"C'est que [leur] planète d'origine, était à peine plus grande qu'une maison"

Rigid and soft modularity:
the case of a Beiruti shoreline

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Abstract: This paper explores spatial systems of modularity on the shoreline of Ein el Mrayseh located in Beirut. The modular systems are studied from a contextual lens while observing different modular interventions as design strategies on this shoreline. The Ein el Mrayseh corniche is one of the few remaining public spaces of Beirut, and is considered one of the most important outlet for the city residents. It is used by different types of groups, from different classes and backgrounds. Based on a series of observations, the paper analyses modular interventions by different stakeholders on this stretch. Two terms were coined: rigid and soft modularity, as linguistic and analytical modes to understand the spatial practices of Ein el Mrayseh. The paper argues that the users of this public space have developed soft modular strategies - dynamic and in constant flux, as a mean to tame the rigid modular strategies enforced on the site and to appropriate the space.

Keywords: Beirut; Ein el Mrayseh; Shoreline narratives; Rigid-modularity; Soft-modularity; Pebble-architecture.

"Not even the memory of the eighth and last episode of a film I saw in the neighbourhood, in which a Chinese who had found some way to multiply himself invaded New York by means of several million self-reproductions. He entered President Wilson's office followed by himself, and by himself, and by himself, and by himself;" (Breton, 1960)

"The earth culminates in the sea; the sky dissolves into the earth and the water. This surface of encounters is one of interference: the fine sand, its delicious fluidity. Here, bodies no longer experience water alone or earth alone, or air and sun in isolation—I almost said, abstractly. Each element plays a role, receives the others and protects itself from them by sheltering living bodies; water protects the sun and the sandy earth from the assaults of the sun, the waves (such a beautiful name, the waves, always repeated, always different, uncertain, unambiguous, individual, caressing, violent)." - (Lefebvre, 2014)

1. Introduction

Breton's extract of Nadja is only a proof of the obsession with repetition, even identical repetition, as an invasive system. This invasion comes as a reminder to break a certain dull organization. Repetition here is a key for breaking an established system, it functions as both: a problem and a solution. When one speaks of modularity, one thinks of repetition. For many, modularity was "a staple of the industrial revolution", repeating identical modules was faster and more cost efficient, thus maximizing economies of scale (Carpo, 2020). Modularity also resonates with standardization. But modularity comes with a double-sens. Identical modules can be repeated identically, but can also be repeated differently. Consequently, dealing with modularity can lead to more standardization or more variation. But despite the literature on modularity, the definition of the module and its purpose in architecture have not been settled. These are issues about which there is a great deal of confusion although architecture and modularity can be traced back to ancient times. Various ways of framing this question seem to have contributed to this confusion. Some of these relate to the traditional understanding of the module as a physically defined and repeatable unit that can be replicated to create larger structures and organizations. What does a modular design look like? Does it look like a grid? Does it have to establish a strong visual rhythm? Is modular design necessarily efficient and rational? consistent and coherent? Or can it offer the possibility of a mutation - an exception that can create new information? Is it only predictable? Does it have to be measurable or can it be interpreted poetically and embed meanings

beyond the quantitative? One might answer yes to all of the above, but none of these definitions seems to fulfill the rudimentary explanation of the relation of the module to architecture.

All of them seem to allude to a special characteristic or a structural concern, but they all seem to miss a central point that should be more obvious. This paper argues that modularity can only be defined with respect to its context. Modular systems can be adaptive and identical modules can have different relations in different sites. Different stakeholders affect these modular systems, especially in public spaces. Since modular systems generate meanings, therefore the question of 'what is a module in architecture' sounds rather simple, however we believe it is not an easy one to answer. Such answers become more complex when discussed in cultural sites, heavy in historical layers and socio-spatial practices.

This paper analyzes existing patterns on a specific site in Beirut. We read these patterns as modules, or parts. We discuss these two systems in the seafront of Beirut, specifically in the area of Ein el Mrayseh, mainly known as The Corniche. The intersectionality between rigid and soft modularity suggests a more complex spatial apprehension, and consequently a better understanding of how these modules affect the socio-spatial practices at the Corniche of Ein el Mrayseh. This paper proposes two types of modularity, one that we call "rigid modularity", another that we call "soft modularity". The former denotes inelastic hegemonic modular systems that were forced onto a landscape, the latter denotes a soft modularity that was a response to the former. Understanding these two types of modularities, and writing about them, reflects a rich assemblage that the Beiruti coastline witnesses. It also proposes a new way of seeing modularity as a driver for collective and individual space of enjoyment.

2. Methodology

This paper is not a scientific attempt to study modular systems. However, it studies modularity from a contextual lens, observing modular attemptsinterventions on public spaces as a design strategy. It traces modular attempts in the area of Ein el Mrayseh, a popular neighborhood of Beirut overlooking the Mediterranean. The paper detects multiple existing modular systems vis-a-vis the coastal strip of Ein el Mrayseh that are not yet mentioned in literature. It is important to note that this paper does not actively map the evolution of the shoreline that underwent many extensions, although the latter is a crucial event and needs a comprehensive study. However, we try to analyze these evolutions and alterations based on existing modular systems that were sometimes forced

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onto the landscape, others invented by the people. Some of these modular systems were analyzed from images, others from aerial views of the area and mostly from recurrent visits to the site under investigation. Identical spots were photographed and observed on different days to understand the malleability of space usage with some modular systems that we will expand on shortly.

3. Ein el Mrayseh

The Ein el Mrayseh Corniche is a crucial part of the Beirut coast line, it stretches from the Saint George Hotel, a main historical resort that dates back to the 1930's, to the Sporting Beach Club, a private beach resort established in 1957 by a "Palestinian entrepreneur in the shadow of Rawsheh, which became the preferred haunt for intellectuals and upper-middle-class professionals" (Kassir, 2010). This stretch is a continuous promenade, relatively flat with respect to its adjacent coast line. Many scholars believe that the inauguration of the American University of Beirut, previously known as the Syrian Protestant College, in Ras Beirut, accelerated the urbanization of Ein el Mrayseh. Historically swimming in the sea of Ein el Mrayseh was only used by the residents of the area, or by fishermen (Kassir, 2010). The Ein el Mrayseh stretch can be divided into multiple elements. The sea water as part of the Mediterranean, what remains of the rocky landscape and the sea shore which was covered by the multiple extensions of the main road, the sidewalk which sits above the water level and the main vehicular road. Occasionally, built interventions break the continuous stretch of the sea shoreline. Although as per the Lebanese law and the zoning regulations, the construction on this stretch of the coastline is prohibited, some projects were built and are considered illegal[1] (Figure 1 and Figure 2). Due to its panoramic view of the sea, the opposite side of the corniche witnessed major construction projects, mainly residential towers stretching along the strip. These tall towers overlook the public strip and the sea.

Today, the Ein el Mrayseh corniche is considered one of the very few remaining public spaces in Beirut, and is considered the main outlet for the residents of Beirut. The corniche is used by different types of groups, from different classes and backgrounds. The relation of this coastal stretch to modularity is the following: the area represents modular systems on multiple scales, integrated in the city and used by different stakeholders. Although one can argue that the sea represents the total opposite of modularity, we argue that this dichotomy between the water, as organic and formless, and the modular objects that were implemented on this stretch, is what makes this specific site worth studying. The recurrent moments of
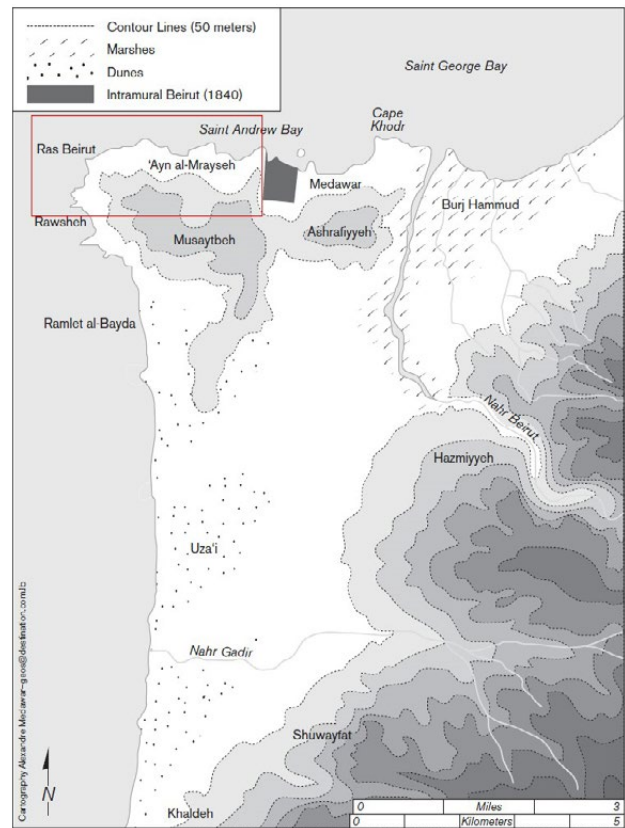

Figure 1 | "Beirut and its physical site" _ Source: Cartography Alexandre Medawar, found in "Beirut" by Kassir, Samir. 2010. The red rectangle encompasses the area of study.

tension between the modular and the organic represent a hybrid model that proposes a very unique spatiality that can be observed on this stretch.

4. From Module to Part, From Architecture to Mereology

Most literature on modularity explores its role in construction, or social housing or industrial systems. Many authors classified modular systems, most of these classifications are based on the properties of the module and its direct use in architecture.[2] The richness and the uniqueness of the site under study forced on us a new way of classification.

Maybe one of the early philosophical grounds of modularity can be mereology. The latter derives from meros, a Greek word meaning: the part. Some writers trace back the origin of elaborated mereological texts to Edmund Husserl, mainly to his book entitled "Logical Investigations" (Köhler, 2016).
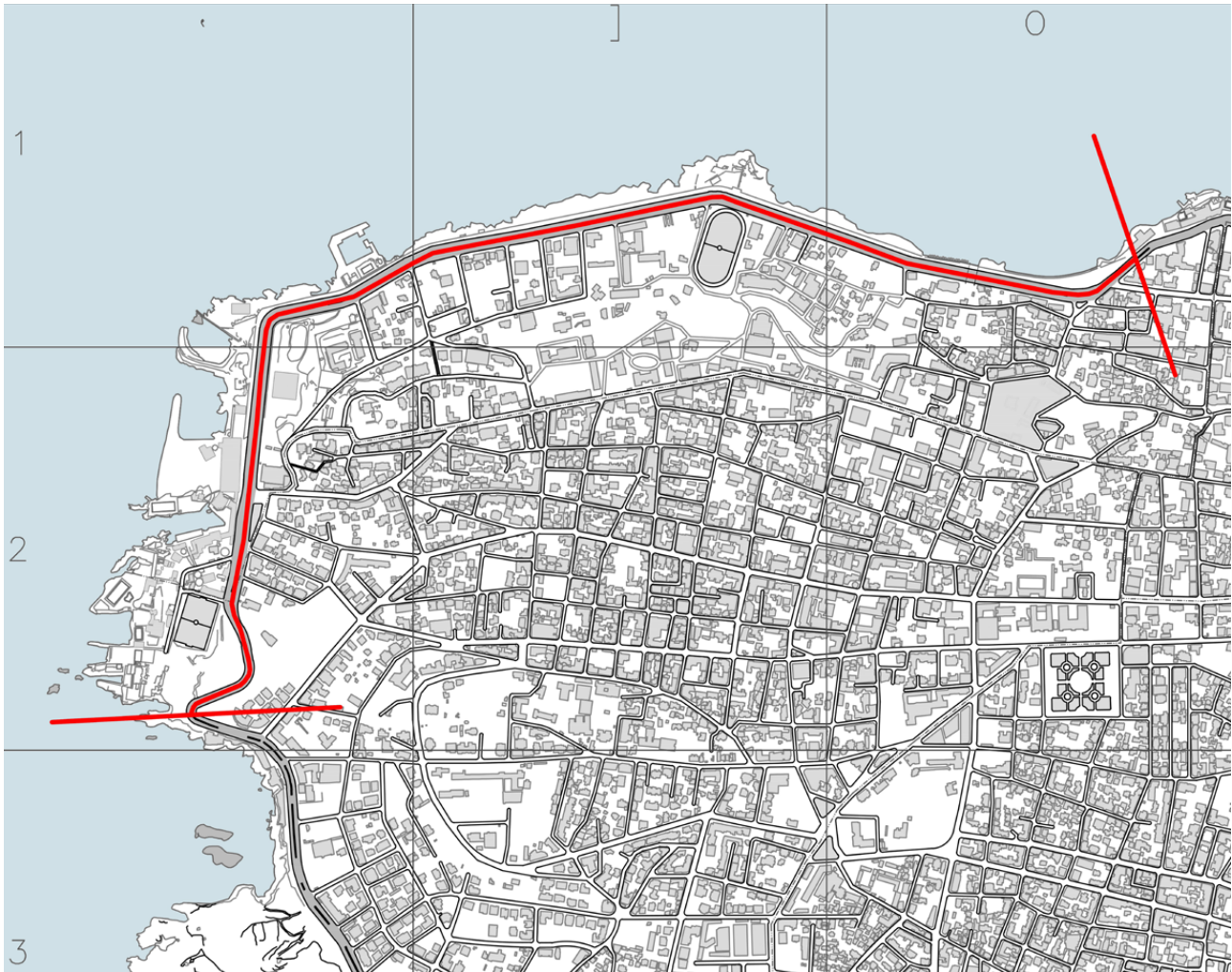
Figure 2 | The strip of Ein el Mrayseh under study is highlighted in red. Source: The Beirut Urban Lab, American University of Beirut.

Mereology indicates the study of parts within a certain system. Such relations between the parts are called part-hood conditions. Some even elaborate further, and state that mereology is also about the composition, therefore, mereological relations are on the level of parthood, and composition (Lando, 2017). Under this philosophical notion, not any part can be a module. But a module is definitely a part. Therefore, this paper claims that mere-ological relations can better inform the study of modules among each other. Some philosophers were very strict in defining specific rules of mereology. But understanding the latter becomes rather complex when intangible parts come into play, such as human interventions and spatial appropriation of modules. Or, when applying mereolog-ical relations to modular compositions on a cultural site. Or, when analyzing such mereological relations vis-a-vis local and specific socio-spatial practices on public

spaces. Such theoretical framing is crucial to understand the relationship of these modules, or parts, on the site of investigation.

The assemblage of modular systems for many is based on the autonomy of the part. Some refer to Kant, and his take on this matter, saying that: "Form as the synthesis, diplomacy between two things. Because a synthetic form as a form of effect accepts the autonomy of objects as form of existence. Unlike the form of Concinnitas, the parts have not been subordinated to a whole, they remain autonomous. This approach of form integrates the substantial form as a multiple of the autonomy of the parts" (Köhler, 2016).

The assemblage of the rigid and soft modules that are going to be discussed shortly, are indeed based on the autonomy of the part in the first place. Whether tangible,

Figure 3 | The strip of Ein el Mrayseh today, with high rise residential buildings. Source: authors.

Figure 4 | The strip of Ein el Mrayseh circa 1890 (similar perspective of figure 3). Source: Sarrafian Brothers Collection, found at the AUB Jafet Special Archives collection.

or intangible, the modules found on site come together in a complex network first and foremost due to the discrete nature of these elements.

5. Soft and Rigid Modules/Parts

After establishing the two major categories of "soft" versus "rigid" modularity, we explore the urban and architectural elements under each category. We also explore the impact of modularity and its contribution to the notion of publicness of the corniche. Through the observation of different social practices and recurrent patterns on the corniche, we aim at highlighting the role of modularity as a passage between imposed and appropriated architectural systems. Mostly, design of public spaces is not participatory, it is state driven process or "an imposition of technical standards for many years, with community groups having a limited or reactive role in this process" (Howayda Al-Harithy and Yassine, 2023). The word "reactive" can be a step towards understanding the process of soft modularity as a response to rigid modularity. We aim to classify these systems with respect to their scale as well.

5.1 Modular Infrastructure

The first rigid modular intervention that this stretch witnessed was the construction of the Avenue de Paris around 1920's. At that time, Beirut under the French mandate was witnessing major roads expansion. Samir Kassir states that in the 1860s, Beirut under the Ottomans was in a transitional phase, and for him "the tendency was clear: a new city was in the process of superimposing itself on an old one and, at the same time, going beyond its borders", this indeed included the "first straight avenues" (Kassir, 2010). The Avenue de Paris was extended again, between 1973 and 1978, destroying the whole rocky landscape as well as the built fabric (2000, محمد عصام، شبارو).

These two extensions imposed straight wide avenues on top of a coastline and functioned as a rigid module on the macro scale. The modularity of the line, as one directional module,erases the organic complexity of the landscape, it is a hegemonic interplay between human intervention and natural landscape. It is best described as an imposition of a rigid and man-made structure onto the inherently irregular and organic form of the rocky coastline. The aggressive nature of this intervention lies in its top to bottom approach, where only a relation to the coastline and the area as a total, was studied at a massive scale. Building the flat avenue, including cut and fill methods due to the rocky topography of the site, created a vertical barrier to the sea.

Although some would argue that the avenue was following the path of the natural coastline, mainly before the second expansion, yet this path was erasing what is beneath while being constructed and imposing a sense of control. Despite the fact that the new boulevard was aiming for offering users a better controlled and accessible environment, it also disrupted the organic interactions that characterized the shoreline in the first place. The new infrastructure imposed a sense of order and regulation that may overshadow the spontaneity and unique experiences that once defined the area. The freedom to engage with the water on a personal and unstructured level is replaced by a more managed and curated experience, altering the essence of the place and the way people interact with it. With this juxtaposition of the old and the new we read the boulevard as a symbol of the evolving relationship between urban development and natural landscapes, highlighting the delicate balance between progress and preservation, accessibility and authenticity. This shift from a wild, untamed shoreline to a structured publicspace reflects the changing dynamic of city life on the trade-offs between convenience and the loss of the raw, unfiltered sea experience that once defined the area (Figure 5).

5.2 Modular Policy and Regulations

From the 1990's onwards, the city of Beirut has been the subject of remarkable physical and social transformations. The changes have been driven by market-led developments triggered by institutional and regulatory reforms and amendments to the building codes. The successive building laws set up a mechanism catering solely to the benefit of real estate speculators, traders and agents at the expense of the old city fabric and lifestyle of its inhabitants. In 1992, the amendment of the building law eased the construction of high rises. Other legislations and laws related to land acquisitions and subdivisions further facilitated foreign and local investments in the real estate sector. It was not however until 2004 that land exploitation increased by an average of 40%, dramatically reshaping the image of the city and affecting the spatial qualities of the streets as well as in the promoted new high rises especially along its shoreline contributing to a process of territorial demarcation and to shaping a new and recognizable skyline of the city (El-Khoury, 2017). Beirut waterfront, as it appears to us today is best described, using Lefebvre terminology, as a 'representational space'; a space of ideology making symbolic use of its objects (Lefebvre, 1991).

In fact, building codes play a significant role in shaping the modular character of a city by establishing standards and guidelines for construction and development. In Beirut these regulations mostly dictate the building height, the set back and thus the number of floors and

Figure 5 | Aerial photos of Ein el Mrayseh, top: avenue de paris, photo taken in 1962, bottom: avenue de paris second extension, photo taken in 1983. Source: Lebanese Army, Directorate of Geographic Affairs.

units on a particular plot. Building codes served as a tool to maximize profits by promoting taller buildings with panoramic views. The modularity imposed on the waterfront through the construction of high-rise residential buildings along the corniche reflects a complex interplay between urban development policies, building laws, and economic interests. While these regulations have played a crucial role in shaping the cityscape, and defining a new semiotic, they have also led to a disconnect with the natural landscape and conditions at the water edge. The prioritization of profit often resulted in a built environment that clashes with the organic beauty of the waterfront and imposed a sense of artificial modularity on the city's edge that expands vertically (Figure 6).

A stark contrast emerges as night falls, delineating the divide between the opulent high rises of the wealthy elite and the humble fishermen's boats. The gleaming lights emanating from the powering edifices stand as beacons of affluence and excess, casting a luminous veil of disconnect from the realities of the world below. In sharp contrast, the dim flickering lights of the fishermen 's boats reflect their intimate bond with the water and rocky landscape, symbolizing a tireless struggle for sustenance and survival. Amidst the glow of artificial illumination, the residential units stand as singular entities within a larger

framework of commodified space, while the dim light coming out of the boats represents a fragile life in a wild landscape, both symbolizing the complex relationship between urban development, economic interests, and the natural landscape.

5.3 Modular Violations

The proliferation of touristic resorts and hotels that have been illegally or forcefully erected along the corniche of beirut represents a stark violation of the natural integrity of the shoreline. These structures disrupt the access to the water and defy the fundamental concept of the shoreline as a continuous and uninterrupted line. Instead of a cohesive and unbroken expanse that seamlessly connects the city to the sea, these interventions act as markers that sever the stretch of the corniche into distinct and disjointed parts. The main interventions are either resorts, coffee shops or fishermen's ports. Some of these interventions are legal, others are illegal, and some a decree for a regularized construction[3]. But all of them disrupt the physical and visual access to the water (Figure 7).

These interventions can be viewed as modular in nature due to their systematic role in fragmenting the corniche into separate stretches. The typical typology of

Figure 6 | Repetitive vertical modules with identical architectural typology. Source: Authors.

these resorts and hotels includes features such as jetties, water breakers, boat marinas, pools and accommodations tailored for upscale water activities. These establishments often create a self-contained environment with shelters or buffer zones that isolate them from the public walkway of the corniche, imposing entrance fees and catering to a particular clientele. Each stretch between these resorts can be seen as a module in itself, encapsulating unique functions and characteristics that differentiates one part from another. This modular division further reinforces the segmentation of the shoreline, perpetuating the fragmentation of the once-united coastal landscape into different enclaves. By transforming the corniche into a series of disconnected modules each defined by particular practice and with restricted access, these interventions undermine the essence of the shoreline as a public and inclusive space, perpetuating a divide between different parts of the waterfront and compromising the integrity of the coastal environment. The stretches between each resort emerge as new parts of the shoreline where the

spirit of the people rises against the encroaching tide of privatization that seeks to confine the waterfront to the privileged few. In these liminal spaces, individuals reclaim their inherent connection to the water, a primal right that transcends the boundaries imposed by towering resorts and imposing infrastructures. Here, amidst the clash of concrete and sea, a quiet revolution unfolds. During some of these stretches and through acts of defiance and creativity, soft modularity takes place. These spaces become stages for spontaneous gatherings and impromptu performances.

5.4 Modular Interventions

Looking closer at activities and recurrent patterns on the corniche adds depth to our understanding of modular systems at various scales - namely at the microscale that represents intricate and minute details. Although these micro-scale observations might go unnoticeable, they remain very relevant with significant impact on the notion

Figure 7 | Evolution of violations into the sea. Source of diagrams: Authors. Source of Base Maps: Below, 1921 Beirut Map by A.F.L Bureau Topographique. Above: Google Earth, 2011.
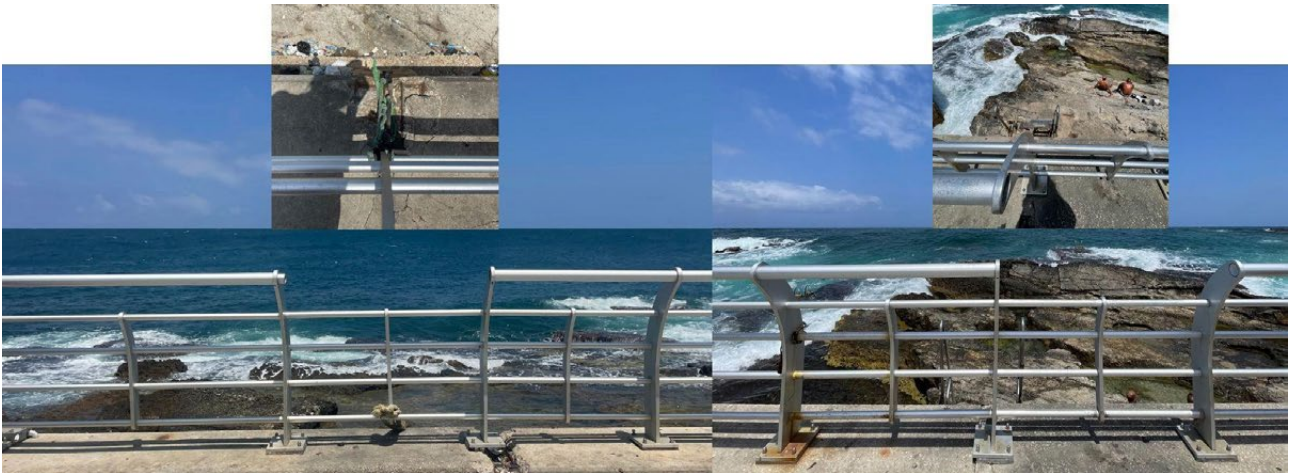
Figure 8 | Intervention on the modular balustrade to access the sea water. Source: authors.

of publicness of the space. Modular elements like the balustrade (Figure 8) and the shading devices (Figure 9) have long served as silent sentinels, guiding and shaping the activities that unfold along the waterfront. These elements, once rigid in their form and function, have witnessed a transformation wrought by hands of humans seeking to imbue them with new life and purpose.

Through subtle yet deliberate acts of intervention, individuals have dared to challenge boundaries imposed by these structures. The corniche's balustrades function as a safety measure, and are made of repetitive modules, yet they block the access to the water below. Breaking free a single element from the balustrade grants access to the shimmering waters below, or removing a piece from the visual barrier unveils hidden vistas and invites new users of space.

In these moments of defiances and creativity, the user transforms these modules into soft, malleable and attuned versions. Each act of intervention is a poetic gesture rendering the once rigid modules more sensitive to their environment and the individuals who interact with them. These soft interventions, born from the alchemy of human imagination, not only reflect real needs but also offer a glimpse into ways of adaptively using structures that can grow, evolve, and harmonize with the ever-changing rhythm of urban life.

In the wake of the ruptured balustrade, a chain of spatial interventions occurs. Some users hang ladders between the broken balustrade and the sea, allowing for a direct access between the elevated corniche and the water. Others tie thick ropes from the modular balustrade that serve as a vertical circulation, others use the modules intuitively with their bodies (Figure 10).

These interventions, guided by the scale of a human step as their foundational module, manifested varied forms and shapes, yet shared a common thread of connection and accessibility. Embodying the essence of the soft module, these structures gracefully traversed diverse terrains - from tiled promenades to rugged rocks, from slick, slippery surfaces to the aqueous embrace of the sea. Their adaptive nature allowed them to span across levels and landscapes, crafting pathways that beckoned residents and visitors alike to venture beyond the edge, to explore new horizons, and to forge a symbiotic relationship between the city and the sea. Each form taken by these soft modules was a testament to the boundless creativity and resilience of human hands, shaping the physical environment to reflect the fluidity and interconnectedness of the original shoreline (Figure 11).

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5.5 Modular Pebbles

Nestled between the luxurious confines of the Riviera Resort and the bustling fisherman port, lies a hidden gem along the Ein el Mrayseh shoreline (Figure 12). A stretch of beach characterized by a mosaic of pebbles and white rocks that whisper tales of their foreign origin. These rocks, remnants of the construction fervor that birthed the neighboring developments, have found a new purpose in shaping a landscape that beckons sea enthusiasts, locals, and refugees alike. Unlike the jagged edges of natural rock formation, this expanse of flattered pebbles offers a safer haven and a canvas ripe for creative habitation. Here, visitors are not mere spectators of the scenery but active participants, demarcating personal spaces, crafting new alcoves, and playfully rearranging the pebbles into configurations that seem to echo the inherent modularity of their form. Each pebble becomes a building bloc, a module in the hands of those who frequent this unique stretch. These observations are at the core of mereological form finding, where the nature of the modules forces certain parthood conditions. A classification process of these modular interventions based on multiple observations took place.
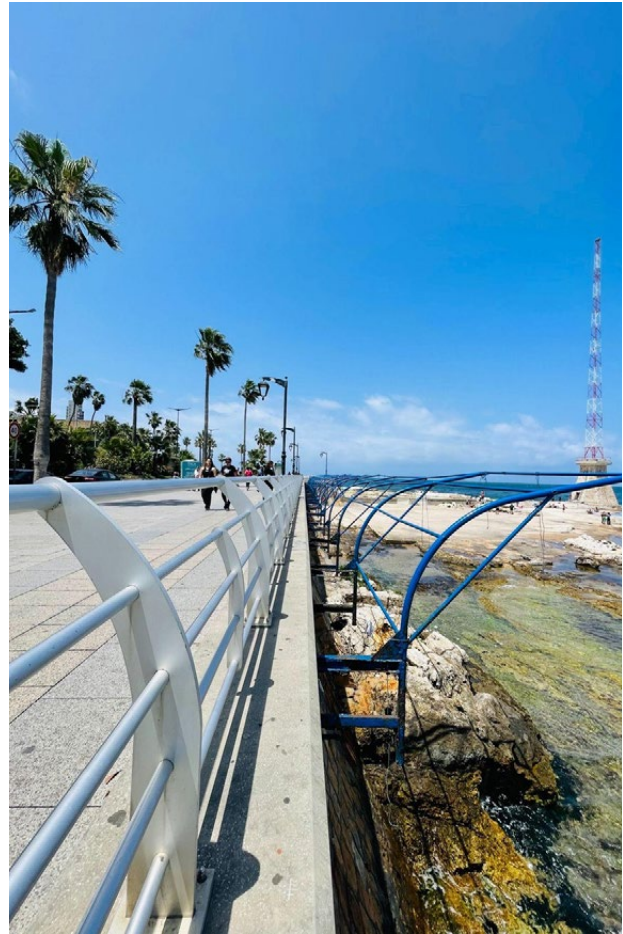

Figure 9 | Modular obstacles: balustrades and shading devices. Source: authors.
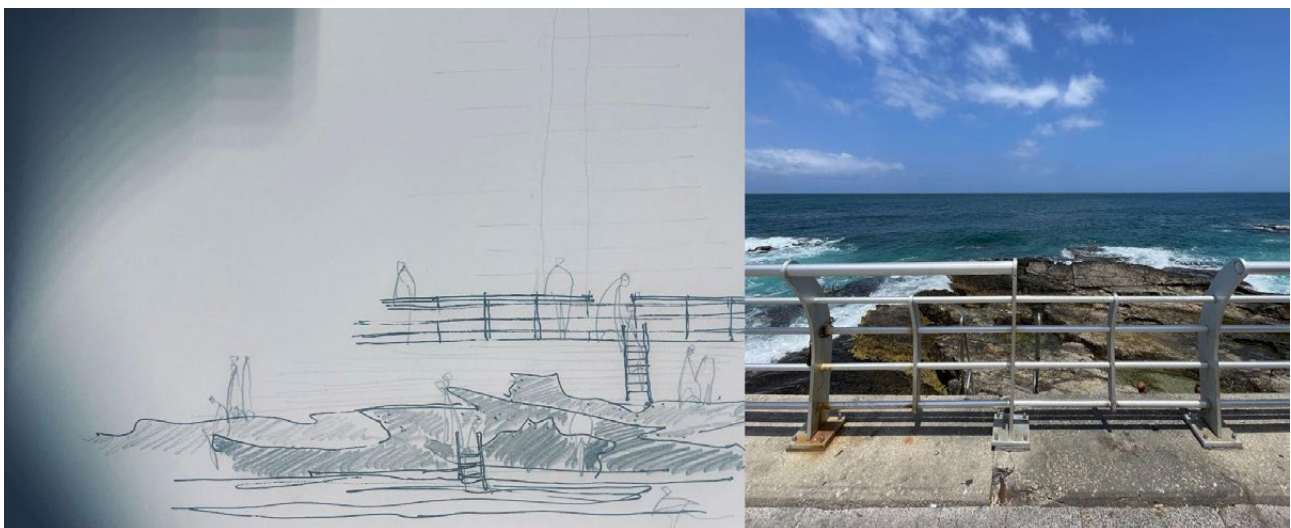

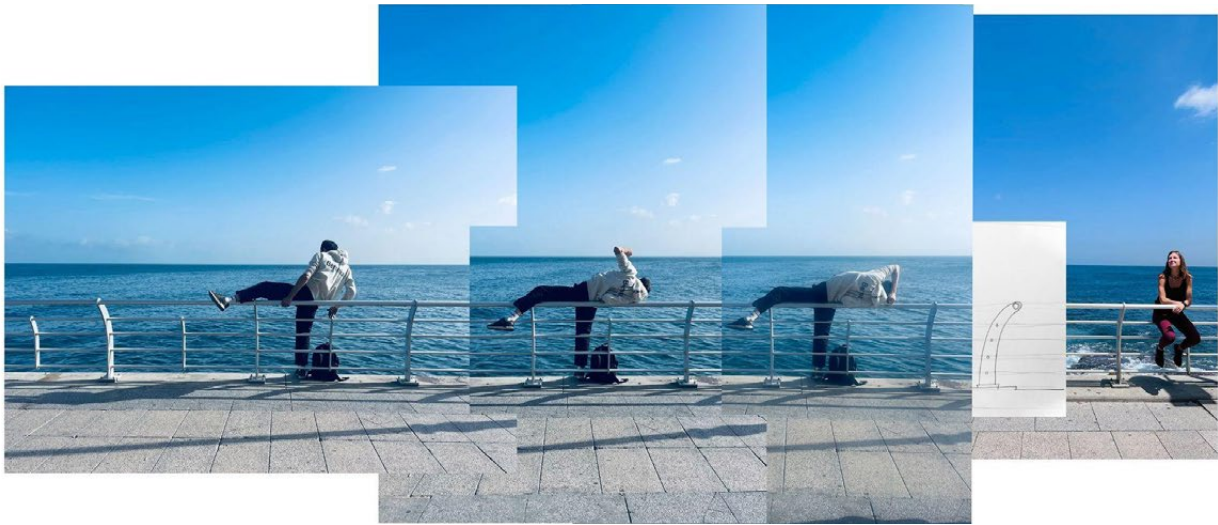**Figure 10 |** IModular balustrades and modular bodies. Source: authors.

Figure 11 | Modular steps, from the corniche to the sea. Source: authors.
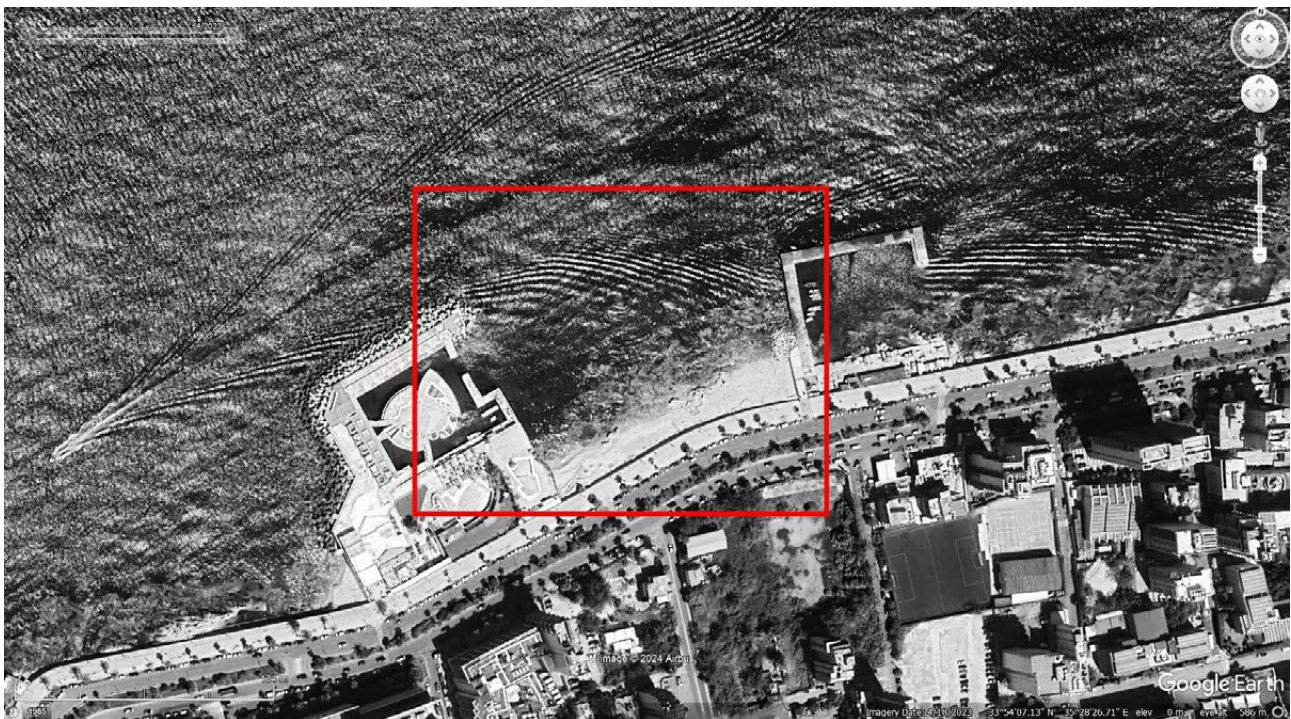

Figure 12 | Stretch of pebbles, source: google earth.

5.5.a Modular Pebbles as Seats

It all begins with the ingenious invention of seating places, where a single large rock, strategically positioned to face the shimmering waters, serves as a cornerstone for contemplation and relaxation. As if guided by an unseen hand, two more sizable rocks are brought together, forming an intimate seating arrangement for two lovers, their gaze intertwined with the endless expanse of the sea. Further along the stretch, larger rocks are arranged horizontally, creating seating for many, inviting communal gathering and shared moments of reflection (Figure 13).

Figure 13 | Pebbles as seaters. Source: authors.

5.5.b Modular Pebbles as Clusters and Walls

The modularity inherent in the soft pebbles comes to life as they are artfully arranged into lumps, delineating distinct spaces along the shoreline. Each cluster becomes a personal sanctuary for sea-goers who lovingly place their towels, belongings, and even themselves upon these natural formations, elevated slightly to offer a perfect vantage point for observing the rise and fall of the tide. Other clusters mimic a planter, where users have placed tree trunks, or actual trees in the middle. This attempt of having a garden on the beach proves the desire of the beach users to design their landscape (Figure 14).

Figure 14 | Pebbles as planters. Source: authors.

Vittorio Gregotti argues that "The marking of the ground, rather than the primitive hut, is the primordial tectonic act" (Gregotti, 1983), but architecture begins even before that; particularizes Simon Unwin "it begins with a mind's desire to identify a place or when one's mind touches the world" (Unwin, 2002).

As he stands inside of it, the boundary of the ground, the wall or the circle of stones defines his place. A place tucked to the corniche wall, sheltered from the eyes of the corniche walkers and yet exposed to the sun. This place mediates between a particular life and the wilder world or is surrounding. It is established by a configuration of pebbles that seems to accommodate or offer the possibility of accommodation to an activity or a desire or a mood.

On the same shoreline, nestled amidst the playful interventions with pebbles, a truly intriguing feature emerges. Some semi-open, semi private rooms stand as enigmatic structures reminiscent of ancient architectural forms. These unique spaces, constructed from rocks and pebbles, are low rise walls or terraced floors or slightly raised platforms. They bear a striking resemblance to rooms, each possessing its own distinct orientation, character and embedded functions within the pebbled walls. These pebbled built rooms exude a sense of organic design, evoking echoes of prehistoric settlement forms with their varied degrees of privacy and communal engagement. Each room-like module presents a different level of individuality and communal functionality, shaped by its size, proximity to the water's edge, adjacency to the corniche wall, or sheltered beneath the canopy of a tree (Figure 15 and 16 and 17).

Some of these pebble constructions offer a sanctuary for solitary contemplation, where one can lay down on a makeshift cardboard mat and immerse oneself in the rhythmic sounds of the sea. Others, with their larger expanse and strategic positioning, serve as gathering spots for social activities ranging from intimate card games

Figure 15 | Pebbles as spaces of containment. Source: authors.

to lively gatherings centered around chicha smoking and communal dining. As visitors navigate these organic spaces, they are invited to partake in a timeless dance of discovery, where the boundaries between architecture, nature and community blur and the essence of place is revealed in its purest module, the pebble and the water.

A simple profound scene unfolds as a child is spotted dragging a sun bed into the gentle waters, transforming it into a makeshift slide (Figure 18). This act of playful ingenuity infuses the space with a fresh vitality, as the rigid, purposeful sun bed is reimagined as a soft extension that beckons exploration. Through the child's spontaneous and imaginative play, the environment is reshaped, offering new possibilities and dynamics that transcend the original design intent. This transformative act underscores the significance of children's creativity in repurposing elements of their surroundings, fostering a sense of wonder and innovation that breathes new life into familiar spaces.

Pebbles sometimes deemed insignificant, now stand as symbols of creativity and adaptability, transforming the ordinary into the extraordinary. Through mereological relations between each pebble, acting as a part, or a basic
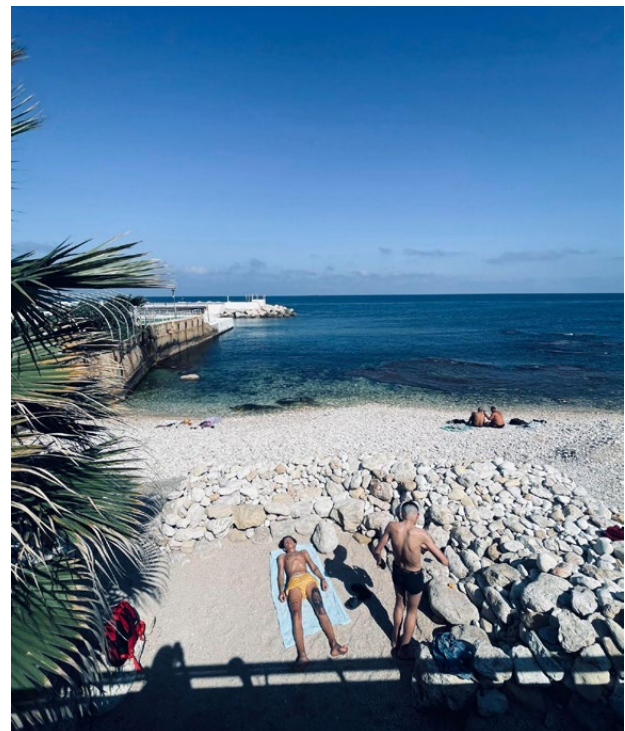

Figure 16 | Pebbles as private spaces near the corniche wall. Source: authors.

Figure 17 | Pebbles as a boundary marker. Source: authors.

module, architectural attempts are observed along Ein el Mrayseh. The interplay of these modular stones creates a tapestry of meaning and spatial significance, inviting all who wander along the shoreline to pause, reflect, and immerse themselves in this urban oasis. As the sun dances on the shimmering shoreline, these modular constructions emerge as ephemeral testaments to human ingenuity and adaptability, celebrating the potential of mereological relations among basic modules. The design of the modules cannot be separated from the design of the relation between these modules, and the importance of the human module as part of this system.

6. Conclusion

The following meaningful observation encapsulates the essence of the notion of publicness on the corniche: A kid stops to watch the water and makes a pile of pebbles to sit on. By doing so, whether he intends to stay the

whole day or just a few minutes, he has established a place. The pile of pebbles is for the time being the center of his activity. As he goes about the day he makes more places, subsidiary to the seating place: a place to place his shoes; a place to spread belongings and hang his wet clothes; a place to lie down; perhaps he will surround these places with a demarcating boundary; and perhaps he will cover the floor with a cardboard to lie down on it more comfortably. From the choice of the first spot onwards he has begun the evolution of a small shelter, he has begun to organize the world around him into places he uses for different purposes. He has begun to do architecture.

These mereological soft modular systems reflected in this observation propose a new way of designing public spaces. Although the modular usually hints to an industrial, or post-industrial era, the examples observed hint to a vernacular that is authentic and playful. These spaces resonate with what Henri Lefebvre discussed his

Figure 18 | Pebbles as roman baths. Source: authors.

book entitled "Toward an Architecture of Enjoyment"[4]. The importance of Lefebvre's book is that his notions on space production can be now directly linked to architectural spaces and notions of dwelling and habitat. In one of the book reviews, Camillo Boano states the following: "Toward an Architecture of Enjoyment fully conforms with the spirit of the time. It is infused with libertarian revolts, freedom of the body and strongly politicised debates, and it resembles the manifesto like literature of the 1970s. Its style resembles that of a philosophical pamphlet that represents Lefebvre's shift of emphasis from urban thinking to a philosophy of dwelling, focusing on a clear political architecture: an architecture of jouissance" (Boano, 2015).

For Lefebvre, the most original architectural invention of all times are the Roman baths. Our interest in Lefebvre's notion on Roman baths first resonates with the notion of modularity, and second with our observations on the site under investigation. Although in

Lefebvre's book the word "modularity" does not exist, even once, his description of the Roman baths is mainly about their repetition and modular aggregation. He states the following: "A succession of rooms followed one another along an axis, which served as both hallway and vestibule" (Lefebvre, 2014). Similarly, the spatial observations on the stretch of Ein el Mrayseh reveal a resonance with the notion of the baths. The demarcations of the shoreline with repetitive units, made of short walls, almost of the same surface area, with a pathway in between leading to the sea water, unconsciously mimicking the pathway in the roman baths that eventually lead to a huge open-air pool (Figure 18). Both typologies serve a common purpose, to enjoy the sea. For Lefebvre, the baths were a space of enjoyment, for so many reasons. Among these reasons is one's body relation to sensuality, he describes: "While there is nothing sensual about them, they were, in a sense, the place where the body as well as the mind prepared itself for sensuality. And the preparation for sensuality in such

Figure 19 | Pebbles as space of imagination. Source: authors.

a context may already constitute a kind of sensuality" (Lefebvre, 2014). Similarly, the soft modular units that were observed present something similar. A space of containment, where the pebbles, the sun and the water merge, containing the body in a private yet open space, always preparing for a sensuality to emerge. Such architecture goes beyond mere utility and aesthetics to create spaces that engage and delight the senses, sparking the imagination of the user. Here, a mereological relation is created not only between the modules, but also between the modules and the users. Users are considered dynamic modules constantly reshaping their environment.

Jan Gehl,, insists on the importance of observing the city, and refers to the french writer George Perec and his instructions to "see what is overlooked in the city", and to unfold the banal and really see "the ordinariness unfolding in public space" (Gehl and Svarre, 2013). This paper has tried to unfold these ordinary practices in one of the most popular public spaces of Beirut, Ein el Mrayseh. It coined two terms, rigid and soft modularity, as linguistic and analytical means to understand the spatial practices of Ein el Mrayseh. In a city like Beirut, where modularity always works for more standardization under a capitalist system, this stretch of Ein el Mrayseh proves that soft modularity can be a solution towards more variation. The paper argues that the users of this public space have developed soft modular strategies to tame the rigid modular strategies enforced on the site, more importantly it argues that sustainable modularity should be dynamic, in constant

Notes

1   For more information on the masterplan of Beirut's coast and its building laws refer to the study of "Beirut Zone 10" by the Beirut Urban Lab, AUB. Found at: https://beiruturbanlab.com/en/Details/577.

2   For more information on these classifications, refer to Wallance, D. (2021). The Future of Modular Architecture. Routledge, pp. 36-42.

3   For more information on the specific VIOLATIONS OF PROPERTY & URBAN REGULATIONS on the stretch of Ein el Mrayseh visit "The Beirut Zone 10 Project" at: https://beiruturbanlab.com/en/Details/577, Map 9.

4   This book, which was originally written in Lefebvre's own handwriting, was left unpublished in the private archive of Mario Gaviria in Zaragoza, Spain. The book was written in 1973, discovered in 2008 and published in 2014.For more information on the story of this book refer to the introduction of the book "Towards an Architecture of Enjoyment", Henri Lefebvre, edited by Łukasz Stanek and translated by Robert Bononno. University of Minnesota Press, 2014.

flux and always reflecting people's enjoyment. It should be participatory, malleable and constantly opening the space for imagination (Figure 19).

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