

A Diffractive Drawing Experiment

Recording Material Agency

yeni-materyalizm
faillik
mimari temsil
çizim araştırması
new-materialism
agency
architectural drawing
drawing research

Bu araştırma, muğlaklığı çizen ve madde arasındaki diyalogun aracı olarak kullanarak maddenin failliğini kaydetmeyi amaçlayan eleştirel bir çizimsel pratiği ele almaktadır. Feminist yeni-materyalist teoriye dayanarak, çizimi bir kayıt hali olarak incelemek için kırınım metodolojisini kullanıyorum. Bu süreçte, yaratıcı pratik olarak çizimselin öngörülemesizliği, madde ve çizgi arasında bir aracı olan kayıtlarla üst üste bindirilir. Böylece, kırınımlı çizim bir temsil olarak değil, dönüşüm sürecindeki materyalin ve mimari yüzeylerin performatif bir arşivi olarak ortaya çıkar.

Mimari detay, form ve maddenin etkileşime girdiği yüzey olarak bu dolanıklığın mikro anlatılarını taşımaktadır. Bu çalışmada muğlaklık kavramını, malzemenin geçmişi, şimdiki ve geleceği arasındaki dolanıklıkları kaydetmenin bir aracı olarak kullanıyorum. Kırınımlı çizim aracılığıyla malzemenin geçmişine ait izler şimdiki zamanda görünür hale gelirken; çizen ile madde arasındaki münazara çizgisi, maddenin geleceğine dair bir spekülasyon üretir. Bu süreç, farklı kayıt dizileri üzerinden araştırılır ve muğlaklık ile çizen ve madde diyalektik kurar.

Araştırma mekânı olarak, İstanbul'un tarihi yarımadasındaki bir anıtın parçası olan mermer bir şadırvanı seçtim. Mermerin yüzeyinde biriken izler, zamanın, kullanımın ve çevresel koşulların mikro-anlatılarını taşır. Bu izleri kaydetmek, maddenin kendi failliğini görünür kılar. Böylece mimarlık, yalnızca ideal formların sürekliliğiyle değil, aynı zamanda maddenin dönüşümüyle de tanımlanabilir. Yüzeydeki bu dönüşümler mimarlığı kırılğan bir hale getirirken, çizimsel olan bu kırılğanlığı arşivleyen ve muhafaza eden bir beden işlevi üstlenir.

This research explores a critical drawing practice that aims to trace and record material agency by practicing indeterminacy as a tool of reciprocity between drafter and matter. Building on feminist new-materialist theory, I use diffraction methodology to explore drawing as a form of recording. In the process, the unpredictability of the drawing as a creative practice is superposed with the act of recording as a negotiator between matter and line. The resulting diffractive drawing emerges not as a representation but as a co-performative archive of materialities and architectural surfaces in becoming.

Through diffractive drawing, the record of material past is unraveled in its present, and the negotiating line between drafter and matter speculates on their future. The surface where architectural form and material body interact holds the micro-narratives of their entangled history. And for this study, I record these superpositions of material past-present-futures. There are two sets of records, one situates the drafter on site, and within her practice, the latter uses indeterminacy to converse with matter.

The site selected for this study was a marble fountain, part of a monument in the historic peninsula of Istanbul. The traces accumulated on the marble's surface carry micro-narratives of time, use, and environmental conditions. Recording these traces makes visible the agency of the material itself. Thus, architecture is defined not only by the continuity of ideal forms but also by the transformation of matter. While these transformations on the surface render architecture fragile, drawing serves as a body that archives and preserves this fragility.

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ARCHITECTURAL SURFACE AS THE WOUND

Conventionally, architectural drawing is a form giving practice that acts as a translation between a design proposal and the material world that will constitute it (Evans, 1997). In the process, matter is first disciplined, that is, transformed into 'material' that can be measured, standardized, and controlled, so that its unpredictable, unruly nature is restrained (Hughes, 2007). It is then shaped and assembled into the form outlined by the drawing. This process establishes and reinforces a binary construct between architecture and matter, positioning drawing and consequently, architecture, as the one who commands, and matter as the passive object to be acted upon. This approach privileges the authority of representation over the agency of materiality, reducing the complex, dynamic interactions of the physical world to a fixed and compliant backdrop for architectural intent. Through my drawing practice, I challenge the authorship of the drafter, allowing drawing to emerge as a co-performative archive of materialities and architectural surfaces in becoming, rather than a mere representation.

Architectural surfaces that make up the form can be seen as similar to veils created over what Francesca Hughes defines as the "territory of matter", describing it as the space in between "the known, the stills, the drawing" (Hughes, 2007, 279). Through time, and agency of the assemblages¹ -created by encounters of material, living, and non-living agents surrounding it - the surface containing them etches away, and disrupts the architectural form. For such micro-sites, I use the term wounds. One approach to such sites would be creating survey drawings as a foundation for conservation. The initial step would condense timely emergent materialities into classified time periods as a conservation foundation for the remaking of

the surface to what it once was. This is followed by a maintenance, of cleaning, closing the wound, would follow flattening any assemblages of material agency. I am interested in these wounds as how an archeologist might read them, carefully unpacking layers and recording, speculating on their past-present-future, rather than a conservation practitioner.

The research builds on feminist new-materialist theory to develop a drawing-recording practice that challenges the position of humans as the sole agents in shaping the material world. Opposed to a reflective methodology, in which a displacement of "the same" occurs, Donna Haraway discusses diffraction to map interference so it does not observe differences, but what they become (1992, 300). Karen Barad adds on and further proposes diffraction methodology as a way to "read insights through each other" so that their "always already entanglements" can be observed (2020, 313). Thus, diffraction methodology can be used to understand the entanglements of bodies and materialities not by comparing them but mapping -drawing- their interference. The methodology of the work shared here relies on Haraway's interpretation of feminist objectivity, which she terms situated knowledge (1988, 581). This values a personal, locatable, and partial vision that can create knowledge that is grounded in the embodiment of the researcher and the agency of the one being studied. Haraway states that this process of creating knowledge cannot accept the world and the entities being studied as 'passive and inert', waiting to be exploited and discovered. Instead, she discusses how knowledge is produced in conversation (Haraway, 1988). My drawing practice is informed by Haraway's approach, exploring a means to converse and negotiate the record of the material agency that shapes the architectural artefact. In this way it can be positioned as a critical spatial practice, as defined by Jane Rendell as those practices that question dominant orders, reclaiming and critiquing through every-day and

creative practices (Rendell, 2008).

This drawing practice experiments with two seemingly clashing, creative systems: drawing and recording. Here, drawings are defined as a pursuit for the unpredictability of the new. Recording on the other hand, is positioned as a negotiation between the existing material and the depicting line. The wounds in question cannot easily be traced because they do not follow conventional lines of a given form, as it is where matter is emerging. Therefore, tracing as a delineation process is laced with drafter's lines to re-weave the wound with matter emergence. In the process, drawings become superpositions of textual, linear, and photographic components that can be read through each other. Diffracting drawing and recording through one another allows material agency to reciprocate against the drafter. Thus, diffractive drawing² emerges as a performative act, where drawer and material engage through the practice of diffractive drawing, and the result is a superposition of material past-present-future.

DRAWING BEFORE ARCHITECTURE

Architectural drawing became essential to the practice and in reference the status of the architect during the 15th century (Hill, 2005). During this period, sole ownership of a design and thus the artefact was attributed to the master architect. As descriptive geometry began to shape the architectural drawing, the abstraction of the Cartesian grid offered an infinite, ordered, sterile surface that removed the architect from the messiness of the matter (Emmons, 2019). Consequently, the material histories and the labor that built the artefact are overshadowed by the architect's authorship.

Architectural drawing before architecture, captures a virtual space that emerges on the paper. Design is created through drawing rather than just a transfer from the mind to paper (Frasconi, 2007). It is

a messy process filled with crinkled paper, smudges, and erased lines. Yet, the desire to create an objective truth, the exact built form on a paper surface, forced the architect to reduce the drawing into a set of geometrical instructions, and the drafter's body was excluded. The straight singular line prevents the inclusion of the subjective position of the drafter, rendering it "voiceless" (Thomas, 2007, 100). And in that geometry, architecture hides all that is deemed improper for the discipline, sexuality, materiality, the female body, and the mythical (Ingraham, 1998).

In my research, I pursue to make visible what conventional architectural drawing practice avoids and erases from the drawing surface; introducing the materiality of the drawing act and the architectural surface into the drawing itself.

DRAWING AFTER ARCHITECTURE

The discourse of architectural drawing often focuses on the process preceding architecture. Here, I want to speculate on the role of architectural drawing after architecture. The work hypothesizes that within these instances, materiality cannot be ignored since architecture left the Cartesian plane for the material world. Thus, the act of drawing crosses over to the act of recording. We often encounter such phenomena as architecture survey drawings of conservation, and heritage studies. In architecture survey drawings, after decades of use, the architecture needs to be delineated by the lines and surfaces that once defined it. Every surface of the building is drawn, and every material emergence is outlined, but these are all seen as potential problem areas to address. I claim that drawing after architecture is precisely the threshold of diffractive drawing when we approach it without the ambition to return it to its original state, but to understand the entanglements that have come to be.

Jennifer Bloomer's dirty drawings

are one such example that brings materiality into the discussion of the drawing. She brings together the rendered drawing with the working drawing, questioning architecture's desire after the image (1992). By incorporating unconventional materials into her drawing practice, Bloomer deliberately disrupts the sterility associated with architectural drawing.

Sarah Wigglesworth's work 'Table Manners' (1998) is a unique example that her drawings of material traces become the beginnings of an architectural artefact. Thus, what is after and what is before becomes blurry. The architectural drawing here is built upon everyday materialities, in this case, on the architecture of the dining table. Everyday practices occupying the dining table, its materiality, the aftermath of dinning of dirty plates and stains are all recorded and interwoven with the drafter's line to create a plan (Wigglesworth and Till, 1998). By integrating mundane and messy everyday practice into architectural drawing, Wigglesworth criticizes the order and propriety of architecture. This opens opportunities to engage material practices into architectural drawing even before the architectural artefact emerges.

Building upon these examples of critical practices, and a critique of what conventional architectural drawing practices obscure, I pursue a drawing practice as an engagement with the architectural artefact and its material entanglements. I attempt to reintegrate the agency of matter into the process of architectural representation by balancing the creativity of drawing with the responsibility of recording. In doing so I reconsider architectural drawing as an active, collaborative practice that negotiates between matter, architecture, and the architect.

DIFFRACTION IN DRAWING

Diffraction as a drawing method³ is introduced by Kai Mah Woods and Patrick Lynn Rivers (2022).

They practice diffractive drawing in survey drawings to reveal multi-layered, performative relations of the site. Their work enables veiled intra-actions of matter entanglements being visible through diffraction in drawing. Thus, these drawings delineate matter, enabling its material existence (Woods and Rivers, 2022). Their practice utilizes computational tools to disrupt the drafter's command over the drawing and emphasize material agency.

My drawing practice shares some of these concerns and uses indeterminacy to create a negotiation between drafter and matter. I interpret diffraction in drawing to co-create a drawing record between the one who draws and the one who is drawn. Just as waves create diffraction patterns when they overlap in response to an obstacle, drawing and recording intersect to create a pattern that serves as an archive of the material surface. This emerges as a pattern that both reveals what is and what may become. Here, the drafter is embedded in the drawing just as much as the matter. The drawing formed through a conversation between the self and matter. The apparatus therefore is not an outside entity that objectively transfers between three-dimensional and two-dimensional space but part of the record itself.

THE SITE

In the process of construction, the architectural surface acts as a stabilizer that confines the material into a static state. However, material is a living agent that changes through time. Therefore, the architectural surface is strained between upholding the precision of the paper and the material's becoming. In that strain, matter bursts through, creating wounds. This is most evident in buildings that have long stood the test of time.

The recordings take place at the ablution fountains of the prominent historical monument, Hagia Sophia in Istanbul, Turkey. Due to its long history, the structure has interacted with numerous

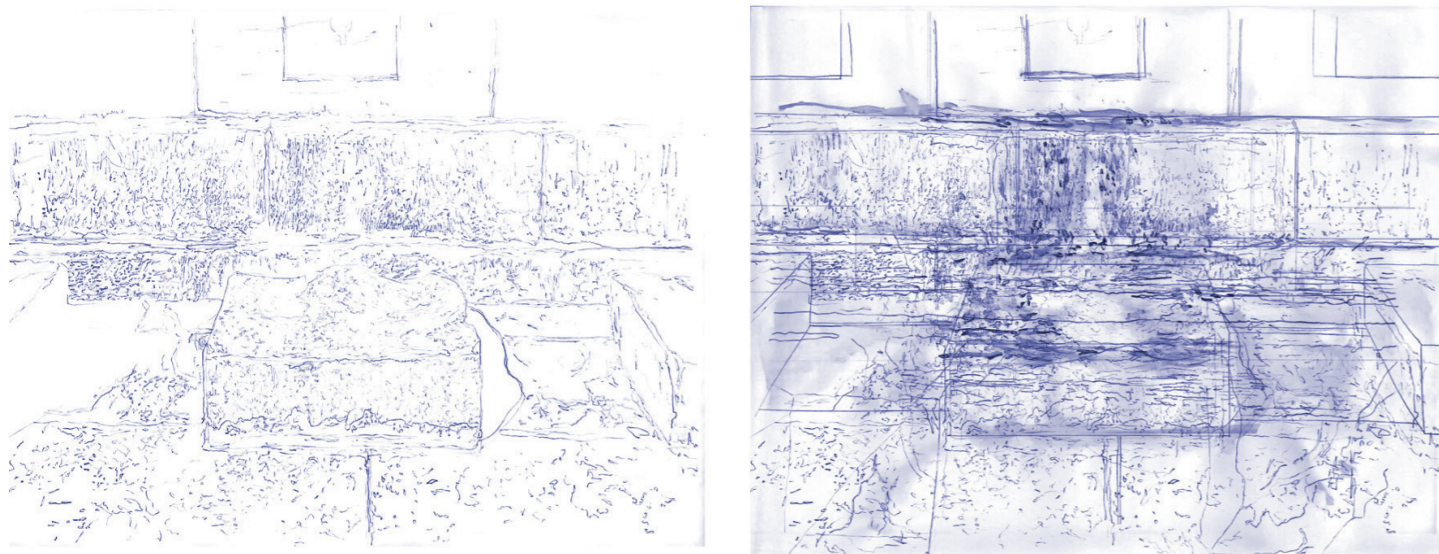


Fig.1 - Record-I layers unraveled.

living and non-living agents that have etched the surface, becoming intertwined with its materiality and offering traces of what is often overlooked or forgotten. However, for a site which has a history full of erasing, re-membling, re-making, it is challenging to look past the architectural artefact and what it represents. In this research I however focus on the micro-narratives of the wounds amid such an assemblage.

The building is a renowned example of Byzantine architecture that has stood for over fourteen centuries. Hagia Sophia has witnessed changes of empires, and with those changes shifts in its use from a church to a mosque, then to a museum, and recently again to a mosque. Throughout these changes, many additions, restorations, and repairs have been made to maintain the propriety of the architectural surface. Some of these were major rebuilds following collapses due to earthquakes, while others were additions made to accommodate changing religious practices. The structure predominantly uses brick for non-structural sections, while natural stone forms part of the load-bearing system, such as columns. Stone is also applied decoratively in elements such as wall plates and floor finishes (Angi, 2015). One of the frequently used natural stones in Hagia Sophia is Marmara (Proconnesian) Marble, and this was used as flooring, wall covering, column headers, and bases (Angi,

2015). The ablution fountain is also made of Marmara marble due to its durability against water. However, even materials like natural stone that appear static and permanent change over time.

RECORDING EXPERIMENTS

Record-I (Fig.1) is an investigative record where I situate myself both on the site and within my drawing practice. The drawing is based on several site photos. For this experiment I printed the photographs in order to work on them by hand. Emmons emphasizes that drawing by hand and the accompanying rituals allow the drafter to inhabit the spatiality of the drawing, and combined with the drafter's presence on paper, make the act twice embodied (2019). By choosing to draw by hand, I aimed to be part of the line that is in dialogue with the matter being recorded. A continuous linkage from paper to pen, pen to my hand, and consequently to my body.

I traced this first photograph twice; first by using tracing paper on the image at my desk, looking at it as I drew, giving the drafter a sense of control, gazing upon the page as it reveals itself to me. Emmons argues that the horizontal surface creates a closer relationship with the paper, describing the surface where the drafter's belly touches the table as where drawing is conceived (2019). That closeness

appears to create hierarchy in the reciprocal relationship between the matter being recorded and the drafter telling the story. For the second trace I placed the drawing in front of a source of light, a window. Drawing in front of the window created a different dialogue with the surface of the drawing. Instead of looking upon, it is a case of being face-to-face with the paper. I am more aware of my body, standing up, using myself to block and let in light, creating a site of reciprocity that makes me vulnerable to being led by matter.

Matter is a hard thing to capture, always seemingly contained between the lines. Architecture represses matter into materiality to contain and isolate; it is left undefined and suspended between the drawing sections and plans (Hughes, 2007). Therefore, it requires wounds to emerge over time so that we can see material re-becoming matter. I started tracing each little wound, but found their edges do not really exist. And without an edge I was in a constant state of being lost (Fig.2). The trace did not have a definite end or a beginning. This resisted the constant desire of precision in architecture, which is how architecture prevents matter from taking over form (Hughes, 2007). Consequently the drawing is more than just a trace; it is a conversation between me and the matter, a drawing that captures both of us. Here, being lost is the beginning

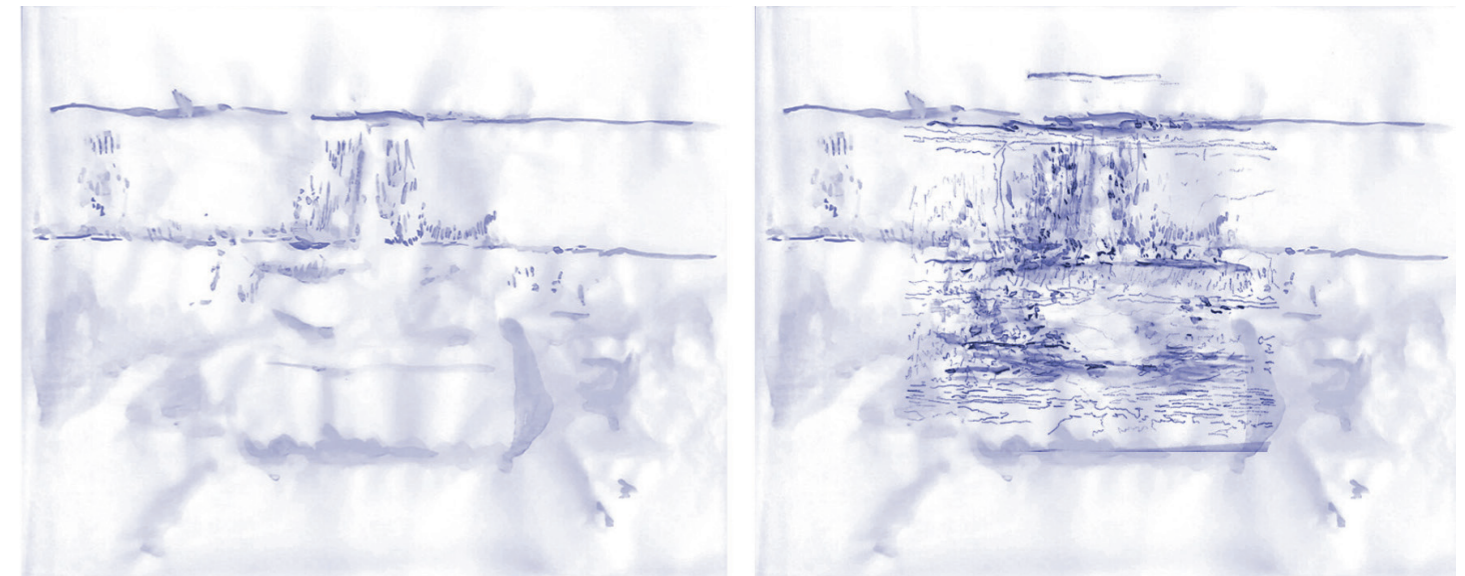


Fig.2 - Record-I layers unraveled.

where our conventional teaching starts to fade into the agency of the material itself.

When each sheet of recording is brought together (Fig.3), some traces follow each other, and some do not. It is a shifting, moving recording on paper; a

possibility of coming together in the superimposed. However, this record was still mostly dominated by form, thus it was not diffracted enough. The anonymous gaze floating across the site, distances the way it is engaged, even though the act of drawing brings the voyeur and the matter together. However,

the shifting in the way drafter positions themselves with paper, and the indeterminacy it creates because of the loss of control, diffuses the recording. Therefore, for the following records I arranged indeterminacy, encourages myself as drafter to be lost and in a reciprocity with matter.

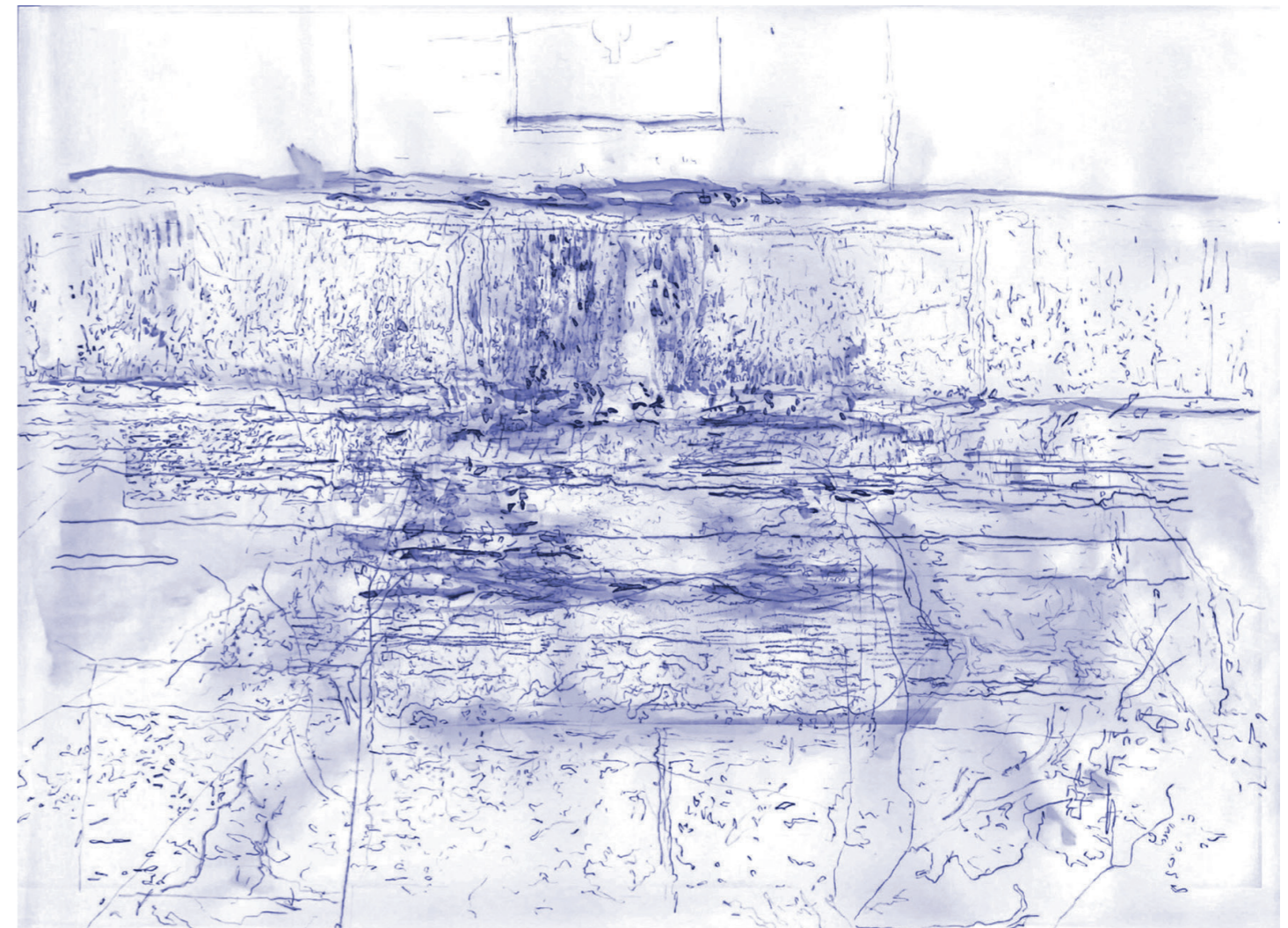


Fig.3 - Record-I layers altogether.

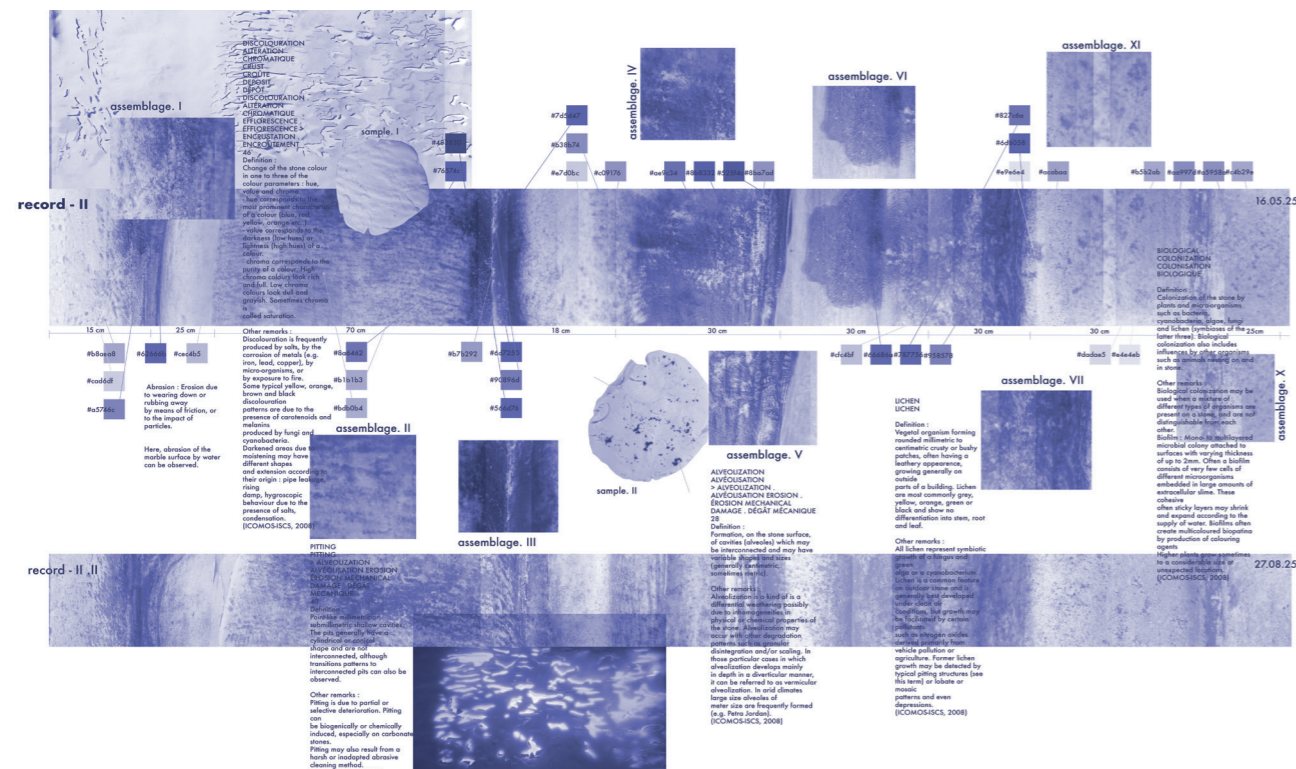


Fig.4 - Record-II

Record-II (Fig.4) undertook experiments with indeterminacy in the gaze. Often, when drafting survey drawings materials are observed and documented through their reference to form. As we record it onto paper, we seek out its edges, where the lines of the projection meet with matter. Through these edges the architectural artefact is compared to the lines of the design. This disregards the emerging matter inside the outline, and marks wounds as defects. If architecture survey drawing does not comply with the form as it was intended, maintenance erases it back to the sterile surface from when it was first built. The drive to fit the changing materiality back into the Cartesian space is emphasized through the orthogonal projection, which returns the material back into the geometrical. This projection is designed to objectify the gaze as an all-seeing entity. Therefore, Record-II aims to disorient the observer with the Cartesian planes bleeding into each other, losing any sense of direction. The geometry of the marble fountain dissolves outside the frame, and the material surface unfolds as a horizontal narrative that reveals assemblages created over time. Here I can only read what matter tells me, rather than

according to its given form.

The diffracted drawing in Record-II is composed of different layers (Fig.5). The first layer is created by photographs taken to observe the texture of the material surface, rather than the parallel view that disrupted the drawing in Record-I. Here images are overlapped to create a continuous narrative of material agency. It aims to show how other bodies shape the marble, how they rewrite the architectural surface... Overtime, marble surface engages with other living and non-living agents creating assemblages of matter. Even though marble itself might appear to be static, it affects and gets effected by the other bodies it encounters. Water carves the marble, creating shine by exposing under the top layers, curving the surface. Microbiomes engrave it with repetitive small pits, staining it red. Algae and lichen attach to the surface, coating it with a bright green hue. The drawing focuses on ten micro-assemblages of this narrative (Fig.5). To decipher the illustrated glossary of natural stone deteriorations created by ICOMOS-ISC (2008). However, here, they are not understood as deteriorations but assemblages of more-than-human bodies re-weaving the

wound. The drawing is diffracted with the explanations of how matter came together.

CONCLUSION

In these recordings, I reimagine drawing as an act of negotiation, a practice where architecture and matter co-archive their entangled histories. When approaching material emergence on wounds, I claim that drawing is not a simple act as it holds the architectural surface together. By drawing on the wound I recall its previous states by the remained traces of the form and record continual shape-shift by layering of the material agency.

Conventional architectural drawing is mainly a tool to form and confine matter into the architectural surface. However, by approaching the surface after its conception, the drawing becomes a conversation between drafter and materiality of architecture. With a diffractive methodology between drawing and recording, the drawing process unfolds a space where material past, present, and future overlap. First, I situate myself as a drafter on site and the process of drawing is not for shaping matter but of taking it in. With consequent record, the form that suppresses matter is erased, and the agency of



Fig.5 - Record-II, detail.

matter is exposed. Taken together, these experiments reveal how the intersection of architectural surface and matter holds narratives of emergence and transformation.

By approaching drawing as a record this research also speculates a critical spatial practice from sole authorship to collectivity. The negotiating line becomes less an instrument of regulation and more a mark of co-becoming. Such a shift challenges how architecture engages with its materials, inviting us to consider the micro-narratives embedded within form and the agencies that shape them over time.

In doing so drawing becomes more than a representation, but an inquiry into the space of matter and how material agency emerges from the clean and linear surfaces of form.

WORKS CITED

- ANGI, O. Serkan. Ayasofya'nın yapımında kullanılan doğal taşlar ve günümüzdeki korunmuşluk durumları. In *Restorasyon ve Konservasyon Çalışmaları Dergisi*, 2015. 14, pp. 43-57.
- BARAD, Karen. Troubling Time/s and Ecologies of Nothingness. In: Lauzon, Claudette & O'Brian, John (eds.). *Through Post-Atomic Eyes*. Montréal: McGill-Queen's University Press, 2020. p. 306-329.
- BENNETT, Jane. *Vibrant matter: A political*

ecology of things. Duke UP, 2010. pp. 20-38.

BLOOMER, Jennifer. Abodes of Theory and Flesh: Tables of Bower. In: *Assemblage*. Cambridge: MIT P, 1992, issue 17, pp. 7-29.

EVANS, Robin. Translation from drawing to building. In: Evans, Robin. *Translations from Drawing to Building and Other Essays*. London: Architectural Association, 1997, pp.153-193.

EMMONS, Paul. *Drawing Imagining Building: Embodiment in Architectural Design Practices*. New York: Routledge, 2019.

FRASCARI, Marco. A reflection on paper and its virtues within the material and invisible features of architecture. In: Frascari, M. Hale, J. Starkey, B. (eds) *From Models to Drawings*. New York: Routledge, 2007, pp. 23-33.

HARAWAY, Donna. Situated knowledges: The science question in feminism and the privilege of partial perspective. In: *Feminist Studies*, 1988, 14(3), 575-599.

HARAWAY, Donna. The Promises of Monsters: A Regenerative Politics for Inappropriate/d Others. In: Grossberg, Lawrence; Nelson, Cary; Treichler, Paula A. (eds.) *Cultural Studies*. New York: Routledge, 1992, pp. 295-337.

HILL, Jonathan. Criticism by design: Drawing, wearing, weathering. In: *The Journal of Architecture*, 2005, volume 10, issue 3, pp. 285-293.

HUGHES, Francesca. Stabat Mater: On standing in for matter. In: Petrescu, D. (ed) *Altering Practices*. New York: Routledge, 2007, pp. 259-280.

INGRAHAM, Catherine. *Architecture and the Burdens of Linearity*. New Haven and London: Yale UP, 1998.

THOMAS, Katie Lloyd. Building while being in it: Notes on drawing 'otherhow'. In: Petrescu, D. *Altering Practices*. New York:

Routledge, 2007, pp. 89-112.

RENDELL, Jane. Critical spatial practice. In: *Art Incorporated*, 2008

VERGÈS-BELMIN, Véronique, et al. *Illustrated glossary on stone deterioration patterns*. ICOMOS, 2008.

WIGGLESWORTH, S. and TILL, J. Table Manners. In: *AD The Everyday and Architecture*. 1998. p.31-35

WOODS, Kai Mah, & RIVERS, Patrick Lynn. Diffractive drawing. In: Murris, K. Bozalek, V. (ed) *In Conversation with Karen Barad*. New York: Routledge, 2022, pp. 144-157.

NOTES

1. Here, I use the term assemblage as Jane Bennet explores in her discourse. She describes it as a collective of all kinds of bodies functioning together without a central head; their agency together is greater than what each individual would have. They are ephemeral states of encounters that are in constant change (Bennet, 2010).

2. The term diffractive drawing is first used by Kai Mah Woods and Patrick Lynn Rivers. (Mah, K. W., & Rivers, P. L. Diffractive drawing. In: Murris, K. Bozalek, V. (ed) *In Conversation with Karen Barad*. New York: Routledge, 2022, pp. 144-157.

3. Diffraction is a broad methodology that is interpreted differently by many researchers.

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