiry for landscape architectural design and research, but their aesthetic dimensions tend to not be strongly attended to. Instead, a designer's preoccupations tend to be dominated by the technical or scientific aspects of such sites. This leaves how these sites can be *encountered* as monuments to extraction unfulfilled. This paper seeks to articulate how the aesthetic force of such encounters can be understood, starting from specific causes as opposed to generalities. Understanding these forces as encounters with the sublime allows the relations between body and space-time to be unpacked, making clear what agents and forces come together to produce aesthetic events. The following argument intends to bring together several lines of enquiry that are entwined. First, the landscape of the Horokiwi Quarry will be introduced. The

geometric, vegetative and operational characteristics that make sites such as this appealing to designers will be described, followed by the argument that such characteristics tend to be engaged with only through instrumental means. Second, a range of contemporary approaches to landscape aesthetics suited to working with experiential encounters will be introduced, forming a theoretical framework. This also serves as a point of departure by highlighting the need for further aesthetically oriented scholarship and practice-based, or led, research in this area. Third, an encounter from within the Horokiwi Quarry is described and unpacked by articulating it as resulting from a series of preconscious relations between the body and landscape. Fourth, the findings from this approach will then be brought in contact with the notion of a 'material sublime' to suggest how aesthetic encounters can drive us towards stronger relationships with other individuals, collectives, the environment and non-human agents.

## The Horokiwi Quarry

The Horokiwi Quarry stands as an imposing landscape even within the intense topography of Wellington (Fig. 1). Roughly 1,400 m long, 400 m wide and more than 300 m of vertical distance from its highest edge to the base. Since at least the 1940s, the quarry has been the primary aggregate supplier for the greater Wellington region and beyond. The quarry is still operating, with enough material to sustain extraction until at least 2035, at which point it will be transitioned to another use. Typically, this would involve the traces of quarrying processes being smoothed and the site revegetated to return a vague, yet legislated, idea of 'natural character'.[1] Being nestled between several urban areas leaves this landscape well-positioned to go beyond the conventional regreening approach by using its capacity to trigger encounters that shift our individual and collective relationship to the processes and products of extraction.[2]

### *A geometric envelope*

Horokiwi, like most quarries, has its form determined via a strictly controlled set of geometric variables (Fig. 2). These variables are derived from two factors: the economic impetus to extract as much material as possible and safety requirements. The former is the quarry's *raison d'être* and therefore propels form generation through subtraction. In tension with this are requirements to have a safe quarrying operation in a dangerous environment. Uncontrolled material movement is a constant concern. Carving benches into a quarry's slope helps to ensure stability by adhering to an 'overall slope angle', dictated by the onsite geology and best practice guidelines. Employing more benches means less material can be extracted, and although workarounds exist, they lead to an increase in complexity and risk (Fig. 3). A quarry's form can only emerge within a given geometric envelope where two forces pull at the undetermined configuration in opposite directions. Horokiwi's extraction is structured in this way, the specifics varying based on the specific geological formations. For example, Mitre Peak and Main Bench are largely composed of unweathered greywacke with argillite seams, whereas Crown Hill is predominantly weathered greywacke, leading to lower slope angles. The creation of this geometric work of art is entirely one of co-creation with nonhuman agents and processes (Fig. 4).[3]

*The colonization of adverse terrain*

New Zealand vegetation is seemingly adapted to finding success in the most adverse of environments. It is not uncommon to see taupata (*Coprosma repens*) or cliff toetoe (*Austroderia splendens*) barely holding onto characteristically crumbling greywacke hillsides, or within marginal niches. Within the quarry, the flat benches have been colonized by a variety of species: notably *Coprosma repens, Austroderia splendens, Phormium cookianum* (whaririki/mountain flax)*, Coprosma crassifolia* (mikimiki)*, Oleria solandri* (coastal daisy-bush) and the ubiquitous *Ulex europaeus* (gorse)(Fig. 5). Attempts to hydroseed the slopes have largely failed due to the harsh climatic conditions and lack of amenable soils. In contrast, the surrounding hillsides are covered in the dense olive-green cloak of podocarp forest. Several areas of significant remnant forest and bush lie directly adjacent to the Horokiwi Quarry, supporting valuable seed stocks and food sources for a range of avian species (Fig. 6).

*Extraction and processing*

The processes of extraction are still highly visible at Horokiwi, in contrast to many quarry landscapes that a designer might engage with. Excavators spread out across the site to whatever vein of material is desired that day, ripping away at the stone walls. Articulated dumpers carry material from excavators to storage piles in the lower quarry, while large dump trucks carefully navigate the steep haul road linking the quarry's halves as they carry material from the upper areas. Even more trucks and dumpers transport material from the storage to a network of crushers and conveyor lines (Fig. 7).

The mechanical and organizational complexity of this machinery is inherent to the production of this landscape, but also the production of the cities surrounding it. They cannot be uncoupled. The subtractive processes of the quarry form the additive production of the city through a transfer of material and energy. Canadian landscape architect Jane Hutton argues that such 'relations are consequential, yet they can be hard to see'.[4] As such, the region's cities are entwined with this hole in the earth via 'massive material assemblages' that determine their life, character and affects.[5] Because these processes are largely visible, a sense of temporality and readily understood change can be felt.

**Instrumentality obscuring intuition**

These characteristics of the Horokiwi Quarry are site specific, but also often found in other quarry landscapes. The following section discusses some of the dominant landscape architectural design approaches in post-extraction landscapes. Quarry landscapes are almost entirely created via technical and scientific means. In the aftermath of extractive processes, post-mining landscapes often evidence a hybridity of technoscientific and non-human agency as the environment undergoes vegetative recolonization and soil stabilization. In response to this, the previously described conditions often come together to demand an equal technical and operational design response, seeking to engage with both streams of agency present. This complexity is in part why a landscape architect's polymathic body of knowledge is well suited to such challenges.[6]

However, this strength in dealing with the technical has also led to it becoming a, or in some cases *the*, preoccupation of designing itself. When the landscape is primarily seen as operational, everything that follows is coloured by this viewpoint. Vilém Flusser describes two cultural approaches to art and design: one that seeks to

give expression to, elaborate on and extend the power of Nature; and another that seeks to give expression to, elaborate on and extend the power of instrumentality upon Nature.[7] With a greater capacity to address complex technical problems, our design responses have become increasingly technical as their *raison d'être*. These issues are compounded by a general deferral away from engaging with the aesthetic materials of the site. Positivist means of knowing and doing inadvertently, and in some instances advertently, downplay aesthetic design approaches. For Australian architect Simone Brott, this is a conversion of the 'bourgeois subject to an empirical unit . . . an attempt simply to rid architecture of the subject once and for all'.[8] The drive to implement ecological restoration precludes or takes precedence over greater experimentation with what vegetation can also do in relation to experiencing the site and its environmental impacts. Likewise, investigations into the mechanics of quarrying would trend towards producing novel forms as a spatial expression of such systems, instead of how such forms can create encounters with the site's *longue durée*. Understanding landscapes as heterotopias allows for design approaches that avoid 'singular, reductive, and static narratives and interpretations of their pasts' by challenging ecological 'assumptions of influence [and] control . . . [and] to resist seeing them merely as the sites of struggle between culture and nature, industry and ecology'.[9] Similarly, narratives and felt experiences with issues such as environmental degradation can affect greater degrees of social change.[10] As Danish landscape architecture researcher Ellen Braae argues, aesthetic encounters are 'not an optional add-on . . . or a matter of ornamentation' but integral to creating sustainable futures.[11]

**Recovery of aesthetics**

The need to address post-mining landscapes as more than just a technical problem has been highlighted across several disciplines, with a call to engage with the aesthetic forces of these sites. Design approaches that rely only on 'techno-scientific evaluations of risk and ecological conditions' are not strong enough to engage with these sites as instigators of stronger relations between collectives and the landscape.[12] The following section draws together several approaches that engage with aesthetic performativity between human and non-human entities, highlighting the capacities for aesthetic encounters to engender new relationships to landscape. In 'Sustaining Beauty', Elizabeth Meyer, an American landscape architect, argues that aesthetics are equally as performative and capable of affecting change as techno-scientific systems.[13] Likewise, in 'Beyond Sustaining Beauty', she argues that aesthetic encounters are an 'affective force that implicates bodies, objects, spaces, values, experiences and networks'.[14] For Meyer, experiences of and with landscape can creatively establish new ethico-political relationships between individuals, collectives and non-human entities/agents. An aesthetics of affect allows for ongoing relationships between humans and non-humans to emerge that celebrate their interlacing.[15] Affectual encounters go beyond the individual, becoming something collective that can affect substantive change through prolonged encounters with landscapes that make these relations present. However, how this might unfold through designing was not addressed by Meyer, who suggests that further scholarship on relevant practices is required.[16]

Landscape architects Rudi van Etteger, Ian Thompson and Vera Vicenzotti, though not engaging with affect like Meyer, offer insights into how such design practices can concretely engage with encounters through employing Aesthetic Creation Theory (ACT), developed by British philosopher Nick Zangwill.[17] Zangwill argues that

aesthetic properties (beauty, order, natural, etcetera) are created by, or 'depend on', certain non-aesthetic properties.[18] Non-aesthetic qualities are what we would typically regard as extensive properties (space), meaning and some sensations, in contrast to intensive (affective) properties, which align more closely with aesthetic qualities.[19] This approach argues that specific experiences can be causally designed by employing specific forms, materials or spatial arrangements. Alexandra van Zyl and Rudi van Etteger later wrote how this methodology can be employed to elicit experiences of melancholy towards a retreating glacier.[20] In doing so, nine aesthetic properties, twenty-eight non-aesthetic properties and seventy-four design devices are identified, suggesting a degree of methodological rigour.[21] This approach offers significant promise to landscape architectural design in that it seeks to unpack *how* certain experiences work, so that they can be designed. As van Zyl and van Etteger note, '"aesthetics for aesthetics" sake is often not enough', which suggests that experiential design must not divorce itself from the capacities of instrumentality.[22]
Several recent design-led inquiries have highlighted the aesthetic potential of working with hyperlocal ecologies within post-mining landscapes. For Italian landscape architects Camilla Perrone, Maddalena Rossi and Flavia Giallorenzo, the fractured geology of the deceased Santa Barbara Quarry in Cavriglia, Italy, is well suited to experimenting with the potential of self-selecting planting schemes.[23] By extending Gilles Clément's notion of the 'garden in motion' to a territorial scale,[24] the landscape's cultural and historical dimensions can be put in a dialectic relationship with the agency of successional planting processes.[25] These plants can appropriate abandoned spaces and thrive through being given the space to act freely.[26] Doing so allows for encounters with non-human agency at several scales as the landscape's *longue durée* and possible futures are made present.[27] Katherine Jenkins, an American landscape architect, argues for a similar approach based on discovering hyperlocal ecologies within the Marble Cliff Quarry in Ohio. This landscape is characterized by marks left behind from the processes of extraction interacting with erosion, vegetation, hydrology and soil systems. These two layers intersect to produce plant communities whose 'extent and position is precisely aligned to the texture and moisture content of the ground'.[28] The marks across this landscape produce what Jenkins describes as a 'tangled aesthetic' that imposes questions of origin and process by interrupting normative understandings of what landscapes are.[29]
Jenkins also illustrates how spatial relations within this site can produce disruptive, engaging encounters. The ground conditions are described as highly varied, 'demand[ing] an acute focus' as one traverses this pathless landscape.[30] The 'physical intuition' required to negotiate this terrain goes beyond the everyday, leaving one 'wide awake' as they find pleasure in navigating without prescription.[31] Similarly, Jenkins notes how the verticality of the quarry's walls reorients bodily perception in a habit-breaking way, as the visitor 'looks up and down as much as she looks left and right'.[32] This creates an expanded sense of space that is 'viscerally stimulating, bearing a heightened awareness of place'.[33] On this need for topographical awareness, American landscape architect Elissa Rosenberg writes: 'Topography both reflects and engenders certain ways of seeing and knowing the world; it structures our vantage point and organizes the way we move through and experience space . . . in a fundamentally physical way.'[34] Christophe Girot also notes the importance of movement across a site, 'where one moves and stalks' across the landscape, forming the most critical stage within the design project.[35] Similarly, French landscape architects Marc Claramunt and Catherine Mosbach argued that

landscape design projects start ‘from the blank page of human experience’ building an understanding of site through ‘all the senses’, mediated by representation.[36] Such accounts illustrate the importance of movement through and aesthetic events within landscapes, though further research is required to develop the means with which to understand how specific encounters unfold.

## An encounter within Horokiwi

### *Method*

The following investigation was conducted through a practice-led inquiry where drawing is both the means and object of the research. The intent is to explore how aesthetically oriented design practices can concretely engage with landscape encounters. The evaluation of these practices is focused on their affectual capacity, the ability of design techniques and the significance of this ability concerning a given problem. Success is determined when *resonance* is felt between what is discovered on site and what the representation does when read, viewed and watched. This is what Gilles Deleuze terms ‘expression’: bringing affects to life via the page.[37] Extensive fieldwork was conducted using the researcher’s body as an ‘affective register’ so that encounters discovered onsite could be described through a-personal narrative. Doing so makes clear the autonomous spatiotemporal relations at play, or as Tim Ingold argues: ‘To observe is not so much to see what is “out there” as to *watch what is going on.*’[38] Employing similarities to autoethnographic approaches, this fieldwork sought to engage with the pre-personal, preconscious and autonomous *doings* of the body in the landscape. This approach goes beyond the individual and personal by looking at a-subjective and pre-individual relations to the world in a similar manner to the *dérive* and *plaques tournantes* as described by the Situationists in the 1950s and 1960s.[39] Similar approaches have been undertaken by others conducting experiential research, each highlighting that the site itself is constructed through movement and involvement with it.[40]

Drawing on a similar research method developed by Jenkins in her work ‘In Praise of Limestone’, the site experience is narrated and collected using a specific protocol. When an encounter or distinct experiential movement was discovered on site—a tipping point where a significant experiential shift is felt—the author sought to unpack it through initial drawing in plan and section, describing what happened and where. Such movements are involuntary and pre-conscious, a *doing* rather than conscious action. The drawing and notation analysis would be done atop aerial and contour plans, creating an experiential log. This material is brought back into the studio where further investigative drawings are produced allowing what can only be discovered on site to be combined with what can only be found via other drawing methods. To communicate these findings and convey this experience for others, a series of cross-referencing drawings are created. Through this, based upon one’s past bodily experience, a resonance can be felt with the relations being described. This resonance is what Portuguese-American neuroscientist Antonio Damasio describes as an ‘as-if body loop’, where the body feels a sensation as if it were actually occurring.[41]

### *It looms ahead*

The Horokiwi Quarry is accessed via a motorway linking Wellington and Lower Hutt, skirting the harbour’s oft-tumultuous coastal conditions. There is almost no indication that the quarry exists throughout the region, until, if you were driving slowly enough along this motorway, a brief glimpse through a gap in the wall-like hills reveals

stepped greywacke slopes. A sharply rising road takes you into these hills, where the quarry abruptly appears. The surrounding topography still shows the distinctive lines of previous ridges and gullies, exaggerating the quarry's altered landscape.
The quarry's gateway is found right as you encounter this view, seemingly inviting you inwards, but this is where the experience of the quarry ends for most.
Moving carefully but with purpose, the crunching of small rocks atop hardpack rock underfoot, a plateau of stone emerging out of the benched hillside looms ahead. This mass of rock, called the Main Bench, is the current area of extraction. A steep haul road curves its way up the plateau's side, turning back on itself to mediate the elevation change. As you walk up this road, the wider landscape fades away as you sink into your thoughts as the effort required draws attention inward (Figs. 8 & 9).
Reaching the top of the haul road is celebrated with a view across the plateau's surface—seemingly flat, elevated far above the restless activity below. You feel compelled to move—*dragged*—across this plateau without stopping, a directionless free-wandering (see tipping point 1 in Fig. 10). This wandering is interrupted by the ominous sensation of something looming over you as if a weight were beginning to be pressed down (see tipping point 2 in Fig. 10). Without thought you move towards the rock face, eyes tracking up from its base. A sense of anxious unease begins to build as you try to come to grips with the verticality and mass. Your head and shoulders are tilted back as you try to find the highest point or reference point. You stop, arrested in place. Any relations to the wider landscape are now entirely gone as the stone affrontingly absorbs your entire attention (see tipping point 5 in Fig. 10 and Fig. 11).
Time becomes a bit murky. Your attention is slowly pulled away from this looming, affronting presence. The looming weight starts to fade away, replaced with a presence above without weight (see tipping point 6 in Fig. 10). Movement becomes freer. Then, without warning, it drops off entirely as all the nerves in your body release. The rock face still stands in front of you, but the visceral gouges on the rock's surface, the sharpness of each edge and the deep darkness of the argillite invades your whole perception. The sharpness of the edges left behind by the excavator's teeth can be haptically felt from afar. Moving closer, the relaxation is replaced by a sense of shelter, as if you were beneath an awning or canopy (see tipping point 7 in Fig. 10). This sense of shelter radiates out from the base of the rock face, its extent can be felt and understood right there on site (Figs. 12 & 13).

*Ecological relations before thought*
Horokiwi's bowl-like topography cuts off any sense of what lies beyond. The walls, benches and slopes on all sides create new frames of reference for those within their embrace. These topographical forms restructure our perceptual orientation from horizontal to vertical, as Jenkins similarly noted at Marble Cliff.[42] This shift in perception is not conscious or intellectual, rather it is a pre-conscious and pre-personal response to sensation. Peter Connolly, an Australian landscape architect and urbanist, describes it as a connection to the 'whole environment', where human involvement is 'direct[ly] connect[ed] to what the world is doing'.[43] Likewise, the prominent American psychologist James J. Gibson asserted that (human) organisms do not perceive their environment as a series of objects or even as a totality, but rather as relations between the body and the environment that produce an affordance, capacity or power. They are *ecologically* connected to what the world has to offer and what it does.[44]

Looking at this encounter atop Main Bench allows us to understand it through *physiological* and relational means. Figure 14 provides a graphic account of these agents and relations that participate in the described encounter and movements atop Main Bench. For example, the sense of looming described emerges from concrete spatiotemporal relations between body and landscape. It has been observed that the moon appears smaller (further away) when it is at its zenith and larger (closer) when it nears the horizon. This has been attributed to how the human brain's oculomotor system perceives the distance of entities in relation to variations in bodily orientation.[45] Further studies have shown that more supine postures (lying down), or even the perception of being more or less supine, create a drastic shortening of experienced distance.[46] The exaggerated verticality of the rock faces in relation to the flat ground plane atop Main Bench intensifies the *sensation* of looming as we move towards them. Moving closer, we struggle to grasp the rock face's extent, where our vision and upper body position are held upwards. Moving closer, this angle rises, and the sensation of looming increases relational and physiological change that we *feel before thinking*. Likewise, as found in both this study and in Jenkins's work, walking atop an unevenly rocky surface creates a form of experience that focuses attention towards both the 'specificities of the site' and one's internal thoughts.[47] This is not just because one is walking atop rocks, but rather specific forms and materiality that demand constant attention and effort to navigate alongside drawing awareness to particular qualities, quantities and relations (Fig. 15).

*A material sublime*

Through movement, we are continuously constructing a world around us by determining a series of reference points against which our bodies register. The top and bottom of a rock face are one such reference point, providing a rough means to determine its height. Our brains create this estimation using 'the dimensions of the body and its action capabilities as "perceptual rulers"'.[48] However, certain landscape encounters (and other mediums) deny or distort this ability to determine reference points, or otherwise disrupt our habitual responses to phenomena. The experience of such encounters has typically been understood via the aesthetic notion of the sublime. Loosely described as an affronting experience, often terror-inducing where a threat looms ahead, the sublime has been an aesthetic mainstay since its emergence in the eighteenth century.[49] However, there has been little attention given to how it emerges through spatiotemporal relations between the body and the environment.

The prior described movement atop the Main Bench emerges from such relations, specifically a series of tipping points each created by an intensive difference. Tipping points are *felt* signs in body-environment relations where an involuntary change in movement or sensation emerges. The three types of moving, or experiential domains, described in Fig. 10 are determined by the shifting relations at the seven tipping points.[50] Physical changes in how the body relates to the landscape, such as the increasing angle one's upper body must assume in order to grasp the top of the rock face, create different sensations, affects and doings. At a certain point this angle increases to a degree where the sensation flips or intensifies into something else. This shift might be disruptive or disturbing, what we might call sublime.

Turning to one of the sublime's original thinkers, lines can be drawn between the notion of bodily determined relations and Immanuel Kant's *mathematical sublime*.[51] For Kant, whenever we encounter an object our faculty of imagination estimates its extensive form and magnitude against either a previously experienced object or the

body. However, there are certain encounters where this aesthetic synthesis fails. English philosopher Timothy Morton describes it as such: 'You can think about *it*, you can directly experience *it*, but you can't think *it.*'[52] The faculty of imagination fails to represent this object to the subject and in the end, submits to the faculty of reason. This failure results in a pleasurable pain within the subject from the discovery of its limits and the 'sense of superiority of one of our mental faculties (thought) over another (sensibility).'[53]

Extreme landscapes that include excessive scale or verticality are not prerequisites for sublime experiences. A mounded, rippling, surface that denies the perception of flatness or the determination of the lowest point can also instigate such an encounter. Likewise, a rapid oscillation between the feeling of expansion and contraction caused by alternating gully and spur landforms along a valley can disrupt our physiological processes and engagement with a landscape. Such examples highlight how landscapes can profoundly affect us *before* we think and that conscious thoughts or ideas are secondary to the pre-conscious relations that form between ourselves and the environment.

Encounters with the sublime, particularly what has been termed a 'material sublime', illustrate our ecological connectedness.[54] This sense of the sublime demands more rigorous attention to the conditions it emerges from. If we think of the sublime as an ecological and material encounter, we can determine its *singular* conditions, as opposed to generalities.[55] We might loosely take all high vertical rock faces as being able to elicit the sublime (and that may be more or less true), likewise all lofty mountains or the infinitude of the Sahara. Stopping here limits the ability to design specific landscape encounters and what they offer. In contrast, the material sublime demands we pay attention to its causes.

## Conclusion

In an age where every entity is called to present itself in front of universal instrumentality, to be 'linguistically defined, classified, broken into discernible units suitable for purely productive employment', encounters with post-mining landscapes evidence that the world is constituted by forces well in excess of metrics and measures.[56] These encounters viscerally illustrate how we are ecologically connected to the world around us before thought and subjectivity. Movements, experiences and sensations emerge from concrete spatiotemporal relations between the body and landscape—a coming together of human and non-human entities. Engaging with these relations allows for encounters with a material sublime to be first understood and then later designed with. Attending to the singular, as opposed to the generic, conditions of sites shifts designing away from generalities to a field where aesthetic material can be employed as rigorously as its technoscientific counterparts.

The implications of such an ongoing recovery of aesthetics in the design of post-mining landscapes are threefold. First, it highlights the deeply political nature of landscape and our participation and engagement with it. The aesthetic agency of human, non-human and collectives of the two can be made present, be celebrated and acknowledged. Second, shifting from generic to specific aesthetic causes affirms the *thisness* of a given landscape beyond metrics and quantities. Encounters with the sublime, beautiful or the picturesque should give us reason to pause and decipher why such events occur. Considering that a site is the very material landscape architects design with, aesthetic material must be included, or it risks being left out altogether. Third, it asks for reflection on the predominance of

technoscientific ways of knowing and designing. Engaging with technical issues and processes is critical to the creation of sustainable landscape, yet it can also obscure how we relate to them. Change and disruption are hard to embody when you're *told* what is happening. It is a different story when we *feel* it. Creating truly sustainable futures requires going beyond technoscience. It requires an ethical, political and aesthetic approach, posing a challenge that the discipline of landscape architecture must rise to the occasion of.

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Shaun Rosier is an assistant professor of Landscape Architecture at the Virginia Tech School of Design. His work centres on developing design practices and techniques suited to strong engagement with landscape aesthetics through Deleuze's notions of affect and assemblage. Originally from New Zealand, Shaun has engaged with post-mining landscapes and urban restructuring in his work, by working with Indigenous peoples and employing unmanned aerial vehicles for landscape scanning/modelling. Before joining Virginia Tech in 2022, Rosier taught at and received a practice-led PhD in Landscape Architecture from the Wellington School of Architecture at Victoria University of Wellington, New Zealand.

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**Captions**
Figure 1
Regional plan of the Lower North Island, New Zealand. The cities of Wellington, Porirua, Lower Hutt, and Upper Hutt surround the Horokiwi Quarry, drawing material for their expansion.
Source: Aerial imagery sourced from the LINZ Data Service and licensed by the Greater Wellington Regional Council for re-use under the Creative Commons Attribution 4.0 International

Figure 2
Site Plan of the Horokiwi Quarry, Wellington, New Zealand. 5-m interval contours generated from 2018 aerial LiDAR scan.

a. Quarry entrance / b. Processing plant / c. Material storage / d. Pavement Hill / e. Main Bench (now removed) / f. Wet tailings pit / g. Mitre Peak / h. Crown Hill (now removed) / i. Dry tailings benches.

Figure 3
Bird's-eye view of the Horokiwi Quarry as of 2017, portraying the current operational areas within this operational landscape.
Source: Created in Autodesk Infraworks using aerial imagery sourced from the LINZ Data Service and licensed by the Greater Wellington Regional Council for re-use under the Creative Commons Attribution 4.0 International

Figure 4
As you leave the coastal edge motorway, a steep curving road pulls you up towards the quarry that suddenly appears, entirely unannounced. The gateway restricts entry for most, though there is public access for those needing aggregate material.

Figure 5
Vegetation struggles to take hold on the slopes and beaches within the quarry. The environmental conditions quickly dry out any areas that have been hydroseeded, leaving only marginal areas able to host hardy species.

Figure 6
Some slopes have relatively successful plant colonization that reaches up to the pre-existing vegetation along the quarry's edges. The contrast between the two creates a shifting gradient around the topographical bowl.

Figure 7
The main aggregate processing plant at Horokiwi is structured by a series of conveyer belts, dump piles, crushers and distributors. The overlapping belts and machines makes it nigh-impossible to track where material goes.

Figure 8
The Main Bench makes itself immediately known as one enters the quarry. Its form pushes out into the void, a presence wherever you are. The topographical arc from its top to the current quarry base hints at the former landscape.

Figure 9
The view atop the Main Bench provides a sense of quietness and stark removal from the activities of the wider quarry. No middle ground seems to exists between the foreground plateau and the green background of the surrounding slopes, pulling you forward as if something can be found if you move closer.

Figure 10
Mapping of the different transitional zones atop Main Bench showing the described movement that was discovered on site. Numbers indicate specific tipping points in the movement.

Figure 11
A component of the representational assemblage unpacking the spatiotemporal relations involved with the discovered movement.

Figure 12
The materiality of the rock face atop Main Bench draws you forward, its materiality can be haptically (visually) felt from afar.

Figure 13
The fractured materiality is seemingly otherworldly. It is not every day you come close to feeling rock in this way, from a looming mass to chunks of greywacke and argillite.

Figure 14
Assemblage diagram depicting the relevant entities and relations that make up the described movement atop the Main Bench.

Figure 15
The ground plane's materiality within the quarry is highly varied and can be varied even further through design actions using the machinery on site.

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