MEAN TIME

Expiring Architecture

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Mean Time. Expiring Architecture

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ABSTRACT

The distance that separates us from the imminent ends of the worlds is reduced progressively. Humans, and thus, architecture, are forced to navigate within a permanent condition of impermanence.

Drawing a reinterpretation of Cedric Price's notion of mean time, the research adopts his methodology to identify the transitory space-time fragments generated by the increasing occurrence of man-made catastrophes within the contemporary entropic condition in which we are immersed.

In addition to Price's definition, the term mean here refers not only to an in-between condition but also to cruelty. Therefore, shifting the scope to the present-day condition, the research investigates the temporal intervals characterized by transience and trauma, precariousness and shock, and temporariness and violence.

The research explores the entanglement between body, trauma, and architecture, and identifies three different agencies through which it operates: trauma on, of, and as architecture. While in the first one, architecture embodies the role of the medium of the disaster, the other two reveal unexpected components. Firstly, architecture becomes the trauma's agent, employed intentionally within unbuilt projects to trigger critical questioning on complex situations, inserted in the field of speculative design. Moreover, this critical employment of the representational tools is further pushed within the third agency, which records architecture as the representation of the trauma itself.
Impacted by trauma, architecture mirrors the very symptoms of the traumatized body, activating, on the one hand, processes and strategies to react and contain it and, on the other, being affected in its physical and theoretical body by spatial-temporal distortions, radical interruptions, and the aporia of representation.

The research develops its exploration across three mean time intervals, whose length progressively expands, articulating into short (days), medium (years), and long (centuries). The short-term retraces practices meant to exorcise and overcome trauma through cyclical rituals and reiterated operations: movements, trajectories, and practices that, by means of repetition, erasure, re-enacting, and in some cases spectacularization, face the aftermath of painful events, to heal their effects. The medium-term addresses a bunker taxonomy – the body's protective archetype that employs and represents an obsession for stability, resistance, and permanence. The long-term embrace projects that deal with geological time, exploring architectural strategies to operate on landscapes and territories traumatized by the emergence of threatening hyper-objects.

From this taxonomy, a gradual topological inversion emerges, shifting from protection to containment – from shelter and bunker to containment shield, such as the nuclear waste repository.

Furthermore, the architectural tendency to confront the aporia provoked by the contemporary entropic condition emerges. The relevance of the design process intended not only as a tool to intervene materially on the landscape but, additionally, as a powerful explorative practice to trace possible scenarios for the future by means of representation, being it unfolded on the paper surface or through a spatial experience. Finally, if the starting point of the research records its roots in Cedric Price's exhibition, the investigated projects, and the designed and realized installations resonate with it. Thus, starting from Price' methodology, and drawing from it parallel reasoning and practice, emerged the potential of the exhibition and installation as explorative means and stimulating experimental testing grounds to trigger an operative reconstruction of our contemporary condition.

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INTRODUCTION

The resounding echoes of the Prometheus myth, whose vestige resonates in the contemporary post-human, more-than-human, and trans-human, have always reverberated their influences on architecture, reshaping it. Indeed, the perpetual tension that has pushed the discipline to constantly reformulate itself throughout history embodies the relationship between the intrinsic human paranoia dictated by the irreversibility and uncertainty of existence and the inability to tame the extreme natural forces, nowadays retraceable and converted in the emergence of hyper-objects, that intermittently threaten it.

Thus, the friction between the continuous search for an unattainable permanence and the inevitability of decay, which constantly undermines its archetypical role as a safe human refuge, has constituted, simultaneously, the triggering and menacing stimulus at the very base of architectural practice.

This persistent condition of exposure, whether projected through the construction of apocalyptic imaginaries or materialized through the occurrence of real physical impacts, has drawn a complex multi-layered interconnection between architecture and trauma, articulating a filigree composed of disturbing symptoms and reacting processes whose density is incremented in the nowadays entropic condition. Moreover, this relation generated an enormous field of experimentation and a fertile testing ground for architecture. In fact, in response to the succession of traumatic events that occurred throughout history, the discipline has shaped an operative and provisional taxonomy, whose collected projects — whether pragmatic, speculative, utopian, or dystopian — embody three fundamental issues: the search for refuge from an impending catastrophe, the aspiration to survive time, and the celebration of loss.

The perception of imminent ends of the worlds has always cast its shadow on humanity, whose need for finitude derives from the instinctive impulse to circumscribe a measurable and intelligible temporal period to oppose the eternal flow of time, eon. The adoption of the plural form "ends of the worlds" intends to explicitly contextualize the discussion within the heated and articulated contemporary debate. Although the research refers to the Western conception of the apocalypse, assuming a critical posture toward its assumptions and conceptualizations, it is crucial to recognize that this term involves multiple fields of formulations, constructions, and reactive displacements of narratives, bodies, and dwellings. Indeed, each culture and each civilization has constructed its own projection of the end of the world, using different gradations, intensities, and imaginaries. As Eduardo Viveiro De Castro and Debora Danowsky note, "the ethnographic documentation records a variety of ways in which human cultures have imagined the disarticulation of the space-time structu-

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Francisco Goya,
*Saturn devouring
one of his son*,
1819-1823.

res of history."[1]

Thus, through this semantic reformulation, it is possible to decentralize and slippage the apocalyptic reasoning away from the purely western anthropocentric conception of the world.

The Western construction of these eschatological narratives is rooted in the concept of apocalypse — from the Latin *apocalypsis* and the Greek ἀποκάλυψις, *apokálypsis*, meaning "revelation" — conceived as a fundamental turning point, sanctioning simultaneously the dissolution of a spatio-temporal dimension that had punctuated rhythms and life in the previous state and involving its subsequent rearrangement in different conformations and rhythms, shaping a new era.

Furthermore, the meaning of this pivot is not limited to a reassessment and recalibration of the space-time dimensions, defining a pre- and a -post, but takes on a mystified aura, standing to identify an unveiling and thus, drawing a connection with the different religious cults that have succeeded in history, marking the painful and salvific transitional passage to reach and secure life in the underworld and, as such, representing a robust political construction. Modernity marks a fundamental shift: catastrophe exits its religious-mystical dimension to relate indissolubly to the consequences of capitalist processes and technological progress.

This shifted notion of catastrophe records an important variation in the causality relation: humans are no longer solely passively suffering the traumatic events, but also, above all, human beings are the very cause of these events. Catastrophes without a subject are not part of the philosophical idea of catastrophe: they are natural disasters, calamities, contingent fatalities, and acts of nature.

This distinction defines the scope of this research: man-made catastrophes. The catastrophe, the apocalypse, in addition to being an event that humans have always faced, embodies a real condition that humanity has to confront daily in the so-called Anthropocene era.[2]

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1. Danowski, D. and Viveiros de Castro, E. (2016) *The Ends of the Worlds*, Polity Press, Boston, p.21. (translation by the author.)
2. The concept of the Anthropocene was already conceptualized around the 1940s when the Russian Ukrainian mineralogist and geochemist Vladimir Vernadsky adopted the term *Noosphere* to identify the scientific thought as a geological force and was then utilized in the 1960s to refer to the Quaternary, the most recent geological period. Nonetheless, it was only in the 1980s that this term was officially formulated (by the ecologist Eugene F. Stoermer), and in 2000 that it was radically popularized by the atmospheric chemist Paul J. Crutzen to identify the influence of human behavior on Earth's atmosphere in recent centuries as so significant as to constitute a new geological epoch. In the last two decades, this term has been converted into a fashionable template for contemporary cultural debates. For instance, the music artist Grimes recalls it in her latest album, published in 2020, entitled "Miss Anthropocene," which collects darkwave and electropop with dark music to talk about global warming through a series of divine and demonic entities. Some tracks of the album are: "So Heavy I Fell Through the Earth," "Darkseid," "Delete Forever," "You'll Miss Me When I'm Not Around," and "Before the Fever."

The distance that separates us from the imminent end of the world is reduced progressively, discarded daily by the artificial disasters inducted by the contemporary Prometheus that occupy the major media headlines, from the great economic crisis of 2008, the terrorist attacks, the war in Syria, to reach the pandemic Covid-19 at the beginning of 2020, and the contemporary war in Ukraine. This term has been proposed to name the new geological epoch, even if not officially recognized by the International Union of Geological Sciences (IUGS),[3] we are living in, where humans have become the major force determining the continuation of the livability of the Earth.

Thus, the planetary equilibrium, constantly threatened by anthropic perturbations, finds itself in a perpetual condition of entropy, whose tendency to lose order forces humans to wander from trauma to trauma, to float dangerously in a permanent condition of impermanence. This very condition, arguably, is tightly connected to the discipline of architecture. As Federico Soriano has pointed out, architecture "steals entropy from the environment because it is an open system, not linear."[4] Furthermore, Beatriz Colomina describes the mutual relationship between architecture and sickness, which can be considered the external factor that perturbates the already-weak conditions of the latter. If, as Colomina states, "humans might be the only species that have systematically designed its extinction in a self-destructive accomplishment,"[5] architecture has always been directly called into operation by trauma-

On the question of the Anthropocene, numerous publications have been produced. Here we note, in particular, the text of Timothy Morton, (2013), *Hyperobjects. Philosophy and Ecology after the End of the World*, Minnesota Press, which opens the reflection on the concept of Hyperobjects, questioning and highlighting how human activity has started a process of transformation of the planet involving a temporal scale and so widely distributed "in time and space to baffle humans and make the interaction with it fascinating and at the same time disturbing and complex." Another fascinating text that questions the concept of Anthropocene developing a critical reflection through the collection of contributions of architects, artists, philosophers, and contemporary thinkers is Tsing, A., Swanson, H., Gan, A., Bubandt, N., (2017), *Arts of Living on a Damaged Planet: Ghosts and Monsters of the Anthropocene*, University of Minnesota Press
3. The group Anthropocene Working Group, established in 2009, is an interdisciplinary research group focused on the detection and investigation of the Anthropocene as a geological time unit, with the aim of prooving scientific evidence strong enough for the Anthropocene to be formally ratified by the International Union of Geological Sciences as an Epoch within the Geological time scale. AWG's central object of research is defining the limits and boundaries to localize the Anthropocene as a geological epoch, defining: when, where, and how. To develop this investigation, the group developed a series of tests by analyzing sediments in lakes, coring in Antarctic ice, or taking samples of corals to obtain the "proof" of the passage to the Anthropocene. According to Jan Zalasiewicz, a group member, the radioactivity dispersed due to nuclear tests and accidents could represent the most tangible trace of entry into the new geological era. Recently, the AWG published a book: Zalasiewicz, J., Waters, C.N., Williams, M., Summerhayes, V.P., (2019), *The Anthropocene as a Geological Time Unit: A Guide to the Scientific Evidence and Current Debate*, Cambridge University Press, that represents an extensive summary the collected evidence, ranging from stratigraphy, lithostratigraphy, mineralogy, biostratigraphy, chemostratigraphy, to climatology, Earth system science, and archaeology. The monograph also links the Anthropocene to the question concerning anthropogenic climate change and the role of human technology and the technosphere in impacting the functioning of the Earth system.
4. Soriano, F. (2002) *It's Small, It Rains Inside and It's Got Ants: Small, it Rains and with Ants*, Actarbirkhauser, p.86.
5. Wigley, M., Colomina, B., (2016), *Are we human? notes on an archaeology of design*, Lars Müller Publishers, p.128.

tic events and artificial catastrophes on different levels, as Teresa Stoppani argued.[6]

The relation between architecture and trauma is, thus, investigated within the different configurations that the constant shifting between the traumatic agent and the traumatized reagent articulates: *trauma on architecture*, *trauma of architecture*, and *trauma as architecture*. These agencies intercept different transitional time intervals whose diverse extension defines the operative field within which the observed traumatic phenomena intervene and the displaced reactions formulated through architecture expire.

A sequence of interstices of different intensity and velocities, that is detected through the reinterpretation of Cedric Price's mean time, a concept through which he underlines the shift occurred in the indeterminacy issue, passing from identifying a design strategy to, simultaneously, materializing and describing the very condition of architecture.

Shifting the object of observation from the general architectural field to the specific ground defined by the impact of artificial disasters, this research investigates the temporal intervals characterized by a mixture of transience and trauma, precariousness and shock, and temporariness and violence, intertwining with the explorative process defined by Cedric Price, and hybridizing with it.

While mean time explores the latent space-times trapped within the normal urban transformation, *mean time* requires further efforts from the design practice, hitting and interacting with it at different spatial and temporal levels.

Firstly, architecture can be conceived as the medium of disaster: destruction, erosion, and erasure are processes that harshly hit its physical and symbolic body.

Moreover, in addition to passively suffering the adverse effects of disaster, architecture is called upon to react, defining strategies and designing projects to respond to traumatic events which can assume different speeds and intensities, spanning from a sudden and violent shock to slow and disruptive erosion, thus acting in and on space and time in various ways. Traumatic events, triggering a short-circuit displaced in space and time, lead to the emergence of a multitude of space-time frictions. Fragments that, overpassing a violent rupture with their prior weakened-balanced system, seek to be re-imagined and re-sewn within the urban body and imagination.

Therefore, the field of investigation is situated in the contemporary catastrophic scenario, in which the ancient architectural *firmitas* seems to be converted into a permanently impermanent feature. This concept needs a further explanation. In particular, it refers to the rein-

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6. Stoppani, T. (2016), "Architecture and Trauma", published in "Interdisciplinary Handbook of Trauma and Culture," Springer International Publishing, Berlin. Teresa Stoppani is Professor at the Architectural Association of London, she wrote several publications, investigating how architecture formulates responses to trauma, both on a theoretical and a pragmatic level, through a process that can led to the very re-questioning and re-formulation of the same architectural discipline.

terpretation of Vitruvius' work that took place during the Renaissance, an operation that will mark the detachment of the drawing as a tool employed in engineering to direct the physical and material transformation of the territory and the inauguration of this medium as an exploratory tool to outline scenarios of future transformation. An interesting reinterpretation of the Vitruvian work is that traced by Bernard Cache, who states:

> It seems far from insignificant that Vitruvius uses a concept of material (materia) that accords the status of an original material. Indeed, De Architectura seems to be permeated by an atmosphere of fundamental opposition toward the imperial project of the transposition of materials. It resists, that is to say, the translation of wood into marble. Indications of this are the thoroughly organic materials — animal sinews and women's hair — that are used to make taut projectile devices. This prompts the question whether one must read De Architectura from today's perspective in the spirit of a reversed transposition of materials — that is to say, not from wood to stone, but instead from stone to wood.[7]

The work investigates modalities, strategies, and devices that architecture learned from trauma by focusing on the different elements that reverberated within the discipline and how it reacted by activating processes capable of counteracting the traumatic event at different time scales defined as *mean time*. Thus, *mean time expiring architectures* that embody different strategies and thicknesses to deal with anthropic traumas connoted by different time lengths are retraced and investigated. The topic, involving the psychological and psychoanalytical issue of trauma, proceeds through this exploration by analyzing the entanglement which connects body, trauma, and architecture, which is constantly re-shaped and molded according to different situations.

The research articulates its purposes on two distinct levels.
Firstly it intends to verify how, in the contemporary era, many elements defined within the extreme situations opened up by artificial disasters have been assimilated within the architectural discipline, originating a taxonomy of filters, diaphragms, construction elements, and architectural devices that, manipulated and adapted within different contexts, are still employed by design. Nowadays, recording the replacement of the Vitruvian *firmitas* with structural impermanence, is it possible to reconstruct an archeology of this defensive language and its sequential rearrangement in defense of an increasingly fragile entropic condition?

Therefore, the purpose is to detect a system of architectural sequences, cyclical returns, projects, paper architectures, and theories that, formulated within these *mean time* intervals, could constitute a corpus of architectural operative strategies for contemporary design.

By adopting the process displayed by Cedric Price to reveal the thickness of transitional time intervals, the research explores and retraces the *mean time architectures* derived from

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7. Cache, B., (December 2009) "De Architectura. On the Table of Content of the Ten Books of Architecture," published on Candide. Journal for Architectural Knowledge n.01, pp.9-48, p.38..

the urge to limitate, react, and treat the built and human bodies hit by trauma. The investigation, employing this specific gaze as the general fil rouge of exploration, intends to weave a game of strings, outlining frictions, paradoxes, and conflicting tensions that fill the traumatized spaces. This last image has been employed by Donna Haraway and is intentionally recalled in this context. Describing it, the author states: "I am not interested in reconciliation or restoration, but I am deeply committed to the more modest possibilities of partial recuperation and getting on together. Call that staying with the trouble."[8]

Thus, the work aims to open possibilities to reflect rather than define fixed and closed solutions. It intends to draw trans-relational and trans-dimensional connections which, overpass the boundaries between the different disciplines, finally detect ways to deal with the trauma.

The second level, which in the course of the work acquires body and depth, concerns and grafts entirely around the concept of containment and, consequently, anthropocentric geology.

Within the central part of this work, configured, as will be shown, as a trajectory through the different temporal scales in which *mean time* manifests itself, emerges a progressive focal shift in the intentionality with whom architecture is constructed. Architecture symbolizes, since its origins, the means through which humans have shaped an internal space that could provide shelter and comfort, subtracting themselves from the threatening events and weather conditions of an exterior: the construction of a secure perimeter, of a closed and comfortable space in which relations with the outside were mediated by devices capable of modulating and controlling this relationship between artificial and safe built interior and exterior, unknown, threatening. With the urban evolution, the threatening natural exterior has gradually lost its connotation of wilderness to become also built and domesticated. On the one hand, the issues deriving from the growth of the first large urban settlements, environmental comfort, sanitary conditions, and the design of spaces that could contain some diseases, preventing their spreading. On the other hand, the occurrence of increasingly impetuous and violent conflicts determined, as Virilio pointed out, a drastic metamorphosis of the dimensions of threat: warfare.

If the devices deployed by architecture to arm the conflict between humans and traumatic events find, initially at their core, the protection of the human body, starting from the device of the bunker and its reinterpretation, a first shift can be recorded. The same architectural features characterizing the confinement of a safe space have started to be manipulated and converted into alienating and threatening cells. The human body started to record a progressive removal from the center of the containment issue. It is first replaced by data, at the very base of our contemporary technological progress, and then, substituted by the nuclear waste, that now requires to be contained and separated from the outside. Thus, the rese-

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8. Haraway, D. J. (2016) *Staying with the Trouble. Making Kin in the Chtulucene*, Durham and London: Duke University Press, p.10.

arch retraces, through a sequence of architectural devices, the gradual inversion of spatial configuration, from shelter and bunker, to containment shield — such as the nuclear waste repository, — from protecting from external conditions to containing threats.

The main body of the work consists of five chapters, embodied in two distinct parts. Part I comprises the theoretical framework with projects that exemplify the main operations and phenomena evoked by the primary concepts. The second, armed through the terms and concepts defined in the first, collect the case studies, structured according to their expiring date: the *mean time* characterizing both their design processes and the phenomena that triggered their construction.

The first part, "Paraphernalia. Nomenclature of *mean time* architecture," consists of two chapters.
The first "1.1. Negative horizons of *mean time*. Between traumatic obsolescence and failed aspirations for permanence"[9] contextualizes and explores the term mean time, reconstructing its formulation by Cedric Price on the occasion of the homonym exhibition he curated in 1999 at the CCA.

This concept, constituting a barycentric point for the research, is explained through the employment of Price's preparatory notes and sketches tracing the connections he drew between the disparate collected artifacts.
Furthermore, its spatial experience is reconstructed, in the attempt to unveil Price's intention to incorporate the mean time dimension not only in the installed materials, but also, and above all, in the visitors' experience. Moreover, detecting the category of the interval, the research further explores the connections and relations suggested by Price, in the attempt to reconstruct his logic and, at the same time, to appropriate his explorative design methodology. The chapter, furthermore, reconstructs the genealogy of the western concept of apocalypse, retracing the taxonomy of architectures that historically encounter the fear of an imminent end of the world.

The permanent impermanence of architecture is then described, accompanied by a chronicle reporting the most impacting artificial disasters of the last century.

The second chapter, "1.2. The trauma question,"[10] focuses on the second primary issue: trauma. This concept, whose history and theoretical framework are too complex and vast

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9. As further discussed, the term mean undergoes a gradual shift within its initial semantic field of application. If, in the beginning, it is employed in Cedric Price's exhibition as a concept to define in-between intervals, this work associates it with the negative connotation that this term underlies: something critical and wrong. Within the first part of this work, it will be bounded more strictly to violent and traumatic events and, in this sense, the book of Paul Virilio, (1984), *L'horizon négatif: essai de dromoscopie*, Paris: Editions Galilée, represents a first essential reference.
10. The second chapter takes the title of a text that is essential in the comprehension of the trauma phenomenology, it constituted the main reference to investigate the traumatic symptoms and the central issue of aporia. The book is: Luckhurst, R. (2008), *The Trauma Question*, London & New York: Routledge Taylor and Francis Group.

to be described here, is studied through the work of Jean Martin Charcot, whose *Teatro dei Nervi* provides an example for understanding the entanglement between body, trauma, and architecture, and Sigmund Freud's psychoanalysis[11] which marked the foundation of trauma theory. The topic is then investigated by focusing on the two effects that the traumatic experience provokes on the human mind, which are then transposed to the architectural discipline: temporal distortion and the aporia. In this sense, assumes a particular relevance the explorative work on memory developed by Cathy Caruth[12] and that on the definition of multi-temporal narrative registers defined by Gerard Genette.[13] In the second paragraph, the traumatic event is then connected to the concept of the *fold* (Leibniz, Deleuze), and its interpretation as a perturbating generative force[14] is drawn.

The symptoms and spatio-temporal distortions provoked by trauma, basically related to a memory disorder, are then intertwined with architecture through parallels that highlight the resonances existing within the entanglement between body, architecture, and trauma. If the trauma can be described as *violent laughter*[15] that bursts into architecture, activating those relational tensions that inhabit it densely; then the reaction displaced by the architectural discipline articulates into three distinct traumatized and traumatizing agencies: *the trauma on architecture*, *the trauma of architecture* and, finally, *the trauma as architecture*.

The second part of this work, "The emergence of *mean time* architectures," is structured in three chapters respectively dedicated to three distinct time-scales.
Implying the presence of a vanishing point and a certain *durée*,[16] *mean time* evokes the

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11. Fundamental Freud's texts are : Freud, S. and Breuer, J. (1956 [1893]), *On the Physical Mechanism of Hysterical Phenomena*, The International Journal of Psychoanalysis, 37, pp. 8–13; Freud, S. (1974 [1896]), *Studies on Hysteria*, Standard Edition vol. 3, reprinted in Harmondsworth: Penguin, Freud Library vol. 3; Freud, S. (1984 [1920]) 'Beyond the Pleasure Principle', Standard Edition vol. 18, Harmondsworth: Penguin, Freud Library vol.11, p.301. Furthermore, to explore the history of the concept of trauma and its evolutions, see: Leys, R. (2000) *Trauma: A Genealogy*, Chicago: University of Chicago Press, and Luckhurst, R. (2008) *The trauma question*, London & New York: Routledge.
12. Caruth, C. (1995), *Trauma: Explorations in Memory*, JHUP
13. Genette, G. (1980), *Narrative Discourse: An Essay in Method*, New York: Cornell University Press.
14. Anna Tsing is an American anthropologist interested in exploring, deconstructing, and problematizing the field of the Anthopocene. To deepen her issues and theoretical reasoning see: Tsing, A. (2015) The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins, Princeton University Press, and Tsing, A., Swanson, H., Gan,E., Bubandt, N. (2017), *Arts of Living on a Damaged Planet: Ghosts and Monsters of the Anthropocene*, University of Minnesota Press.
15. Stoppani, T. (2008) "Relational Architecture: Dense Voids and Violent Laughters", in field: a free journal of architecture, vol.2. In this text the author draw a parallel between the traumatic event, the disaster, and the Bataille' concept of "laughter," that the philosopher employs to describe sudden and strenghtful events that, introducing a perturbation within a defined context, are capable of shaking its existing configuration, bringing new perspectives.
16. The concept of dureè formed the basis of the thought of the philosopher Henri Bergson, who used this term to describe the duration of inner time, the psychological time that varies, altering, depending on the circumstances, thus conforming to a series of dilations and contractions. Bergson, focusing on the duality between space and duration, describes the former as a quantitative homogeneity while relating the latter to a changing entity, continuously undergoing a qualitative differential mutation. The very nature of time underlies the characteristic of the invention, the creation of forms, and the constant reworking of new entities. Real-time cannot be reproduced through the false movement of cinema but can be experienced

array of diverse expiring architecture, grasping three different time lengths, respectively: short-term - days -(2.1), medium-term – years - (2.2), and long-term -centuries- (2.3). The central part of the work intentionally refuses a rigid internal subdivision but contains numerous references and echoes that reveal a dense and complex relational system. If the trauma causes a strong shock in the human mind, implying a disruption and blurring of the normal boundaries between the temporal dimensions perceived as past, present, and future, this phenomenon of mixing and disorientation also affects architecture. In some cases, the initially planned duration, as often happens within the ephemeral, provisional, and emergency architectural practice, is denied or reformulated according to the complex system of contingencies that have affected the contexts within which these architectures have materialized.

Furthermore, tackling a fascinating and complex issue such as temporality would be excessively simplistic to discern strictly between short, medium, and long duration.
Through this system of relations, the research intends to trace the entanglements existing between the different temporal dimensions and the architectural phenomena that materialize in them, revealing by making so intertwined connections between buildings and architectural speculative processes, memory and forced or unconscious amnesia, rituality and exorcism, intentional provisionality and unexpected permanence.

Within chapter 2.1 are reunited rituals, projects, and routines designed to respond and react to trauma by the re-drawing and re-choreographing of the traumatic experience in a sort of exorcism practice. These are ephemeral, provisional, and temporary practices whose movement and dynamism reverberate and reflect that of people affected by trauma. For this reason, the chapter traces the ritual dimension to which it gave rise, grafting within the urban fabric a series of repeated trajectories, of regular choreographies, whose crossing is a fundamental element to mend and revive the wounded places within the collective imagination. Rituals become a dynamic and active repository of memory and a form of expression and representation.
Furthermore, another device violently and effectively activated by trauma emerges: drawing. Somehow the ritual choreographies triggered by the traumatic event, leading to the movement of the human body, reverberate in the crowding and thickening of paths described on the paper. Here emerges how the paranoia for the end and the mourning for the loss have given rise to an aporia of representation, to which numerous architects (Woods, Abraham, Heyduk, Taut) tried to respond by suspending the construction and seeking the formulation of a renewed and experimental design practice, even and mainly on an imaginative level. Among the others, Lebbeus Woods states:

> if there is no idea in the drawing, there is no idea in the constructed project. That is
> the expression of the idea. Architects make drawings that other people build. I make
> the drawings. If someone wants to build from those, that is up to them. I feel I am

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through the perceptive space of man. The French situationists experienced the psychological dimension of space in real-time through the psychogeographical practice of drift. Experiences were then revived, among others, by Tschumi in his *Manhattan Transcripts* and, again, in his project for *La Villette*.

making architecture. I believe the building comes into being as soon as it is drawn.[17]

The blank paper space simultaneously becomes a means to escape a violent reality and an explorative means to trigger the reasoning on possible future scenarios for the design. The relevance of the transformative and explorative features embodied by the design operative tools such as drawing, diagram, exhibitions, and multimedia installations emerges through all the research. The employment of these tools has constituted a stimulating investigative tool for the discipline, essential not only for the critical questioning of the contextual theoretical and physical conditions but, rather, crucial also for the definition of new paradigms and methodologies through which reconstructing complex cartographies enabling the interpretation of our contemporary entropic condition. Finally, this consideration, which introduces the importance of the installation and the exhibition, is embodied within the same explorative projects designed and developed in the last years, drawing, by so, a connection with the starting reference of this research: Cedric Price's exhibition.

Then, the chapter traces a series of traumatic episodes that, referring to the extreme power of images in the construction of narratives and rhetorics, have capitalized on trauma and apocalypse, converting it into a tourist attraction or, moreover, into an object of fascination.

Chapter 2.2 focuses on medium-term architectures. By retracing the episodes in which the project manifested itself through the construction of shelters, resorting to the ancient architectural vocation of the refuge, of a delimited space confining a safe, internal place, separated from a threatening outer space. A taxonomy of architectures configured as safe containers, not only to protect humans but also to preserve their memory, is thus reconstructed. The archetype of these architectures is represented by the typology of the bunker, which has experienced a paranoid diffusion producing a highly desperate system of configurations since World War II. Within the urban space, it takes the form of underground domestic appendages for single-family use, to the point of constituting, through its serial repetition, huge territorial borders to protect entire countries. This dispositif, combining the underground component with a character of massive monumentality, constituted a source of inspiration and fascination for brutalist architecture. During the survey through the Atlantic Wall, Paul Virilio affirms that these structures, in addition to representing strategic garrisons from which to conduct military operations, also constituted essential guardians of the war's memory. Here emerges the cynical relation with the great funeral monuments erected throughout history.

Finally, chapter 2.3 investigates the long-term architectures with a different time span. The chapter explores architectural strategies dealing with the aspiration and urgency to relate to the unmeasurable scale of geological time — eon — operating on landscape and territories traumatized by the emerging of threatening hyperobjects.[18] Reacting to a sort of

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17. Woods, L. "The Reality of Experimental Architecture: an Interview with Lebbeus Woods", Carnegie Online, July/August 2004.
18. Morton, T., (2013), *Hyperobjects. Philosophy and Ecology after the End of the World*, Minnesota Press.

slow-motion catastrophe,[19] these projects question the very meaning of containment and monumentality — the nuclear waste repositories. Time duration is no longer a cultural aspiration but a question of survival. These architectures, inheriting many essential features from the bunker archetype, combine a simple, thus massive underground container — the deposit — with an external volume often articulated in a sort of ready-made operation to give these sites a monumental aspect. While classical monuments are linked to the memory transmission, in this case, operating an inversion, they are connected to the warning: they no longer ensure a precious containment from an external threat but contain and confine a toxic and dangerous interior.

In addition, three exhibitions and installations have been designed and realized in parallel with the research. Welcoming the same way of observing things with which Price invited visitors to experience his exhibition, "the harvest of the eye,"[20] these projects experimented with an explorative design methodology. They, intertwining connections between them, present at the same time adherence to the main themes of the research while maintaining their theoretical autonomy. They are introduced within this work in the form of appendices and are *Scenes in America Deserta*[21] (appendix 01), *Geometries of Time*,[22] (appendix 02), and *Time-capsules Transcrypts* [23] (appendix 03). In this way, if the starting point of the research records its roots in Cedric Price's exhibition, these projects resonate with it, experimenting with his explorative methodology, and drawing parallel reasoning, which permeates the entire research, about the potentialities of the exhibition and installation as an explorative means and a stimulating experimental testing ground where to trigger an operative and suggestive reconstruction of the complex condition of permanent impermanence within which we are immersed.

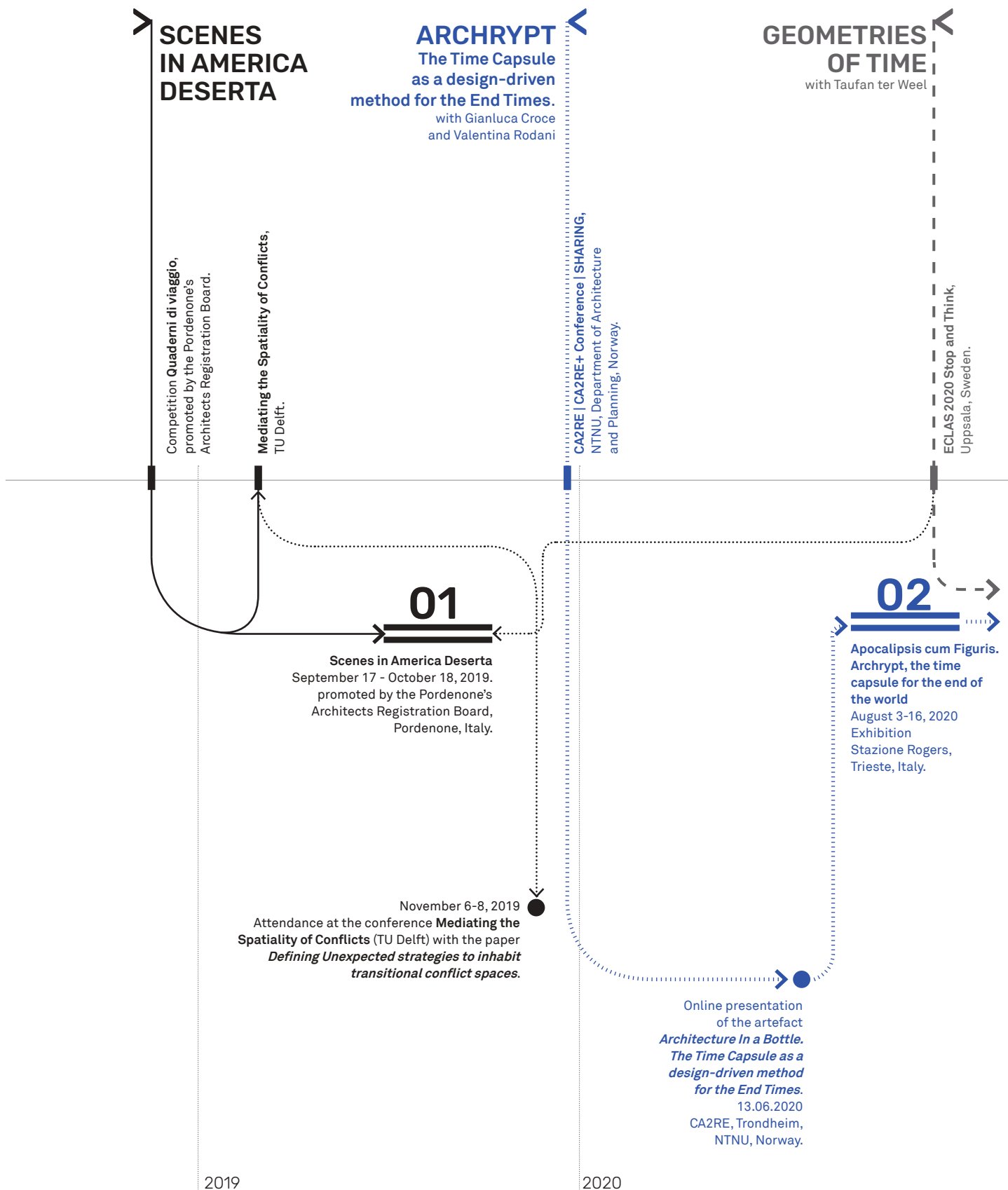**19.** Baudrillard, J., (1986), *Amérique*, Grasset & Fasquelle, p.13.
20. "In common things that round us lie / Some random truths he can impart,— / The harvest of a quiet eye / That broods and sleeps on his own heart" (37-52). W. Wordsworth, A Poet's Epitaph (1799), in Id., The Poems, vol. 1, curated by J.O. Hayden, Penguin, Harmondsworth 1977, p. 396. In relation to Price's work, Haus Ulrich Obrist cites Wordsworth's verse and not its alteration in Price's notes. See H.U. Obrist, Preface, in Id. (Edited by), Hans Ulrich Obrist and Cedric Price: The Conversation Series, vol. 21, Walter König, Köln 2009, p. 11.
21. *Scenes in America Deserta* is an exhibition designed and realized by Mariacristina D'Oria September 17 - October 18, 2019, promoted by the Pordenone's Architects Registration Board,Pordenone, Italy.
22. *Geometries of Time* is a multimedia installation designed with the PhD candidate Taufan ter Weel (TU Delft). It was displayed in the exhibition space of Stazione Rogers (Trieste) and presented online on the occasion of the ECLAS Conference 2020, International Federation of Landscape Architects, Swedish University of Agricultural Sciences, Uppsala, Sweden (13.09.2021 – 15.09.2021.) Furthermore, it was displayed in Ljubljana and presented at the international conference CA2RE | CA2RE+ | REFORMULATION (24.09.2021 – 28.09.2021).
23. *Time-capsule Transcrypts* is a design-driven research developed with Gianluca Croce (PhD candidate Units, Italy) and presented and displayed at the CA2RE | CA2RE+ Conference | RECCOMENDATION at Delft University of Technology, Faculty of Architecture & the Built Environment, The Netherlands (28.03.2022 – 01.04.2022).
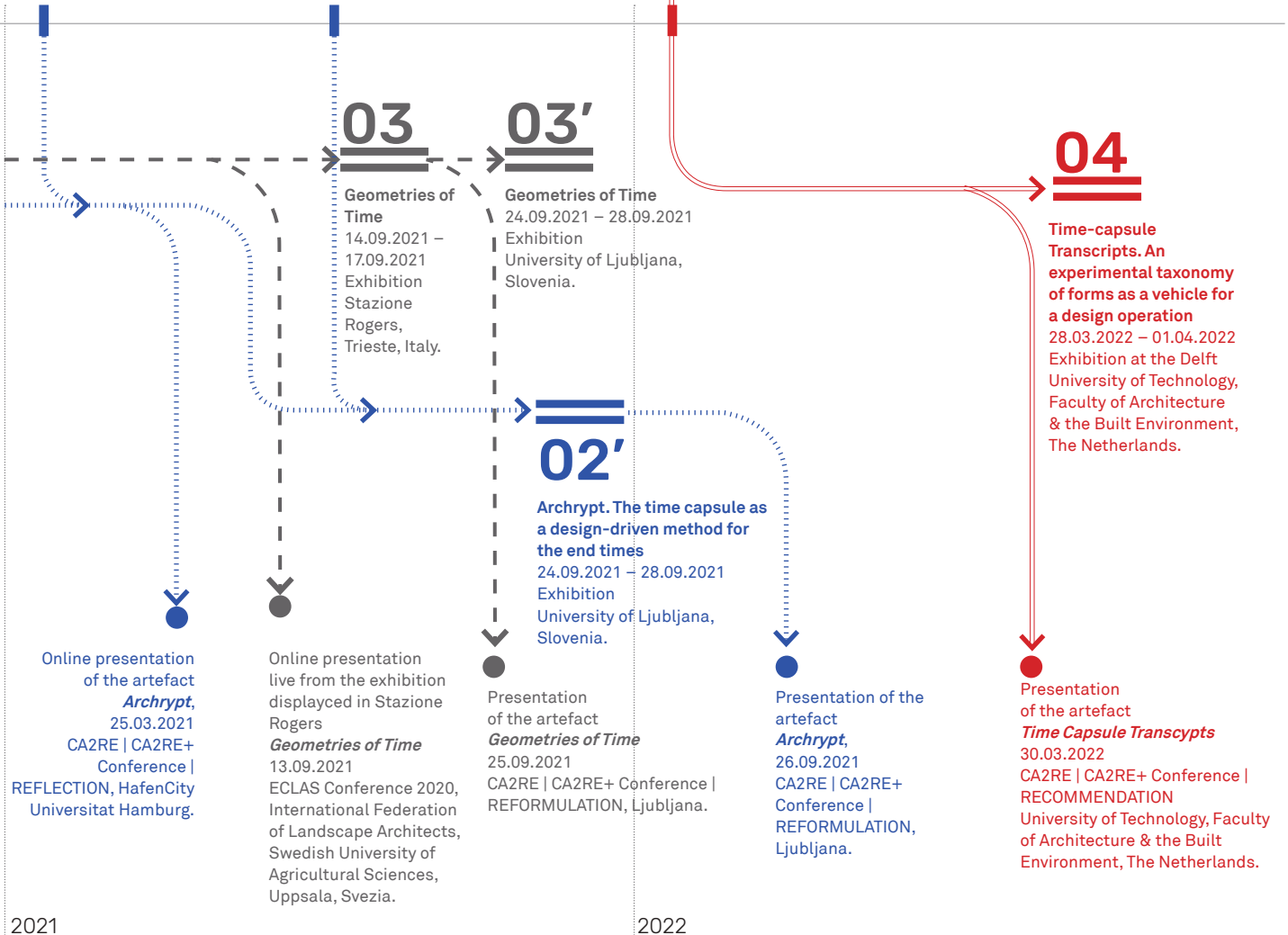
MULTIMEDIA INSTALLATIONS WORKS

SCENES IN AMERICA DESERTA

ARCHRYPT
The Time Capsule as a design-driven method for the End Times.
with Gianluca Croce and Valentina Rodani

GEOMETRIES OF TIME
with Taufan ter Weel

Competition **Quaderni di viaggio**, promoted by the Pordenone's Architects Registration Board.

Mediating the Spatiality of Conflicts, TU Delft.

CA2RE | CA2RE+ Conference | SHARING, NTNU, Department of Architecture and Planning, Norway.

ECLAS 2020 Stop and Think, Uppsala, Sweden.

01

Scenes in America Deserta
September 17 - October 18, 2019.
promoted by the Pordenone's Architects Registration Board, Pordenone, Italy.

02

Apocalipsis cum Figuris. Archrypt, the time capsule for the end of the world
August 3-16, 2020
Exhibition
Stazione Rogers, Trieste, Italy.

November 6-8, 2019
Attendance at the conference **Mediating the Spatiality of Conflicts** (TU Delft) with the paper *Defining Unexpected strategies to inhabit transitional conflict spaces*.

Online presentation
of the artefact
Architecture In a Bottle.
The Time Capsule as a
design-driven method
for the End Times.
13.06.2020
CA2RE, Trondheim,
NTNU, Norway.

2019

2020

**TIME-CAPSULE
TRANSCRYPTS.**
**An experimental taxonomy of forms as a
vehicle for a design operation**
with Gianluca Croce

CA2RE | CA2RE+ Conference | REFLECTION, HafenCity Universitat Hamburg, Germany.

CA2RE | CA2RE+ Conference | REFORMULATION, University of Ljubljana, Slovenia.

CA2RE | CA2RE+ Conference | RECOMMENDATION, Delft University of Technology, Faculty of Architecture & the Built Environment, The Netherlands.

03

Geometries of Time
14.09.2021 –
17.09.2021
Exhibition
Stazione
Rogers,
Trieste, Italy.

03'

Geometries of Time
24.09.2021 – 28.09.2021
Exhibition
University of Ljubljana,
Slovenia.

04

Time-capsule
Transcripts. An
experimental taxonomy
of forms as a vehicle for
a design operation
28.03.2022 – 01.04.2022
Exhibition at the Delft
University of Technology,
Faculty of Architecture
& the Built Environment,
The Netherlands.

02'

Archrypt. The time capsule as
a design-driven method for
the end times
24.09.2021 – 28.09.2021
Exhibition
University of Ljubljana,
Slovenia.

Online presentation
of the artefact
Archrypt,
25.03.2021
CA2RE | CA2RE+
Conference |
REFLECTION, HafenCity
Universitat Hamburg.

Online presentation
live from the exhibition
displayced in Stazione
Rogers
Geometries of Time
13.09.2021
ECLAS Conference 2020,
International Federation
of Landscape Architects,
Swedish University of
Agricultural Sciences,
Uppsala, Svezia.

Presentation
of the artefact
Geometries of Time
25.09.2021
CA2RE | CA2RE+ Conference |
REFORMULATION, Ljubljana.

Presentation of the
artefact
Archrypt,
26.09.2021
CA2RE | CA2RE+
Conference |
REFORMULATION,
Ljubljana.

Presentation
of the artefact
Time Capsule Transcypts
30.03.2022
CA2RE | CA2RE+ Conference |
RECOMMENDATION
University of Technology, Faculty
of Architecture & the Built
Environment, The Netherlands.

2021

2022

PART I

PARAPHERNALIA. NOMENCLATURE OF *MEAN* TIME ARCHITECTURES

These paraphernalia gathers, specifies, and clarifies the strategic terms that structure this work.

A barycentric position occupies the term "mean time," which provides the frame through which the enquiry is carried out, connecting the different cases and works, and refers to the homonymous exhibition curated by Cedric Price in 1999 at CCA. The chapter clarifies this reference, retracing both the architectural context and the intention with which it has been employed and explaining then the shift within the semantic and disciplinary field that it experiences in this work, given by its intertwinement with the second pivotal theme of this research: trauma.
This psychological and medical term describes an injury — mental as well as physical — responsible for mental disorder and distortions in time-space perception. It is briefly studied, highlighting the relationships, assonances, and reverberations that it entangles with the human body and, by so, with the architectural discipline. Reconstructed the critical and theoretical structure on which the work moves, the term *mean* becomes the vehicle of a different significance at the end of this part, charged with a progressively negative connotation. The translation concerning its initial meaning is underlined from this moment on through the adoption of a different writing mark: replacing the initial mean time with *mean time*.
Therefore, this part outlines the paradoxical relationship between Cedric Price's mean time and the *mean time* formulated to define our contemporaneity: the condition of permanent impermanence in which architecture is inserted simultaneously as a victim, author, and potential savior.

1.1.

THE NEGATIVE HORIZON OF *MEAN* TIME

Between traumatic obsolescence and failed aspirations for permanence

"The value of permanence must be proven, not merely assumed."

Price, C., *Price Works 1952-2003: A Forward-minded Retrospective,*
"12 Design maxims: On Safety Pins and Other Good Designs,"
1972, Pegasus, "Point 4" (London, AA Book 2016).

<
Bourne, S.,
View of the Manikarnika Burning Ghat, Benares (now Varanasi), 1866, Canadian Centre for Architecture, Montréal, (reference number PH1981:0823).

CEDRIC PRICE. MEAN TIME: A REINTERPRETATION

In 1999 Nicholas Olsberg, the Canadian Center of Architecture of Montreal (CCA) director, invited Cedric Price to curate an exhibition giving him complete freedom on the subject, with the only constraint of selecting and incorporating artifacts and materials from the CCA archive. The vibrancy and non-conformism characterizing the British architect thus originated the exhibition *Cedric Price: Mean Time*,[1] welcomed as the opportunity to draw a critical reflection about the "mean time" as the real, thought unexpected, condition of architecture. By elaborating on the concept of time and the possibility of its measurement through the displacement of movement in space, he aspired to unfold the latter to discuss the role and potentials that architecture could embrace. Describing time's increased compression and progressive loss of consistency, Price declares, "Time present has no length, as a line has no thickness,"[2] stressing the uninterrupted weakening of the Vitruvian *firmitas*, as reinterpreted from Renaissance onward, and identifying fourteen temporal categories to trigger a reflection on renewed and dynamic approaches of intending architecture.

The complete reflection expands from the metronome, an instrument widely used in the musical field to measure time and control the rhythmic scanning of metrical compositions. Price, seeking for impermanence and uncertainty, places this instrument at the center of the exhibition, declaring explicitly the object of his investigation: the time interval. The dimension to which he refers is not a unique, fixed period but a variable fragment of space-time intercepted and captured, intermittently, by a moving object. The speed of the pendulum movement, during its dynamic action of crossing the space-time dimension, thus, gives shape to a complex system of intervals, synchronicities, and diachronies: different rhythms that expand the possibilities of interpretation and maneuvering of time-space and its perception. Therefore, the time passage is recorded by appropriate intervals, adopted as a comparison method, as a tool to measure the distance interposed between the time past and the time future, but also between temporal unexpected extensions and sudden interruptions. What is identified and retraced is the unstable consistency of a temporal interstice that, due to the measurement tool and to the movement adopted to cross it, constantly changes its thickness. Thus, it configures a selection that, from time to time, assumes a different perspective, a diverse posture, and a new gaze to question, interpret and detect time, provoking the emergence of a heterogeneous collection of diaphgrams. Moreover, by investigating the specific and contextualized intervals and displaying them in

1. The exhibition occurred in The Canadian Centre for Architecture, from October 19, 1999, to February 27, 2000, in the museum's Octagonal Gallery.
2. Quote taken from the Press Release of the Canadian Centre for Architecture (CCA), 1920, rue Bailoe Montréal, Québec, Canada.
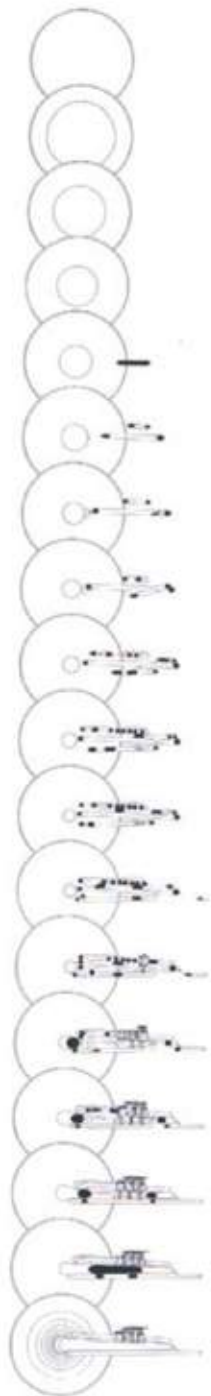
French Horn, Barry Stein. VV.AA., Education of an architect. The 9 Irwin S. Chanin School of architecture of the Cooper Union, New 1 York, 1988, Rizzoli, p 132.
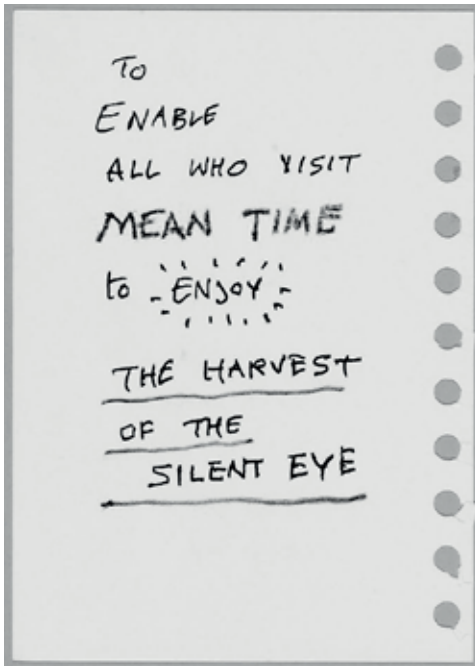
series, Price elaborates a mnemonic method to measure the passing of time.

By refusing any linear preconception, thus avoiding any strict distinction between present, past, and future, he intercepts multiple space-time dimensions articulating and recomposing them as a unique flow of constant communication, mixture, and projections. Therefore, the metronome is reinterpreted as a flexible and adaptable means whose pacing and rhythms are continuously renegotiated according to the detected phenomena. This object is accompanied by a quote from Wordsworth's famous epitaph:[3] "to enable all who visit Mean Time to enjoy the harvest of the silent eye,"[4] supposing and suggesting that only a calm eye supports the gathering of present and past. Price invites the visitors to experience the exhibition wearing this same eye to grasp the different thicknesses and shades of the complex and ambiguous spatio-temporal interstices he defined with mean time. To adopt a vigilant-quiescent gaze, noting things in a mutual state of half-sleeping and distracted observation, to detect these in-betweens interstitial intervals of variable thickness through ever-changing movements and dynamism. These intervals, grafted and suspended as interruptions within transformation processes or emerging from unexpected events, reveal themselves at interstitial levels within the transition between a "before" and an "after," times of possibilities but also suspension.

On the occasion of this exhibition, Price pushes even further his critical reasoning on obsolescence and time by focusing on the relation between time, movement, and space, investigating their interaction within the built environment. Criticizing the production of permanent and pre-defined spaces, Price affirms that "movement is implicit, together with change, in the surrounding conditions."[5] He affirms:

> The speed of a total life span can be measured. The fourth
> dimension can thus be introduced to design. The condition

C. Price, *Label to accompany metronome in exhibition*, in notes for the exhibition, *Cedric Price: Mean Time*, Canadian Centre for Architecture, Montréal, 1999 (inv. 181: Mean; reference number DR2004:1034:001).
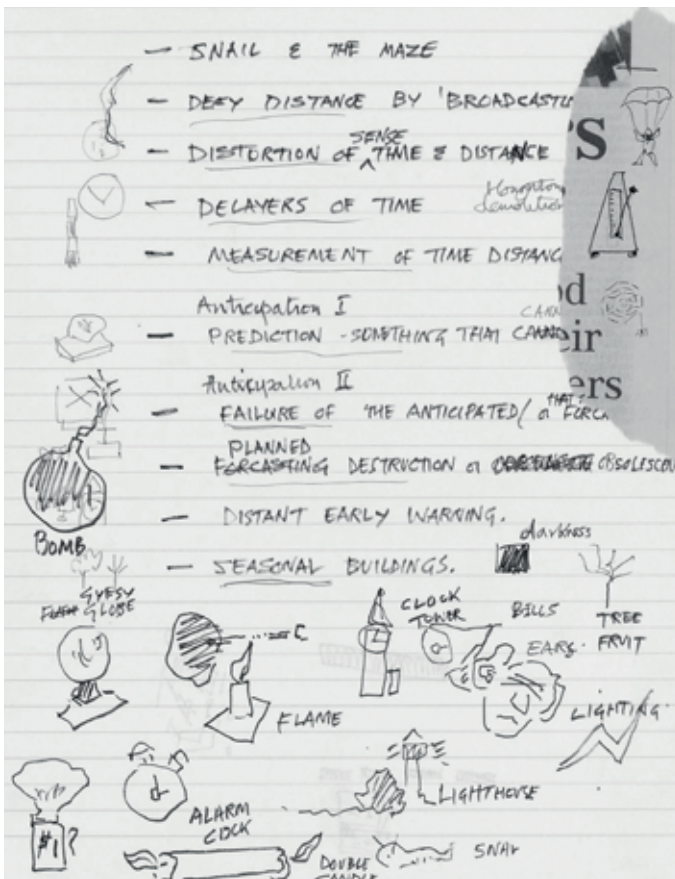
3. "In common things that round us lie / Some random truths he can impart,— / The harvest of a quiet eye / That broods and sleeps on his own heart" (37-52). W. Wordsworth, A Poet's Epitaph (1799), in Id., The Poems, vol. 1, curated by J.O. Hayden, Penguin, Harmondsworth 1977, p. 396. Concerning Price's work, Haus Ulrich Obrist cites Wordsworth's verse and not its alteration in Price's notes. See H.U. Obrist, Preface, in Id. (Edited by), Hans Ulrich Obrist and Cedric Price: The Conversation Series, vol. 21, Walter König, Köln 2009, p. 11.
4. Quote taken from the Press Release of the Canadian Centre for Architecture (CCA), 1920, rue Bailoe Montréal, Québec, Canada.
5. C. Price, "Label to accompany metronome in exhibition", in notes for the exhibition "Cedric Price: Mean Time" at the Canadian Centre for Architecture, Montréal, 1999. Cedric Price fonds, Canadian Centre for Architecture (inv. 181: Mean; folder DR2004:1034:001).

Column 1:
MAZE
PUZZLE
PUZZLEMENT
DOUBT
DISASTER
DISCOVERY
ASSUMPTION
SURPRISE
AGE
AGING
MOMENT (IN TIME)
TIMING
ASSUMPTION
PROPHECY
PROFETIC
INEVITABLE

Column 2:
INTERVAL
AWARENESS
EXPECTATION
CHANCE
CHANGE
PREDICTABILITY
PROGRESS
SPEED
MOVEMENT
TIME
RESULTANT
RESULT
INTENTION
SURPRISE
SHOCK
SURETY

Column 3:
24H
PRIORITIES
FIRST
MEANT
SEQUENTIAL
DISCONTINIOUS
INTERMITTENT
CYCLICAL
MAGNIFY
MAGNIFICATION
DISTORTION
INTERRUPTION
MISTAKE
DECAY   1.7.99
PERMANENT   2 7 99
TRANSITORY
REPOSITIONING

— SNAIL & THE MAZE
— DEFY DISTANCE BY 'BROADCAST...
— DISTORTION OF SENSE TIME & DISTANCE
— DELAYERS OF TIME
— MEASUREMENT OF TIME DISTANCE

Anticipation I
— PREDICTION - SOMETHING THAT CAN...
Anticipation II
— FAILURE OF THE ANTICIPATED / THAT FORCE
— PLANNED FORECASTING DESTRUCTION or OBSOLESC...
— DISTANT EARLY WARNING.
— SEASONAL BUILDINGS.

BOMB
GYPSY GLOBE
FLAME
ALARM CLOCK
#1
CLOCK TOWER
BILLS
TREE
EARS FRUIT
LIGHTING
LIGHTHOUSE
DOUBLE CANDLE
SNAIL
darkness

∧
Price, C., *List of words compiled in the context of preparing the exhibition "Cedric Price: Mean Time"* at the Canadian Centre for Architecture (document from Mean project records, inv. 181: Mean; reference number DR2004:1033:005), 2 July 1999.

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Price, C., *Notes and sketches made in conjunction with the design of the exhibition "Cedric Price: Mean Time" at the Canadian Centre for Architecture,* (document from Mean project records, inv. 181: Mean; reference number: DR2004:1033:001), 1999.
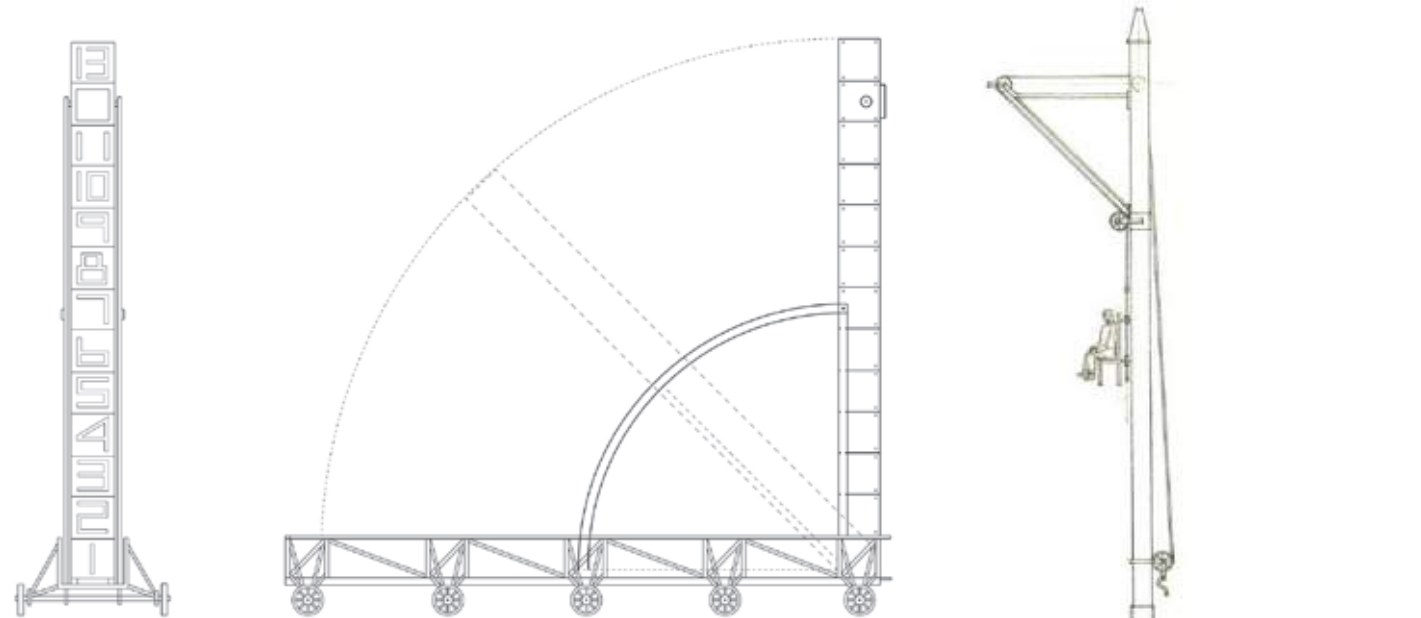
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Hejduk, J., (1986) *The
Collapse of Time and other
diary constructions,* London:
Architectural Association Press.
In October 1986, John
Hejduk's The Collapse of
Time was erected outside
the Architectural Association
premises in Bedford Square.

of movement in space and time, and the occasion and occurrence of its start and finish, everything required to describe the design and method of such movement, its sources, reinforcement, distortion, need, and aging – the life-span – can be determined. The essential equation is then complete.[6]

This operation is only possible by reconstructing the heterogeneous sequence of intervals that marks and records movement within space and time: a dynamism that rejects the linearity of the modern clock generating distortions, suspensions, frustrations, and anticipations, blurring predetermined boundaries and giving rise to a multiplicity of temporalities, which only an attentive and, at the same time dreaming eye can grasp. The intention is to break the perception of time as a purely linear phenomenon.

Within this critical refusal of time's one-directionality, resound here the words that John Hejduk adopted to describe his installation *The Collapse of Time*:

> I am obsessed with time and have recently created time-pieces... *clock towers*. One of my recurrent persistences is that present time cannot be seen... present time has an opacity... present time is opaque... present time erases... blanks out time...[7]

The installation was in September 1986 in Bedford Square by the Architectural Association School of Architecture. It consists of a clock that intertwines the private and public spheres. The first, embodying the new individual forced nomadic condition, is expressed through constructing this object on wheels. In contrast, the second, concretizing the monumental aspiration of architecture, resides in the very shape of the installation, modeled as a rough-hewn timber obelisk. By injecting a dynamic feature into the project, it is possible to draw articulated transdimensional relations. Hejduk's clock constitutes at the same time a means of time measurement and a device capable of physically moving within time, condensing, by so, a complex system of overlapped and superimposed temporalities. The installation, furthermore, operates as a spectral and disturbing narrative device aimed to impact and undermine, through an articulated, performative tale, any fixed definition of time. The relentless flowing of time is expressed through a woman's voice

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6. Quote taken from the Press Release of the Canadian Centre for Architecture (CCA), 1920, rue Bailoe Montréal, Québec, Canada.
7. Hejduk, J., (1986) *The Collapse of Time and other diary constructions*, London: Architectural Association Press, p.31.

continuously performing the poem *The Sleep of Adam*. In addition to moving through the urban space, the tower clock can rotate around a pivot to assume three different inclinations, each representing a particular time dimension. Therefore, it moves from the flat time, verticality (90°), to the angular, isometric time (45°), ending horizontally, expressing the perspective time (0°).

A further provocative element resides in the very organization of the clock screen, which presents thirteen squares, inserting a new unit within the standardized twelve hours. The twelfth hour stands as a blank square, introducing a missing element that generates a malfunction in the clock, that Lewis Mumford defined as: "the key machine of the industrial age."[8] An empty space that, at the same time, translates into a moment of opportunity, open to the experiential time.

In Hejduk's installation, the frictions between the unidirectional conception of time and its interpretation as a dynamic entity give rise to the blank unit, interpretable as a possible experimenting ground through and within which shaping a dynamic interpretation of the temporal dimension. This same testing ground, this space of possibilities, is identified in Cedric Price's exhibition with the mean time, evoking the transitional temporal fragments latent within the urban context.

Price's exhibition is articulated in two main parts that confront the contemporary project, respectively, through the definition of a critical recognition of the theoretical context and the formulation of a relational system to explore time through dynamic experimental processes. The first room that the visitor meets, the introductory space, hosts the metronome at its center. Here, presenting the issues and reasonings in which the exhibition is rooted, Cedric Price introduces two statements that embody his critique toward the refusal, recognized in most of the contemporary design practices of that time, to embrace distortion and variation within the architectural process, and underlining the design impoverishment resulting from a

Pictures of the exhibition *Cedric Price: Mean Time, from the Canadian Centre of Architecture, 1999.*
The picture captures the sectioned labyrinth, which constitutes the backdrop of the metronome. The particular positioning of these two elements generates a relational connection, triggering the visitor to reason on the frictions between a linear conception of time and the multiplicity of temporal intervals that constitute the human, and therefore the architectural, experience.

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8. Mumford, L. (1934), *Technics and Civilization*, Harcourt, Brace & Co., p. 14. Furthermore, it is interesting to notice that Kevin Lynch used this same reference to draw his critical reasoning on "Abstract Time," writing: "Lewis Mumford credits the mechanical clock to the Christian monastery, whose regular devotions were required for the welfare of souls in eternity. The clock, he says, 'dissociated time from human events, and helped create the belief in an independent world of mathematically measurable consequences.' [...] We are subjected to intrusive time signals: bells, buzzers, and alarms. Necessary as it may be for group coordination, this imposed time weights on us: we seek to escape it when we can, or we feel guilty for 'wasting' it." [Lynch, K. (1972), *What Time is This Place?*, The MIT Press, p.127].

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Price, C., *Cedric Price: Mean Time*, cover of the booklet by the Canadian Centre for Architecture (1999), *Cedric Price: Mean Time. A chronological Listing of Works in the Exhibition.*

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Pictures of the exhibition *Cedric Price: Mean Time, from the Canadian Centre of Architecture, 1999.*

purely linear conception of time. The design must make distortion a new operating method: "design is concerned with conscious distortion of time, distance, and size. If it achieves none of these distortions it is unlikely to be more than the elaboration of the 'status quo.'"[9] The second aspect noted in this introduction to the exhibition is the temporal contraction, on which the contemporary project is called to question itself: "shortage of time is likely to become an increasingly large element in the conscious design process: not merely in achieving a particular means but even in deciding whether there is time to bother disigning such a means."[10]

These two statements are accompanied by the design of a labyrinth crossed by the trajectory of a snail that runs through it transversely without getting lost inside its meanders. With this image Price clearly explains the meaning of his exhibition: design can find a renewed and stimulating ground for intervention and expression within those interstitial spaces imprisoned in transformative processes, and the temporal distortion can be appropriate and adopted by the project to accord to the constant variation in the amplitude of the intervals that mark the contemporary time. Here the metronome assumes, as already mentioned, a prominent position, representing the junction of passage between a regular and unique measurement of time to an investigative device calibrated to intercept time's continuously evolving shape.

Finally, within this first space, Price formulates his concept of mean time, deriving from the densification and combination of dichotomous relationships and antithetical couples, as it is possible to notice by scrolling his preparatory notes. Thus, from the frictions such as maze - discovery, doubt - surely, disaster - chance, discovery - mistake, continuity - interruption, assumption - suspicion, decay - aging, transitory - permanent, the fourteen categories composing this transitional time emerge. autodestruction, reconstruction, prevision, chronicle, anticipating the impossible, synchronization, interval, simultaneousness, uncertainty, the pleasure of frustration, suspending time, distorting time, gravity, and pacing. Each category represents a peculiar collection of disparate projects that succeeded or failed, the attempt to consider the relation time-movement-space[11] adequately, a fragmented archive that includes:

> photographs of an ancient Aztec sundial, a railroad switching yard, a shot tower, and a Russian radio pylon; a model book for Renaissance labyrinths and mazes; trade catalogs for revolving doors; prints of an 18th-century firework structure and an ice palace of the late 19th century; plans for an unbuilt heliport in Montréal's Milton Park and the unbuilt high-speed rail service at Mirabel airport.[12]

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9. Quote taken from the pictures of Cedric Price' exhibition collected in the digital archive of the Canadian Centre for Architecture.
10. Ibidem.
11. As will be deepened in the next paragraph, the space issue resulting from multiple movements and trajectories developed within time will be at the very base of Bernard Tschumi's poetic. Trained at the Swiss Federal Institute of Technology in Zurich and highly influenced by the milieu of artists and students, he ran the first year of his design unit at the Architectural Association (1971) entitled: *Theory, Language, Attitudes*, coming soon to interpret the movement of bodies in space as important as the building and to consider program, event, and space as the barycentric ground for his thinking and practice.
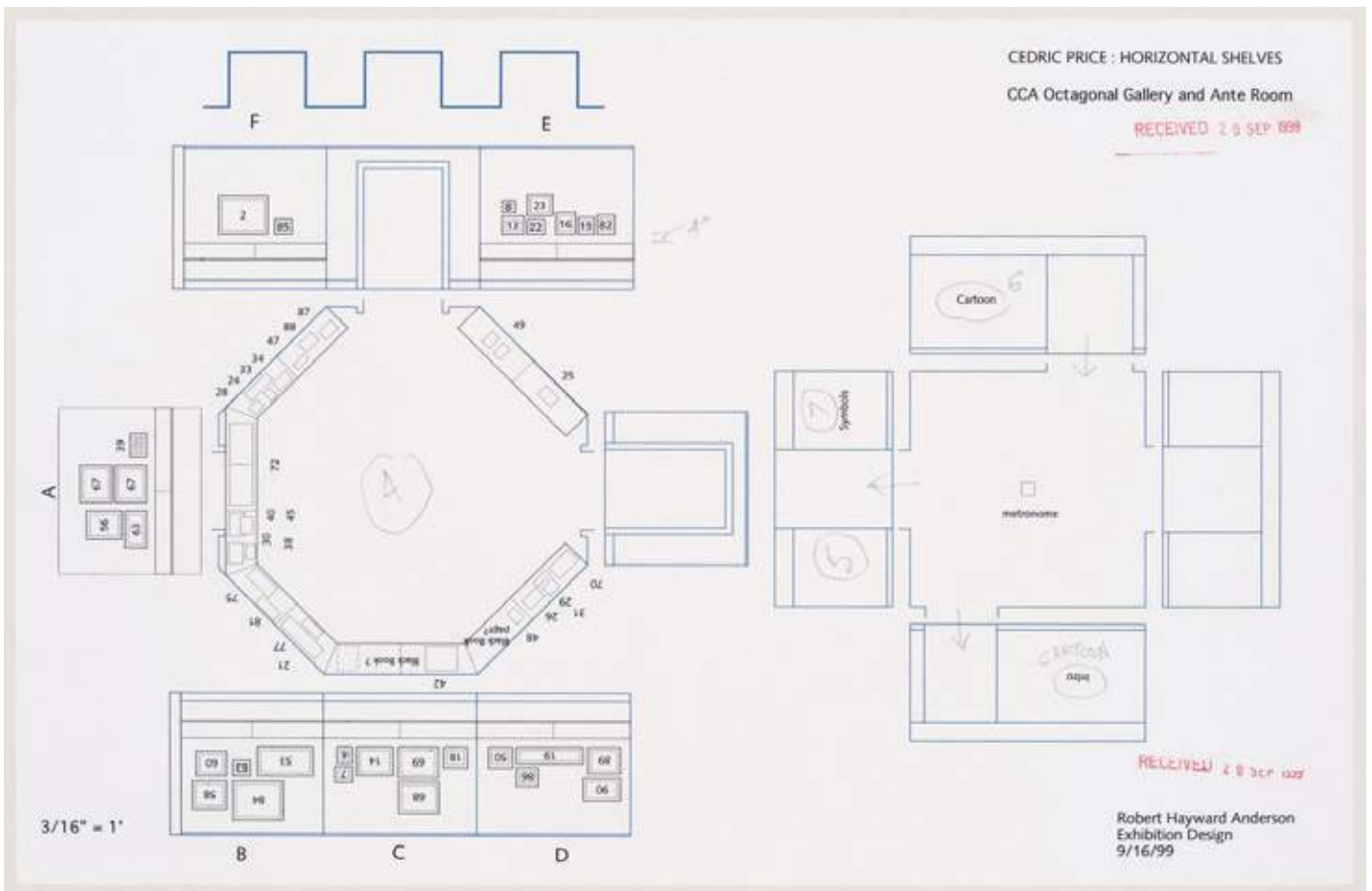**12.** Canadian Centre for Architecture (1999), *Cedric Price: Mean Time. A chronological Listing of Works in*

This heterogeneous collection of objects, drawings, photographs, and unrealized projects is presented within the second part of the exhibition, within the Octagonal Gallery, where they are distributed on the walls and inside display cases that run along the perimeter of the hall. Rejecting any logic of chronological and thematic organization, Price returns a kind of architectural entanglement in which spaces, places, and tools of the project are connected according to principles of spatial organization. Visitors can thus grasp, through a single glance, different places and times, intercepting construction details of ancient Gothic cathedrals alongside radical urban projects, proposals of flexible housing units arranged concerning calendars marking the time and cyclical rhythmic of Eastern cultures now lost. In Hejduk's project, the complexity of the temporal dimension is reported by a double possibility of dynamism. Price renders it by drawing inter-relational connections that, refusing any chronological organization, are displacement within the exhibit space according to the architectural strategies and social practices characterizing the spaces they represent. Finally, an additional component of complexity is given by the temporal distance that elapses between the artifact or the realized object and physically exposed in the exhibition and the temporalities and spaces it represents and crystallizes.

The exhibition does not just explore a possible reinterpretation of architecture as a moldable discipline capable of adapting and mutating according to the movements that interfere with it within a particular space. Moreover, it underlines potential colonizable space-time fragments identifying various, even paradoxical, temporal intervals characterized by and generated through a moving phenomenon: transitory and blurred intervals that architecture can measure and occupy: it displays constructions in which movement is controlled and synchronized by structure, where spatial constraints are overcome by simultaneity, where time is distorted and distance deceptive, where the structure predicts its demise, or where efforts to anticipate social conditions have proved strangely prescient or wrong.
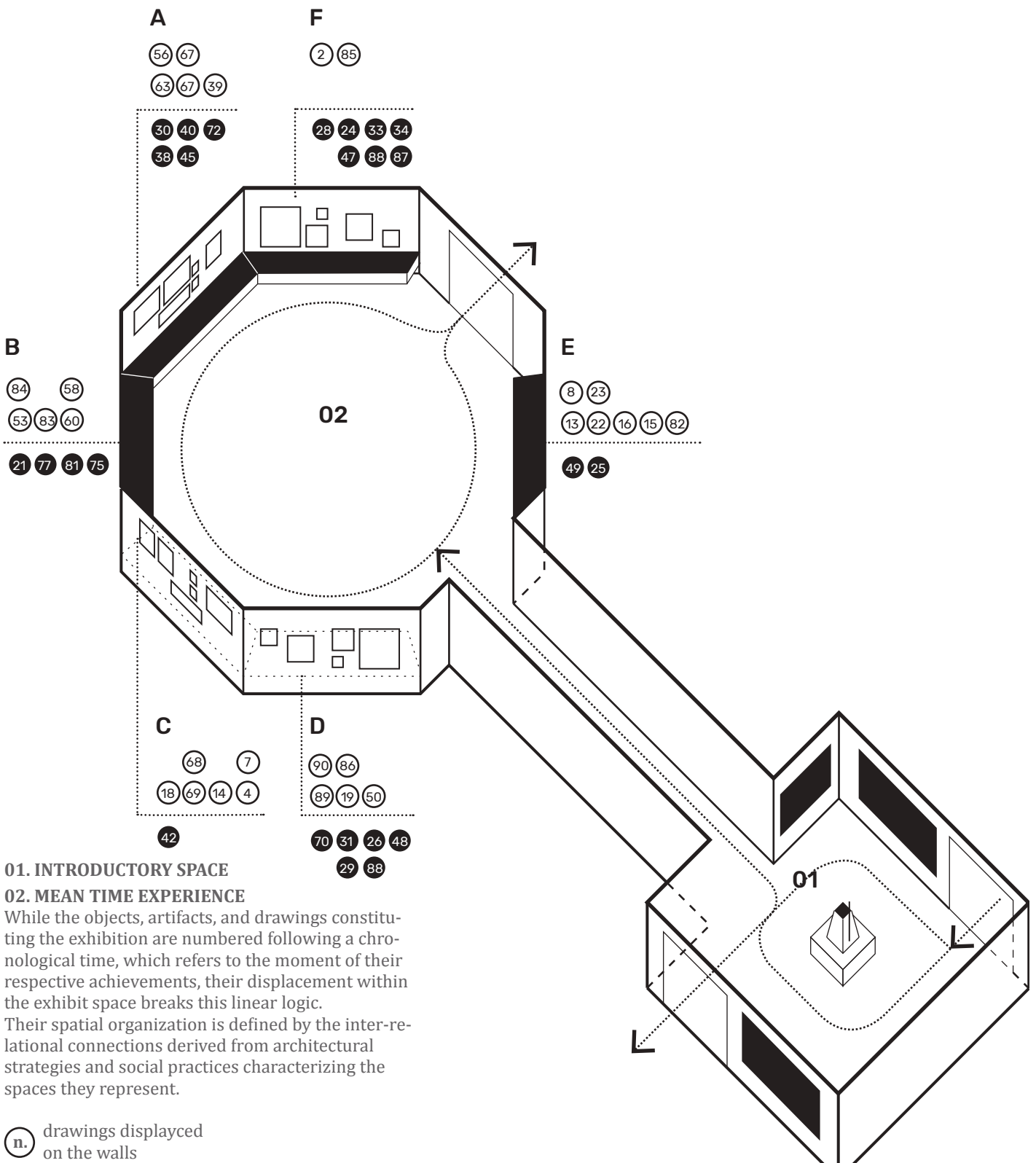
The temporal dimension is, thus, retraced through various devices, tools, and artifacts, intertwining it with the field of action in space. The defined categories and the devices inserted within them are described by terms that open to the projections of phenomena in progress, occurring at the moment they are described or, again, which define complex measurement tools of time. Thus, discrepancies between different worlds and measurement methods are highlighted, and occasional and unexpected openings of temporal interstices for potential design interventions and the architectural project itself are detected. The result is a highly subjective spatial experience, which changes according to the critical gaze of the visitor. To further increase the complexity and potential of this design matrix is the invitation that the architect himself opens to the visitor: cross the exhibition again at a later time, demonstrating that the architectural space changes according to the different experiences of it.

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the Exhibition, p.2.

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Price, C., *Plan for the Octagonal
Gallery and Ante Room at
the Canadian Centre for
Architecture for the exhibition,*
at the Canadian Centre for
Architecture (document from
Mean project records, inv.
181: Mean; reference number
DR2004:1034:002),
16 September 1999.

>
M. D'Oria, *Reconstructing the
spatial experience of Cedric
Price's exhibition,* 2022.

A
56 67
63 67 39
30 40 72
38 45

F
2 85
28 24 33 34
47 88 87

B
84 58
53 83 60
21 77 81 75

E
8 23
13 22 16 15 82
49 25

02

C
68 7
18 69 14 4
42

D
90 86
89 19 50
70 31 26 48
29 88

01

01. INTRODUCTORY SPACE

02. MEAN TIME EXPERIENCE

While the objects, artifacts, and drawings constituting the exhibition are numbered following a chronological time, which refers to the moment of their respective achievements, their displacement within the exhibit space breaks this linear logic.

Their spatial organization is defined by the inter-relational connections derived from architectural strategies and social practices characterizing the spaces they represent.

(n.) drawings displayced on the walls

(n.) artifacts exposed inside the perimeter display cases

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Price, C., *Table of objects compiled in the context of creating the exhibition "Cedric Price: Mean Time,"* at the Canadian Centre for Architecture (sheet 1 of 2). (document from Mean project records, inv. 181: Mean; reference number DR2004:1031:003), 30 June 1999.

>
M. D'Oria, *Reconstructing the spatial experience of Cedric Price's exhibition. The entangled projects of wall E,* 2022.

29
Ilse Bing
Frankfurt am Main, Germany, 1899–
New York City 1998
**Eiffel Tower used as an electric billboard
for the Citroën company, alternating
with an electronic temperature gauge, Paris**
1934
Gelatin silver print
23.3 x 28.3 cm (image); 27.5 x 35.6 cm (mount)

26
H. Ehrlich & Sons Mfg. Co., Saint Joseph, Missouri,
manufacturer and publisher
**The "Ehrlich" Track Door, "Double Sealed"
The "Ehrlich" "One at a Time" (No More)
Automatic Recording Ice Door**
Relief halftones and letterpress
16 x 24 cm (pages)
Pages 6 and 7 in *Ehrlich, St. Joseph, Mo.: catalog no.
43* (Saint Joseph, Missouri, c. 1926)

22
James Stoddard
Active United States
**View of Howard Street between 17th and 18th
streets following the 1906 earthquake and fire,
San Francisco**
1906
Gelatin silver print mounted on black sheet
15.1 x 20.2 cm (image); 25.1 x 30 cm (mount)

20
Arnold Genthe
Berlin, Germany, 1869–New Milford, Connecticut,
1942
**General view of the aftermath of the 1906 earth-
quake and fire, looking down Market Street from
the Ferry Building Tower, San Francisco, California**
1906
Gelatin silver print
18.9 x 24.2 cm

10
Gustave Le Gray
Villiers-le-Bel, France, 1820–Cairo, Egypt, 1882
Railroad yard, Tours, France
1851
Albumen silver print from waxed-paper negative
25.3 x 34.9 cm (image); 32.7 x 42.6 cm (sheet)

Several sets of railroad cars are laid on tracks that
run through train sheds and converge at a rotating
platform (lower right) used to turn the engines
and lead them to a single route.

31
A. Aubrey Bodine
Baltimore, Maryland, 1906–1970
**Phoenix Shot Tower (1828),
801 East Fayette Street,
Baltimore, Maryland**
C. 1940
Gelatin silver print
34.4 x 27.2 cm (image); 35.5 x 28.4 cm (sheet)

Shot towers were designed for the manufacture
of shot, a process in which molten lead was
dropped from a platform at the top of the tower
through a sieve-like device into a vat of cold water
on the ground.

8
John Britton
England, Kington St. Michael 1771–London 1857
**Stairs from the chapter house to the nave,
designed to allow for the formation of the
procession, Wells Cathedral**
Etching
27 x 20.7 cm (plate)
Plate 18 in *The History and Antiquities of the
Cathedral Church of Wells* (London: Printed for
Longman, Hurst, Rees, Orme, Brown, and Green,
the Author, and J. Taylor, 1824)

16
Alfred Saint Ange Briquet
France; active 1854–1896
**Aztec stone calendar showing
two parallel time structures**
1870s
Albumen silver print
24.7 x 18.6 cm

It is believed that the Aztec Calendar or Sun Stone
refers to the face of *Tonatiuh*, the Sun, depicted
at the centre. Carved in the mid 15th century,
this calendar indicates the Aztecs' advanced
knowledge of both astronomy and mathematics;
this single artefact presents two more or less
independent calendar systems. One, called the
xiuhpohualli, has 365 days and its symbols relate
to earthly rituals; the other, the *tonalpohualli*
or day count, has 260 days, and appears to be
a sacred calendar reflecting the divine year, in
which each god has a day unto itself. This dual
system is conveyed by two concentric circular
dials, the inner wheel marked by the numbers
1 to 13, the outer one by twenty symbols. The
top symbol indicates "one," the first day of the
tonalpohualli. As the sun creates shadows the
two dials point to the parallel days of the year.
The calendar is not completely understood, and
other interpretations remain possible.

43
Bernd Becher, photographer
Born Seigen, Germany, 1931
Hilla Becher, photographer
Born Postdam, Germany, 1934
**Winding Tower, Glenrhondda Colliery,
Treherbert, South Wales**
1966
Gelatin silver print
29.8 x 23.8 cm
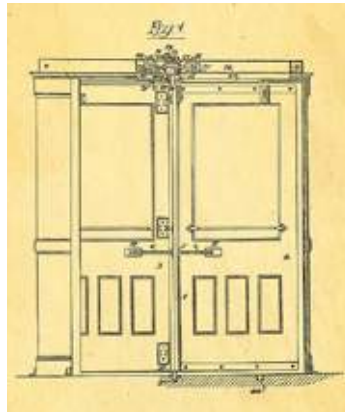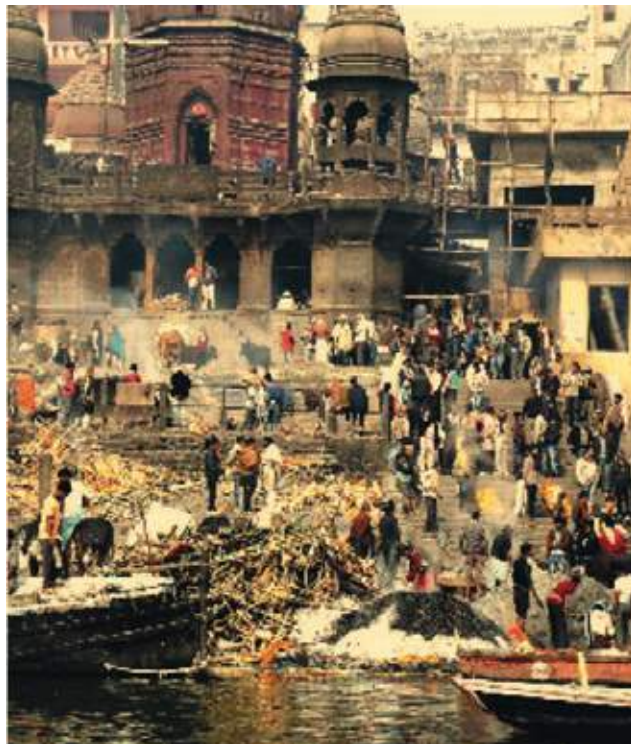On loan from the American Friends of the CCA

29

16

5
Chronique
Chronicle

9
Incertitude
Uncertainty

20

26

31

13
Gravité
Gravity

11
Le temps suspendu
Suspending Time

43

13
Gravité
Gravity

8

6
Synchronisation
Synchronization

22

^ ^
Unknown author, *The Sati of Ramabai,*
Wife of Madhavrao Peshwa (reigned
1761-1772).

^
Manikarnika Cremation Ghat, Varanasi.

A SEQUENCE OF INTERVALS

Whether all the categories will be recalled throughout the entire research, in the constant attempt to establish a critical dialogue with Price's work, it is necessary to introduce here the one defined "interval" which condenses, for its very meaning and for the projects it involves, the entire exhibition.

The symbol of the exhibition is the instrument of the metrometer, which Hejduk, in a famous text, defined as an instrument capable of measuring "densities that silently implode."[13] Furthermore, Price himself, interviewed by Olbrist on the exhibition's contents, affirms "the metronome is an interval or maybe a series of intervals."[14]

A sequence of intervals can assume significantly different consistencies through the modulation of rhythm and gradation. Thus, exploring the projects collected and assembled by Price to define this category, remarkably different architectures and devices appear, whose brief analysis allows us to glimpse the relationship between architecture and trauma that will be deepened in the following chapter (1.2).

The first reference is the photograph of a Crematorium site taken in the 1870s by Thomas A. Rust[15] in Varanasi (India), the holiest of the seven sacred places of Hinduism. This culture conceives death as an essential and integrated event within the life cycle, and, as part of a quotidian routine. The cremation ritual is repeated daily through the wooden pyres arranged along the river, consumed by a fire that, according to beliefs, seems to continue burning for centuries. This architectural structure, located on the banks of the Ganges, is of vital importance for the Hindus who believe that only through this ritual passage between death and cremation, and, exclusively, through the waters of the Ganges, is possible to reach the completion of the cycle of reincarnation to reach the Nirvana finally. By introducing this photograph, Price evokes the dimension of death and the transitional time frame embedded within the passage from the terrestrial to the higher celestial-spiritual dimension.
Cedric Price accompanies this photograph with the following caption: "The higher the rank of deceased, the longer the interval between death and burning."[16]
Architecture mutually performs and marks the rhythm of this ritual, accompanying the transmutation through wooden ephemeral dwellings that stand as the medium of this

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13. "Sounds in deep perspective barreling within spirals forward dart upon the frame of time ellipses cask of oak the pendulum stuck at thirty-two degrees the ovality of a silence a high chair matron observes the note the wood shutters meet the iron grille at one hundred and eighty the corner statue indeterminate small tends to fold in upon itself the triangular sliver overlooks the singular ivory key densities silently implode". From Hejduk, J. (April 1998), *Such Places as Memory. Poems 1953-1996*, MIT Press, pp. 14-15.
**14.** Obrist, H.U. (2010), *Hans Ulrich Obrist & Cedric Price: The Conversation Series: Vol. 21*, Walther König, Köln, p.74
15. Thomas A. Rust (between ca. 1869 and ca. 1874), View of a burning ghat showing a cremation process, Benares (now Varanasi), India. This photo is part of the CCA archive, where it is identified with the reference number: PH1986:0059. On the occasion of the exhibition, Cedric Price entitled it *"Cremation site, Benares (now Varanasi)."*
16. Canadian Centre for Architecture (1999), *Cedric Price: Mean Time. A chronological Listing of Works in the Exhibition*, p.8.
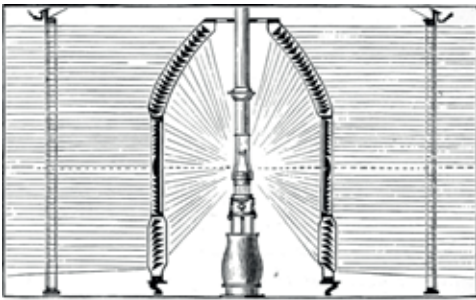
Dioptric Apparatus.
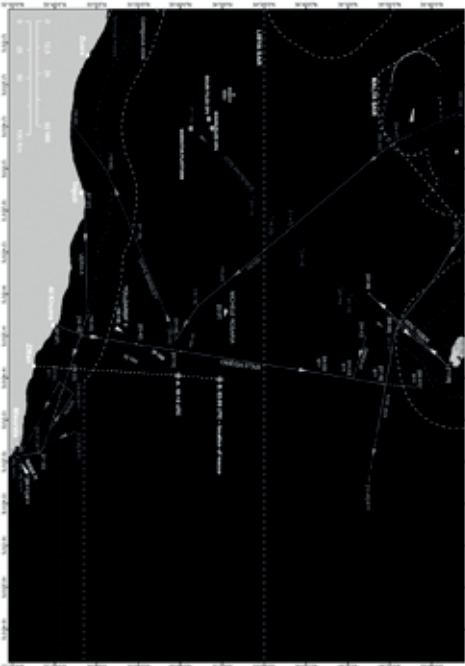
process, representing the operator favoring the passing toward the afterlife — a device repeatedly destroyed to exorcize death, in a process that blends human and architectural bodies —: a ritualized violence, a cyclical reiterated expiation.

The second project inserted within this category, the Cologne Cathedral,[17] reconstructs and interprets architecture through a sequence of still images embodying its incremental metamorphosis. The succession of transitional intervals through which it has been rearticulated and reorganized throughout time are crystallized its intermediate shapes in a series of photographies, letting the emergence of a complex system of configurations shaping the relationship between architecture and trauma. This time what emerges is not a ritualized and cyclical violent expiation but, instead, a sudden and disruptive shock that directly and inadvertently affects architecture, decreeing a vehement interruption. Thus, the project narrates the phases of development and construction, of dramatic destruction by its bombings, and, finally, of reconstruction.

Price recalls another process that reveals the penchant of architecture for resistance and reaction. These two projects express architecture respectively as a mystical vehicle and physical means to manifest both time and human practice. Architecture is understood as a means capable of modulating and giving rhythm to life, interacting with the exogenous and endogenous phenomena, being them the spontaneous ones of bodies moving along a staircase, as in Isaac Ware's project,[18] or, still, more strictly strategic and infrastructured trajectories, traceable in the maritime routes evoked by the design of the *Dioptric Apparatus*.[19] This technology explicitly refers to rhythmicity and metric modulation of time, space, and distance. Conceived at the end of the nineteenth century, it allowed the orientation and directionality of the passing ships through the mechanical setting of light on a circular movement.

∧ ∧
Scott, C.W., *The Dioptric Apparatus*, relief halftone, plate following p.30 in *History of the Fastnet Rock* (London. Hazell, Watson & Viney, 1906).

∧
Forensic Oceanography, *Synthetic map of the 7 November 2018 Nivin incident on the basis of georeferenced positions and AIS data*, published on the 18.12.2019.

17. Michiels, J.F. (1852), *Köln Cathedral under construction, Köln, Germany*. This photo is part of the CCA archive, where it is identified with the reference number: PH1989:0042. On the occasion of the exhibition, Cedric Price entitled it *"Cologne Cathedral (constructed 1248-1880, destroyed by bombing 1942-1945, rebuilt)."*
18. Ware, I. (1735), *The Plans, Elevations and Sections, Chimney-pieces and Ceilings of Houghton in Norfolk*, Plate 1-2. This drawing is inserted in the omonimous book and is part of the CCA archive. On the occasion of the exhibition, Cedric Price entitled it *"West front of Houghton in Norfolk, showing the design of a staircase (finally completed c.1970)."*
19. Scott, C.W. (1906), "The Dioptric Apparatus", in Scott, C.W. (1906), *History of the Fastnet Rock*, London: Hazell, Watson & Viney, p. 30.

The intervals represent, thus, a series of captions from whom architecture emerges as a discipline that, on the one hand, defines spatial configurations to modulate and calibrate those same revolutions that cross its internals and, on the other, is itself impacted by the same trajectories that, evolving within its internals, modify its rhythm and functioning.[20] Those references describe Price's fluid and impermanent idea of the built space, whose flexibility resides in the openness to change and the suspension of any final or definitive spatial imposition.

One last issue remains unexplored: architecture as the vehicle of a message, of content, an issue significantly represented through displaying the *Letters to members of the Crystal Chain*.[21] In the wounded and severely affected Germany of the post-war period, Bruno Taut inaugurated a regenerative and inspired movement based on the critical occupation of the paper space. This project, consisting of a collection of letters, is the correspondence of a society of visionary artists and architects invited to share and discuss their ideas anonymously by Bruno Taut with the following words:

> Quite informally and according to inclination, each of us will draw or write down at regular intervals those of his ideas that he wants to share with our circle and will then send

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20. Flexibility, impermanence, and dynamism embody the basis of all Cedric Price's practice, forming the critical gaze with which he looks at and interprets architecture. These topics constituted the barycentric topic in the Swiss Pavilion curated by Hans Ulrich Obrist at the 14th Venice Architecture Biennale, curated by Rem Koolhaas. On this occasion, Price's work was accompanied by a critical Swiss political economist and sociologist, Lucius Burkhardt. The latter was responsible for the birth of Promenadology, a cultural and aesthetic method that, through the practice of walking and crossing different urban spaces, aims to make people aware of and expand the perception of the environment they are living in. During the press conference for the presentation of the pavilion, Obrist will affirm that both have rethought architecture as an element in constant evolution "that revolves around people, space and its various representations." For further information on Promenadology see the book: Burkhardt, L. (2015), *Why is Landscape Beautiful? The Science of Strollology*, Birkhäuser.
21. The *Crystal Chain* or the *Glass Chain* (in German *Die Gläserne Kette*) was a utopian correspondence conducted among a group of German expressionists architects between November 1919 and December 1920 established by the architect Bruno Taut to collect new and visionary ideas, in an anonymous form, to build a new future in the first post-World War period. The group counted the following members (in brackets their pen-names): Bruno Taut (Glas), Willhelm Brückmann (Berxback 7), Hermann Finsterlin (Prometh), Paul Gösch (Tancred), Jakobus Göttel (Stellarius), Walter Gropius (Maß), Wenzel Hablick (W.H.), Hans Hansen (Antischmitz), Carl Krayl (Anfang), Wassili Luckhardt (Zacken), Hans Luckhardt (Angkor), Hans Scharoun (Hannes), Max Taut (no name). A complete text including all the letters and the illustrations is: Whyte, I.B. (1985), *The Crystal Chain Letters. Architectural Fantasies by Bruno Taut and His Circle,* MIT Press.
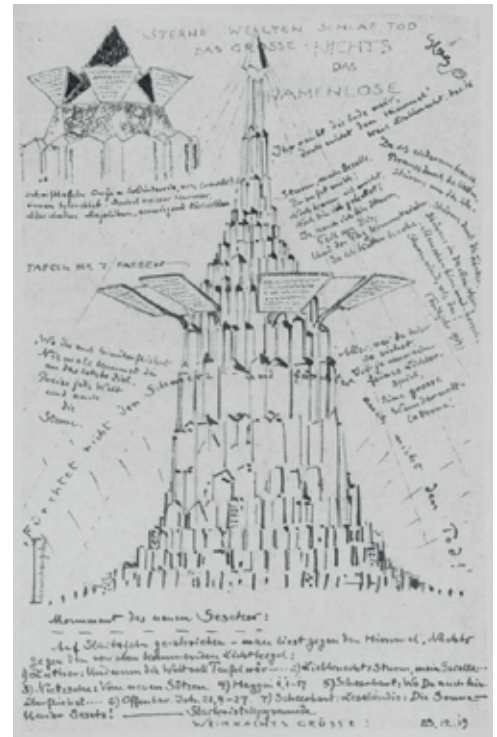
Taut, B. (Glas),
Letter to the Crystal Chain, December 23, 1919. Akademie der Künste.

a copy to each member. In this way, an exchange of ideas, questions, answers, and criticism will be established.[22]

At a time when traumatic war occurrence heavily occupies the mental and physical space of the urban context and its inhabitants, this group assumed a vital and critical posture: temporarily suspending any attempt to construct and concentrating all the efforts to hold the only colonizable space to materialize new ideas: the blank page. Thus, the correspondence develops and evolves within the paper space. This medium, despite its pre-established and fixed dimension, enables the unfolding of different configurations. Depending on the hand that operates on its surface, it assumes multiple thicknesses and gradations that, intertwining with each other, give body to a sort of Chinese figure, to a projection through whom lens re-imagining the future. The paper constitutes, thus, a triggering field of experimentation capable to fill the ideological and aesthetic gap provoked by war. As Price himself demonstrated throughout his career — in this sense, Samantha Hardingham states that Price's projects "are not unbuilt, but unrealized"[23] — paper space despite its apparently fragile and light consistency, has a powerful role in the architectural field, constituting the testing ground and formulating space for "preparatory fantasies."[24] This intimate correspondence renders the crisis that afflicted German architectural theory immediately after the World War I and its social consequences. The correspondence, which ended in December 1920, configured thus, a period of critical reformulation,from which rise projects to be carried out once both planning and contextual maturity have been reached. Paper architectures play an indispensable role in interpreting the suspended time painful opened up by conflict as an intense field of experimentation to unfold and occupy unexpected spaces of possibilities.

The format inaugurated by Bruno Taut to foster this intense exchange of ideas was revived during the 1970s, giving rise to further interesting theoretical debates. Amid them, the first exhibition curated by Bernard Tschumi and RosaLee Goldberg [25] in the 1970s: *A Space: A Thousand Words*.[26]

22. Bruno Taut Letter of Invitation, 24th November 1919, from Whyte, I.B. (1985), *The Crystal Chain Letters. Architectural Fantasies by Bruno Taut and His Circle*, MIT Press, p.1.
23. Rosselli, S.C. (2021), *Ironia progettante. Tre sketch su Cedric Price*, Macerata: Libria Editore, Collana Àncore: p.63. (translation by the author.)
24. Whyte, I.B, (1985), *The Crystal Chain Letters. Architectural Fantasies by Bruno Taut and His Circle*, MIT Press.
25. RoseLee Goldberg, a graduate of the Courtauld Institute of Art, explores the theoretical consequences of space in different modes of conceptual art. She developed a reflection around the interaction between body and space by referring to Schlemmer's notion of a "space filled with sand" (Goldberg, R. "Oskar Schlemmer's Performance Art," Art- forum 16, no. 1 (September 1977), pp. 32–37) a physical volume that responded to the smallest shift.
26. The exhibition "A Space: A Thousand Words," curated by Rosaline Goldberg and Bernard Tschumi, was held at the Royal College of Art Gallery, London, from February 7, 1975, to March 6, 1975. The same year was published the homonymous catalog: Tschumi, B., Goldberg, R. (1975), *A Space: A Thousand Words*, London: Dieci Libri.

The curators, driven by the urgency to reinterpret the concept of space and, in particular, of its ability to function as "the only common denominator within cities, architecture and social structure,"[27] invited artists and architects to participate in the installation by presenting their thoughts drawing on Lefebvre's production of space and critique of everyday life, and their resonings on its mental assimilation. Only one rule was settled: the participants' drawings or photographs had to be inscribed on a standard and fixed surface of 36 cm x 24 cm and accompanied by two typed A4 pages to fill with a maximum of one thousand words. In addition, the contributors were asked to:

> Reveal the existence of new attitudes toward space. These emerging attitudes are concerned with the fundamental link between the theory and the language of space. They refuse any separation between the theoretical level of politics and the everyday level of space and desires, between objective analysis and unconscious spheres, and between socio-economic space and mental space. The Royal Academy of Arts documentation, on the contrary, attempts to break the tight boundaries of critical theory and its spatial representation and expand them into the neglected realm of mental space.[28]

The resulting collection of twenty-seven heterogenous proposals gave thickness to a renovated interpretation of space rendered through juxtapositions between real and ideal, images and texts, intertwining different perspectives through which interpret the mutable spatial consistency: from the personal and nonrepeatable ones to the definition of more general and abstract concepts delineating new manifestos.

The echo of the *Crystal Chain*'s format emerges from the proposals' very spatial organization. Refusing any hierarchy, and by so, intending to shape a stimulating ground to exchange ideas, the collected materials are arranged in space to form a sequence which, devoid of a precise order, invites the visitors to move across them without a defined trajectory, drawing themselves their own reasoning about space.

The curators' two crucial essays enriched the exhibition's catalog: Goldberg's *Space as Praxis*[29] and Tschumi's *Questions of Space*.[30] The latter represents a further questioning around the spatial concept, a reflection reverberating the very meaning of Cedric Price's installation: to reveal, to unfold, to interpret space through movement, through experience. The use of the blank pages reverberates, and by following its trajectory is possible to

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27. Tschumi, B. (1990), *Questions of Space: Lectures on Architecture*, Architectural Association, p.9.
28. Announcement about the 'A Space: A Thousand Words' exhibition as was sent out to potential contributors on August 15, 1974 [Source: Goldberg R, Tschumi B (1975), *A Space: A Thousand Words*, Dieci Libri, Royal Academy of Arts].
29. RoseLee Goldberg recognizes performance as the only practice to enable the viewer a more challenging response to the perception of space in relation to art prepositions. She identified a new sense of space coming out from the collected proposals, which she categorized in the following terms: "constructed space and power fields (Nauman, B. and Acconci)," "natural space (Oppenheim)," "body space (Forti, S., Brown, T. and Rainer, Y.)," "spectator space (Graham)," and work presented as "a critique of the uses of public and private space (Buren, D. and Dimitriejvic)." Goldberg, R. (1975), "Space as Praxis," in *Studio International 190*, no. 977, p.130.
30. Tschumi invited architects that he personally knew, among them: Gianni Pettena and Ugo La Pietra — founding members of the interdisciplinary design research group Global Tools — Pesce and Guissepi Chiari, Antoine Grumbach, Fernando Montes, Roland Castro, and Christian de Portzamparc.
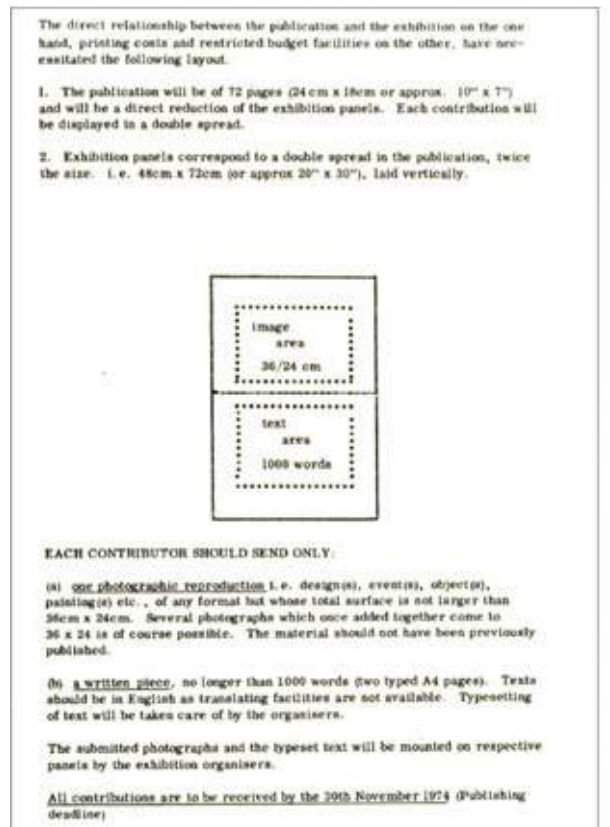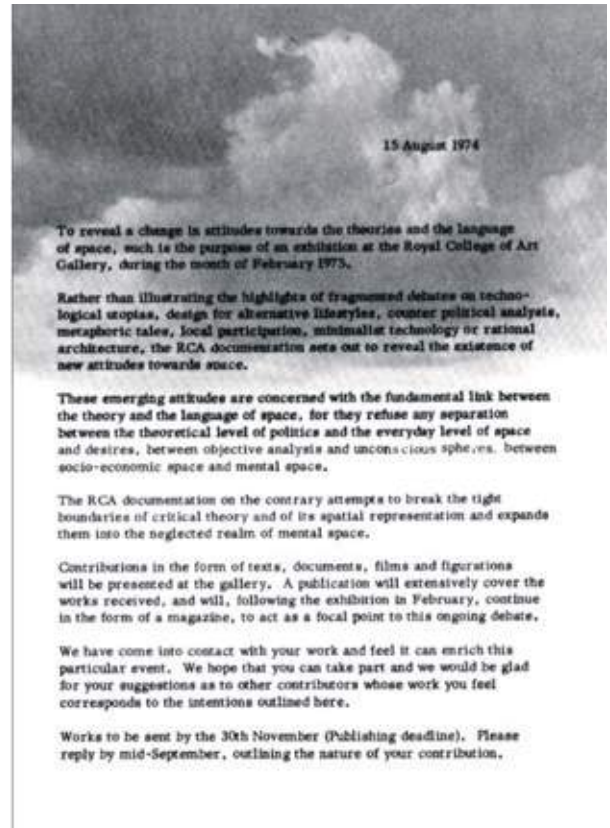
∧   ∧
Announcement about the *A Space: A Thousand Words* exhibition as was sent out to potential contributors on August 15, 1974, from Goldberg R, Tschumi B. (1975), *A Space: A Thousand Words,* Dieci Libri, Royal Academy of Arts.

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Guidelines given to the contributors to *A Space: A Thousand Words*, from Goldberg R, Tschumi B. (1975), *A Space: A Thousand Words,* Dieci Libri, Royal Academy of Arts.
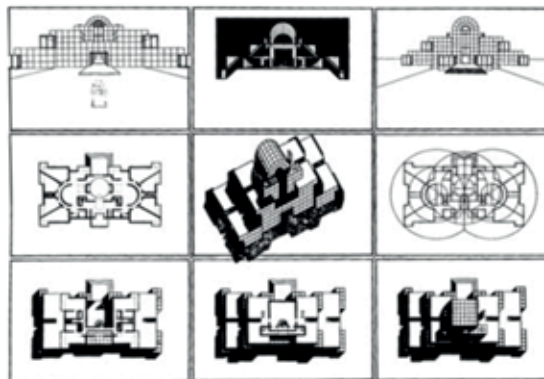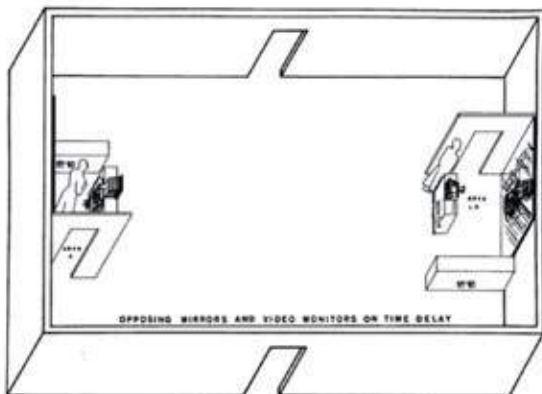
A Space: A
Thousand Words

Thirty contributions
on the production
of space

A publication/exhibition
at the RCA Gallery,
Kensington Gore,
London SW7

February 18 — March 13
Conference at the
Architectural Association
Tuesday 18 February
Preview and publication
presentation
Monday 17 February
6 — 8 pm

Antoine Grumbach, Bernard Tschumi, Bill
Beckley, Braco Dimitrijevic, Brian Muller,
Christian de Portzamparc, Dan Graham,
Daniel Buren, David Dye, Dereck
Revington, Fernando Montes, Franco
Vaccari, Gaetano Pesce, Gianni Pettena,
Guiseppe Chiari, Jeanne Sillett, Jenny Lowe,
John Stezaker, Leon van Schaik, Nigel
Coates, Paul Shepheard, Peter Hutchinson,
Peter Wilson, Pierpalo Saporito, Rem
Koolhaas, Roland Castro, Ugo la Pietra,
Will Alsop, Zoe and Elia Zenghelis.

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Invitation to *A Space: A Thousand Words* at the Royal College of Art Gallery, Bernard Tschumi Archives.

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Some of the partecipants' contributions. First column, from the top:

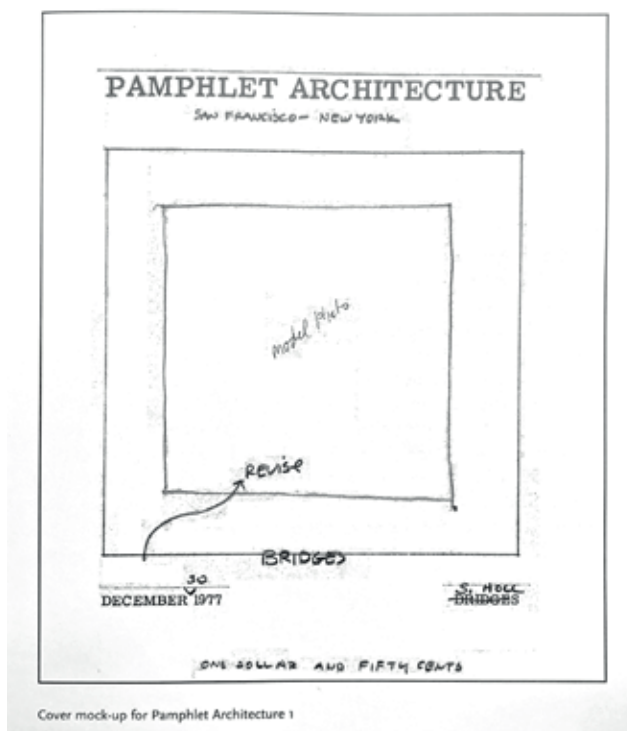Graham, D., *The spectator space.*
Lowe, J., *Sense of Theater.*

Second column, from the top:
Montes, F., *The insurgent space.*
Wilson, P. *House on a void in Covent Garden.*

>
Holl, S.,
*Cover mock-up
for Pamphlet
Architecture 1,*
inserted within the
collection *Pamphlet
Architecture
1-10,* Princeton
Architectural Press,
1998.

>>
Holl, S.,
*Letter from Steven
Holl to William Stout,*
inserted within the
collection *Pamphlet
Architecture
1-10,* Princeton
Architectural Press,
1998.

>>>
*Covers of some issues
of Pamphlet Archi-
tecture.*

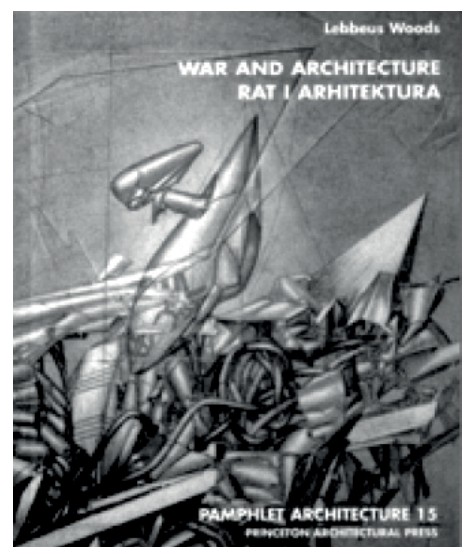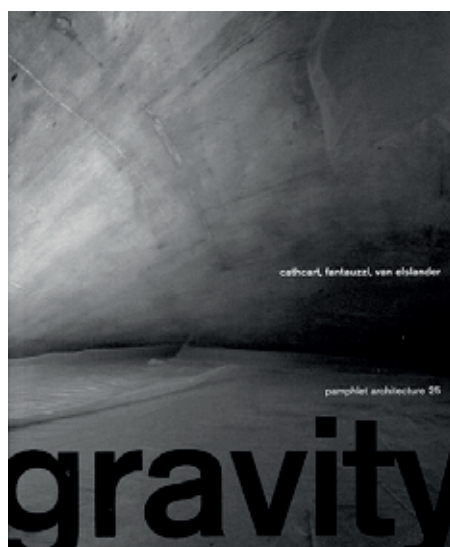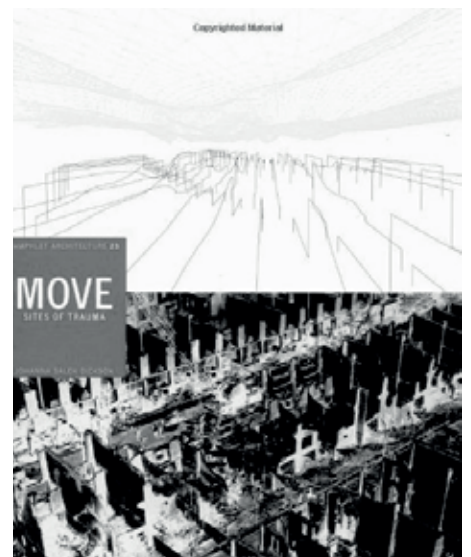Cover mock-up for Pamphlet Architecture 1

retrace another project reached by Bruno Taut's blank page's echo. Only three years after Tschumi and Goldberg's exhibition, Steven Holl and William Stout inaugurated "The Pamphlet Architecture" experiment. By expanding Bruno Taut's expedient to collect ideas, bringing it from a single sheet of paper to a series of monographic publications, in which each number is fully dedicated to the works, thoughts, and theory of a new generation of architects. Within the first number's introduction they declared the aim of their project: "to enjoy the optimism of the indefinite,"[31] and, quoting not too surprisingly, Bruno Taut's words, they defined their statement:

> each of us draws or writes, every so often, casually and according to inclination, on a handy piece of drawing paper (standard size) the ideas he wants to communicate to our circle and sends each of the others a copy. In this way, we shall have an exchange, question, answer, criticism.[32]

Each issue represents a "number in the dark in which its author launched himself, emerging from obscurity,"[33] an exploration of urgent and innovative topics, constituting a sequence of experimental steps through architectural representation and theory.[34]

Thus, adopting this semi-dormant gaze, the observer's eye is driven to wander from reference to reference across Cedric Price collected projects. Forced and invited to question itself about what his eye can embrace, reconstruct his field of personal suggestions and resonances, and finally grasp the dense and kaleidoscopic space-time interstices suspended in a condition of latency, represent a massive field of explorative opportunities for the design, where architecture is explored as a conveyance of mystical ritualities, as the executioner of forced trajectories, as the victim of alien movements, and, finally, as a means to convey significances and ideas to the future.

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31. Holl, S. and Stout, W. (1978), *Introduction*, in Pamphlet Architecture #1,
32. Taut, B., (1919), *Letters to a friend*.
33. Holl, S. and Stout, W. (1978), *Introduction*, in Pamphlet Architecture #1,
34. Within the numbers, it is possible to find projects from Lebbeus Woods (*War and Architecture*, #15, 1993), David Ross (*Some Among them are Killers. Unmanaged Landscape for Non US Military and Government Users*, #23, 2003), NaJa & deOstos (*Ambiguous Spaces*, #29, 2008), LCLA Office (*Islands and Atolls*, #33, 2013), and Nad Chard & Perry Kulper (*Fathoming the Unfathomable. Archival Ghosts and Paradoxical Shadows*, #34, 2014), to name a few.

Cedric Price at the CCA, during the selection of works for the exhibition, 1999, from the Canadian Centre for Architecture (1999), *Cedric Price: Mean Time. A chronological Listing of Works in the Exhibition*, p.16.

TAKE A WALK ON THE *MEAN* SIDE

The term mean time constituted for Price the spatio-temporal device through which detecting and interpreting the different thicknesses of "intermediate" time, enabling to trace those residual and latent space-time diaphragms trapped in a condition of interruption, intermediate times that emerge at irregular intervals within the processes of urban transformation and that architecture can colonized until their total consumption.

The interpretation of Price's mean time represents an exhortation to allow dynamism and open architecture to the indeterminacy and unexpected, reinterpreting the discipline by renouncing any aspiration to the traditional permanence and stability in favor of an aperture to transience. In particular, mean time confronts two distinct and even conflicting movements. The first is conveyed by architecture, which, through the displacement of spatial configurations, defines forced trajectories and directions for crossing the built space. The second, sudden and unpredictable, is the movement of the user's body which, crossing and inhabiting the built space, generates interferences and conflicts.

Price interprets and adopts the term "mean" in two main ways. On the one hand, in direct connection to the temporal dimension, describing a latent interval, a time of transition and simultaneity that, rejecting any defined and unique classification, embraces the consistency of a multiplicity of transitory and changeable intervals derived from the urban transformation and the construction processes. On the other hand, "mean" retains the semantic value of conveying messages and concepts, transmitting values "shared by all, general, held in common."[1] Precisely from this link between time and meaning emerge his fourteen intervals.

Further investigating the meaning of this term, it is possible to identify another semantic nuance with a negative connotation. This word, contextualized in specific conditions and urban contexts, can characterize something hateful, miserly, or bad.

Cedric Price's exhibition consisted of the reflection of a sleeping eye along the concepts of indeterminacy and change, outlining an invitation to explore, immersed in a semi-unconscious state, new ways to interpret the concept of time and its measurement. By operating a transposition of his approach, this work intends to investigate how architecture related to and measured the transitional space-time fragments opened up by mean events provoked by humans. Thus, intercepting traumatized and traumatizing intervals pushed architecture to a double action-reaction operation, leading it to define physical devices,

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1. Definition taken from the Encyclopædia Britannica, under the voice "mean."

rhetorics, and temporary strategies. This mixture of transience and trauma, precariousness and shock, and temporariness and violence intertwines the explorative process defined by Cedric Price, hybridizing with it.

The temporal intervals of transition always stand at the center of reflection. What has mutated is the nature of the process responsible for their apparition. Rather than deriving from the constant process of urban transformation, the investigated transitional time is triggered and produced by traumatic events. Thus, the *mean time* is identified and requires further effort from the design practice. In addition to open and explore the latent space-times trapped within the normal urban transformation, architecture has to confront the definition of projects and strategies to mend the fragments and ruptures produced by trauma, with the drawing of narratives and rituals to exorcise the violent event and overcome it.

The once-serene and sleeping gaze now records a variation between different conditions.
It alternates paranoid and schizophrenic postures in the attempt to grasp and interpret the traumatized space-time slivers opened up intermittently and suddenly by the impact of anthropic shocks, to much more quiet periods, in which the trauma's violence requires a "half-closed eye," capable of disclosing phenomena, lines, and practices more vaguely. Architecture, fluctuating between different states of entropy and dynamism, mirrors the same mental state of trauma's victims, giving thickness to projects that blur and elide boundaries between the real and the unreal, operating introducing disturbing ambiguity, generating a slippage between nightmare and dreaming, shaking the fixed certainties of the present to define and individuate new escaping lines of survival.

By adopting the process displayed by Cedric Price to reveal the thickness of transitional time intervals, the research explores and retraces the *mean time architectures* derived from the urge to limitate, react, and treat the built and human bodies hitten by trauma. The investigation, employing this specific gaze as the general *fil rouge* of exploration, intends to weave a game of strings, outlining frictions, paradoxes, and conflicting tensions that fill the traumatized spaces. This last image has been employed by Donna Haraway and is intentionally recalled in this context. Describing this concept, the author states:

> String figures are like stories; they propose and enact patterns for participants to inhabit, somehow, on a vulnerable and wounded Earth. My multispecies storytelling is about
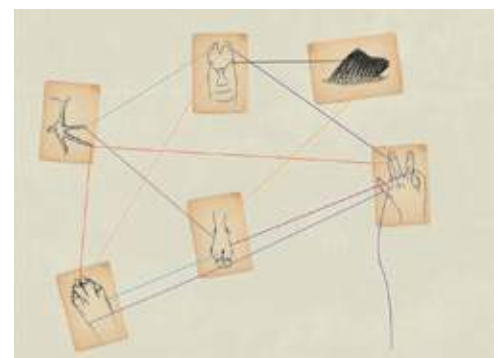
Mufti, N., *Multispecies Cat's Cradle*, 2011. The drawing illustrates Haraway's thinking of how multispecies kinship and collaboration can produce patterns for inhabitation on an Earth in crisis.

recuperation in complex histories that are as full of dying as living, as full of endings, even genocides, as beginnings. In the face of unrelenting historically specific surplus suffering in companion species knottings, I am not interested in reconciliation or restoration, but I am deeply committed to the more modest possibilities of partial recuperation and getting on together. Call that staying with the trouble.[2]

Thus, the work operates with the aim of open possibilities of reflection rather than define fixed and closed solutions to draw trans-relational and trans-dimensional connections which, overpassing the boundaries between the different disciplines, finally detect practices, projects, and strategies to deal with the trauma.

APOCALYPSE NOW
The imminent end of the world has always cast its shadow on humanity. Throughout history, it observed a constant metamorphosis punctuated by a succession of dilations and contractions related to the speed of its predicted, or partially concretized, advent, originating, thus, in the collective imagination, an articulated iconographic taxonomy which shapes the manners through which it should have been concretized.
"Each cosmogony explores its own eschatology,"[3] each culture, each civilization has constructed its projection of the end of the world, using different gradations, intensities, and imaginaries.
Essentially, this need for finitude is linked to human's instinctive and primordial impulse to circumscribe a measurable and intelligible temporal period, to oppose to the eternal flow of time, the eon. As Eduardo Viveiro De Castro and Debora Danowsky note, "the ethnographic documentation records a variety of ways in which human cultures have imagined the disarticulation of the space-time structures of history."[4] Thus, by retracing the history of humanity, it is possible to trace a heterogeneous sequence of extreme and resolving ends of human existence, a progressive series of Ends of the Worlds.[5] The adoption of the plural

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2. Haraway, D. J. (2016) *Staying with the Trouble. Making Kin in the Chtulucene*, Durham and London: Duke University Press, p.10.
3. Fogue, U. (2022), *Las arquitecturas del fin del mundo. Cosmotécnicas y cosmopoliticas para un futuro en suspenso*, Barcelona: Puente editores, p.120. (translation by the author). The author, assuming the end of the world as a phenomenon characterized by multiplicity, and insisting on the various and heterogeneous configurations it can take, draws an apocalypses taxonomy, recognizing ten possible ends of the world, each of which mobilizes a specific architectural reaction: Edenism, Preservationism, Extinction, Thanatology, Ecological Degradation, Transhumanism, Accelerationism, American Cosmogonies, the War Of Gaia, and the Cosmopolitan Proposal.
4. Danowski, D. and Viveiros de Castro, E. (2016) *The Ends of the Worlds*, Polity Press, Boston, p.21. (translation by the author.)
5. A whole series of texts and authors carrying out this operation of deconstruction of the anthropocentric, of the overcoming of the Vitruvian perfect man, who is registering nowadays a displacement by the very technology he has created. In particular, the Posthuman Convergence, investigated and promoted, among the others, by Rosi Braidotti, raises from the encounter of the fourth industrial revolution and the sixth extinction (climate change), exhorting the necessity to ground the discussion in the materiality (acidified oceans, mushrooms, toxic stones) and through cartography and figuration, understood as methodologies that conceptualize time, help trigger the process of mapping, of navigation in space and time. Through some meaningful books, it is possible to deepen these concepts further: Latour, B. (2017), *Facing Gaia: Eight lectures on the New Climatic Regime,* Polity Press; Haraway, D.J. (2016) *Staying with the Trouble. Making Kin in the Chtulucene,* Durham and London: Duke University Press; Braidotti, R. (2013), *The Posthuman,* Polity Press; Braidotti, R. (2013), *The Posthuman Knowledge,* Polity Press. The field traced

form intends to explicitly contextualize the discussion within the heated and articulated contemporary debate. Although the research refers to the Western conception of the apocalypse, it is crucial to assume and recognize that this term involves a multiple fields of formulations, constructions, and reactive displacements of narratives, bodies, and dwellings. As will be described further within this paragraph, Uriel Fogue, in his latest book, draws three hypothetical ends: the end of humanity in the world, the end of the world, and Gaia. Each of these weaves a dense subsystem of possible capitulations, decentralizing and slipping the apocalyptic reasoning away from the purely anthropocentric conception of the world.

A key term in the construction of eschatological narratives embodies apocalypse — from the Latin apocalypsis and the Greek ἀποκάλυψις, apokálypsis, meaning "revelation." This religious, social, political, and cultural construct, rooted in ancient times, is the ultimate limit of the shadow projected by the threat of the world's imminent end and has always been conceived and described as the ultimate destiny of humanity.

The manifestation of the apocalypse marks, as the very etymology of the term evokes, a fundamental turning point, simultaneously sanctioning the completion of a historical phase and inaugurating the commencement of a new condition. Thus, determining the dissolution of a spatio-temporal dimension that had punctuated rhythm and life in the previous state and involving its subsequent rearrangement in different conformations and rhythms, shaping a new era. In this sense, the lemma apocalypse is closely linked to another term, catastrophe, whose definition — exploited through the construction of manipulative, speculative, and capitalistic narrations — refers to a wide range of meanings, including "the denouement of a drama,"[6] as well as "an event causing great damage or suffering."[7] Narrative reports of beginning and ending cosmic catastrophes can be found in Greek mythology, where Chaos, Chronos, and Zeus form a rather catastrophic succession. The same applies, mutatis mutandi, to Teutonic mythology, in which Ragnarok, or the Twilight of the Gods, is a cosmic catastrophe.[8]

Guttmann, E., *Cartolina ricordo della fine del mondo*, Alessandro Levi Editore, 1899.

The meaning of this pivot is not limited to a reassessment and recalibration of the space-time dimensions, defining a pre- and a -post, but takes on a mystified aura, traceable to the other fundamental etymological meaning of the term: unveiling. This semantic value and, consequently, the interpretations condensed around it have produced the dense existing intertwining between the apocalyptic event, or rather the projection of its imminent advent, and the different religious cults that have succeeded in history, loading the term with mystical meaning. The apocalypse does not only mark a drastic change, but the painful and salvific transitional passage to reach and secure life in the underworld and, as such, represented a robust political construction, as emerges clearly from his Christian exegesis in which it has been instrumentalized as the narrative device conveying fears and suggestions of the faithful to justify operations of submission and colonization. In this sense, the philosopher Quintin Racionero recognizes a precise political construction in the famous *Apocalypsis of Saint John.*[9] By tracing a political topology of heaven and earth, Rome is identified as the main enemy that prevents a unified church.

Thus, the entire human history can be described as an ongoing process of catastrophes constructed through a complex hybridization between two forces. On the one hand, there is the primordial human paranoia dictated by the irreversibility and uncertainty of existence and the perceived inability to tame the extreme forces of nature. The second resides in the tension deriving from the exegesis of a looming final judgment as a political, social, and cultural construct to develop logics of control and colonization.

Thus, read through this framework, the Greek mythological apocalypse expresses the intense friction characterizing the relationship between humans and the hostile, or even indifferent, divinities; passing then through its Christian theological construction, where the same human condition is defined by it: starting with a catastrophe — the expulsion from the Garden of Eden, the Flood, the Tower of Babel — and destined to end in the same way with the Judgement Day, in perpetual tension between Damnation and Extinction, Paradise and Redemption. Finally, coming to Modernity, when the catastrophe exits its eschatological dimension to relate indissolubly to the consequences of capitalist processes and technological progress, recording a shift of significance in which it is definable as the synthesis of the mythical-cosmic and the historical ones.[10]

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9. Racionero, Q. (2010) "La inquietud en el barro. Lecciones de historia de la filosofia antigua y medieval", in *Vols. and y II. El espiritu griego y El mundo medieval*, Dykinson: Madrid.
10. This definition was conceived by The Club of Rome, founded in the homonymous city in 1968 by an Italian industrial, Aurelio Peccei, and a Scottish scientist, Alexander King. This nonprofit and informal organization developed its original score around the concept of *problematic* and, basically, the urgency of abandoning the individualistic dimension of confronting with problems of humankind — such as environmental deterioration, pollution, poverty — to embrace a more relational approach. In 1972 was published the first report, *The Limits to Growth*, that developed reasoning around the issue of uncontrolled population and industrial growth, stating that "if the present growth trends.. continue unchanged, the limits of growth on this planet will be reached sometime within the next hundred years." (Meadows, D.H., Meadows, D.L., Renders, J., and Behrens III, W.W. (1972), *The Limits to Growth*, Potomac Associates books, p.23). This publication, nonetheless its mediatic success, is strongly criticized today. One of the weakest points brought to the discussion is the very roots of the theoretical contents presented in the report, based on the emphasis on demographic growth.

This idea approaches the scientific concept of catastrophe. It predicts a sudden shift to conditions that were hitherto almost unimaginable — but it is at the same time normative:

> catastrophe is a drastic disruption of the equilibrium within the global system brought about by human beings, which can result in all manner of negative consequences for the vital elements of that system, or even in a large-scale implosion and destruction of that system, with a massive death toll as its most painful effect.[11]

This ultimate shift within the catastrophe's idea, strictly linked to and provoked by globalization, can be expressed in terms of the causality concept. It is no longer solely about the passive suffering of the traumatic events impacting human beings but also, above all, human beings as the cause of events. Catastrophes without a subject are not part of the philosophical idea of catastrophe: they are natural disasters, calamities, contingent fatalities, and acts of nature. Moreover, this reformulation shakes the foundations of anthropocentrism: as a cause, human is not the norm of order but their transgressor; therefore, human beings need to be decentred. This philosophical shift is remarked, as well, by Lieven De Cauter, who states that:

> Catastrophe theory often deals with insignificant details: the turbulence in a jet of water at higher pressure is, in technical, mathematical, or physical terms, a catastrophe, but not in philosophical terms. It means that we must realize that catastrophe is a normative concept. One might go so far as to argue that there are no natural catastrophes. We can speak of catastrophes only if humans are involved. [...] We have to be wary of ecosentimentality: the dodo died out in the eighteenth century, but the world did not end because of it. Is the philosophical idea of catastrophe fundamentally anthropocentric?[12]

Starting from this observation a crucial element that constitutes a fundamental criterion for the delimitation of the field of investigation derives: the distinction between environmental disaster and artificial catastrophe, which lies in the fact that the triggering causes of the latter recognize in man an active role.
Together with its semantical reformulation, the catastrophe is affected by an accelerative process that records an incremental looming in our daily perception. It represents no longer a mere distant projection of human fears but a tangible and gradually-materializing

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11. de Cauter, L. (2004), *The Capsular Civilization. On the City in the Age of Fear,* Nai Publishers, p.101.
12. Ivi pp.100-101. Furthermore, to deepen the topic of the catastrophe theory, it is really relevant to mention the Catastrophe Theory by René Thom (1968-1972) a philosopher and matematician who formulated a mathematical theory in which he attempted to apply the latest results of topology to the interpretation of natural phenomena, and in particular to the disastrous events. In particular, his theory considers the special case where the long-run stable equilibrium can be identified as the minimum of a smooth, well-defined potential function. Small changes in certain parameters of a nonlinear system can cause equilibria to appear or disappear, or to change from attracting to repelling and vice versa, leading to large and sudden changes of the behaviour of the system. However, examined in a larger parameter space, catastrophe theory reveals that such bifurcation points tend to occur as part of well-defined qualitative geometrical structures. responsible for provoking a discontinuous system change to a different state. Furthermore, he defined seven elementary events of transformation which escaping from any classical simmetry, do not allow any possibility for a static object: the space is thus interpreted as a variable curved surface that is the inflection of the pure event.

condition to be confronted with regularly in the so-called Anthropocene era.[13]
Here resounds the echo of the first environmental wave initiated by the shot and the subsequent spread of Blue Marble in the 1970s, in which the estrangement produced in humans in observing their own planet from the outside, in all its fragility and vulnerability, had given rise to a search for more sustainable ways of inhabiting it and preserving it for the future generations. Over the last few decades, it has acquired a renewed critical and speculative consistency, reverberating in the broader disciplinary fields that question the formulation of *The Art of Living on a Damaged Planet.*[14]

The distance that separates us from the imminent ends of the worlds is reducing progressively, discarded daily by the artificial disasters triggered by the contemporary Prometheus that occupy the major media headlines, of which the pandemic covid-19 and the war in Ukraine constitute only a final example. The constant and ever-growing discourse and perception of approximating one or more probable ends is a tendency that the philosopher John Gray describes as intensely growing and dense in the 1990s. The reasoning developed by this philosopher is particularly relevant for the connection he draws between the utopian impulse derived from the Enlightenment notion of progress and the reiterative emergence of apocalyptic projections. Analyzing the doctrines of Nazi racism, al Quaeda's fundamentalism, the Bushian war on terror, and Soviet Communism, he states that "apocalyptic impulses are coded into every ideological genome,"[15] and the situation is destined to increase because of the ever-standing wrong assumption of the balance between scientific knowledge and technological power and politics and morality.
With the growth of human produced ecological disasters on the one hand, and the development of technological improvements on the other, the result will be the creation of innovative and more powerful tools of destruction, reinforcing, thus, the tendencies toward violent order and anarchy in a constant attempt to impose on the world our illusions until it proves

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13. The concept of the Anthropocene was already conceptualized around the 1940s when the Russian Ukrainian mineralogist and geochemist Vladimir Vernadsky adopted the term Noosphere to identify the scientific thought as a geological force and was then utilized in the 1960s to refer to the Quaternary, the most recent geological period. Nonetheless, it was only in the 1980s that this term was officially formulated (by the ecologist Eugene F. Stoermer), and in 2000 that it was radically popularized by the atmospheric chemist Paul J. Crutzen to identify the influence of human behavior on Earth's atmosphere in recent centuries as so significant as to constitute a new geological epoch. On the question of the Anthropocene, numerous publications have been produced, among which: Morton, T., (2013), *Hyperobjects. Philosophy and Ecology after the End of the World*, Minnesota Press. This text reasons on the Hyperobjects, questioning and highlighting how human activity has triggered a process of transformation widely distributed "in time and space to baffle humans and make the interaction with it fascinating and at the same time disturbing and complex." Another fascinating book that questions the concept of Anthropocene is Tsing, A., Swanson, H., Gan, E., Bubandt, N. (2017), *Arts of Living on a Damaged Planet: Ghosts and Monsters of the Anthropocene*, University of Minnesota Press. Finally, Rosi Braidotti, within the context of the last Utrecht International Summer School that I attended in the summer of 2021 and which was focused on the "Posthuman and the New Materialism," recognizes the riotous profusion and abuse of this term by quoting some of the forms he took over the last years: Capitalocene (2013), Chtulucene (2013), Anthropo-scene (2014), Anthropo-obscene (2015), Plastic-ene (2016), Plantatioscene (2015), Mis-Anthropocene (2014).
14. Tsing, A., Swanson, H., Gan,E., Bubandt, N. (2017), *Arts of Living on a Damaged Planet: Ghosts and Monsters of the Anthropocene*, University of Minnesota Press.
15. Gray, J. (2011), *Black Mass: Apocalyptic Religion and the Death of Utopia*, Penguin, p.45.

we are wrong. The succession of subsequent and increasingly threatening crisis waves, coming from the disregarded and denied balance between evolution and exploitation, gave new strength, in the same period, to a movement already born in the 1930s: Survivavilism.[16] Based on the preparation for a personal and global emergency, this social movement spread intensely after the 09/11 attack and the Great Recession of 2008, offering survival advice for various potential disasters: ranging from an energy shortage and crash to nuclear or biological terrorism.[17]

The last paragraph of this chapter, *Chronicle: one, no one, and one hundred thousand ends of the world/s*, will describe in a visual synthetic journey, built by combining the diagrammatical and iconographic language, the more recent artificial disasters.

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16. Survivalism is a social movement of individuals or groups (survivalists or preppers) who prepare proactively for various kinds of emergencies, ranging from a vast scale of adversities and temporal terms. Rooted in the 1930s, in Great Britain and the United States, as a response to the threats of nuclear warfare and fear of social and economic collapse, Survivalism was officially formulated in the 1980s. The movement has shaped a specialized terminology, highly hybridized with the military language, to define different surviving strategies: BOL (Bug-out location), BOB (Bug-out-bag), EDC (Everyday carry), EOTW (End Of The World), and GOOD (Get Out Of Dodge), to name a few.
17. Around this topic have been published a considerable number of books, structured in the form of a Surviving kit or manual, among them, to name a few: Aguirre, F.F. (2009), *The Modern Survival Manual: Surviving the Economic Collapse*; Creek, S. (2012) *Build the Perfect Bug Out Bag: Your 72-Hour Disaster Survival Kit*; Pennington, T. (2014) *The Prepper's Blueprint*; Cobb, G. (2014) *Prepper's Long-term Survival Guide: Food, Shelter, Security, Off-the-Grid Power and More Life-Saving Strategies for Self-Sufficient Living*, Goodreads; Rawles, J.W. (2009) *How to survive the End of the Worlds as We Know It: Tactics, Techniques, and Technologies for Uncertain Times,* Plume.

TOWARD A PERMANENTLY IMPERMANENT ARCHITECTURE

The Earth system's equilibrium, constantly threatened by anthropic perturbations, finds itself in a perpetual condition of entropy, whose tendency to lose order forces humans to wander from one traumatic event to another, dangerously floating in a permanent condition of transitoriety. An entropic world, where architecture itself is immersed, simultaneously undergoing strong influences stratifying its theoretical corpus and recording a constant erosion in its materiality, its permanence: a chronic loss of stability that forces it to reiterate a perpetual motion in search of new possible balances.

Strictly intertwined with the congenital relation between the hypothetical projections of the ends of the world/s and their narrations, architecture has been displaced throughout history to navigate these uncertain critical time intervals and has been called into question to formulate solutions to fight against environmental and social catastrophes, which have represented an enormous field of experimentation and a fertile testing ground for this discipline.

This reactive operation led to the materialization of a complex system of projects — whether pragmatic, utopian, or dystopian — narratives and strategies that attempted to concretize solutions capable of protecting human beings from an impending catastrophe or, at least, to try to slow down this progressive erosion. Some projects and devices that constitute this operative and provisional taxonomy have partly been absorbed within the "normal" design practice through a sedimentation and stratification process that registered gradual adjustments, mixtures, and hybridizations. The architect Federico Soriano has recently underlined this porous and absorptive consistency of architecture that ingests contingencies and phenomena that traverse it. Taking up the second principle of thermodynamics — according to which the entropy of an isolated system tends to increase over time, implying its continuous passage from a degree of instability to a higher degree of instability —, he states that:

> while the states tend to the disappearance of gradients, in the art, on the contrary, each stage tends to seek for new and more complex balances. Architecture needs to stress space. Its order balances opposing tensions, gravity, lightness, speed, consistency, scale and size, stability, and dynamism. The balance is unstable. The deeper, the more unlikely it seems. Architecture steals entropy from the environment because it is an open system, not linear. There are no logical extensions. Discontinuities appear, fluctuations establish order, jumps, and crawls towards new and unforeseen states.[1]

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1. Soriano, F. (2000) *Es pequeño, llueve dentro y hay hormigas*, Barcelona: Actar Publisher, p.86. (translation by the author.)

This mutual and violent relationship between architecture and trauma, which can be considered the external factor that perturbates the already-weak conditions of the first, is also described by the words of Beatriz Colomina, who states:
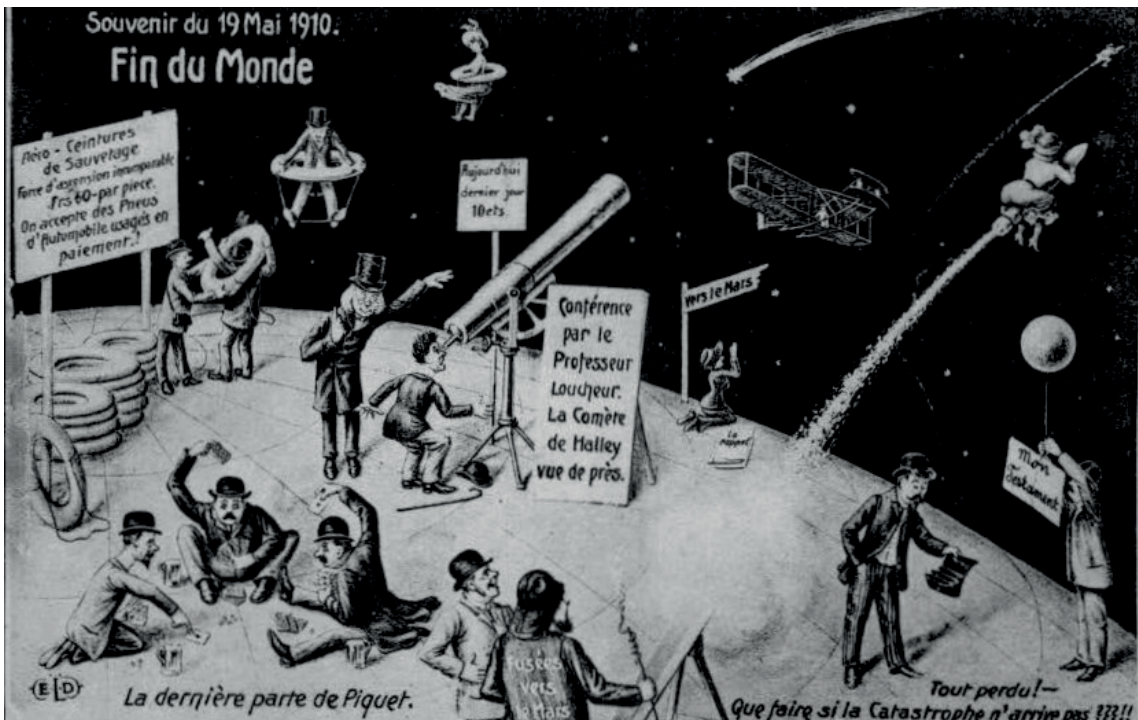
> All architecture is sick. There is no disease without architecture and no architecture without the disease. Architecture constructs the very conditions for disease. Doctors and architects have always been in a kind of dance, often exchanging roles, collaborating, and influencing each other, even if not always synchronized. Furniture, rooms, buildings, cities, and networks are produced by medical emergencies that layer one on top of another over the centuries. We tend to forget very quickly what produces these layers. We act as if each pandemic is the first as if trying to bury the pain and uncertainty of the past.[2]

Architecture has always been directly called into operation by different levels of traumatic events and artificial catastrophes. Firstly it assumes the semblances of the medium of disaster: destruction, erosion, and erasure are processes that harshly hit its physical and symbolic body: its relation with sickness is chronic, and our cities are the result of a constant overlapping operation of layers over layers of diseases.
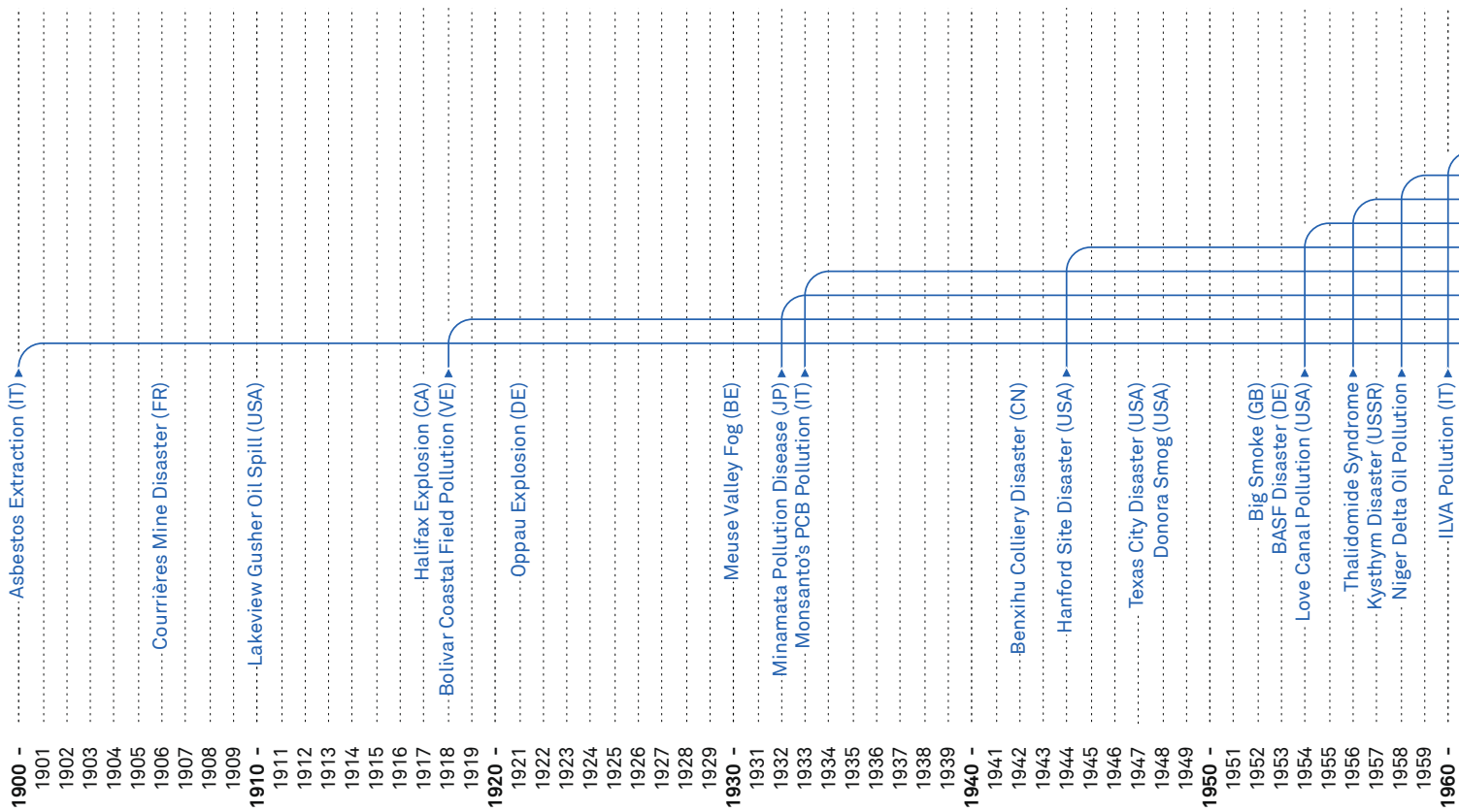
Furthermore, in addition to passively suffering the adverse effects of hazards, architecture is called upon to react, defining strategies and projects to contrast the traumatic event that, proficient in assuming different speeds and intensities, spans from sudden and violent shocks to slow and disruptive erosion, acting thus in and on space and time in various manners. The violent hazard provokes a short-circuit, which leads to the emergence of a multitude of space-time frictions: a diffuse and growing constellation of fragments undergoing a violent rupture with their prior weakened-balanced system and seek to be re-imagined and re-sewn within the urban body and the imaginary dimension. In such a current catastrophic scenario, ancient architectural aspiration for stability seems to be converted into a permanently impermanent feature: contemporary architecture is immersed in a constant crisis condition. This work investigates modalities, strategies, and devices that architecture formulated in response to trauma. It focuses on the different elements that reverberated within the architectural discipline and how they reacted by activating processes capable of counteracting the traumatic event at different time scales defined as *mean time*, drawing an explicitly direct connection with Cedric Price's intervals and detecting the new architectural tools with which to afford the current unstable condition.

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2. Wigley, M., Colomina, B. (2016), *Are we human? notes on an archaeology of design*, Lars Müller Publishers, p.128.

MARIACRISTINA D'ORIA

CHRONICLE: ONE, NO ONE, AND ONE HUNDRED THOUSANDS ENDS OF THE WORLD/S

Fin du Monde, le 19 Mai 1910, humorous postcards, 1910.

Timeline axis labels (1900–1960):

Asbestos Extraction (IT)
Courrières Mine Disaster (FR)
Lakeview Gusher Oil Spill (USA)
Halifax Explosion (CA)
Bolivar Coastal Field Pollution (VE)
Oppau Explosion (DE)
Meuse Valley Fog (BE)
Minamata Pollution Disease (JP)
Monsanto's PCB Pollution (IT)
Benxihu Colliery Disaster (CN)
Hanford Site Disaster (USA)
Texas City Disaster (USA)
Donora Smog (USA)
Big Smoke (GB)
BASF Disaster (DE)
Love Canal Pollution (USA)
Thalidomide Syndrome
Kysthym Disaster (USSR)
Niger Delta Oil Pollution
ILVA Pollution (IT)

1900 – 1901 1902 1903 1904 1905 1906 1907 1908 1909 1910 – 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 – 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 – 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 – 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 – 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 –
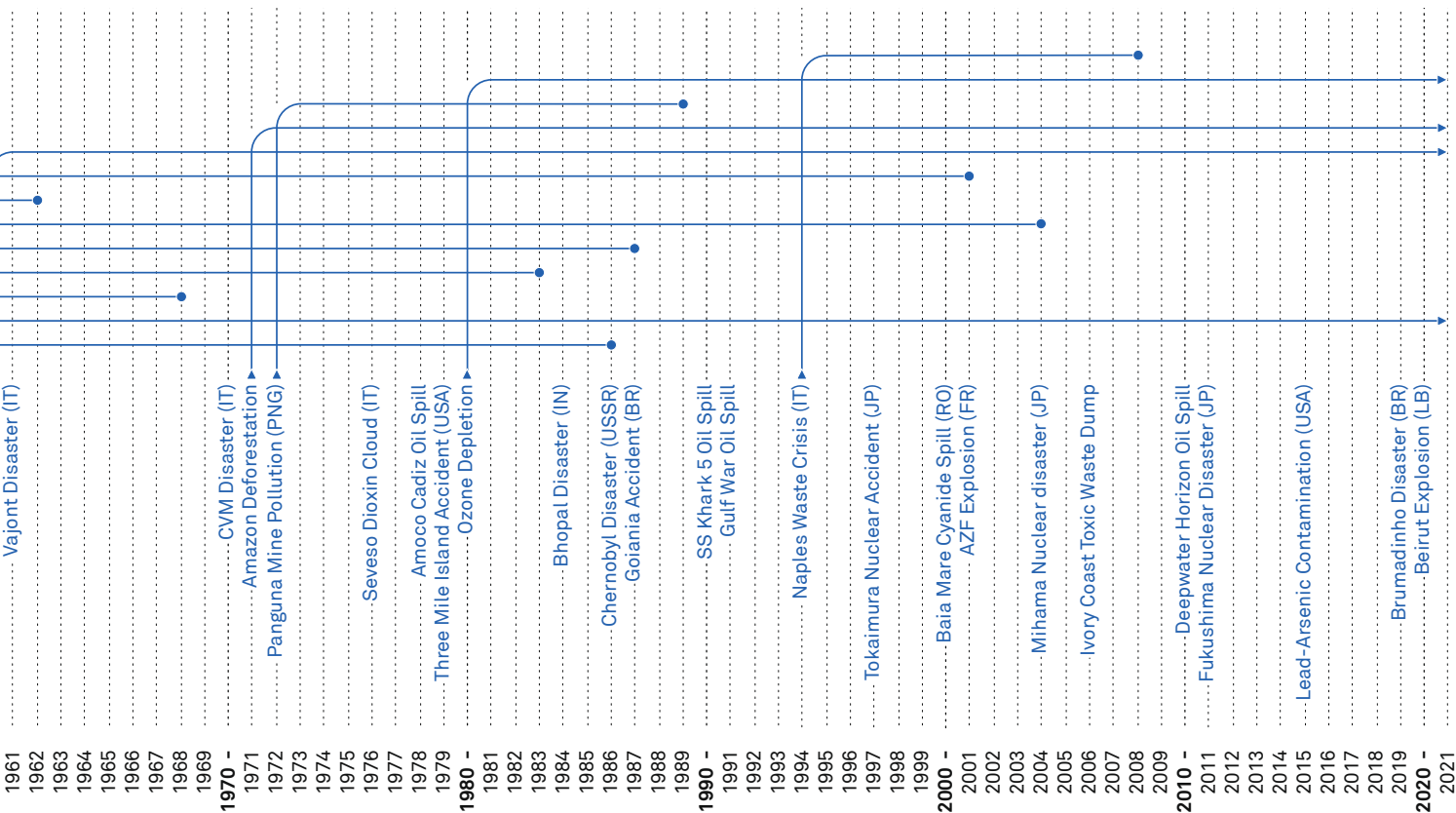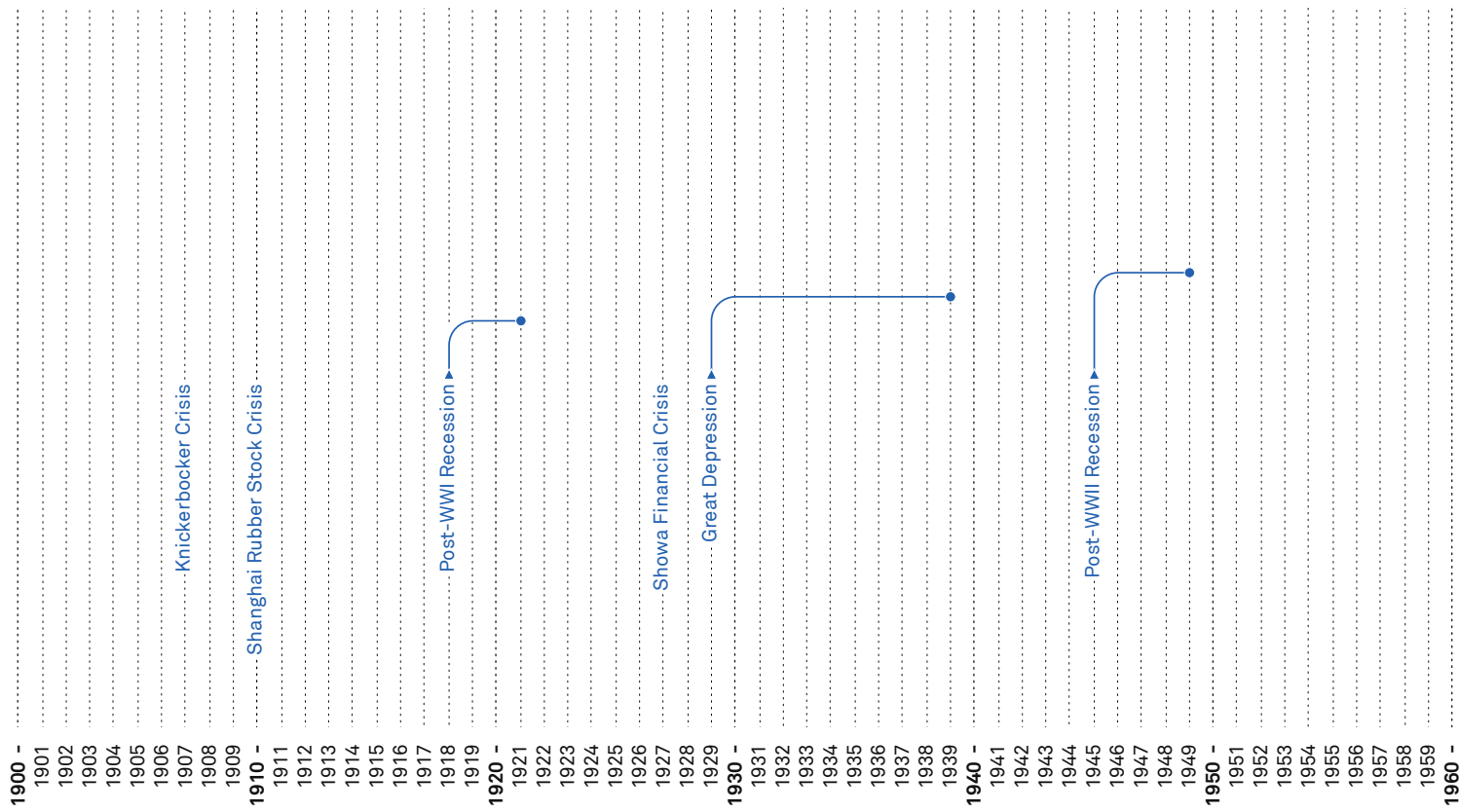
ENVIRONMENTAL / HEALTH DISASTER

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Croce, G., D'Oria, M., Rodani, V., *Distasters archive,* from the installation *Archrypt. The time capsule as a design-driven method for the end times*, 2020-2021.

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An aerial view of the Chernobyl nuclear power plant still smoking shortly after the explosion of its fourth reactor. In particular, "the 30 km exclusion zone around the Chernobyl reactor remains highly contaminated and unsuitable to live in," it said. REUTERS, 1986.

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Residential buildings near the port were severely damaged by the explosion, Beirut, REUTERS, 2020. Photo taken from the online article "Beirut explosion: What we know so far," published on the BBC website in the 11 August, 2020.
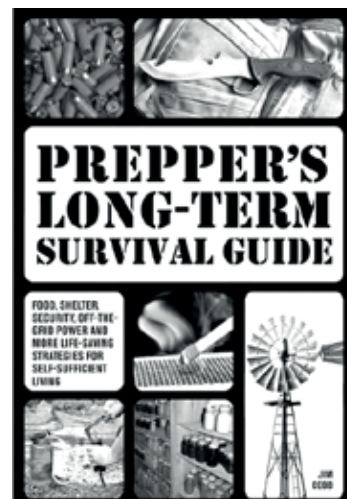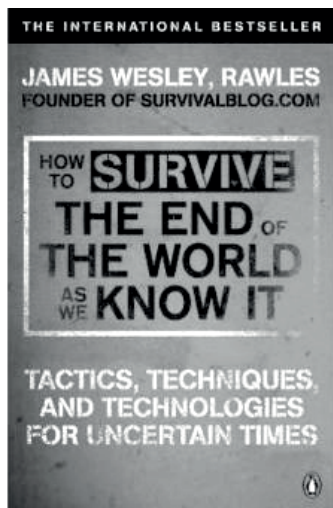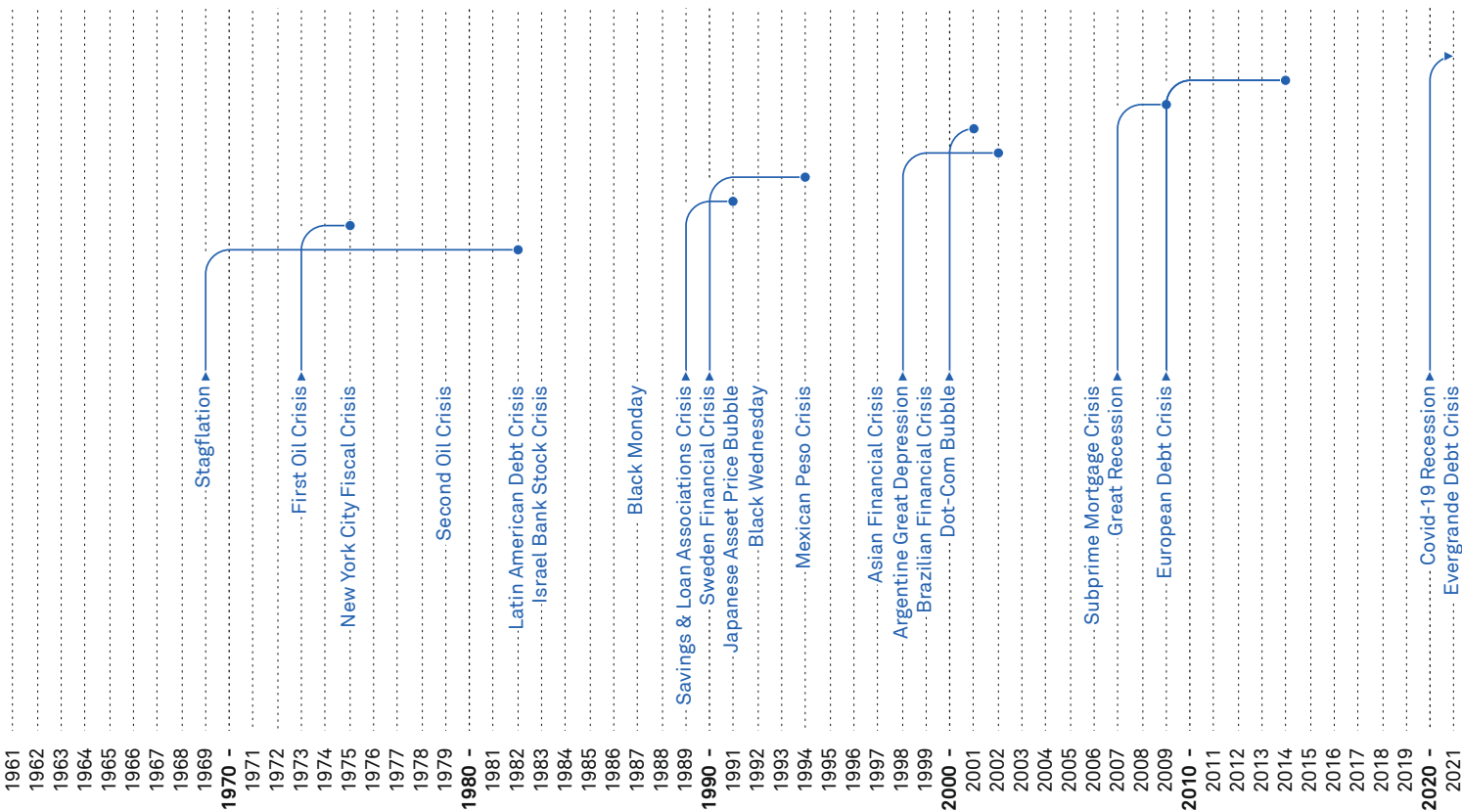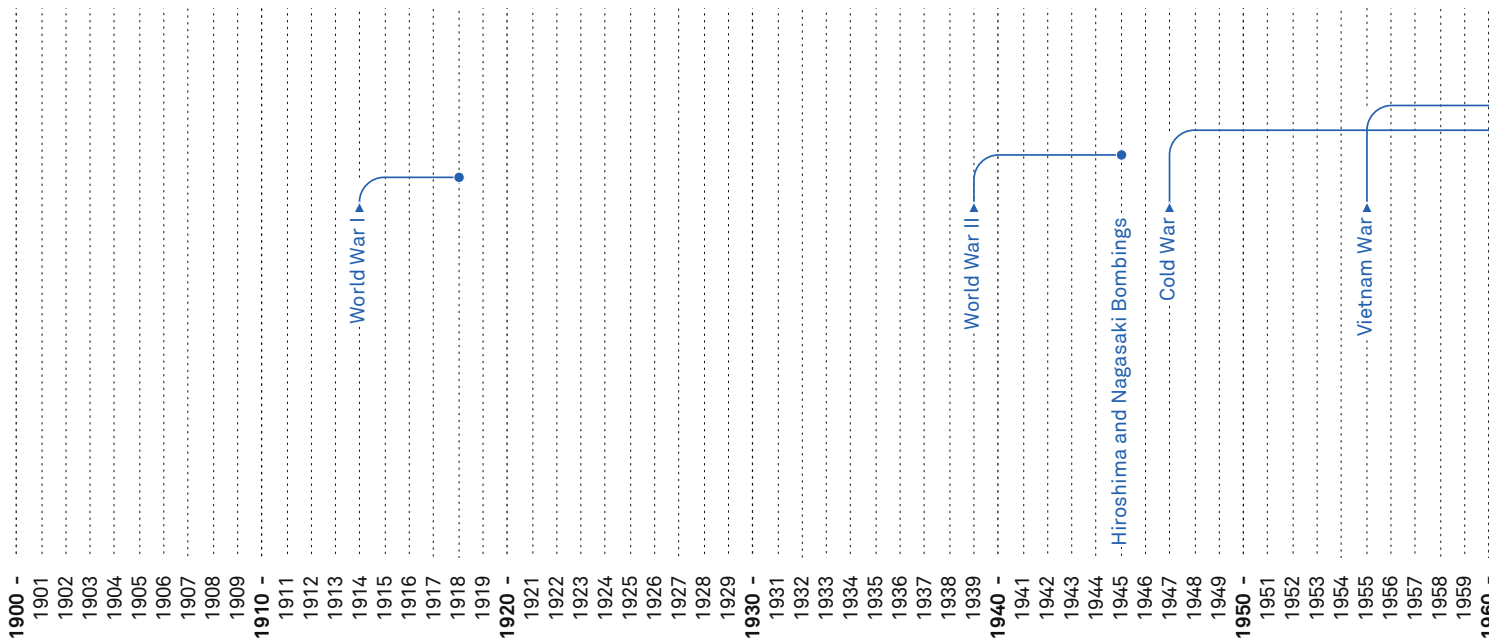
Vajont Disaster (IT)

1970 – CVM Disaster (IT)
Amazon Deforestation
Panguna Mine Pollution (PNG)

Seveso Dioxin Cloud (IT)

Amoco Cadiz Oil Spill
Three Mile Island Accident (USA)
1980 – Ozone Depletion

Bhopal Disaster (IN)

Chernobyl Disaster (USSR)
Goiania Accident (BR)

SS Khark 5 Oil Spill
1990 – Gulf War Oil Spill

Naples Waste Crisis (IT)

Tokaimura Nuclear Accident (JP)

2000 – Baia Mare Cyanide Spill (RO)
AZF Explosion (FR)

Mihama Nuclear disaster (JP)
Ivory Coast Toxic Waste Dump

2010 – Deepwater Horizon Oil Spill
Fukushima Nuclear Disaster (JP)

Lead-Arsenic Contamination (USA)

Brumadinho Disaster (BR)
2020 – Beirut Explosion (LB)

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Knickerbocker Crisis · Shanghai Rubber Stock Crisis · Post-WWI Recession · Showa Financial Crisis · Great Depression · Post-WWII Recession

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ECONOMICAL / FINANCIAL / ENERGY CRISES

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Croce, G., D'Oria, M., Rodani, V., *Distasters archive-economical/ financial / energy crises,* from the installation *Archrypt. The time capsule as a design-driven method for the end times*, 2020-2021.

>
Some covers of books published within the last decades in the field of Survivalism.

Timeline of financial crises (1961–2021):
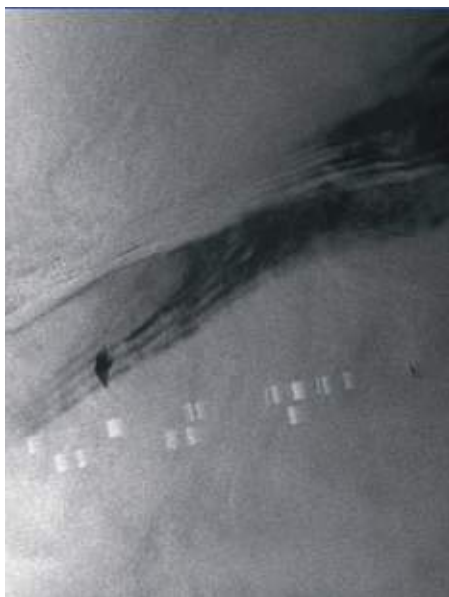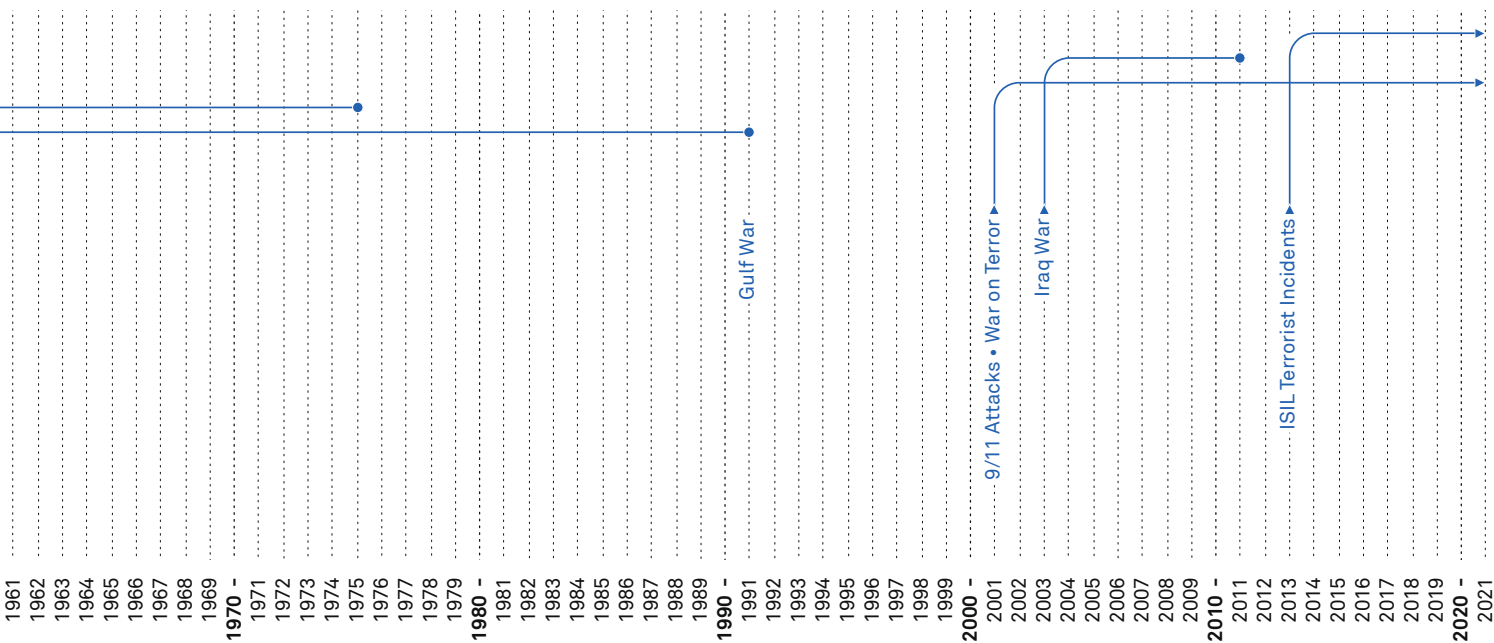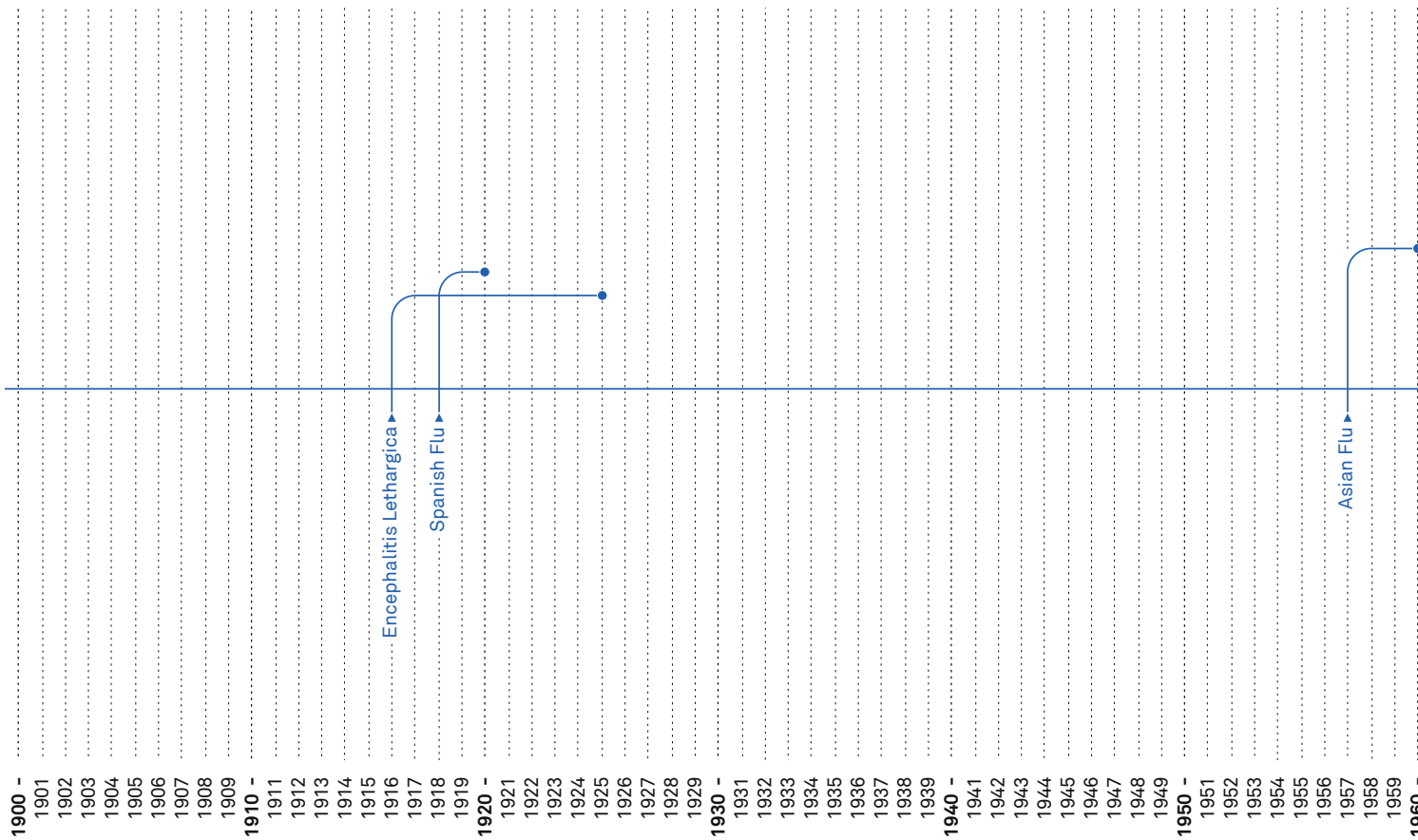
- Stagflation
- First Oil Crisis
- New York City Fiscal Crisis
- Second Oil Crisis
- Latin American Debt Crisis
- Israel Bank Stock Crisis
- Black Monday
- Savings & Loan Associations Crisis
- Sweden Financial Crisis
- Japanese Asset Price Bubble
- Black Wednesday
- Mexican Peso Crisis
- Asian Financial Crisis
- Argentine Great Depression
- Brazilian Financial Crisis
- Dot-Com Bubble
- Subprime Mortgage Crisis
- Great Recession
- European Debt Crisis
- Covid-19 Recession
- Evergrande Debt Crisis

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THE INTERNATIONAL BESTSELLER
JAMES WESLEY, RAWLES
FOUNDER OF SURVIVALBLOG.COM
HOW TO SURVIVE THE END OF THE WORLD AS WE KNOW IT
TACTICS, TECHNIQUES, AND TECHNOLOGIES FOR UNCERTAIN TIMES

WRITTEN BY: TESS PENNINGTON
THE PREPPER'S BLUEPRINT
FIRST EDITION
THE STEP-BY-STEP GUIDE TO HELP YOU PREPARE FOR ANY DISASTER

BUILD THE PERFECT BUG OUT BAG
YOUR 72-HOUR DISASTER SURVIVAL KIT
Creek Stewart

PREPPER'S LONG-TERM SURVIVAL GUIDE
FOOD, SHELTER, SECURITY, OFF-THE-GRID POWER AND MORE LIFE-SAVING STRATEGIES FOR SELF-SUFFICIENT LIVING

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World War I ▶

World War II ▶

Hiroshima and Nagasaki Bombings

Cold War ▶

Vietnam War ▶

WARS / CONFLICTS / TERRORIST ATTACKS

⋀
Croce, G., D'Oria, M., Rodani, V., *Distasters archive-wars / conflicts / terroristi attacks,* from the installation *Archrypt. The time capsule as a design-driven method for the end times*, 2020-2021.
>
Doré, G.,
The Holy Bible - Plate I, The Deluge,
1866.

>>
Forensic Architecture - Forensic Oceanography, still image taken from the project *Death by Rescue: The Lethal Effects of Non-Assistance at Sea*, date of the incident: 12-18.04.2015, published on 18.04.2016.

>>> ⋀
Video game Fallout 3, The future ruins of Washington, players stroll through the streets of the US capital devastated by atomic bombs but where the ancient symbols of power still stand, 2008.

>>> ⋁
A destroyed apartment block in the besieged port city of Mariupol, REUTERS NEWS AGENCY / Pavel Klimov photographer. Photo taken from the article by Robinson, M., "In pictures: How 50 days of war left Ukraine reeling from destruction" published on the Telegraph on the 15 April 2022.

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Gulf War

9/11 Attacks • War on Terror

Iraq War

ISIL Terrorist Incidents

Timeline 1900–1960 with markers: Encephalitis Lethargica, Spanish Flu, Asian Flu.

EPIDEMICS / PANDEMICS

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Croce, G., D'Oria, M., Rodani, V., *Distasters archive-epidemics / pandemics,* from the installation *Archrypt. The time capsule as a design-driven method for the end times*, 2020-2021.

>>
Coumbina, I., *Engraving of Doctor Schnabel*, a plague doctor in seventeenth-century Rome, with a satirical macaronic poem in octosyllabic rhyming couplets, 1656.

>>
Health workers in Wuhan, China, during the pandemic covid-19, 2020.

>>> ^
Lawrence, F.,
scene portraiting an empty street in New York from the movie
I am a Legend,
2007.

>>> ∨
Empty street in New York during the pandemic covid-19,
2020.

7th Cholera

Hong Kong Flu

1977 Russian Flu

HIV/AIDS

SARS Outbreak

Swine Flu

MERS-CoV

Western Africa Ebola Virus Epidemic

Zika Virus Epidemic

COVID-19

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PHD THESIS

Schoonderbeek, M. (2018) *Place-Time: Mapping in Architectural Discourse*, PhD Thesis, TU Delft.

1.2.

THE TRAUMA QUESTION

Between traumatic obsolescence and failed aspirations for permanence

"Design is concerned with the conscious distortion of time, distance, and size. If it achieves none of these distortions, it is unlikely to be more than the elaboration of the 'status quo'."

Price, C., *Price Works 1952-2003: A Forward-minded Retrospective*, "12 Design maxims: On Safety Pins and Other Good Designs," Point 1, 1972, Pegasus (London, AA Book 2016).
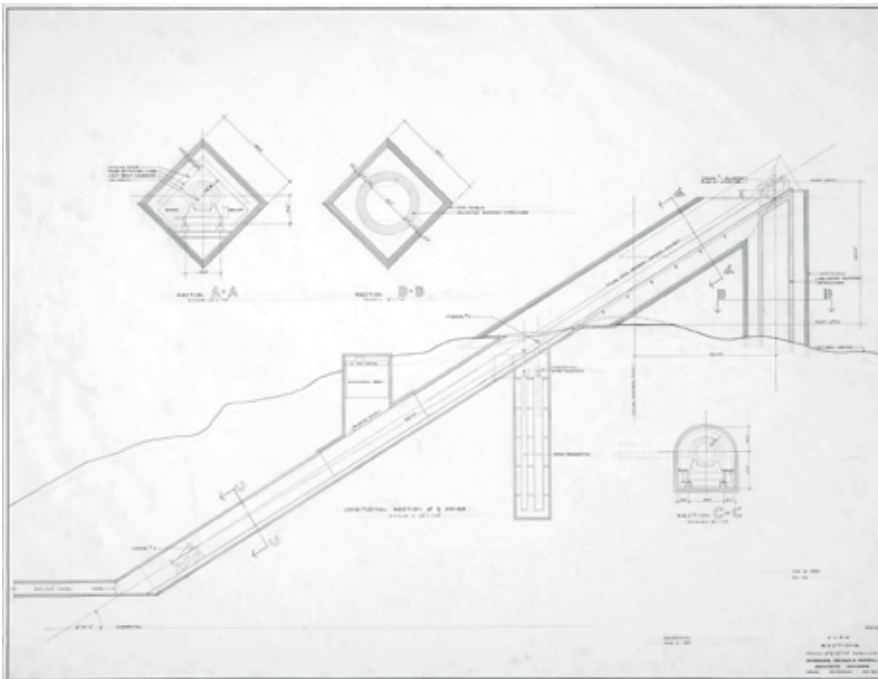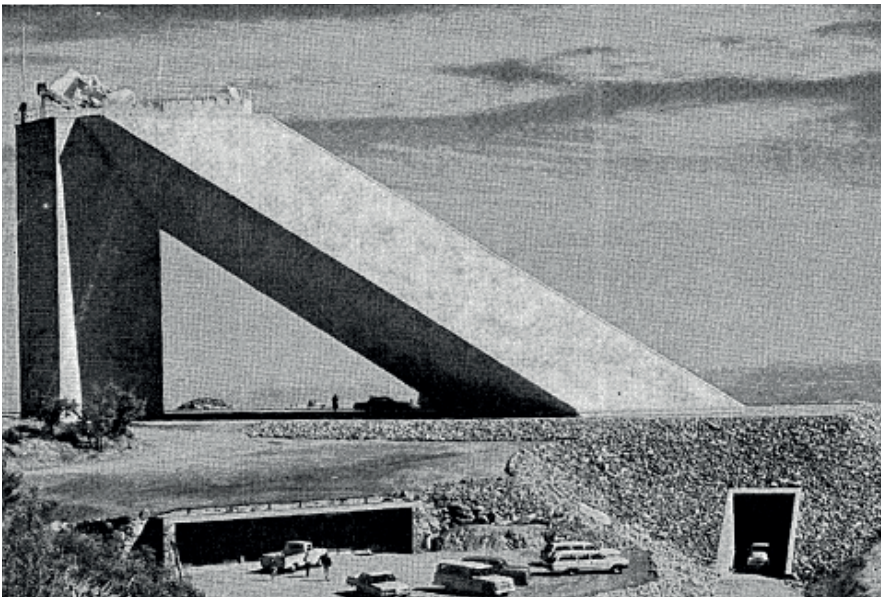
<
Office of Skidmore, Owings, and Merill, Chicago, Architects and Engineers Myron Goldsmith, Senior Designer, *Sections for the Robert R. McMath Solar Telescope, Kitt Peak National Observatory*, Kitt Peak, Arizona, June 3, 1959. Described by Cedric Price in the following terms:

"At the top of the concrete tower, a 2-meter (82-inch9 flat mirror directs the sunlight downward to an angle of 32 degrees. at the bottom of the 500-foot shaft, a 1.5 meter (60-inch) image-forming mirror reflects the beam back up the shalft. At the ground level, a third mirror catches the beam and sends it into the observing room, where the image of the sun is formed on a horizontak table."

From: Canadian Centre for Architecture (1999), *Cedric Price: Mean Time. A chronological Listing of Works in the Exhibition*, p. 7.

FLASHBACKS, AFTERWARDNESS, AND AMNESIA DEFINING THE CONTEMPORARY SCHIZOPHRENIC CONDITION

Trauma is a piercing or breach of a border that puts inside and outside into a strange communication. Trauma violently opens passageways between systems that were once discrete, making unforeseen connections that distress or confound. Trauma also appears to be worryingly transmissible: it leaks between mental and physical symptoms, between patients (as in the 'contagions' of hysteria or shell shock), between patients and doctors via the mysterious processes of transference or suggestion, and between victims and their listeners or viewers who are commonly moved to forms of overwhelming sympathy, even to the extent of claiming secondary victimhood.[1]

Human beings have always been accompanied by an innate fear dictated by the constant perception of potential external dangers, whether natural — deriving from the wilderness — or artificial — the paranoia towards attacks from the outside. This persistent condition of exposure, defined as "permanent anthropological risk,"[2] together with the constant projection of an imminent end, whether imaginary or real, has drawn complex multi-layered and inter-relational connections between traumatic events and humans' emotional and instinctive responses, which intertwine an articulated filigree composed by disturbing symptoms and reacting processes. Describable as a congenital phenomenon,[3] trauma epitomizes an innate and intrinsic condition of humanity, displacing an apparatus of effects, impacts, and shocks characterized by a huge degree of heterogeneity and nuances of meanings that prevent any generalization and univocal definition. Affecting and intervening in such a subjective sphere as the human mind, the symptoms generated by its impact produce mental injuries that vary according to the interactions with multiple factors. Firstly, an adverse event can assume the dimension of an individual or a collective shock and a huge degree of intensities, projecting its effects on different time-scales whose entity varies concerning profound subjective modalities to confront and overcome it. Finally, the same conceptualization and interpretation of trauma records multiple roots, each of which is deeply connected with specific cultural context, as introduced, for instance, in chapter 1.1 with the Crematorium project, which showed how the very conception of death radically changes according to the cultural constructions rooted in different contexts.

1. Luckhurst, R. (2008) *The Trauma Question*, Routledge, p.3.
2. De Martino, E. (2019) *La fine del mondo. Contributo all'analisi delle apocalissi culturali*, curated by G. Charuty, D. Fabre e M. Massenzio, Torino: Einaudi.
3. Tràuma [from the greek τραῦμα (-ατος) «ferita»] was employed by Ancient Greeks to define a physical damage produced on the body by whatever agent capable of producing a sudden, fast, and violent agent. From then on, this term entered the common language to identify any typology of physical damage, until the end of the ninenteenth century.

Therefore, this chapter explores trauma, concentrating on its Western conceptualization and investigating its effects on the distortion of the space-time dimension. Focusing, on the one hand, on how the traumatic events influenced the perception of space, be it urban or architectural. On the other hand, it will analyze how they triggered reactive and defensive processes, embodied in different means of expression, as will be presented in the second part of this work.

Despite being rooted in the remotest history, trauma and its actual consequences on the complex human psyche have officially started to be studied and analyzed in the field of psychology and psychoanalysis only relatively recently. It was only during the nineteenth century that trauma's repercussions were redefined semantically, starting to identify a series of symptoms that, invisible from the outside, operate at a psychological level, while the mental injuries and symptoms provoked by trauma would be formalized and systematized only in 1980 when they would finally be incorporated into the official medical diagnostics as "post-traumatic stress disorders" (PTSD). Starting from the 1990s, not coincidentally at the same time that John Gray records a mighty revival of apocalyptic narratives, these studies have attracted increasing attention, recording their application also within other transdisciplinary fields, as with the humanities studies that have shown a significant interest in trauma as a concept to describe the individual experience and its relationship to history.

The semantic reformulation of trauma, determining the shift in its recorded consequences that were transferred from the physical to the mental injury, was favored by the inauguration of the systematic and specific investigation of the human mind and the definition of new psychological paradigms reinterpreting how mental illness was judged and had to be cured. In this period, these mental disturbances were generally related to the violent collision of the first industrialization and the consequent infrastructuring of the cities, which affected the human mind through perceptive alterations. In fact: "one of the very first mentions of traumatic symptoms occurred during the expansion of the railways in the 1860s and the concomitant industrialization of this means of transportation."[4] An impact further exacerbated by the introduction of the modern clock, in which it is possible to retrace and narrate the first dramatic upheaval and subversion in the perception and measurement of time. Local rhythms have been replaced by standardized routines that punctuate labor time, coordinating national economies and transport systems. Individuals have been disembedded from the cyclical and traditional routines, and self-identity is uprooted from traditional and subjective verities to a permanent revolution, which can be associated with the concept of the "annihilation of space and time"[5]. This notion, coined by Karl Marx in *Grundrisse,* refers to the diminishing of the relative distance between points in space. This shifting relative distance is needed to increase the circulation of capital and goods. It is a consequence of capitalist expansion. David Harvey further elaborates on this

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4. Bellu, M. & Bujès, E. (2018), *The memory of it sometimes comes to you in the bright light of the beach, through the transparency of the rolling waves - Encircling the Image of Trauma*, Berlin: Archive Books, p.27.
5. To deepen further this issue: Marx, K. (1857-58) Grundrisse [published later as: Marx, K. (1993), *Grundrisse,* Penguin Classics.

notion and calls it his "time-space compression."[6] An operation that, through constructing, expanding, and exploiting a system of fixed and physical infrastructures, facilitated the capitalistic distribution of resources that could be moved rapidly and efficiently on the territory.

Furthermore, within the Western conceptualization and in its most collective manifestations, trauma has been strictly associated with Modernity, that "has come to be understood under the sign of the wound [...] the modern subject has become inseparable from the categories of shock and trauma,"[7] producing, in addition, a system of disturbances whose effects reverberated and reflected on the way in which urban space is perceived and interpreted.[8] Interestingly enough, it is possible to draw a parallel between significant collective trauma occurrences and the subsequent emergence of particular phobias coming from and associated with space. The distortion of space and time deriving from the first industrialization produced a schizophrenic process of dilatation and contraction that, within its metabolization processes led to the appearance of agoraphobia, "le peur des espace", to the fear of space and its impacting bigness. In the same way, during World War I, invisible injuries associated with the sound of the exploding shells were observed in many soldiers who had been converted in a sort of industrial workers operating within a monstrous war machine, whose physical destructive and violent effects on space gave rise to another complex pathology: transcendental homelessness. This sickness, which records its roots in the late eight-teenth-century nostalgia, registers this feeling of alienation, of uncanniness, coming from the lost and destroyed nature of the dwelling, marking the shift from the romantic sublime to the uncanny and puzzling nostalgia. The center of contemplation is now the ruins and debris of the before-threatening cities. Finally, the next stage of this industrialized-based machine was the mass extermination of the Holocaust, with all its psychic and social consequences. The impact of this event reverberated on a longer time-scale, determining a shift from the victim that experienced personal trauma to the second-generation survivors. The traumatic experience projects its ghosts and monsters further in the future, insinuating itself as a constant presence within everyday life. Since the second post-war period started to spread a generalized and permeating feeling of paranoia and anxiety for the constant perception of an incumbent apocalypse and a final extinction. Together with the feeling of the loss of roots emerged the exile and forced nomadism.

While Marx and Harvey identified a certain compression of space and time by means of a materialist politico-economic analysis, Freud and others observed a certain space-time distortion through psychoanalysis.

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6. Harvey, D. (1990) *The Condition of Postmodernity. An enquiry into the Origins of Cultural Change,* Cambridge, MA: Blackwell. The notion of annihilation of space and time has been further deepened by David Harvey within his definition of the time–space compression. Starting from the alteration of the qualities of space-time, Harvey adds the term compression to point the accelerated occurrence of all kinds of events that, intensifying the turnover of the capital, impact on human existence through ingent levels of stress.
7. Seltzer, M. (1997), *Wound Culture: Trauma in the Pathological Public Sphere*, October 80, p.18.
8. Anthony Vidler dedicates the third part of his *The Architectural Uncanny: Essays in the Modern Unhomely*, entitled "Spaces," to the complex system of phobias rising within the urban context, drawing suggesting relations between them and the mutated perception of space.

The psychic-cognitive effects provoked by this deformation of the spatio-temporal coordinates constituted a relevant issue, due to the relations it draws with the perception of the urban space and the practices unfolded within it. This last point constituted the core field of investigation for the director of the Salpêtrière Asylum of Paris and master of Sigmund Freud, Jean-Martin Charcot. Starting from the mental injury defined by Hermann Oppenheim in 1889 as "traumatic neurosis,"[9] he focused and approached this issue from the un-investigated perspective of memory, defining an essential concept such "traumatic retrograde amnesia"[10] and noticing the phenomenon of the "psychical paralyzes,"[11] posing, by so, the attention on an essential facet of the relation between trauma and time. Trauma's effects, manifesting as a perceived deformation of space and time, not only provoke a distorted sensation of the external passing of time but rather intervene in the intimate and psychological organization of the temporal dimension inside the human mind. Within the traumatized mind, the normal flow of time can record interruptions, suspensions, and mishmashes determining the temporary or permanent impossibility to discern present from past, or, furthermore, intervening in the memory dimension through processes of subtractions and elisions.
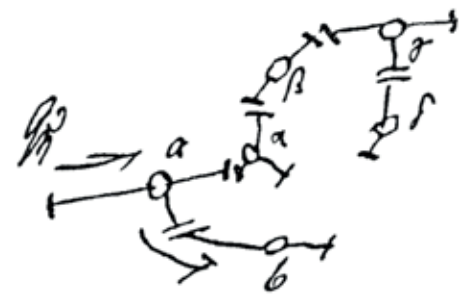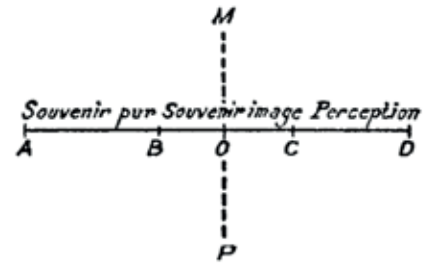
Nonetheless, these first explorations, it would be with Freud's psychoanalysis — on which Lyotard, Derrida, Felman, and Caruth will base their argumentations — that the foundation of trauma theories

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9. Hermann Oppenheim (1858-1919) was a leading figure of the modern German neurology. In 1889 he published significant works on several disorders, including "traumatic neurosis" about post-traumatic symptoms of passengers involved in railroad accidents, the "railway spine", stating that it was due to the physical damage to the spine or brain that the mental symptoms emerge. This concept was criticized by Jean-Martin Charcot (1825–1893) that insisted that some symptoms could be caused by hysteria.
10. Psychical factors brought by the traumatic experience often affect and pro-voke damage to memory through a complex system of patterns and symptoms. One of these is the traumatic retrograde amnesia, which refers to the inability to recall events that happened immediately before or during the displacement of the traumatic event, eliding significant time intervals, consisting in a disturbance of the consolidation and/or retrieval memory mechanisms.
11. Already an expert in the codification of la grande hystérie, Jean-Martin Charcot, in the mid-1880s, began to examine some cases of male hysteria, while previously this disturb was only associated with women, immediately linking the raising of mental symptoms to industrial accidents. Interestingly he noted that these mental disturbs were related to the disturbing effects of the new work environment. In particular, these symptoms, frequently introduced by a physical wound, seemed to spread, after accessing this opening, to generate various and diffuse manifestations inside the nervous system, taking fragmented trajectories and spreading non-homogeneous within the body. Charcot decided to call these hysterical symptoms "psychical paralyses," refusing to adopt the term "imaginary paralyses" to evidence the actual consistency of this problem.

Sigmund Freud, *sketch of neurons and the flow of neural energy,* 1895.

is marked. *On the Psychical Mechanism of Hysterical Phenomena*,[12] for instance, represents an introductory text of his theory. Here, elaborating on the puzzling effects produced by trauma, he draws sketches of the patient's treatments, turning the hysteric bodies into cryptograms. Operating, by so, not only a theoretical exploration of this uninvestigated field but embodying, additionally, in the very articulation of his work the traumatic aftermaths: "Freud's writings on trauma and defense mechanisms are disorganized in ways that seem to invite, or necessitate, critical discussion."[13]

Furthermore, in his *Studies on Hysteria*,[14] he deepens the phenomena of the "belated or deferred action,"[15] recording the impossibility for the human mind to describe and represent linearly the traumatic experience, which fractures conventional causality.

Elaborating on Freud's reasoning on the relation between trauma and the patients struggle in reconstructing its temporalities, Cathy Caruth, in her *Trauma: Explorations in Memory*[16] focuses on the device of aporia, intended as an unresolvable paradox, as a crisis of representation. This term, deriving from the Greek ἀπορία "difficulty, uncertainty," has been employed philosophically to define the difficulty faced by the thought in its search, being then employed by Derrida to identify a "blocking of passage, a stalling or hesitation, a foot hovering on the threshold, caught between advancing and falling back, between the possible and impossible."[17] Caruth investigates, in particular, "the peculiar, temporal structure, the belatedness of trauma,"[18] that is, the deferral phenomenon. The traumatic experience can occur without being initially metabolized by the hit person who, at that moment, has an absolute inability to understand it, and thus its experience can re-emerge in a second, delayed moment. This phenomenon implies the loss of its direct experience and dispersion of places and times associated with it by the victim: the original context where the event took place is exploded into a series of spatial and temporal fragments through whom the wounded person reconstructs it. The poetic discourse, to bridge these ruptures, gave body to the formulation of narrative dispositifs, determining a proliferation of meanings that, contextualized in the hypermodern age and its exchangeability principles,[19]

12. Freud, S. and Breuer, J. (1956 [1893]), *On the Physical Mechanism of Hysterical Phenomena*, The International Journal of Psychoanalysis, 37, pp.8–13

13. Leys, R. (2000) *Trauma: A Genealogy*, Chicago: University of Chicago Press, p.274.

14. Freud, S. (1974 [1896]), *Studies on Hysteria, Standard Edition vol. 3*, reprinted in Harmondsworth: Penguin, Freud Library vol. 3.

15. This symptom consists of a double distortion and slippage in the time dimension: a first moment when the impact of the traumatic event is forgotten, passing almost unnoticed, and its belated return after a hiatus. The psychoanalyst Jean Laplanche has translated Freud's term for belated or deferred action as 'afterwardsness', a deliberately awkward word that foregrounds the odd temporality of an event not understood as traumatic until its return (Laplanche, J. (1999) "Notes on Afterwardsness," in *Essays on Otherness*, London: Routledge). This is a fundamental issue within trauma theory that has to formulate a new sintax to retrace the fragmentad conventional organization of time: no narrative of trauma can be told in a linear way.

16. Caruth, C. (1995), *Trauma: Explorations in Memory*, JHUP.

17. Luckhurst, R. (2008) *The trauma question*, London & New York: Routledge, p. 6.

18. Caruth, C. (1991) *'Introduction to Psychoanalysis, Trauma and Culture*, American Imago 48/1, p.7.

19. Cuomo, A. (2015), *La fine senza fine dell'architettura. Verso un Philosophical Design*, Deleyva, p.32. (translation by the author.)

generated a "surplus of signifiers,"[20] producing a complex system of blurred and, even, erroneous representations and triggering, by so, a further degree of alienation in the patient. This operation has also been exploited as a political device, as registered by the same Freud in *Moses and Monotheism*.[21] Speculating on the origins of Judaism, he argues that the effect of trauma was transposed from the individual to an entire race: through this phenomenon of latency, Freud traces, using the analog construction, a parallel between the evolution of the Jewish people and the first cases of individual neurosis. Among others, Agamben investigates the aporia of Auschwitz, as well as Jean-Francois Lyotard, states that "for post-trauma aesthetics turned to the theory of the sublime, where representing the very failure to process the overwhelming event paradoxically figures its success as a work of art."[22] He gave avant-garde art a privileged place in articulating this paradox stating that "what art can do is bear witness, not to the sublime, but this aporia of art and its pain. It does not say the unsayable but says it cannot say it."[23] Starting from these reasonings, further critical reflections were developed by Caruth will later assume that "it can help us understand our own catastrophic era and the difficulties of writing history from within it."[24] This overwhelming proliferation of signs, together with the impossibility of reconstructing the whole traumatic experience and, by so, overcoming it, constitutes the main challenge posed by trauma. The after-effect blockages, refusing any integration into diachrony, persist "a bit monstrous, unformed, confusing, confounding,"[25] in a half-life, like a ghost, an absent haunting presence of another time in our time.

Spatio-temporal distortions, aporia, and the proliferation of deceiving signs constitute the main issues that this work will investigate from the architectural perspective.
Trauma's impact "provokes a disturbance on a large scale in the organism's energy and sets in motion every possible defense measure,"[26] architecture enables the displacement of a counter-action operating on two levels.
Firstly, on the physical space, pursuing its re-organization and re-construction in the traumatic aftermath, and defining concrete strategies of defence and protection through which reducing the pananoia for the potential impact of a traumatic event, operating, by so, on a preventive means. Furthermore, this discipline intervenes in the collective imagination, embodying a narrative and representational device that stands as a strategic and essential means to help overcome trauma afterward. As anticipated in the previous chapter and deepened in the following paragraphs, architecture's representative tools constitute a fertile ground for experimentation, permitting building and reconstructing the spatio-temporal fragments opened up by trauma. Furthermore, this operational feature is responsible for two distinct processes. On the one hand, it enables the possibility of

20. Hartman, G. (1995) '*On Traumatic Knowledge and Literary Studies*', New Literary History 26, p. 540.
21. Freud, S. (1939) *Moses and Monotheism*, vol. 23, Standard Edition.
22. Lyotard, J-F. (1990), *Heidegger and 'the Jews'*, Minneapolis: University of Minnesota Press, p. 47.
23. Ibidem.
24. Caruth, C (1996) '*Introduction to Psychoanalysis, Trauma and Culture*, American Imago 48/1, p.12.
25. Lyotard, J-F. (1990), *Heidegger and 'the Jews'*, Minneapolis: University of Minnesota Press, p. 17.
26. Freud, S. (1984 [1920]) '*Beyond the Pleasure Principle*', Standard Edition vol. 18, Harmondsworth: Penguin, Freud Library vol.11, p.301.

dealing collectively with the shock and, thus, to overcome the "communal dimension of trauma."[27] On the other, it pursues a more subtle and transparent process, connected with the signs proliferation described above, converting trauma into a narrative device for the elaboration of political and cultural constructs. It is also not a coincidence that in the 1990s, an exponential increase in communications related to the imminent end of the world.[28] Finally, it is essential to delineate a first framework of the symptoms provoked by trauma and with whom architecture has to confront.

The distortion of time calls into question the relation between perception and space-time. Moreover, the violent event generates mental disturbance, provoking alterations, dissonances, echoes, and elisions, which complicate and blur the distinction between past-present-future.

This issue is strictly associated with aporia: the impossibility of re-assembling the fragments provoked by trauma, the complex issue of reconstructing the self and its experience and representing the violent event to overcome it. To react and work on this recomposition, it is fundamental first to recognize which typology of slippage and disarticulation has been triggered by trauma. Interestingly Genette,[29] starting from noticing this slippage between the event, its perception, and its "overcoming," draws a taxonomy of these time shifts, recognizing in particular: the analepsis (movements backward), the prolepsis (anticipations), and the ellipsis (edits that accelerate the narrative time) — building a sort of archive of discordances between the two temporal orders of the event and its narration. Derrida's *On Grammatology*[30] has been fundamental for this issue since it reasons the writing process and its deconstruction, drawing a parallel with architecture. Writing is about leaving human traces, it is "differe(a)nce, difference, deferral."[31]

Finally, these unexpected mismatches and confounding phenomena generate new and distorted temporal dimensions that can be retraced in three main clusters of trauma-related symptoms. The first one, "intrusive flashback," manifests itself through the persistent re-experiencing of the traumatic event: the shock emerges again and again within recurring dreams or later situations that evoke a kind of echo of the actual occurrence or analog spatial conditions. The second is related to what can be defined as selective amnesia. It

27. Erikson, K. (1991) *Notes on Trauma and Community*, American Imago 48/4: p.471.

28. If trauma can be interpreted as a temporal becoming, it is immediately clear that it intertwines a complex and articulate relationship with the temporal dimension: recalling the past and requiring, at the same time, a projection towards the future, and in some cases, the search for future escapism, and utopias wholly detached from reality. Concerning the future temporal dimension, an interesting distinction is the one delineated by James Allen Dator (professor and director of the Research Center for Studies on the Future of Hawaii in the Department of Political Science of the University of Hawaii in Manoa), who recognized four different archetypes: Continuation (the initial phase of slow or fast exponential growth); Limits and Discipline (the saturation phase also implying a limitation of our habits); Decline and Collapse (intended not only as a breaking moment but also as the opening of a window to a new world); and Transformation (superexponential growth).

29. Genette, G. (1980), *Narrative Discourse: An Essay in Method,* New York: Cornell University Press.

30. Derrida, J. (1967), *De la grammatologie*, Paris: Les Éditions de Minuit.

31. Cuomo, A. (2015), *La fine senza fine dell'architettura. Verso un Philosophical Design*, Deleyva, p.62. (translation by the author.)

consists of the persistent avoidance of trauma-associated stimuli, an impossibility or refusal to recall the significant event, in a self-protecting process that prevents the victim from re-experiencing the trauma and heavily hitting the memory dimension. As the author-critic Jenny Disky wrote:

> A traumatic event is accompanied by a surge of adrenal stress hormones, which increases the strength of the memory, and each time the event is recalled, a renewed rush of epinephrine and cortisol reinforces the event's emotional impact and its ease of recall. In other words, each time you recall something awful, the memory and its associated distress are straightened. The trauma is recreated and enhanced with every recollection.[32]

Lastly, the third symptom is recognizable in the increasing arousal that provokes the loss of temper control, hypervigilance, or exaggerated startle response, characterizing a constant paranoid condition. Complicating this intricate field, those symptoms can manifest in different ways: acutely and briefly, persistingly chronically, or belatedly, months or even years after the precipitating event. Nevertheless, these clusters of symptoms are recognizable within the architectural discipline, as explained in the next paragraph.

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32. Jenny Disky in a review of the book: Winter, A. (2013), *Memory: fragments of a Modern History*, University of Chicago Press.

TRAUMA AS A SPATIO-TEMPORAL BECOMING

Traced and described in the previous chapter the new condition of permanent impermanence that architecture is confronting today, and clarified the semantic gradient with which the term *mean* is adopted — identifying the temporal interstices of passage and transition opened by the traumatic event concretized and crystallized through architecture —, it is now fundamental to analyze the connection between architecture and trauma.

The collision of trauma on the architectural body determines a rupture involving its physical and concrete dimension — fractured and unable to continue supporting its original intended use — and its time coordinate — producing a distortion within its functional rhythms and temporalities. The violent event generates, thus, an interruption within the trajectories that bodies, practices, and rhythms intertwine in the architectural interior, determining their sudden expulsion or even their complete erasure. Furthermore, a traumatic event stresses the long-existing tension between the architecture's ambitious purpose to persist and time's continuous operation of erosion and consumption, introducing a challenging system of distortions within the typical architecture's aging process, bringing it to extreme re-assessments. Trauma — provoking a disorder of memory[1] — operates on the intrinsic and already-defined obsolescence implicitly embedded by architecture, design that kills time is part of the game, bringing it to extreme consequences, manipulating its speed and sharpening its intensity. Thus, heterogeneous and multiple weavings of interferences are introduced within this relation, opening up a space of possibilities.[2]

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1. Trauma history is too complex and vast to be described in this context, but it is fundamental to trace at least a general framework. As underlined within the previous paragraph, rooted on the initial studies and analysis of Jean Martin Charchot, is with Sigmund Freud that is marked the foundation of trauma's theory. Fundamentals in this sense are: Freud, S. and Breuer, J. (1956 [1893]), *On the Physical Mechanism of Hysterical Phenomena*, The International Journal of Psychoanalysis, 37, pp. 8–13; Freud, S. (1974 [1896]), *Studies on Hysteria, Standard Edition vol. 3*, reprinted in Harmondsworth: Penguin, Freud Library vol. 3; Freud, S. (1984 [1920]) *'Beyond the Pleasure Principle'*, Standard Edition vol. 18, Harmondsworth: Penguin, Freud Library vol.11, p.301. Another important publication focused on the critical issue of the relation between trauma and memory is: Caruth, C. (1995), *Trauma: Explorations in Memory*, JHUP; while to explore the history of the concept of trauma and its evolutions, see: Leys, R. (2000) *Trauma: A Genealogy*, Chicago: University of Chicago Press, and Luckhurst, R. (2008) *The trauma question*, London & New York: Routledge. Finally, to deepen the topic of the complexities of the relation between trauma and its narration, embracing the shifted temporalities that trauma provoke, see: Genette, G. (1980), *Narrative Discourse: An Essay in Method,* New York: Cornell University Press.
2. As implicitly contained in the etimology of the word catastrophe, a combination of two ideograms meaning crisis and opportunity, the traumatic event opens up, even if tragically, an opportunity to define and experiment strategies to respond to the disaster. An interesting discourse on the phenomenon of trauma as a tool to trigger a further operation of experimentation in the architectural discipline is developed by Teresa Stoppani. Professor at the Architectural Association of London, she wrote several publications,

This fracture, this rupture, can be associated with the explosive event of the unfolding, a phenomenon capable of favoring the communication between an internal and external space, between two systems before discrete. The folding concept was developed by Leibniz in the middle of the eighteenth century when he formulated the concept of the monad[3]: criticizing the idea of a self-concluded, circumscribed, and fixed space, that is the Newtonian notion of space as a container,[4] and refusing any static constrictions, he conceived space as a dynamic entity continuously changing, releasing, and contracting itself through the agency of unfolding. Leibniz, thus, introduced a revolutionary concept: space as an "informe" matter, constantly reshaped and molded in time, stating that:

> We should think of space as full of matter which is inherently fluid, capable of every sort of division, and indeed actually divided and subdivided to infinity [...] finally, this fluid space, like the screen in the dark room, is never uniform: it too 'varies from place to place, because variations in the extent to which the movements in it run the same way.[5]

investigating how architecture formulates responses to trauma, both on a theoretical and a pragmatic level, through a process that can led to the same re-question and re-formulation of the same architectural discipline.

3. From Greek "monas," unit, this term stands to describe an elementary individual substance that reflects the order of the world and from which material properties are derived. Even if this concept was used first by the Pythagoreans as the name of the beginning number of a series, and recalled later by Giordano Bruno in *On the Monad, Number, and Figure* (*De monade, numero et figura liber*, 1591) to describe the world through three fundamental types: God, souls, and atoms, this term was finally popularized by Gottfried Wilhelm Leibniz in *Monadologia* (1714). In his metaphysical system, monads are basic substances that make up the universe but lack spatial extension and hence are immaterial: each monad is a unique, indestructible, dynamic, soullike entity whose properties are a function of its perceptions and appetites. Monads have no true causal relation with other monads, but all are perfectly synchronized with each other by God in a preestablished harmony. The objects of the material world are simply appearances of collections of monads.

4. David Harvey better defines this idea of the newtonian space, associating it with the one defined by Descartes, as follows: "Absolute space is fixed and we record or plan events within its frame. This is the space of Newton and Descartes and it is usually represented as a pre-existing and immovable grid amenable to standardized measurement and open to calculation. Geometrically it is the space of Euclid and therefore the space of all manner of cadastral mapping and engineering practices. It is a primary space of individuation – res extensa as Descartes put it – and this applies to all discrete and bounded phenomena including you and me as individual persons. Socially this is the space of private property and other bounded territorial designations (such as states, administrative units, city plans and urban grids). When Descartes's engineer looked upon the world with a sense of mastery, it was a world of absolute space (and time) from which all uncertainties and ambiguities could in principle be banished and in which human calculation could uninhibitedly flourish." From Harvey, D., "Space as a keyword", in Catree, N. and Gregory, D. (ed.), (2006), *David Harvey, A Critical Reader*, Blackwell Publishing, p.272.

5. Leibniz,G. W., (1981), *New Essays on Human Understanding*, Cambridge: Cambridge University Press, p.60. (original edition 1704.)

This concept was further developed by Gilles Deleuze in his series of lectures entitled *Leibniz and the Baroque*,[6] later condensed in the book *The fold*.[7] To recall and describe Leibniz's idea of space continuity and evolution through the process of unfolding, Deleuze draws a connection with baroque architecture. By delineating the allegory of the *Maison Baroque,* he describes the operative modes and processes generating the constant formation of space. This image condensates its abstract and immaterial features - such as the elusive unfolding capacity to meld and separate simultaneously - and its specific and formal ability to define shapes, especially curved and involuted ones. Antony Vidler describes the *Maison Baroque* with the following words:

> It consists of a ground floor, four windows, and a door wide, the door approached by a flight of three curved steps. Above is a second story composed of a closed room, with five small openings on its floor to let in emanations from below. [...] Evidently, the five openings below represent the five senses, the five curtains their receptors, and the closed upper room a kind of mental space, based solidly on the lower physical body. In a nice touch, Deleuze lightly joins the two stories with a baroque scrolled motif on one side — the tie between body and head, so to speak.[8]

The *Maison Baroque*, analyzed from an architectural perspective, shows an overturning, an inversion: the foundation structure presents windows, while the upper part, the house itself, consists of a blind and hermetic volume. The house, epitomizing the complex relations between the material and sensing body, grounded and solid, and its "monads" or soul, overcomes the absolute closed space through its definition as a relational and ever-changing entity. Space is no longer the outcome of a geometrical exercise but embodies a metamorphic dimension that reflects the perception and experience unfolding and developing within it. Thus, an essential issue for this constant process of space generation is movement,[9] which Deleuze expresses in his drawing by tracing fluxus lines and trajectories, transmissing and interchanging meanings between the foundations and the housing volumes.

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6. Gilles Deleuze gave between the 28 October 1986 and the 2 June 1987 a seminar at the University of Paris, Vincennes, and Saint-Denis entitled "*Leibniz and the Baroque*." The aim of this seminar was to develop a reasoning around the question "*What is philosophy?*," and it was divided in two main segments: "*Leibniz as Baroque Philosopher*" — presenting the operating concepts on Leibniz, notably on the fold — and "*Principles and Freedom*" — a more global reflection on phylosophy.

7. Deleuze, G. (1988), *Le Pli - Leibniz et le baroque*, Paris: Les Éditions de Minuit.
Some years later the fold topic was at the center of the publication of Eisenman, P. (1992), 'Unfolding Events' in J. Crary & S. Kwinter, eds. *Incorporation,* New York: Zone. The architect draw a reasoning around Leibniz's idea of fold/unfold and describes the unfolding event as an explosive operation.

8. Vidler, A. (2000), *Warped Space. Art, architecture, and Anxiety in Modern Culture*, Cambridge - Massachussets: The MIT Press, pp. 218-219.

9. Bernard Cache, who followed Deleuze's seminars at the University of Paris, founded in 1996 with Patrick Beaucé The Objectile atelier. Taking up the idea of the continuous unfolding of space, the atelier has developed a research in the field of digital design and architecture creating "non-standard" objects. Objectile is a term created by Bernard Cache, and further developed by Gilles Deleuze in *The Fold* (1988), that defines a new idea of the object, overcoming its classical conception as a definitive and essential form and interpreted as an entity which, through mathematical function, takes place within a "continuum through variation."

Finally, the fold can be interpreted as a continuous form that articulates possible vertical and horizontal relations between the figure and the ground, breaking the existing cartesian space order. It generates what David Harvey defined as: "relational space – space regarded in the manner of Leibniz, as being contained in objects in the sense that an object can be said to exist only insofar as it contains and represents within itself relationships to other objects."[10] David Harvey, referring to Lefebvre's[11] dialectics — thus, intending the notions of time and space as being socially and culturally produced rather than neutral or objective — and further stressing the issue of the relationship between movement and space, distinguishes the tripartite division of absolute, relative, and relational ways of understanding space and time:

> Space is neither absolute, relative, nor relational in itself, but it can become one or all simultaneously depending on the circumstances. The problem of the proper conceptualization of space is resolved through human practice with respect to it. In other words, there are no philosophical answers to philosophical questions that arise over the nature of space — the answers lie in human practice. The question 'what is space?' is therefore replaced by the question 'how is it that different human practices create and make use of different conceptualizations of space?' The property relationship, for example, creates absolute spaces within which monopoly control can operate. The movement of people, goods, services, and information takes place in a relative space because it takes money, time, energy, and the like to overcome the friction of distance. Parcels of land also capture benefits because they contain relationships with other parcels... in the form of rent relational space comes into its own as an important aspect of human social practice.[12]

This relational approach to space-time, focused on the continuous and dynamic unfolding of an exterior and an interior, allows to define a caesura against a purely dialectical perspective, providing a point of intersection with Barad's understanding of practice as being material-discursive (both ontological and epistemological) and matter as an entangled process. An essential element noted and underlined by Deleuze emerges, which has constituted a fundamental reference for many architects whose design practice is based on the event.

> Man does not make space, and space is not even a subjective way of intuiting; however, it is not even something objective like an object. Rather, space, to make space as space, needs men. This mysterious relationship does not concern only the reference of man to space and time but the reference 'of being for' men (event) [...] the man who is always spatialized and spatializing.[13]

Space generates, renews, and unfolds itself constantly through movement; therefore, architecture represents a privileged site to host this unfolding operation, conveying a high

10. Harvey, D., (1973), *Social Justice and the City*, London: Edward Arnold and Baltimore.
11. Lefebvre, Henri (1991 [1974]) *The Production of Space*, trans. by Donald Nicholson-Smith, Cambridge MA, Oxford: Blackwell.
12. Harvey, D., (1979), *Monument and myth*, Annals of the Association of American Geographers 69, 3: 362–81.
13. Cuomo, A. (2015), *La fine senza fine dell'architettura. Verso un Philosophical Design*, Deleyva, p.59. (translation by the author).

Pièce close privée,
tapissée d'une *toile
diversifiée par des plis*

Pièces communes,
avec *quelques
petites ouvertures*;
les cinq sens
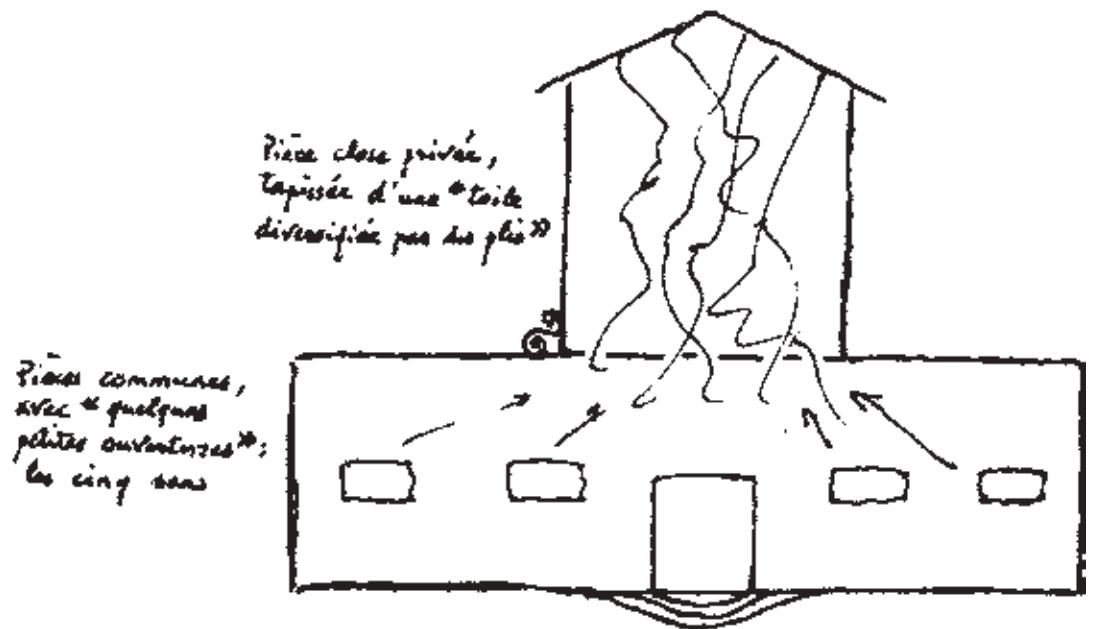
— la maison baroque —
(allégorie)

>
Deleuze, G.,
*La maison baroque
(allégorie)*, in *Le pli.
Leibniz et la baroque*
(Paris: Editions de
Minuit, 1988), p. 7.

density of relationships and changes within its space. Its body is constantly crossed and affected by a complex system of endogenous — bodies, practices, and thoughts — and exogenous phenomena — contingencies affecting the contexts where it is concretized — introducing an additional component of interference. As Tschumi argues and highlights throughout his work, the event is in itself, summarized in the famous triad space-event-movement, a catalyst, and generator of space and spatial relations. Therefore, the traumatic event, the turbulence, regardless of its density and entity, introduces a further degree of dynamism and change within this constant unfolding of that shapeless and moldable material represented by space.

Starting from this framework, a connection can be traced between the traumatic event and what Bataille defines as *laughter*, adopted to designate a sudden change, "a violent current that traverses the human pyramid like a network of endless waves that renew themselves in all directions."[14] Transposing the properties and disturbing effects released by a sudden explosive event within the architectural field makes it possible to question its very basis, stressing a reformulation of its role as an activator of tensions. The violent accident virulently decomposes architecture, challenging its composition and functioning. Interestingly, to Bataille's laughter:

> Intervenes in these value determinations of being as the expression of the circuit of movements of attraction across a human field. It manifests itself each time a change in level suddenly occurs: it characterizes all vacant lives as ridiculous. [...] But laughter is not only the composition of those it assembles into a unique convulsion; it most often decomposes without consequence and sometimes with a virulence that is so pernicious that it even puts in question composition itself and the wholes across which it functions.[15]

The laughter, the traumatic event, forces architecture to resort, in a process linked to the instinct of survival and conservation, to every available space and energy, operating action of excavation in the physical and theoretical space of the discipline, allowing the detection of interstitial and fragmented time-spaces previously hidden and latent, to deploy defensive strategies with which responding to trauma. Laughter, therefore, triggers a dual process that, on the one hand, destroys the previously known and defined space while unfolding, on the other, a space of uncertainty, triggering the emergence of unknown space-time dimensions and the displacement of previously latent territories, shaping, thus, a new system of spaces. Standing between sacrifice and poetry, the event consists of a sudden and violent accident that forces humans to face nonknowledge: something that escapes the realm of reason and rational understanding. It is described as a "formless receptive place of every pattern, matter, and shape from which things are generated and, therefore, the place that welcomes every thought of things."[16] In this belonging to the sphere of unknowledge,

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14. Bataille, G. (1935-6) 'The Labyrinth' in Bataille,G. (1985), *Visions of Excess. Selected Writings*, Minneapolis: University of Minnesota Press, p.174.
15. Ivi p.172.
16. Cuomo, A. (2015), *La fine senza fine dell'architettura. Verso un Philosophical Design*, Deleyva, p.70. (translation by the author.)

the concept of laughter intertwined a close link with that, Derridian, of chōra, evoking the sphere of indeterminacy.[17]

Thus, a violent laugh, a sudden shock, and a slow erosion produce on the architectural body, physical or theoretical, the opening of a system of liminal fragments, blurred and deformed spaces, and suspended and distorted times. A sequence of interstices of different intensity and speed that, far from being empty, are densely inhabited by tensions and relationships. These latent possibilities not only have to be considered occasional issues to integrate within the design process but, as Cedric Price intuitively urged in his exhibition, have become the very field of action of this discipline, simultaneously describing and materializing its new condition. Therefore, if the perturbing becomes the element of space activation,[18] through instilling within it violent dynamisms that destabilize its system's equilibrium, our contemporary condition of permanent impermanence, as described previously in chapter 1.1, is constantly crossed by these undermining tensions assuming the consistency of a "formless"[19] matter.

The tension toward an imminent collapse characterizes Dürer's depiction of the *Apocalypse* by or, furthermore, Piranesi's *Prisons.* The latter, developed as a vertical labyrinth non-finite and dizzying, at once represents a chain of mental-spatial association and expresses the disturbing feelings arising from spatial instability, from an abyssal derive toward nothingness. A dramatic space whose overlapping and dense, nebulous lines suggest the tension emanating from the perception of a current, slow-motion collapse. This same perception is materialized and concretized in the work *Seven Celestial Palaces*[20] by Anselm Kiefer. Seven concrete towers transmit all the fragility and weakness of the contemporary condition: seven constructions intentionally built to express the imminent approximation

17. Derrida, J. (1987), *Khôra*, Paris: Edition Galilée. Taking up the Platonian cosmogony, which describes the cosmos composed of the intelligible — that is, the model, the father — the sensitive — that is, the image of the model, the son — and a third element, the Khôra, which escaping from any classic binary logic, is extraneous to the order of the paradigm, invisible and elusive to any attempt to be identified with the two main binary genera, in this case of father and son, of intelligible and sensitive.

18. Anna Tsing is an American anthropologist interested in exploring, deconstructing, and problematizing the field of the Anthopocene. To deepen her issues and theoretical reasoning see: Tsing, A. (2015) *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins,* Princeton University Press, and Tsing, A., Swanson, H., Gan,E., Bubandt, N. (2017), *Arts of Living on a Damaged Planet: Ghosts and Monsters of the Anthropocene*, University of Minnesota Press.

19. George Bataille conceived this concept in 1929 in his entry for the Critical Dictionary, describing it as: "a term serving to declassify, requiring in general that everything should have a form. [...] To affirm, on the contrary, that the universe resembles nothing at all and is only formless, amounts to saying that the universe is something akin to a spider or a gob of spittle." (Bataille, G., "Formless", in *Documents 1*, Paris, 1929, p. 382.)

20. The work was built by the artist in France, in Barjac, between 2003 and 2005. Since 2005 it has been placed inside the exhibition space of the hangarbicocca of Milan as a permanent installation. The seven towers, each weighing ninety tons and all differing in height between thirteen and nineteen meters, represent a direct reference to the ancient Hebrew treatise of the fifth-sixth century AD, "Sefer Hechalot" (translated, "Book of Palaces or Shrines"), therefore symbolically referring to the initiatory spiritual journey of a man who wants to approach the presence of God. Each tower has a name, so the path is marked by a series of sequential encounters: Sefiroth, Melancholia, Ararat, Magnetic Field Lines, JH & WH, and Tower of Falling Pictures.

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Dürer, A. (1496-98) *The Four Horsemen of the Apocalypse,* from the *Apocalypse* series.

<
Piranesi, G.B. (1745-50) *Prisons, or Le Carceri d'Invenzione.*

^
Kiefer, A. (2003) *The Seven Celestial Palaces.*Hangar Bicocca, Milano.

of their seld-destruction, of their collapse, synthetizing the two very meanings of the catastrophe. The anxiety and paranoia for an imminent succumb and the revelation, the possibility of a new beginning. The towers, constituting the actual ruins of an immediate future, represent a hermeneutically sensitive deposit, the symbolic and material source from which to draw renovated energy for constructing a new world.

These works crystallize through different means of representing the moment immediately before the collapse, transmitting all the power and possibilities inherent in this precarious liminal balance between permanence and dissolution and, as if an echo crossed them to resonate in the contemporary era, they can all be summarized through Charles Nodier's description of Piranesi's work:

> The ruins of Piranesi are about to collapse. They groan, they cry... The effects of his great building are not less extraordinary. They produce vertigo, as if one were measuring them from on high, and when you search for the cause of emotion that inspires you, you are surprised to tremble in fear on one of their cornices, or to see all the objects turn beneath your eyes from the capital one of their columns.[21]

The tensions unfolded by a violent event in fieri or, even, by the perception of living the wait for its sudden occurrence, are expressed through the delineation of an evolving space, charged by a complex dynamism and immersed in an entropic state, whose equilibrium is about to be interrupted, more or less abruptly. Within the dense intertwining of these forces is possible to detect the emergence of reacting tensions, and the still-unmoulded delineation of a different and renovated balance. The transposition of these observations within the architectural field determines the emergence of the concept of the "maintenant." Architecture, violently freed from any concrete and self-concluded materialization in a specific context and from any frozen temporal configuration, insistently converging towards the here and now, absorbs exogenous phenomena, converting the destabilizing tensions that threaten it into vital and unstable forces able to perpetuate a condition of precarious balance. The concept of "maintenant," in fact, indicates to:

> Becoming that eludes the spatial experience [...] to announce the writing of space through the event [...] thus, inscribing within the architectural device: sequence, open seriality, narrative, cinematic, dramaturgy, choreography [...] if there is an architecture of the event, it will be linked to madness.[22]

Therefore, the event introduces a provisional equilibrium between what is stable, structure and function, and an unstable and unknown component that, crossing the architectural space, guarantees its activation. Finally, those frictions are rendered through a space constantly re-assembled and re-shaped by bodies and trajectories,[23] as in the projects of Eisenman,

21. Nodier, C. (1832-1837), "Piranese, contes psychologiques, à propos de la monomanie réflective," in *Ouvre complètes de Charles Nodier*, 12 vols., Paris: Eugène Renduel, pp.188-189.
22. Cuomo, A. (2015), *La fine senza fine dell'architettura. Verso un Philosophical Design*, Deleyva, p.64. (translation by the author.)
23. The embodiement of people participating in an event within the same meaning and significance of the event itself is a concept that has been expressed before by Bataille that in his definition of the "museum" writes: "We must take into account the fact that the galleries and objects of art are no more than a contai-

Tschumi, and Price, who built their poetics on movement and notation. If therefore, this reinterpretation of the spatial dimension contemplates and embraces movement as the essential factor for the operation of unfolding, the impact of a traumatic event emphasizes this process radically, triggering a multiplicity of interstitial and moldable spaces, configured as blurred diaphragms or, still assuming the consistency of liminal fragments, to arouse. The reflection drawn by Peter Eisenman is relevant in this sense. He defines the architectural process of *spacing*,[24] which allows intercepting and revealing interstitial spaces and places of latent tensions denoted by frayed contours. This compositional strategy is based on deformation operations, which can make and transform as ambiguous the condition of solid and void through the introduction and exploitation of interferences and transgressions. In contrast with the design process of *forming*, which endures a spatial vision that is essentially static, based on the sharp distinction between figure and background, solid and empty, *spacing* identifies a new compositive operation. It enacts a series of manipulations intended to introduce ambiguity between previous-discrete entities, blurring, by so, the boundaries of a defined and fixed architectural space through the activation of interstitial tensions of reinvention, where architecture, refusing any stasis, operates by contagion, unfolding itself in a constant condition of dynamism and movement.

Moreover, the formulation of the interstitial concept marks a resolute distinction from the notion of *poché*, which implies an initial condition where the solid pre-exists the void. Instead, operating a radical shift, the interstitial space can be intercepted and delineated from the investigation of a double absence, detecting and metabolizing the latent forces and frictions that tense it, responsible for blurring the limits between internal and external, between stability and uncertainty continuously. *Spacing* detects and identifies the superimposed interrelated textual levels of space, which, saturated with complex and multiple meanings, is constantly blurred, becoming a testing field for the definition of other forms of architecture, characterized by trans-dimensional coexistences. In this way:

> Architecture can no longer be bound by the static conditions of space and time, here and there. It is a mediated world, there are no longer places in the sense we once knew them. Architecture must address the problem of the event. Today rock concerts must be considered the archetypical form of the architectural event [...] architecture can propose an alternative, an interpretation in which the environment is problematized, in which the event comes between sign and object.[25]

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ner, the contents of which is formed by the visitors: it is the contents which distinguish a museum from a private collection. A museum is comparable to the lung of a great city: every Sunday the throng flows into the museum, like blood, and leaves it fresh and purified. The pictures are only dead surfaces and it is within the crowd that the play, the flashes, the shimmerings of light technically described by the authorised critics takes place. On Sundays, at five o'clock, at the exit door of the Louvre, it is interesting to admire the torrent of visitors, visibly animated with a desire to be in all things at one with the celestial apparitions with which their eyes are still ravished." (Bataille, G., Leiris, M. Einstein, C., and Desnos, R. (1995), *Encyclopaedia Acephalica*, London: Atlas Press, Atlas Arkhive Three, p.64).
24. Eisenman, P. (2009), *Blurred Zones: Investigations of the Interstitial: Eisenman Architects 1988-1998: Works and Projects,* Monacelli Press.
25. Ivi., p.424.

*"The function of the Advertisements —reproduced
again and again, as opposed to the single architectu-
ral piece—was to trigger desire for something beyond
the page itself. When removed from their customary
endorsement of commodity values, advertisements
are the ultimate magazine form, even if used ironi-
cally. Because there are advertisements for archi-
tectural "products," the logic of the Advertisements
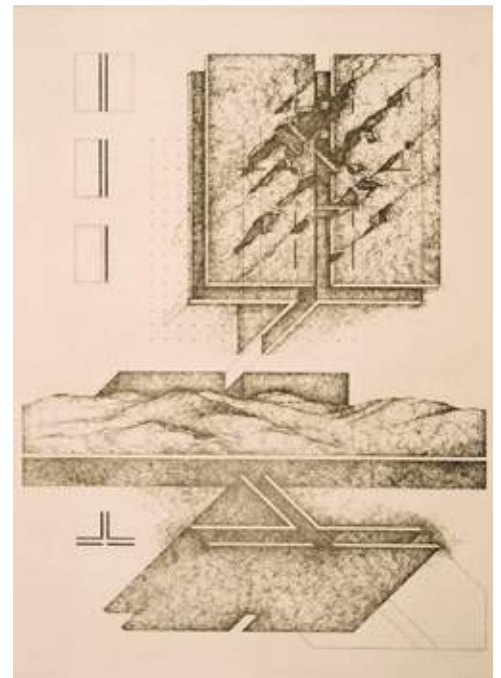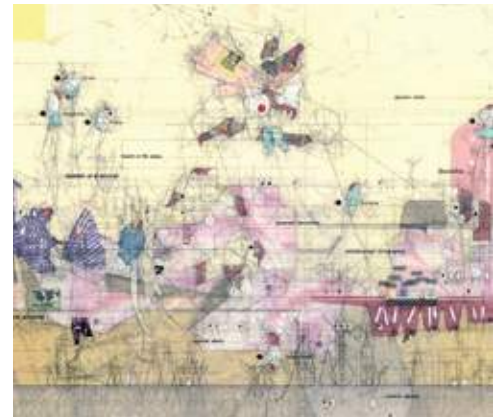for Architecture asks, Why not advertisements for the
production (and reproduction) of architecture?"*

Tschumi, B. (1976-77) *Advertisements for
Architecture.*

Bernard Tschumi, interested since the very beginning of his practice in this topic, further explored this conception of space as a constantly reshapable and renegotiable substance. As seen in chapter 1.1, he investigated the potentials of interrelating it with bodies' movements and trajectories, proposing a rupture with the static and classical perspective of constructing architecture, stating that his pleasure "has never surfaced in looking at buildings, at the great works of the history or present architecture, but rather in dismantling them."[26] This need for a radical shift, for a rupture, brought him to substitute, within his semantic and pragmatic practice, the terms form and function with those of space and event, aligning, by so, his architectural poetic to the deconstructivist one, emerging in the philosophical field in the same period. The shift from a static to a dynamic conception of space, lead Tschumi to the formulation of an architectural semiology based on terms such as disjunction, displacement, dislocation, decentering, discontinuous, deregulated, ex-centric, disassociated, opposing the prefixes de-, dis- and ex- to the overused and over-employed post-, neo-, and pre-.[27] This semantic-operative language attempts to seek an harmonization with the mutated condition of architecture. By reasoning on the concepts formulated by Paul Virilio in his *L'Espace Critique*,[28] Tschumi underlines the dramatic transfiguration of the physical dimension, whose:

> appearance of permanence is constantly threatened challenged by the immaterial representation of abstract systems, from television to electronic surveillance, and so on. Architecture is constantly subject to reinterpretation. In no way can architecture today claim permanence of meaning.[29]

The space is fractured, dis-integrated, and resulting from continuous accidents. Such a mutated condition reverberates its effects on architecture. It finds, thus, itself in front of a crossroad, forced to elect whether to focus on the representation of construction or, instead, on the construction of representation. Operating a hybridization between the architectural language and the cinematic techniques, which enable to capture the dynamic forces and the continuous mutations inhabiting space, Tschumi's operational matrix enables both processes. Constructing, on the one hand, a notational system with whom manipulate the architectural elements and, on the other, employing it for the very re-construction of space. Here an essential issue, deeper investigated within the second part of the work, emerges

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Kulper, P. (2006) *Central California History Museum: Proto_Formal Section*.

∧
Abraham, R.(1982) *Untitled.*

When I draw, the drawing is not a step toward the built but an autonomous reality that I try to anticipate. It's a whole process of anticipation, anticipating that a line becomes an edge, that a plane becomes a wall; the texture of the graphite becomes the texture of the built.

26. Tschumi, B., (1987), "Disjunctions," in *Perspecta 23*, p.116.
27. Tschumi, B. (1994), *Architecture and Disjunction*, The MIT Press, p.220.
28. Virilio, P. (1993) *L'Espace Critique*, Burgois.
29. Tschumi, B. (1994), *Architecture and Disjunction*, The MIT Press, p.216.

the importance of paper architecture, which constitutes a powerful medium to trigger and release a complex system of processes. Firstly, the colonizable blank paper represents a highly experimentative testing ground through which to explore and define possible scenarios of radical changes and reformulations for the discipline itself - as demonstrates the same oeuvre of Cedric Price, together with that of Raimund Abraham, John Heyduk, and Lebbeus Woods, to name a few. Furthermore, as will be deepened in the next paragraph, it embodies a place within which triggering theoretical speculations that detach from the political control of resources, draw hypothetical and radical designs projected in the future to raise questions in the present, as in the work of the Metabolists or, furthermore, in that of Design Earth. Lastly, operating through representation and hybridizing it with extra-disciplinary systems of notations, it is possible to delineate complex cartographies of overlapped spatial and experiential, intertwining space with time, finally reconstructing it with all its dynamic tensions, in a constant play of associations, contiguities, and dislocations. This last case is embodied in the work of NaJa & deOstos, Nad Chard, and Perry Kulper.

Furthermore, he embraces unpredictability and uncertainty by absorbing the dynamic and unexpected components offered by the event within his design process. Thus, avoiding the traditional and classical aspiration to monumentality, a suitable object for nostalgia and consumption, Tschumi favors a condition of textuality, of potential continuous manipulation of the architectural text. Moreover, to render this strategy, the architect defined a dynamic system capable of keeping track of and describing the trajectories unfolding within architecture: the notations. Directly taken from the ballet field, this complex scheme of punctuation is composed of graphic marks and signs that correspond to specific operations, which trespass the architectural field, intertwining with disciplinary codes and languages: such as filmic, diagrammatic, and frame-by-frame. As a result, Manhattan's urban context is not described by conventional maps or drawing restituting facades and urban structure but is reconstructed from a filmic sequence, through the narration of four different events, connected to as many violent events: the murder, the chase, the suicide, and the disruption of institutional structures.[30]

Such a system of conventions, as will be further discussed mainly within the 2.1 chapter, introduces a new frontier for design: the *paraarchitecture*.[31]

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30. Tschumi, B. (1981), *The Manhattan Transcripts*, Academy Edition. In this book Tschumi challenges the very conventional architecturale representation by introducing the notation system and, by so, expressing the project through the transcription of the triad space, event, and movement, respectively represented through the means of different media, respectively: drawing, photograph, and diagram. Furthermore, he adopts extreme and violent programs that exceed the normal common function of architecture to separate it both from its social conventions and from the traditional binome form-function. In particular the four spaces represented in his book are: the park (murder), the street (chase), the tower (suicide), and the block (disruption of institutionalized structures.)

31. The term, adopting the Greek "Para," standing for "alongside, past, beyond," defines an architecture that stands against the traditional manner of intendint its work as a finite, concrete, and with a precise institutionalized aesthetic, but, rather, it opens itself to a constant process of interpretation and consumption, becomes a textual field to be erase, superimposed, manipulated or hybridazedn through the addition or subtraction of further textual layers.
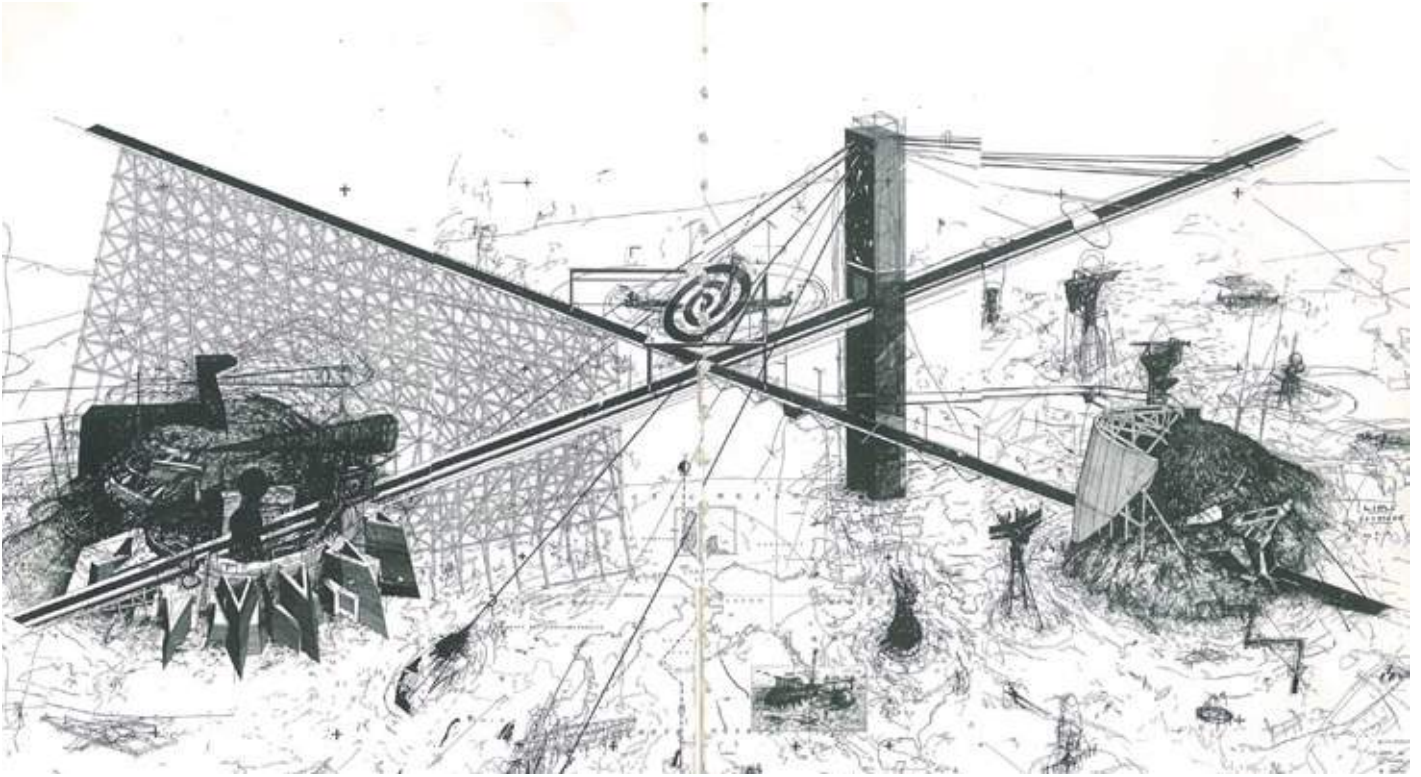
The two islands exist on different days, separated by the International Date Line.
The islands are also reflections of opposing political systems.
They have become caricature of suspicious and fear.
Defensive apparatus dominate their respective landscapes.
The burden of paranoia becomes untenable.
A point precisely midway between the two islands is designated for discussion.
Each island begins construction of a bridge toward the midpoint.
At the intersections of bridges, a table and two chairs are arranged.
Meetings take place. Understandings develop.
Agreement are reached.
The two original bridges are extended to reach the mainlands.
Lines of demarcation are blurred.
Time is collapsed.

Wellington, R. (1999) *Vessels and Fields,* pp.60-61.
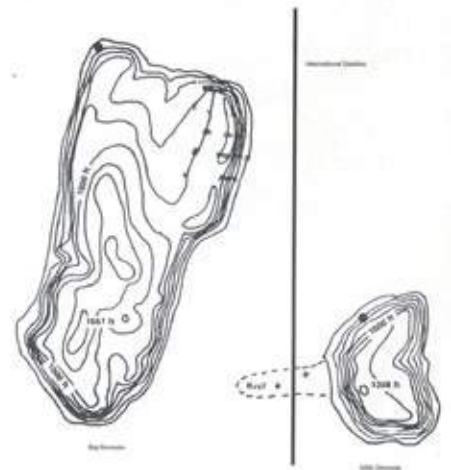
Islands of Time Big Diomede (Russia) and Little Diomede Island (United States), Bering Strait. 5.5 acres and 1.5 acres, respectively. Images taken from: Wellington, R. (1999) *Vessels and Fields,* New York: Princeton University Press. p. 59-61..
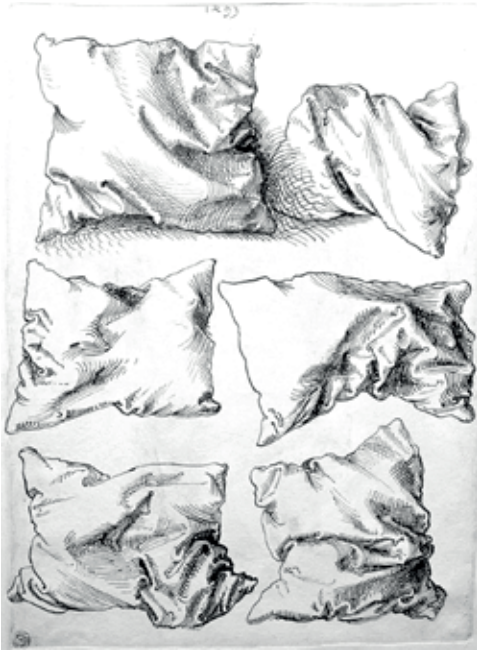
From this operative strategy derives another essential aspect. If space is constantly shaped by event and movement, assuming different consistencies that range from the liminal to the blurred space to interstitial diaphragms, taking the in-between thickness of the *mean time*, then the very concept of emptiness and tabula rasa is deeply undermined by this interpretation. The vision of space as a container, consolidated throughout history, is critically questioned. The diffuse and heterogenous system of urban voids, collecting spaces that are not architecturally defined or, furthermore, whose architecture has been drastically erased and damaged by a traumatic event, rather than being conceived as an empty vacuum, is interpreted as densely occupied by tensions, latencies, suspensions, and possibilities. It constitutes a stimulating and operative field to be reinvented, renegotiated, and redefined by architecture through the dynamic modulation between figure and ground. The unstable nature and weak-balanced condition typically characterizing these spaces in a state of latency is further increased and revealed by the manifestation of an external, sudden, and unexpected force, being it unknown laughter or a violent shock, adding complexity and converted into a field of dense possibilities, as an interstitial space of experimentation and the constant dynamic reconfiguration of the architecture and the city.

The occurrence of a traumatic event, of laughter, generating intense mutation within space, provokes the emergence of a multitude of different and heterogeneous fragments, of latency time-spaces, of an only-apparent void that, to evoke an essential statement of Karen Barad: "is filled with all the undeterminate murmurings of all the possible sound. It is a speaking silence."[32] These in-between space-time intervals can be inhabited and measured through the definition of *mean time* architectures, of particular design processes and strategies focused on the blurring of any previous discrete system, establishing new paths between internal and external, drawing renewed trajectories between different temporal interstices, stratifying and superimposing meanings and relations on these densely inhabited spaces, by involving topographic, morphologic, symbolic and mnemonic conditions.

Dürer, A., *Pillows Studies*, 1493.

32. Barad, K. (2017) "Troubling Time/s and Ecologies of Nothingness: Re-turning, Re-membering, and Facing the Incalculable," in New Formations 92, p.77.

TRAUMATIZED AND TRAUMATIZING AGENCIES: TRAUMA ON, OF, AND AS ARCHITECTURE

The architectural consumption process, thus, can suffer a sudden and violent acceleration or endure the introduction of slow and disruptive erosion, developing new temporal logic in response to the occurrence of the artificial disaster. Moreover, the relationship between architecture and the traumatic activation of transitional fragments, in which space-time dimensions record distortions, suspensions, and unexpected functionings, is extremely complex. It can be described as a dense interweaving of patterns in which causality relationships and the distinctions between agent and reagent undergo continuous shifts, alternations, and imbalances, articulating three different traumatized and traumatizing agencies: the trauma on architecture, the trauma of architecture, and the trauma as architecture.

TRAUMA ON ARCHITECTURE
The most explicit articulation in which the relationship between trauma and architecture unfolds can be recognized when the violence of the traumatic event impacts the latter, inflicting wounds that strike it at different scales and space-time dimensions. This first set of relations, the one most directly detectable and obvious, is thus, trauma on architecture.

This agency indicates an action-reaction relationship between the traumatic event and the architectural discipline. Initially affected by and suffering the disastrous consequences, the latter is forced to react and reorganize the injured spaces in a sort of call to arms. This operation is accomplished through the formulation of new design tools and, therefore, through addressing the ancient figure of the architect *machinator*,[1] characterized by the "astonishing capacity to give weak an advantage over the strong,"[2] even to make the gods appear on the theatre stage — *deus ex machina*. In this case, the traumatic event is an utterly exogenous phenomenon compared to the built, manifesting itself as violent laughter, starting from conditions and contingencies that involve the context in which it stands. This event is configured as an accelerator of the typical processes of consumption and obsolescence of architecture, producing the deployment of a complex system of reactions by the discipline that claims its traditional relationship with military knowledge in the attempt to recover its saving role of safe shelter, formulating new solutions to re-inhabit the spaces interrupted more or less abruptly by trauma.

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1. Bernard Cache, "Vitruvius Machinator Terminator," in *Projectiles: Architecture Words 6* (Architectural Association London, 2011).
2. Ivi p.123.

The architecture assumes the role of disaster's medium, shaping itself as the body on which the passage and manifestation of the critical event unfolds, shows, and affirms, bearing wounds that, according to Teresa Stoppani,[3] are reflected and reverberate at different depths, questioning not only its physical body but also its theoretical corpus. In addition to reporting a complex system of wounds, abductions, and mutilations provoked by trauma, the discipline is also affected ontologically, recording a crisis in its archetypal and ancestral role of shelter, registering a rift that urges it to question possible reformulation of tools and theories.

This relational interweaving between trauma and architecture articulates and unfolds two distinct levels.

Firstly, the traumatic event physically affects architecture, stressing it to seek urgent and critical renegotiations within the dichotomous relationship between interior and exterior, shelter and threat, inclusion and exclusion that have always accompanied it throughout its history. Architecture, recording a rupture in its archetypical vocation of refuge, is forced and exhorted to formulate new balances, harmonizing with concrete catastrophes or imaginary projections of the world's possible imminent ends. This continuous manipulative process, this constant reshaping of limits and materialities through which protecting humans, gave rise to a complex and articulated taxonomy of architectures, whose heterogeneity resides in the contextual specificity of each violent event and hitten context and emanates from the particular conception of the world and humanity on which each culture has rooted its origins. Indeed, each end, or presumed such, of the world mobilizes an extraordinarily concrete and substantially original interpretation, producing extremely diversified architectural devices to face collapse or, in some cases, to accelerate it, invoking different architectural principles and precise techniques of spatial reorganization. Furthermore, the encounter between the tragic time of the chronological events, personified in the mythological figure of Kronos — a giant depicted in the violent action of eating his children and standing for the never-ending flow of events — and the sudden manifestation of the traumatic event, it arises Kairos, the potential time, the time of crisis and opportunity. The interstitial time-space opened up by trauma is therefore interpreted as a moment of rupture and potential that the architectural discipline, through a coordinated strategy of measured reorganization, can exploit to introduce innovative elements capable of bridging the tragic impasse between a past destroyed, according to different degrees and intensity, and a future to be reinvented.

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3. Teresa Stoppani is Professor at the Architectural Association of London, she wrote several publications, investigating how architecture formulates responses to trauma, both on a theoretical and a pragmatic level, through a process that can led to the very re-questioning and re-formulation of the same architectural discipline. To deepen this topic: Stoppani, T. (2016), "Architecture and Trauma", published in "Interdisciplinary Handbook of Trauma and Culture," Springer International Publishing, Berlin; and Stoppani, T. (2008) "Relational Architecture: Dense Voids and Violent Laughters", in field: a free journal of architecture, vol.2.

Embracing within this broader reflection not only the actual disasters but also the projections and narratives of potential upcoming threats emerges a taxonomy of architectures that, holding together imaginary, symbolic, and unrealized projects and material and tangible dispositifs, materializes the survival anxiety and shapes the struggling challenging response to the need for resistance, concretely shaping human's attempts to escape the apocalypse. This taxonomy of archetypal architectures and iconographic devices, whether in the form of the Daedalus wings or Noah's Ark, the garden of Eden or Dante's Paradise, or Virilio's bunker, is rooted within a general semantic field defined by the concept of protection, of containment of the threat, of delimitation of safe space to be subtracted from a terrible unknown, and the search for concrete or metaphorical escape from danger. A constellation of devices declined through highly experimental operations, according to different historical and territorial contexts. Within this taxonomy, it is possible to recognize the vast field of experimentation that architecture has given rise stressed by materialization or projections of multiple ends of the world.

This topic constituted the basis for the exhibition hosted at the Riba at the beginning of 2016 entitled *Creation from catastrophe. How architecture rebuilds communities.*[4] The selected phenomenology of case studies showed how some disasters marked a moment of profound innovation and technical experimentation through which the architectural discipline formulated new tools and methodologies, later absorbed permanently.
Introduced by a quote from Toyo Ito, who writes: "A disaster zone where everything is lost offers the perfect opportunity for us to take a fresh look, from the ground up, at what architecture really is," the exhibition retraced several catastrophic episodes, with even substantial time jumps. Starting from the Great Fire of London (1666), where the destruction of five-sixths of the medieval city center was converted in a tragic occasion to develop different and innovative plans for the city; to the great experimentation led by the Metabolists in the aftermath of the World War II, conceiving radically innovative ideas of the city as a moving, living, and evolving entity.[5] This architectural movement,

4. The exhibition "Creation from catastrophe. How architecture rebuilds communities" took place in London, at RIBA, between 24 jan - 24 april 2016, was set up by Aberrant Architecture and curated by Jes Fernie. Among the investigated catastrophes there were the fires of London 1666 and Lisbon 18th century, and the more recent natural disasters of: Nepal, Nigeria, Chile, Japan, Pakistan and USA. It displayed recovering and reconstructing projects by Yasmeen Lari, Elemental, OMA, Shigeru Ban, NLé, Toyo Ito, Metabolists (K. Tange+K.Kisho) and Sir. C. Wren.
5. The Metabolist Manifesto was prepared in the occasion of the 1960 Tokyo World Design Conference and elaborated, among the others, by Kisho Kurokawa,

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Passe, C. van de *(*1602 - 1607) *The Fall of Icarus.*
^^
Anonymous engraver (1750) *A representation of Noah's Ark floating on the Water.*
^
Kircher, A. (1675) *A depiction of the Garden of Eden and "topography of the earthly paradise".*

which took its name from the Japanese word *shinchintaisha*, meaning literally "replacement of the old with the new,"[6] stated in its manifesto that its principal aim was to propose for the coming world a new design that could "regard human society as a vital process — a continuous development from atom to nebula."[7] Innovative technological solutions develop, so, alongside scenarios and projections that suggest and question what can be the new architecture able to represent and concretize the world of tomorrow, attempting to overcome through the design and the instrument of the project that contextual and emotional impossibility to rebuild or intervene immediately after the tragedy.

In addition to stimulating physical and strategic interventions to repair the effective and consequent lacerations produced by its passage, the traumatic event triggers, in some cases, the shaking of architectural very theoretical foundations, which undergo a radical process of reformulation, registering the impulse to define a change and build a new future. In a book recently published, Mirko Zardini, the former director of the CCA, draws an interesting reflection on the crisis as an effective paradigm through which interpreting the history of the last fifty years. Starting from the energy crises of 1973, he states that rather than introducing new ideas, crises "function as accelerators of trends already underway."[8] It can be clearly understood how the perception of an impending traumatic advent and its concrete manifestation provoke the emergence and concretization of design trends and systemic changes that hovered already within the discipline, in a state of invisible latency.

For instance, the prefabrication and standardization of industrial processes registered an incredible acceleration during the period between the two world wars — from whom it was both triggered and produced —, a phenomenon that led to the introduction of significant technological and constructive innovations from the conception of the MERO system (acronym of Max Mengeringhausen Rohrbauweisen, its inventor). A rigorous construction system conceived between 1942 and 1943, whose modular elements, composed of nodes and metal rods of standardized lengths, were designed to enable its transportation by the airplane and the rapid construction of light and demountable buildings. Successfully employed, since the post-war period, at every scale of construction, this system gave rise to the typology of the transportable and movable house. The *Dymaxion House*, designed by Buckminster Fuller, represents a further example of the accelerative impulse that the war impressed on design. This transportable dwelling was designed as an anti-craft shelter that could be easily converted, in peacetime, into a beach or guest house. Conceived as "an interpretive principle of doing the most with the least in consideration of a mobilizing, integrating society"[9] and initially designed to last ten years, it influenced other housing

Kiyonori Kikutake, and Fumihiko Maki. This radical document was structured in four essays, entitled: Ocean city, Space City, Towards Group Form, and Material and Man, conceiving a radical shift, a strong refusal, toward the traditional japanese city and proposing the idea of vast floating cities on the ocean or, moreover, plug-in capsule towers able to incorporate an organic growth.
6. Zhongjie, Lin (2010), *Kenzo Tange and the Metabolist Movement*, Routledge, p.24.
7. Ibidem.
8. Doglio, F., Zardini, M. (2021), *Dopo le Crisi. 1978, 2001, 2008, 2020*, LetteraVentidue, p.15. (translation by the author.)
9. Fuller, R.B. in *MoMa Exhibits Portable Defense Housing Unit and Bomb Shelter Made from Steel Grane Bin*,

designs, developing a new way of intending prefabricated domestic spaces.

Moreover, the same American urban sprawl resulted from several historical forces — including the Depression's social legacy, the mass demobilization after the war, and the explosion in the mass production of the automobile — this dispersed typology of settlement embodied, through distance and territorial dispersion, a protective apparatus against hypothetical future reappearances of the already experienced bombings. Reaching, finally, the reasoning that Beatriz Colomina draws around the relation between architecture and tuberculosis, delineating a convincing hypothesis that records in the latter the model reference for the configuration of Modern architecture. In her *X-Ray Architecture,*[10] she investigates and intercepts correlations between modern architecture's main features and the tuberculosis sanatoriums, drawing the conclusion that the discipline has shaped its spaces following, primarily, the recommendations from doctors and nurses. The increasing introduction of terraces is, thus, connected with a health-giving sun, as well as the Modernist project and aspiration of transparency, put in relation with in the innovative technology borning at that time: the X-ray. It was the need for a hygienic and healthy space, together with the whole fascinating imaginary the new medical technologies were bringing, that gave impulse to Modern architecture's assiduous search for interpenetration of inner and outer space, for the denudation of architecture from its previous ornaments through expansive employment of glass and clean lines.[11]

TRAUMA OF ARCHITECTURE

The second set of relations records the same architecture in the role of trauma's agent, becoming the device through which trauma is operated, projected, and imposed on a heterogeneous apparatus of corpses, from human to territorial bodies.

This agency articulates on two distinct levels that differ for a diverse positioning of the violent element. In the first case, the traumatizing event is inserted within the architecture's inner space and operates on its user; in the second, engaging its external, revealing itself through the same construction process.

The architectural space, whose programmatical definition poses limits, obstacles, prohibitions, and inhibitions, is charged by the latent presence of invisible tensions and densely populated by an articulated system of relationships that can quickly escalate into various degrees of violence, whose presence resonates from the paradigm space-event-movement. A strained relationship, operating in a double direction, emerges here. On the one hand, with their physical bodies, human beings produce disturbances within architecture, introducing their own trajectories in the preconfigured sequence of

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MoMa Press Release, 1941.

10. Colomina, B. (2018), *X-Ray Architecture*, Lars Müller Publishers

11. Interestingly, this episode is described also by Vidler in his "Uncanny", where, in particular referring to the feeling of nostalgia, he states: "Modernist architecture, formed by the futurism, attempted to erase the traces of the past from their architecture. This urge to escape history was joined to a therapeutic program, dedicated to the erasure of the 19th century squalor in all its forms, that proposed an alliance between the hygienists and architects that would be reinforced on the very level of their design," Vidler, A. (1992), *The Architectural Uncanny. Essays in the Modern Unhomely*, MIT Press, p.63.
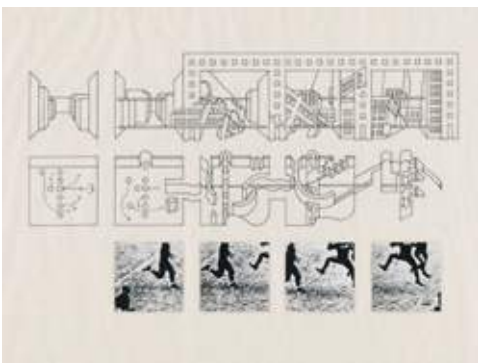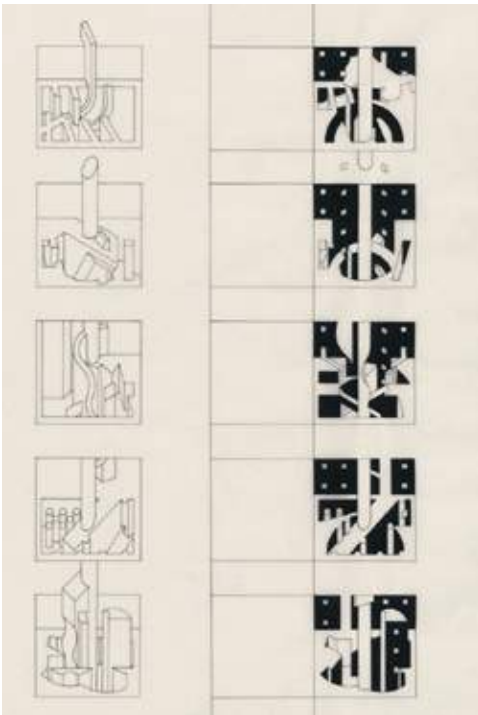
spaces that the discipline defines. On the other, architecture inflicts control on the body in motion, constraining it to flow according to a preconfigured setting.

Bernard Tschumi describes architecture as the ground where objects and humans confront each other in tension, where the empowerment of what he defines as a "violence ritualized"[12] unfolds. Thus, the architectural space is loaded with distress and anxiety deriving from the friction between a rigid and frozen spatial structure that, with its embedded configuration, forces its users to re-stage a specific sequence of operations over and over again, and the human will, seeking for free action and motion. In this sense, Tschumi talks about programmatic violence, focusing on actions and detailed strategies to implement movement in space and time and enforce choreographies. This intrinsic presence of violence provokes a disquieting slippage between what seems homely and what is definitely unhomely, a friction that finds an effective synthesis in the term uncanny. This concept, etymologically rooted in the domestic environment, describes the sudden re-emergence of something only apparently thought to be removed from the mind but constantly and latently present. First employed by Freud[13] to identify the disturbing feeling emerging from the very intimate space of the individual home, and for this reason, even more unsettling. This concept, adopted to interpret the relations between psyche/dwelling, body/house, and individual/metropolis, was later broadened to define the estrangement feeling of social and individual alienation and exile connotating the modern urban centers. In connection with this, Walter Benjamin developed an interesting analysis on how psychology and psychoanalysis found in modern cities a perfect topos for exploring

12. Tschumi, B. (1994), "Violence of architecture." in *Architecture and disjunction*, Cambridge, MA: MIT Press, p.125.
13. The term "uncanny" comes from the German term "unheimlich," which semantically stands at the antipodes of heimlich (from heim, home) standing for something unusual, foreign, unfamiliar, sinister, disturbing, and suspect, but it is something that does not provoke terror, but rather dread. It generates slippages, estraingments, and perturbations that are not completely bad or mean, something that unexpectedly emerging from a familiar context, generates a sense of disorientation and puzzlement. It is in fact not by chance that this concept, studied and introduced by Freud's text "The Uncanny", 1919, roots its origins in an essay written in 1906 by Ernst Jentsch, who stated: "In brief, the word suggests that a lack of orientation is bound up with the impression of the uncanniness of a thing or incident [...] if one wants to come closer to the essence of the uncanny, it is better not to ask what it is, but rather to investigate how the affective excitement of the uncanny arises in psychological terms, how the psychical conditions must be constituted so that the 'uncanny' sensation emerges." (*On the Psychology of the Uncanny*). Writing on this, Freud identified two main causes of the uncanny: firstly the return of something that was thought as definitely repressed, and secondly and subsequently, the return of repressed infantile complexes.

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Tschumi, B. (1980-1981) *The Manhattan Transcripts Project, Episode 3:The Tower (The Fall),* New York.
^
Tschumi, B. (1980-81) *The Manhattan Transcripts Project, Episode 4: The Block*, New York.

anxiety and paranoia, thus, identifying in them the primary cause of the puzzling, confounding, and scaring sensations spreading at that time. Therefore, the uncanny ended to embody a metaphor to describe the unliveable modern condition, a world became alienated and increasingly dissociated from its own nature "that could only recalled itself by shocks, by the effects of things deliberately made strange,"[14] where the spatialities and temporalities perceived from the human mind collapse.

Inscribed within this framework, the project becomes the vehicle to express the previously-ignored feeling of puzzlement, discomfort, and violence generated by the same architecture, in a sudden and mean inversion of its archetypical role of human savior and protector. Something similar reverberates in Tschumi's oeuvre, permeated by this disturbing and restless presence, which becomes the very means through which the architectural space is activated and described. By introducing a series of dramatic and violent events, which appear and impact the space intermittently, architecture is converted into the interacting background of a dynamic narration. Furthermore, these degenerative tensions are intercepted and retraced through a notation system that, combining and hybridizing with transdisciplinary fields, such as the noir novel or even the police language, enables the re-construction of the spatial dimension through sequences of time-frames that capture variations and metamorphosis formerly imprisoned by the design discipline and suddenly released by the event. The introduction of violent and estrangement elements operated through the modeling of awkward and inhospitable spaces, becomes, furthermore, a means to produce puzzling frictions intending to elaborate critical reasonings toward particular and contextualized situations.

An example of this distorted and controversial reassessment that consciously introduces violent and traumatizing features within the design logic raises from the project entitled *10 Californian Houses* by Mark Mack. Presented in the second issue of The Pamphlet Architecture, the project consists of a series of ten tailor-designed individual houses through which the architect delineates an examination of:

> The problematic relational issue of man-made form versus god-made nature. It tries
> to compete with the natural settings on its own terms, carving and molding the bu-
> ilding with the idea and the spirit of the site, to set forth a celebration of the human
> intellect in ritualistic and archaic forms.[15]

This experimental process, perfectly fitting the emerging feeling of a profound dissociation between human beings and nature, ends up in the definition of highly awkward, restricted, and distorted spaces that force users to challengingly confront the extreme and demanding conditions of an only-reproduced-wild nature.

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14. Vidler, A. (1992), *The Architectural Uncanny. Essays in the Modern Unhomely*, MIT Press, p.63.
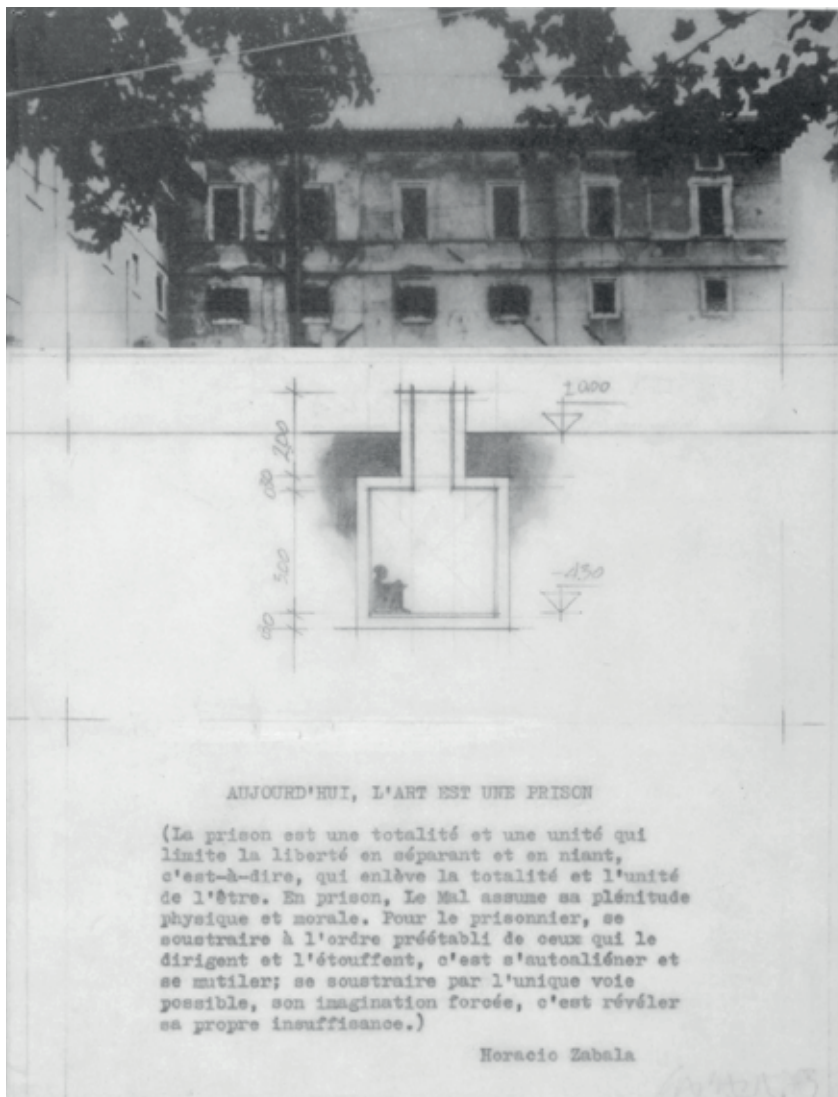**15.** Mack, M., "10 Californian Houses," Pamphlet Architecture #2, Princeton Architectural Press, February 1978, p.5.
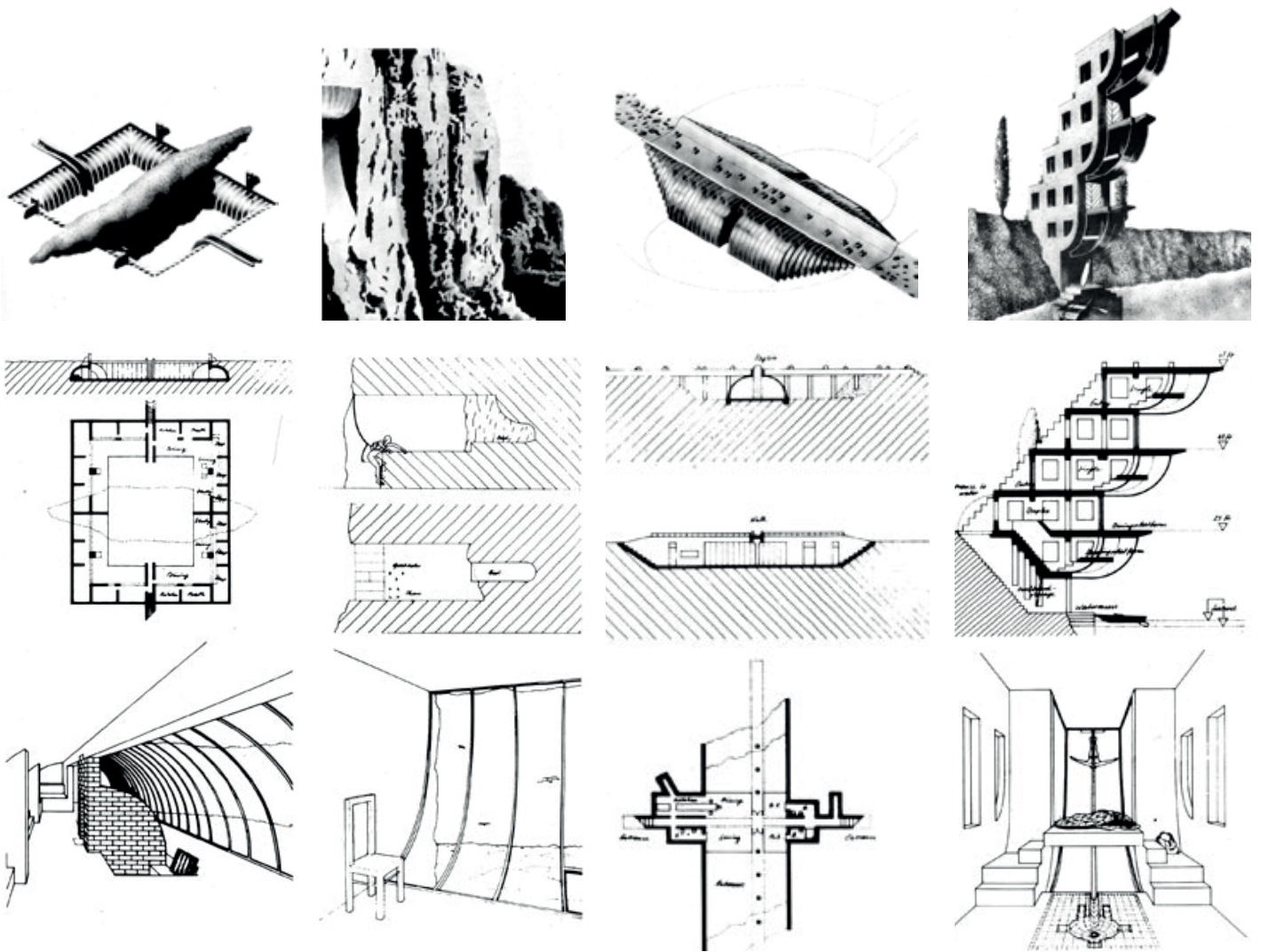
Mack, M., "10 Californian Houses,"
Pamphlet Architecture #2, Prince-
ton Architectural Press, February
1978.
From the left:
Retreat for Mountainclimbers;
House for two fighting Brothers;
House for a Jogger;
Condominiums for Highdivers and
Surfers.

AUJOURD'HUI, L'ART EST UNE PRISON

(La prison est une totalité et une unité qui
limite la liberté en séparant et en niant,
c'est-à-dire, qui enlève la totalité et l'unité
de l'être. En prison, Le Mal assume sa plénitude
physique et morale. Pour le prisonnier, se
soustraire à l'ordre préétabli de ceux qui le
dirigent et l'étouffent, c'est s'autoaliéner et
se mutiler; se soustraire par l'unique voie
possible, son imagination forcée, c'est révéler
sa propre insuffisance.)

Horacio Zabala

Zabala, H. (1978) *Catàlogode la exposiciòn,* Galleria numerosette, Napoli.

Zabala, H. (1973-74) *Ante-proyectos de carcel subterranea.*

The prison is a totality and a unity that limits freedom by separating and denying, that is to say, which removes the wholeness and the unity of being. In prison, Evil assumes its physical and moral fullness. For the prisoner, to escape from the pre-established order of those who direct and stifle him is to alienate and mutilate himself; to escape by the only possible way, one's forced imagination, is to reveal one's own insufficiency.

These architectures are functional and formal at the same time:

> The form is used to convey an attitude toward the site. The function of the building is to comply with the social and political tale within. The organization of the inside determines how the building can be used. Form and function relate to each other in a supplementary way and not in a causal relation.[16]

The project, intending to integrate the formalistic architectural language with a ritualistic social tale, ends up in a sequence of uncanny spaces, where the traditional protective role embodied by architecture is inverted.

The same operation is recognizable in the project of the Argentinian architect and artist Horacio Zabala, who adopts the same strategy as Mark Mack with a shift in the subject of his critical investigation. While in the *10 Californian Houses,* the uncanny is introduced to stress general reasoning on a possible re-conciliation between architecture and nature, Zabala's sequence of imaginary dystopic dispositifs employs dramatic elements to critique a much more specific and contextualized issue. The series *Anteproyectos de arquitectura carcelarias*, conceived between 1973 and 1974, embodies a critical reaction to the military and dictatorial regimes in Latin American countries in that period. His drawings materialize the negative fantasy of spaces of detention designed for artists, embodying an extremized and negative reinterpretation of the artist's studio and, at once, anticipating the real persecution that will take place during the Argentine military dictatorship in the following years.

This preliminary project for prisons presents a series of small underground or underwater cubicles, spaces inhabitable only by one person, who can be placed standing, and hermetically closed except by a tube that allows the entry of oxygen.[17] Within these projects, the uncanny is installed and constitutes the very means of shaping the intimate and, at the same time, threatening space of the individual refuge, recording an inversion of its archetypical connotation of safeness. Chapter 2.2 will deepen the reasoning on this degenerative process.

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John Zubek and an assistant prepare a special dome used in sensory deprivation experiments at his University of Manitoba laboratory in 1959. DAVID PORTIGAL AND CO., COURTESY OF UNIVERSITY OF MANITOBA ARCHIVES

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Submiting to immobilization in Zubek's lab. Few could endure more than twelve hours of complete immobility. DAVID PORTIGAL AND CO., COURTESY OF UNIVERSITY OF MANITOBA ARCHIVES
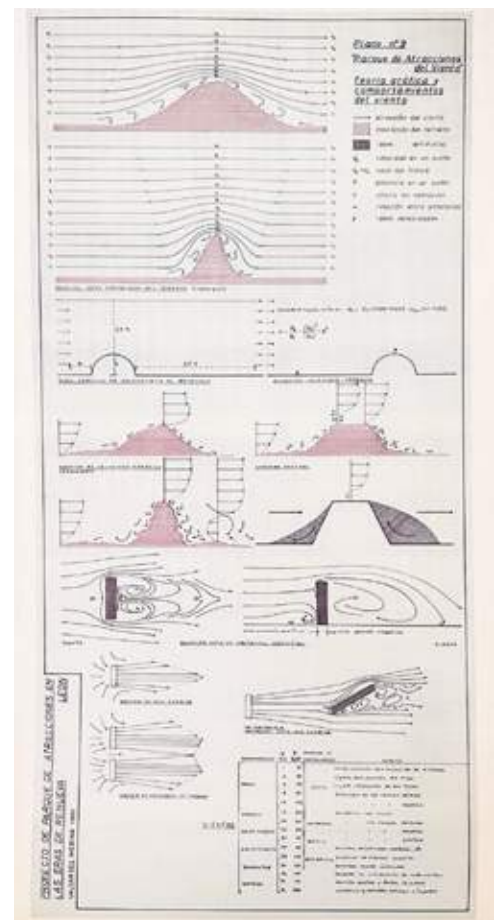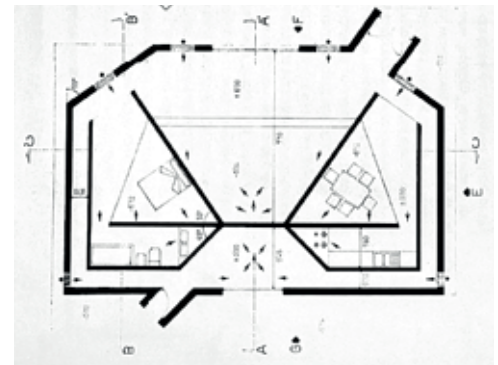
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16. Ivi p.12.
17. As will be further discuss within chapter 2.2, these architectures recall another interesting and disturbing project, "The Sensory Deprivation Cabin," developed in the 1950s by Dr John C Lilly, a neurophysiologist at the National Institute for Mental Health in the USA. For further information: Zubek, J.P. (1969), *Sensory Deprivation: Fifteen years of Research*, New York: Meredith Corporation.

If Zabala's houses express all the fear and omen for the imminent and threatening raising of the military dictatorship, that would dramatically affect the social and artistic life of the Latin American population in the following years; in the same period Isidoro Valcárcel Medina, a Spanish artist and architect, was developing his project entitled *Premature Architecture*. This series of buildings, from individual houses to monuments, rather than concretizing an imaginary or idealized architecture, shape a profound and rooted commitment to reality by dealing with the general atmosphere that subjugated his country for almost forty years, the Franco regime. Dealing with the problems, feelings, and needs that everyday life unfolded in that period, such as unemployment, suicide, maladjustment, homelessness, and unused wasteland, the project gave shape to a series of architectures resulting from the combination of forms and spatial organizations with paradoxical and cynical programs. The *Tower for Suicides*, or open up to the violence and strength of natural elements, as in *The Wind's Violent House*[18] — which echoes the same operation displaced by Mack — contributing, by so, to the thickness and heterogeneity of this taxonomy of violent architectures. This project moves from a radical reinterpretation of wind that shifts from being an essential architectural feature - decisive for the ventilation, temperature, and thermal comfort - to converting into a force that impacts and hits the user. The natural element, through huge fans displaced along its whole perimeter, is conducted within the internal space of the house, whose spatial organization is shaped through narrow angles and corridors. This configuration defines an obliged trajectory for the wind that impacts, coming from different directions, against the walls and is forced to exit through minimal openings located at the bottom of the interior walls and on the roof, through the push of other internal fans. Thus, the house's intimate space is invested by this natural force that, incremented through artificial means and a peculiar spatial organization, is converted into a constant disturbance that startles and destabilizes its inhabitant.

The second nuance through which this agency is displaced manifests an inversion within the direction of its shaking operation. Instead of focusing on the frictions between the internal spatial organization and its users, it concerns the very construction process through which architecture materializes, provoking a trauma on the territory and disrupting a previous-balanced environment.

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Medina, V.I., *The Wind's Violen House*, image taken from Medina, V. I. (2021) *Arquitecturas Prematuras*, Bilbao: Canice Editorial, p.35.

^
Medina, V.I., *Teoria Grafica y comportamientos del viento,* developed for the project *Theme Park Attraction at Las Eras de Renueva*, image taken from Medina, V. I. (2021) *Arquitecturas Prematuras*, Bilbao: Canice Editorial, p.81.

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18. To further deepen the thought and the projects of Isidoro Valcárcel Medin see the catalogue of the exhibition curated by and around him at the Azkuna Zentroa Alhondiga of Bilbao: Medina, V., with critical texts by Mantecón, M., Guzmán, K., and Eguíluz, P. (MUSAC, Azkuna Zentroa and Caniche, 2021), *Arquitecturas prematuras*.

Strictly linked to human's desire to master and to the anthropocentric ways to intervene in space, these processes are, in most cases, perpetuated through the deliberate exploitation of the interpretation of space as a container — developed and employed from the Enlightenment on — and trigger operations of tabula rasa and erosion claiming for further expansions on territories purposely described as empty, void, and characterized by nothingness. The tendency to impose form on matter, intertwined with the Western idea of domination and colonization, is rooted in the very origin of humankind. It has been justified by enlightened and advanced measurement tools — as the non-neutral geography — developed by the so-called civilized Western culture to enable and produce arbitrary division of the whole Earth's surface, whose example is represented by the Berlin Conference when, during the nineteenth century, Western countries drew random lines to divide Africa.

This fragmentation derived basically from the controversial and voluntary-driven misinterpretation of the term nature that, rather than being recognized as a not neutral cultural construction, has been deliberately juxtaposed to and confused with the concept of environment for centuries, triggering a series of operations and legacies that perpetuated these processes of exploitation. A case is, for example, the International Environmental Law,[19] formulated in strict connection with an anthropocentric perspective. Through the adoption of specialized instruments, it divided Earth into separated areas of biodiversity,

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Unattributed illustration, "The Scramble For Africa: the Berlin Conference, 1884-1885 French Commentary On the Berlin Conference of 1884-1885," published on L'illustration, 3rd January, 1885, p. 17.

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Rößler, A. von (1885) *Berlin Conference to divide Africa between the European powers*.

The Berlin Conference was described as

"Africa's undoing in more ways than one. The colonial powers superimposed their domains on the African continent. By the time independence returned to Africa in 1950, the realm had acquired a legacy of political fragmentation that could neither be eliminated nor made to operate satisfactorily."

Quote from Harm J. de Bli (2013) Geography: Realms, Regions, and Concepts, Wiley & Sons, Incorporated, John

19. The International Environmental Law (IEL) is a direct product of the first UN Conference on the Human Environment, held in 1972 and ended with the Stockholm Declaration. It was the first international document to recognize the right to a healthy environment through twentysix different principles that were referring to as many legal spheres of the Earth. As all the critical debate around the Anthropocentric system sustains, the central mistake of such document stands in considering the Earth as a composition of different International Territories, rather than a unique Ecosystem. Moreover, this logic implies the interpretation of the natural elements as objects and resources, carrying, thus, with it a perpetuation of the justification of violent acts on nature, enacted through processes such as extraction, exploitation, and colonization. To contrast this fragmented vision and interpretation of the environment, and the extreme pressure on ecosystems and communities that live and rely on them, in the last two decades raise an important movement, Rights of Nature (RoN), that finally recognized as central the agency of matter and the interpretation of the environment as a whole system characterized by a multiplicity of entities, biological and humans, and operating, thus, in a much more integrated way. A first important step for the development of this movement was the recognition, within Ecuador Constitution of 2008 of the Rights of Nature. To further deepen this topic, see: Kohn, E. (University of California Press, 2013), *How Forests Think. Toward an Anthropology Beyond Humans*; and Emily, J. (2021) 'Posthuman International Law and the Rights of Nature,' Journal of Human Rights and the Environment, 12. pp. 76-101.

Valla, C. (2010-ongoing), *Postcards from Google Earth*.
First column from the top:
47.368412°,-123.28055°
36.475372°,-105.73272°
48.100796°,-123.55835°
Second column from the top:
37.871635°,-122.507225°
41.909588°,12.472086°

"I collect Google Earth images. I discovered strange moments where the illusion of a seamless representation of the Earth's surface seems to break down. At first, I thought they were glitches, or errors in the algorithm, but looking closer I realized the situation was actually more interesting — these images are not glitches. They are the absolute logical result of the system. They are an edge condition—an anomaly within the system, a nonstandard, an outlier, even, but not an error. These jarring moments expose how Google Earth works, focusing our attention on the software. They reveal a new model of representation: not through indexical photographs but through automated data collection from a myriad of different sources constantly updated and endlessly combined to create a seamless illusion; Google Earth is a database disguised as a photographic representation. These uncanny images focus our attention on that process itself, and the network of algorithms, computers, storage systems, automated cameras, maps, pilots, engineers, photographers, surveyors and map-makers that generate them."

regulating each of it by specific legal protections and giving rise to a series of strictly territorialized legacies, such as the law of the seas, the one on the climate change. These issues will be deepened in chapter 2.3, where they intertwine with the toxic and almost-irreversible operations promoted by nuclear warfare in the past and, nowadays, by nuclear energy production and the disposal of its toxic waste.

The violence produced and materialized on territories through architecture, together with the topic of the exploitation and the never-ending process of colonization, constituted the barycentric component of the 17^ Venice Biennale, entitled How will we live together? On this occasion, many critical projects colonized the Giardini and Arsenale spaces, revealing the progressive diffusion of the speculative design approach, which stands today as the basis of the design practice of numerous design practices. This discursive activity is rooted in the critical thinking of the architectural discipline. It employs design as a medium to explore contemporary social and urban issues through a speculative and imaginative operation aimed to trigger awareness, analysis, actions, and debate, drawing alternatives, even utopic or dystopic, essential both for the re-imagination of the world of today and, more importantly, on that of tomorrow. In this way, through the definition of architectural objects and artifacts, it draws narrations able to delineate possible scenarios and visions that question the very discipline. Lastly, by intertwining design issues with speculative narrations, this practice enables to render explicit and visible the complex system of relations between past, present, and future, constantly blurring and mixing them, remarking the relevance of the space of representation and narration, interpreted as a testing ground for critical experimentation where to define new visions to reason and operate on the present.

Earth is an Architecture[20] from the French TVK Architectes is inserted within this practice context and, moving from the statement that stated, "the Earth is a site of construction common to all material elements and living organisms,"[21] it retraces the actual exploitation processes that are taking place on Earth through the delineation of a tale, exploring the relations between architecture and Earth. This narration is articulated through five continental plots - the sky, the sea, the matter, the living entities, and the energy - and reveals through the intertwining of mythological figures and specific sites, the actual and material damages, and catastrophic consequences human beings have triggered on Earth. [22]

20. To further deepen this project see the publication: TVK, (2021), *The Earth is an Architecture*, Leipzig: Spector Books.
21. TVK, (2021), *The Earth is an Architecture*, Leipzig: Spector Books, p.15.
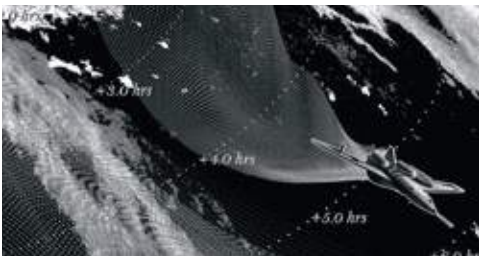**22.** Another work that reasons on these exploitative processes is *The World*
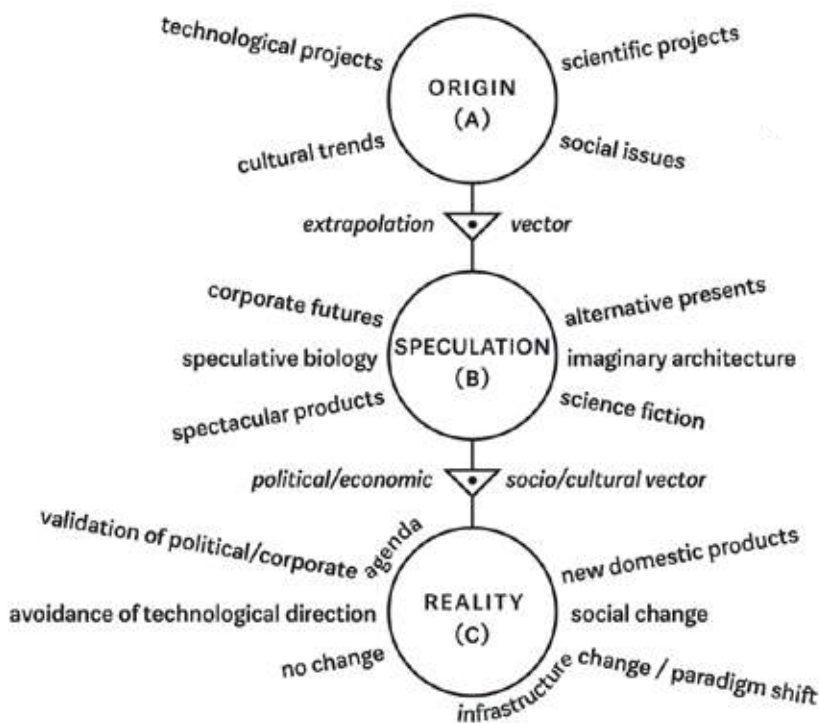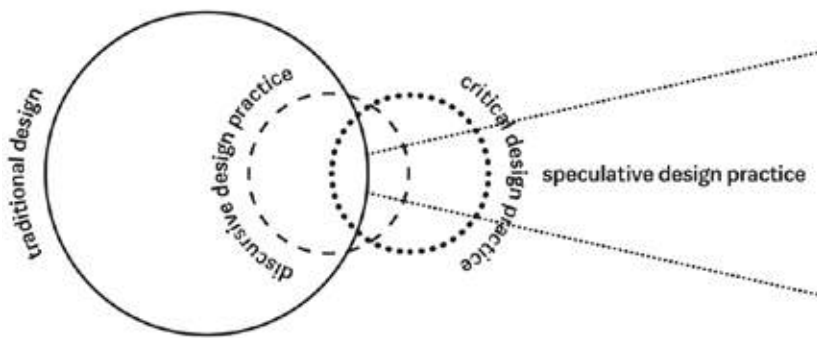
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Mitrović, I. and Šuran, O., *Traditional Design versus Speculative Design*, diagram taken from the publication: Mitrović, I., Auger, J., Hanna, J., Helgason,I. (2021) *Beyond Speculative Design: Past - Present - Future*, Split: SpeculativeEdu; Arts Academy, University of Split, p.69.

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The Lifecycle of Imaginaries, diagram taken from the publication: Mitrović, I., Auger, J., Hanna, J., Helgason,I. (2021) *Beyond Speculative Design: Past - Present - Future*, Split: SpeculativeEdu; Arts Academy, University of Split, p.27.

∨
Summary of Genette's narrative typology.

	ELEMENTS ANALYZED	COMPONENTS			
narrative mood	distance	reported speech	transposed speech, indirect style	transposed speech, free indirect style		narratized speech
	functions of the narrator	narrative function	directing function	communication function	testimonial funcion	ideological function
narrative instance	narrative voice	homodiegetic narrator		heterodiegetic narrator		autodiegetic narrator
	time of narration	subsequent narrator	prior narrator	simultaneous narrator		interpolated narrator
	narrative perspective	zero focalization		internal focalization		external narrator
narrative levels	embedded narratives	extra-diegetic	intre-diegetic	meta-diegetic		meta-meta-diegetic
	metalepsis		breaching of narrative levels			
narrative time	order	analepsis	prolepsis	reach		extent
	narrative speed	pause	scene	summary		ellipsis
	frequency of events	singulative		repeating		iterative

Speculative narrative design constitutes, furthermore, the principal tool of investigation for the studio Design Earth. Their work presented on the Biennale's occasion, *The Planet After Geoengineering*,[23] pointed the attention to further evolutions of these exploitation processes, spreading the narration even beyond the Earth's limits. Configured in the form of a graphic novel, the project presents a compendium of remedial environmental interventions that professes palliative care for the planet. Articulated in five geostories, exploring the realm of the underground, crust, atmosphere, and outer space,[24] it provokes puzzling emotions in the visitor, ranging from anger to confusion, from helplessness to paranoia.

Benjamin Bratton already described this tendency in his work *Terra-forming*,[25] where he operates a critical inversion in the original intentionality with which this term was formulated. While in the 1960s, it emerged to identify the utopic/dystopic idea of creating an alternative Earth by terraforming another planet, what Benjamin proposes is a reversal. Rather than exploit artificiality, astronomy, and automation forms gained through technological progress to convert an alien planet's ecosystem into an Earth-like planet, he suggests the terraforming of Earth. A radical shift that, abandoning any attempt to explore a possible recovery of nature, explicitly reclaims the artificial and the urgency to operate on much longer timescales.

Design Earth, "Sulfur Storm," taken from the project *The Planet After Geoengineering*, 2021. Through the use of the speculative medium, the studio delineates different climate crisis geographies. Among them, *Sulfur Storm* narrates an hypothetical solution drawn by scientists to reduce the increased exposure to solar radiation. Inspired by the phenomenon released in the aftermath of a vulcano, they peruse dispersing sulphate aerosol into the atmosphere to reflect sunlight away from the Earth.

turned inside Out, presented at the Venice Biennale 2021 by Plan b architecture & urbanism (Hsiang, J. and Mendis, B.) which its authors described as a global project on unconsciousness. Their huge inverted global sphere was significantly accompanied by the statement "Let's scour the World to Engineer Emptiness and celebrate omission. If one turns the world inside out, what will be unearthed?" delineating so, a critical reflection on the high degree of exploitation that has been reached nowadays.

23. Design Earth (2021), *The Planet After Geoengineering*, Barcelona: Actar.
24. Blue Marble (1972) marks, together with the inauguration of a nascent ecological movement, an important overturning of humans point of view: the world was perceived for the first time from the outside. The sense of alienation deriving from this mutated perspective, was accompanied, thus, by a further capitalistic aspiration: pushing the colonization process beyond Earth, to explore and, by so, exploit other territories, other planets. This powerful image was recently echoed by a new one: Event Horizon (2019), the first to portrait a Black Hole. First of all, it marked the discovery that, even what which was described as "true nothingness," as a pure void, exist and paradoxically owns its own consistency. At the same time, also the process through which this image was obtained is particularly interesting because it converted the Earth in the camera through which coordinating, within an extremely synchronized and planned operation, a complex system of telescopes, harmonized to focus on the same place at the same time, and from completely different localizations.
25. Bratton, B. (2019), *The Terraforming*, Strelka Press.

TRAUMA AS ARCHITECTURE

Finally, the last relational system that connects trauma and architecture emerges: trauma as architecture. This agency embraces strategies and projects that, through the manipulation, exploitation, and experimentation with the representational tools and narrative constructions, embody two purposes. Firstly, overcoming the aporia of representation and supporting the metabolization of the traumatic shock through its reconstruction and re-experiencing via representational and performative projects. Secondly, in a degeneration of the previous strictly linked to the imposition of control and consumption logics, defining a much more subtle and cynical tendency that exploits disaster, capitalizing and converting it into a sort of dark show.

The interstitial spaces opened up by trauma constitute a system of in-between diaphragms that unfold the dichotomous conflict between remembering and forgetting, between the painful rejection of the scar and the binding acceptance of a drastically modified reality. They represent a sort of battlefield ground where the painful metabolization of trauma is conveyed by architecture through the combination of its means of representation with tools and methods of other disciplines in the attempt to overcome the impasse generated by the traumatic imposed aporia and, by so, favoring the re-circulation and re-activation of practices, apparatuses, and social relations fundamental for the recovery process. A primary concept at the basis of PTSD identifies the possibility of recovering from trauma only through adequately reconstructing its experience as memory, allowing the affected individuals to move forward while still confronting it. In fact, since transformation — in terms of spatio-temporal distortions and consequent emerging of different clusters of symptoms — is an essential consequence of the occurrence of trauma, the inversion of its damages requires a further metamorphosis, achievable through the reprocessing of the event.

Thus, the first level of this agency regards projects, narratives, and practices that exorcise the traumatic experience by employing tools, strategies, and dispositifs to enact repetitive and ritualized operations, retraceable in the obsessive and paranoid reiteration of signs and trajectory on the paper, as well as in the triggering of new forms of expression directly and concretely involving body and its engagement with matter.

Furthermore, exploring innovative forms of expression and creation, other ways to overcome the adverse event, delineating new fields of action and interstices of proximity where to elaborate trauma and recover the collective memory.

Inscribed within this specific operative process is the traveling multimedia exhibition *Wararchitecture Sarajevo: a Wounded city*,[26] developed in Sarajevo by the association Das-

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26. "Warchitecture-Sarajevo: A Wounded City" was a traveling multi-media exhibition documenting the destruction of architecture in Sarajevo between May 1992 and October 1993 through photographs, films, audio-tape and personal testimonies. It was designed and composed by the Bosnia-Herzegovina Association of Architects (Das-Sabih) in Sarajevo during the conflict, and first presented at the Arc en Rêve Centre d'Architecture in Bourdeaux in 1994. In fact, the same year, on March 16, five members of Das Sabih (Cesovic,M., Curic, B., Hasanbegovic, N., Serfic, D., and Spilja, S.) escaped the city bringing with them the
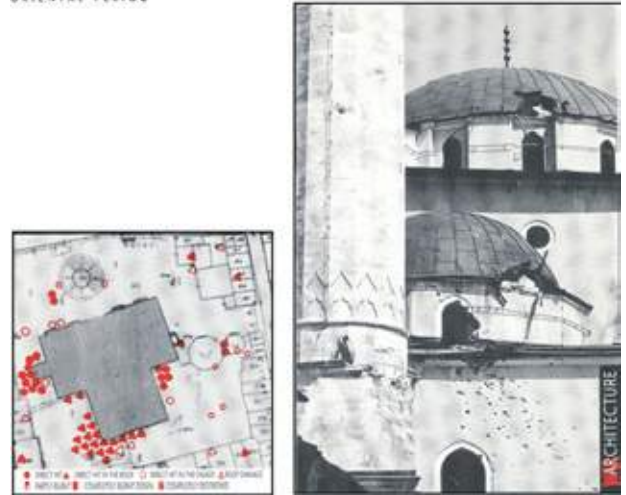
ORIENTAL PERIOD

CONTEMPORARY ARCHITECTURE

ORIENTAL PERIOD

Images taken from: DAS-SABIH
(1994) "Warchitecture: Urbicide
Sarajevo," exhibition catalogue.
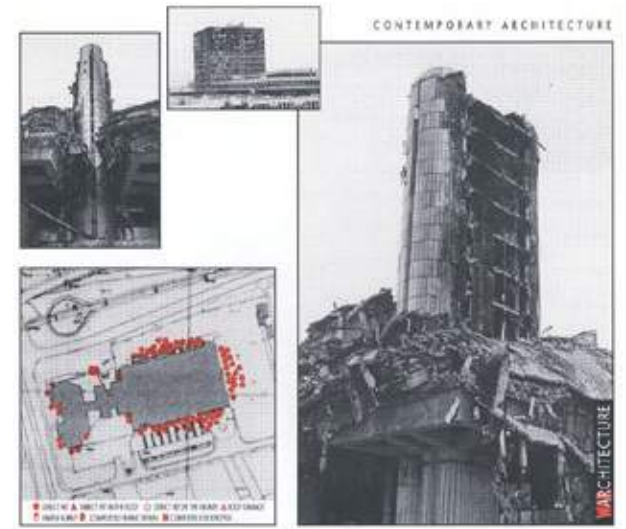
First column:
*Map of destruction in Sarajevo's
Bazaar.*

Second column, from the top:
*Destruction of Gazi Husrev-beg
Mosque, Sarajevo.*
*Destruction of Osloboenje Building,
Sarajevo*

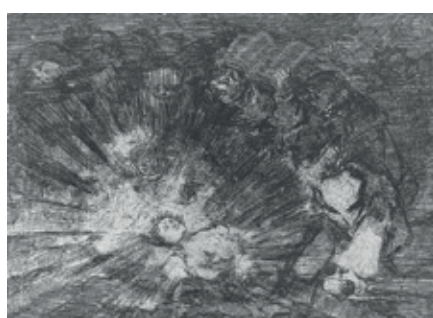Goya, F. (1810-20) *Los desastres de la guerra*. This series of 82 prints delineates a sort of universal vocabulary of war, representing a strong statement of its condemnation.

In the first column, from the top:
1. Sad premonitions of what will happen.
2. With or without reason.
3. With or without reason.
4. Women instill courage.
5. And they are fierce.

Second column, from the top:
8. It always happens.
44. I saw him.
73. Catwalk pantomime.
79. The truth is dead.
80. Will it revive?

Sabih, accompanied by the dossier *Urbicide Sarajevo: wararchitecture dossier*. Hardly hit by the conflict between 1992 and 1996, the city underwent a process of inexorable subtraction and incremental erasure of its built environment.

Das-Sabih, instead of proposing a reconstruction project for an unimaginable and unperceivable future, reacted to the ongoing disaster with a silencing strategy: the construction of an archive in progress. By synchronizing the archiving collecting operation at the same rhythm as the destructive conflict agency, the group revealed and represented was gradually destroyed and erased by the bombings. This archive marks an interesting and radical shift from the traditional project: a linear and proportional interdependence relationship is defined between destruction and collection, between buildings' disappearance from the urban space and their re-appearance in the archive meta-spatial dimension, through detailed documentation. The exhibition, offering a systematic survey of the damaged buildings of the city, whose scars are progressively recorded through a system of lines, drawings, photographs, and data, represents a sort of 3D rendering of the horror of the war, standing as an admonishment and condemnation.

The same operation employed in Sarajevo by Das-Sabih, somehow evokes the series of eighty-two etchings realized by Francisco Goya between 1810 and 1820 entitled *The Disasters of War*.[27] Goya produces a universal condemnation of violence and suffering by portraiting popular uprising, blurring and revealing in this war-frames a taxonomy of abstracted and generalized figures, forming a sort of vocabulary of timeless horrors where each etching becomes an absolute and abstract island of terror.

The Belgian artist Lieven De Boeck in his project *Fireworks II. Le bleu du ciel*[28] developed another interesting modality to deal with and narrate trauma. The project, conceived as a critical response to the 9/11 attack, rather than drawing ideas or proposals for a future too hard and suffering to imagine, focuses on the representation of the event: employing the architectural diagram to reconstruct the choreographed attack dynamics through which architecture had been hitten. By imitating and reconstructing the impact on the Twin Towers, the project cynically converts the same explosion into an architectural event.

Architecture becomes trauma, reaching the aim of speaking about the unspeakable.

Finally, the second and most cynical level embodied within the agency of architecture as trauma is exemplified by projects and narratives that develop explicit and massive exploitation and capitalization of both the imagery and the perceptional consequences that catastrophes generate on humans. The narrations of the apocalypse record, since their very

exhibition packed in two crates. The exhibition was then moved to Paris (Centre Pompidou), and travelled then to numerous museums and art galleries, with the purpouse to inform the public about the conflict degeneration that the city was underpassing.

32. Goya, F., *Los Disastres de la Guerra*, 1810-1820. This series created as a visual protest against the violence of the 1808 Dos de Mayo Uprising, the subsequent Peninsular War of 1808–1814, and following restoration of the Bourbon monarchy in 1814.

28. De Boeck, L. *Fireworks II. Le bleau du ciel*, 2001.

beginning, the non-neutral attempt from the central powers to control and direct the behaviors of the population. In recent years, and particularly after the 9/11 attack, the perception of a possible nuclear or biological war, together with the constant paranoia toward suddenly terroristic attacks, generated a social and cultural atmosphere where the term "end of the world" has become a sort of exploitative template to build narrations able to sell a vast scale of heterogeneous products to the contemporary frightened public/consumer.

As Giorgio Agamben states, the term crises has been charged with a new system of meanings. Shifting from its medical semantic roots - associating it with the precise overturning temporal point at which a sick person was considered capable of surviving or, on the opposite, doomed to death- to address nowadays, through a temporal decontextualization, a more extended condition, identifying that continuous and permanent state often described as a "state of emergency."
"Today crisis has become an instrument of rule. It serves to legitimize political and economic decision that in fact dispossesses citizens and deprives them of any possibility of decision."[29] Stressing furthermore, the relation that this new conception of crisis generates with the "contemporary sense of uncanniness often felt in the face of abstraction."[30] Together with the uninterrupted flow of information transmitted and deformed by power and media, abstraction has produced a contemporary situation where it is impossible to understand the "simple appearance of a chain of events, incorporated within a single catastrophe," that is thus perceived as a seemingly endless multiplication of crises.[31]

Occupying more and more consistently our daily life, the accelerating sequence of apocalyptic images has generated a sort of renovated pornographic[32] apparatus, shifting the barycentric point of interest from the unveiled and prosperous naked body to the very agent intensely concentrating its efforts on the depletion and erasure of these bodies: warfare declined in all its forms. In fact, "our world would be unlivable without this power of deviation, without this radicality coming from another side, you come from the object and no longer from the subject, without this strange process of attraction."[33]

Re-emerges here the topic of consumption, indissolubly intertwined with that of *nourriture*. As Virilio pointed out, the voracious ingestion of images subjects us to an actual daily bombardment, projecting us, in a condition of exponential acceleration and addicted sedation, towards an ever closer and unequivocal end. In such a context, time is measured by subtraction, recording a further reversal: the space of our daily life is no longer estima-
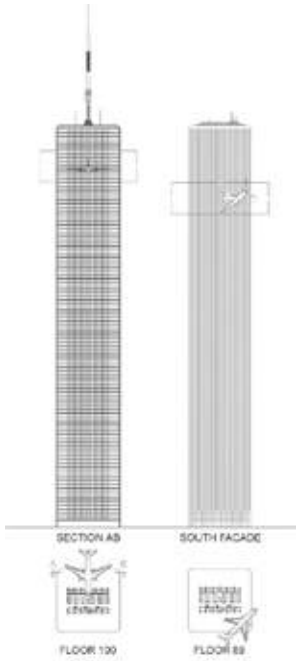
29. Giorgio Agamben in an interview published by the german newspaper Frankfurt Allgemeine Zeitung, 25.05.2013.
30. Bellu, M. and Bujès, E. (2018), *The memory sometimes comes to you in the bright light of the beach, through the transparency of the rolling waves — Encircling the Image of Trauma*, Berlin: Archive Book, p. 34.
31. Benjamin, W. (2007) "Theses on the Philosophy of History", in Illuminations, p.257.
32. To further deepen the issue of "nourriture" and image consumption, see: Crary, J. (2014), *24/7. Late Capitalism and the Ends of Sleep,* Verso Book; and Armand, L., Lewty, J., and Mitchell, A. (2008), *Pornotopias. Image, Apocalypse, Desire*, Litteraria Pragensia Books.
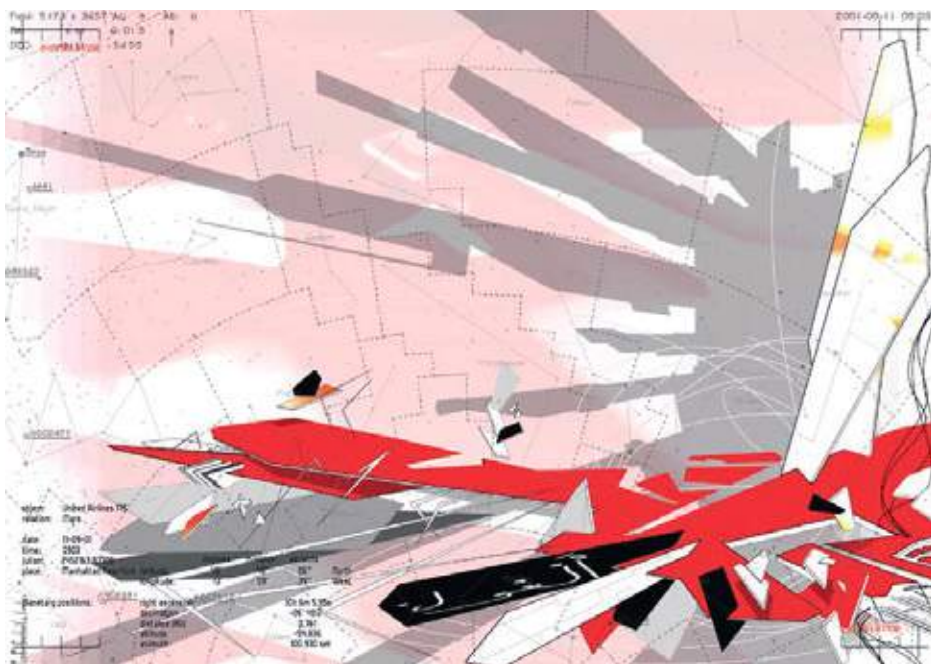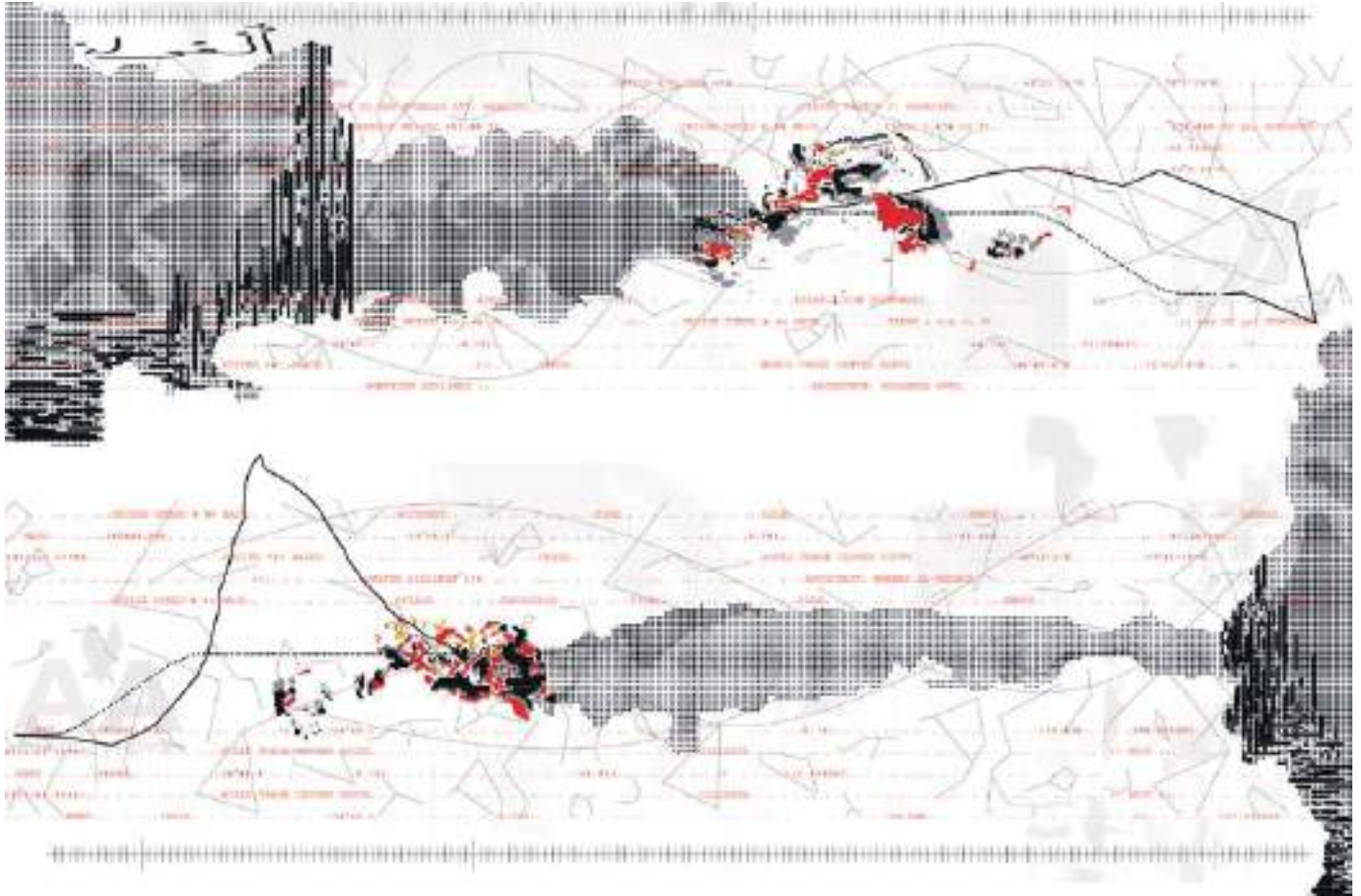**33.** Vidler, A. (1992), *The Architectural Uncanny. Essays in the Modern Unhomely*, MIT Press, p.52.
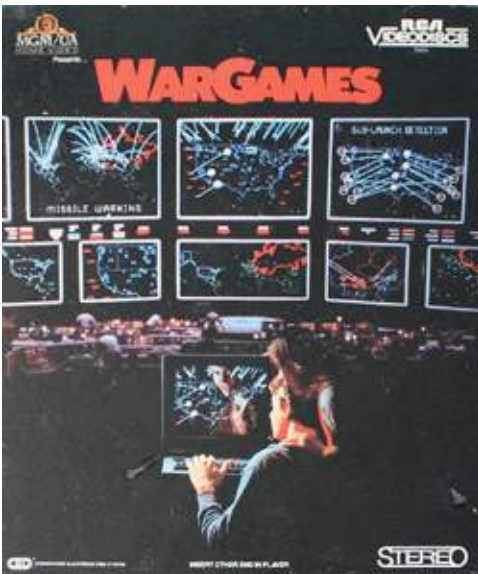
SECTION AB   SOUTH FACADE

FLOOR 100   FLOOR 89

Boeck,L. de (2001)
*Fireworks II. Le bleau
du ciel.*

Tschumi, B. (1992),
*Fireworks at Parc de la
Villette*, Paris, notation
and performance.

ted according to an incremental accumulation of lived instants but, instead, in consonance with the progressive reduction of remaining moments, of the minutes that separate us from one of the many declinations of an inevitable final collapse.[34] The Doomsday clock is an example of the measurement of this residual time. Standing to represent the likelihood of an artificial global catastrophe, the Doomsday Clock was created in 1947 by the Bulletin of the Atomic Scientists to measure the amount of minutes, or seconds, that separate humanity from Midnight, the time of the hypothetical global collapse. The time indicated by the clock is calibrated each year, influenced mainly by the rising nuclear risks and climate change. When it was set in 1947, it measured seven minutes to Midnight, while the farthest distance from it was reached in 1991, with seventeen minutes. The shortest time interval that separates humanity from the apocalypse has been recorded from 2020 and persists nowadays: one hundred seconds.[35]

If in *The Pervert's Guide to Cinema*[36] the philosopher and cultural critic Slavoj Žižek describes the viewer's reading (of cinema), stating, "if something gets too traumatic, too violent, even too filled with enjoyment, it shatters the coordinates of our reality — we have to fictionalise it" the triggered simulation process has increased the consumption of violent and petty images in an operation that has contributed to the atrophy of a long-dormant gaze.

The renewed success of virtual games based on military simulation constitutes an example of this tendency. Aimed at testing and perfecting warfare theories and the military tactics to adopt in the concrete manifestation of actual hostilities, the testing grounds originally represented fictitious battlefields where to train recruits or investigate the effects of the deployment of different weapons, simulating through maps and physical or virtual models the consequences of specific inputs in precise combat contexts. Famous models were built during World War II: through the *Control Room* generals and officials could direct conflict from a strategic and safe space. Nonetheless its military origins, simulation has now been brought to its most extreme consequences, consolidating within a completely different context: the virtual game, where warfare tactics and virtual reality are intertwined

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Operations Room, RAF Fighter Command, Rudloe Manor 1943

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Cover of the Videodisc edition of WarGames (dir. John Badham, 1983). In the foreground is the hacker at his home computer, while in the background is the government missile control room with its huge wall screens.

34. To further deepen the topic of the narrations around the imminent collapse see: Stevens, R. (2020), *How Everything Can Collapse: A Manual for Our Times,* Polity Press; Diamond, J.(2005), *Collapse,* Viking.
35. For further information see: https://thebulletin.org/doomsday-clock/
36. *The Pervert's Guide to Cinema* is a 2006 documentary directed and produced by Sophie Fiennes, scripted and presented by Slavoj Žižek that explores movies through a psychoanalytic theoretical perspective.
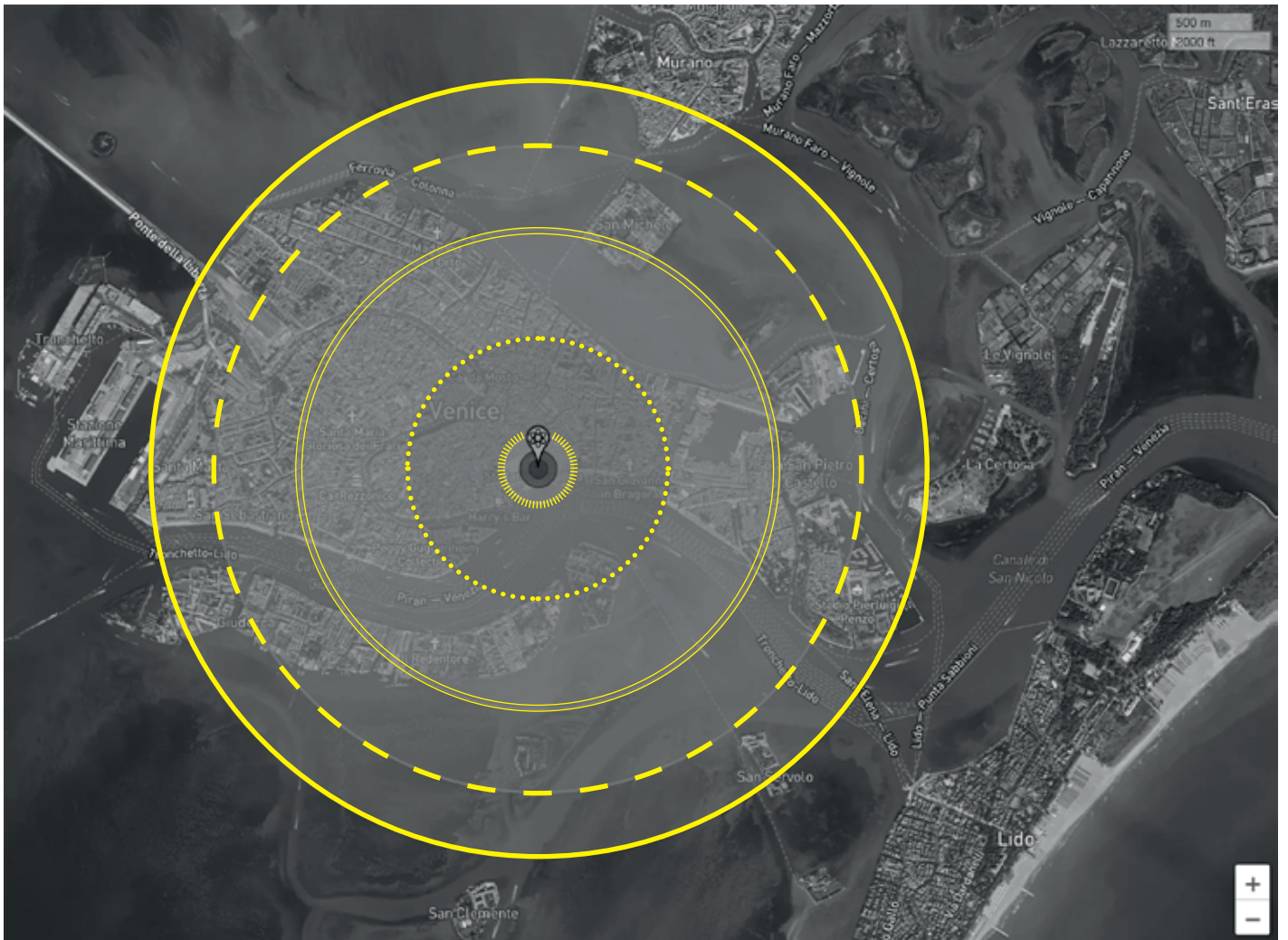
What if detoning a Nuclear Bomb on Venice? The satellite image shows the simulated effects of the detonation of "Fat Boy" on this city, through the platform nukemap.com

● Crater inside radius: 50 m

● Crater lip radius: 100 m

⬛ Fireball radius: 200 m

••••• Heavy blast damage radius: 0.77 km

═══ Radiation radius: 1.41 km

━━━ Moderate blast damage radius: 1.89 km

╌╌╌ Thermal radiation radius: 2.27 km

in a blurring operation. In this way, the consumer's time has been occupied by an activity that, although virtually, allows a further consumption process paradoxically, bringing the war to another invisible and cynical level. Finally, in a further degeneration, it can be recorded a directional shift in the source of alimentation of these two processes. While at the beginning virtual games were fed by the warfare system and built through its imaginary, nowadays the latter, radically trasmuted and evolved, played through the employment and lead of drones, converted the same playing ground into an exercise and testing field where to train and from which to select the best players to recruit in the effective conflict.

The transposition of warfare from a military to a leisure activity, through blurring the original boundaries between these two apparently far away dimensions and through the employment of simulation, emerges in a huge system of contemporary applications and online platform. An example is the *nukemap*, a website that enables its visitors to detonate their personal-customized atomic bombs, by fselecting the location, the type of explosion, and the extent of the impact of the detonation of your atomic bomb.[37]

Finally, in recent decades, has been recorded another consequence of this apocalyptic invasion and pervasion of the contemporary Western society, identifiable in the relevant increase in the construction of luxury bunkers. Further making explicit the negative legacy of social inequalities, this process is triggered and pursued by the millionaires of Silicon Valley,[38] committed to selecting the most exotic destination from which to observe the final Armageddon. Perpetuating an exponential process of colonization and diffusion, these new luxury bunkers register, in particular, a hyperdense concentration on New Zealand's territory, which is not constituting a nuclear target and is neutral ground. The millionaires of Silicon Valley select it to construct their golden cages: many bunkers have already been built, including The Aristocrat, with a capacity of fifty people, made by the Rising S Company.

^^
Homepage of the Rising S Company, one of the World's foremost producer of customizable bunkers.

^
Federal Government of the United States, original caption: *Most subsidences leave saucer-shaped craters varying in diameter and depth, depending upon the yield, depth of burial, and geology. This is the north end of Yucca Flat. Most tests have been conducted in this valley*, National Nuclear Security Administration Nevada Site Office Photo Library under number NF-474,.

37. To create your personal version of the atomic bomb visit: https://nuclearsecrecy.com/nukemap/
38. By visiting the site of this particular construction enterprise, you can select and customize your retreat for the apocalypse, choosing from bunker shelters, economic shelters, standard shelters, silver leaf shelters, and, to complete the series, the luxury ones. To book your customized shelter visit: https://risingsbunkers.com/layouts-pricing-bunkers/underground-bunkers/

This process, without particular wonder, is mainly concentrated in the most distant and uncontaminated territories, thus resulting in a further, advanced and subtle phase of colonialism. Here is another reference that will be deepened during chapter 2.3 on the case of the Nevada National Security Site (Nevada, USA). Throughout the Cold War, the nuclear test denotations conducted on this site have been reinterpreted and spectacularized within a progressive process of mixing entertainment space and dystopian conflict settings.

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PART II

THE EMERGENCE OF *MEAN* TIME ARCHITECTURES.

Transitional *Mean* time intervals, suspended between a destroyed past and an uncertain future.

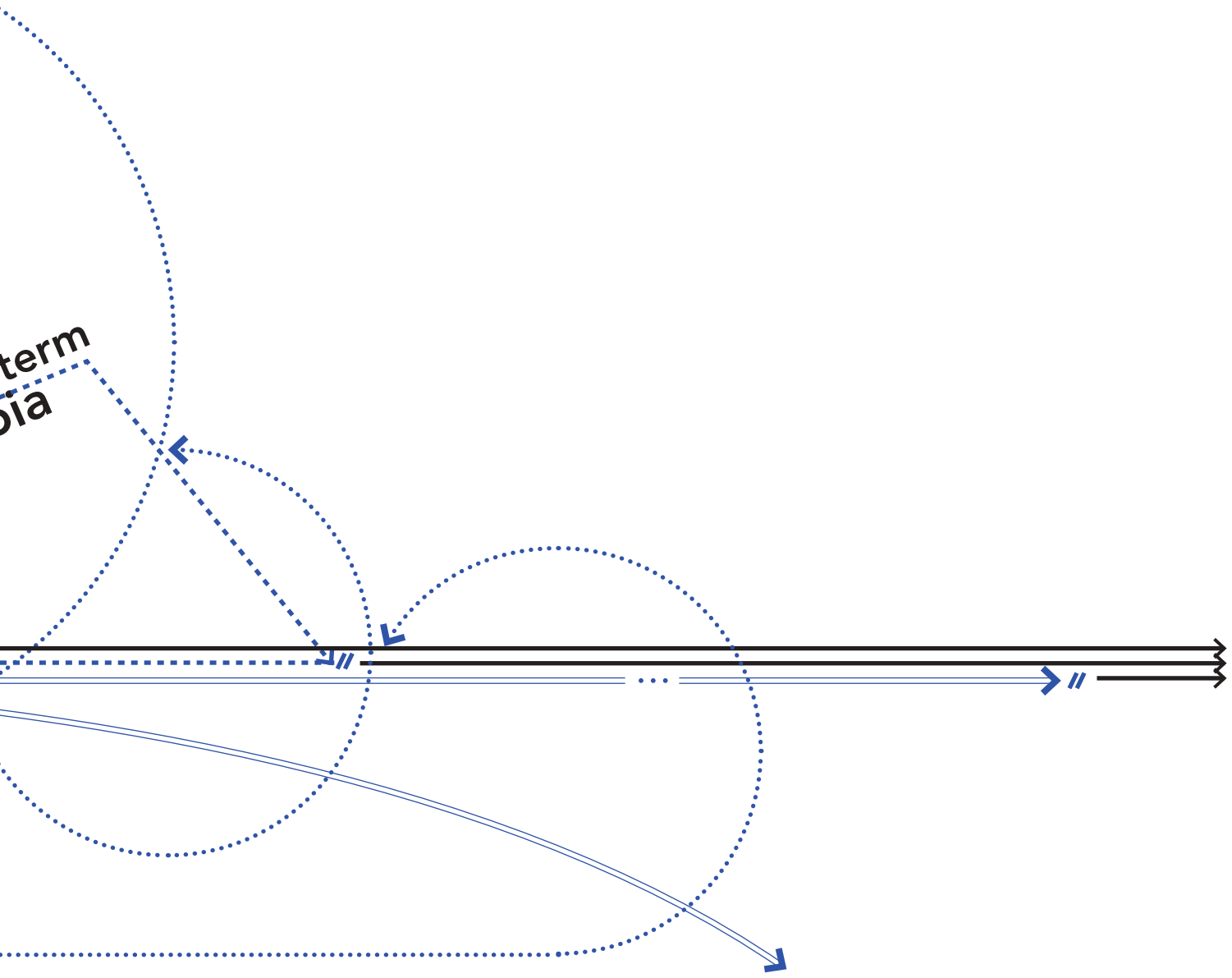Transitional *Mean* time intervals, defining new consumption logics and rhythms.

Transitional *Mean* time intervals, requiring a formulation of tools, instruments, and strategies to deal with this altered consumption.

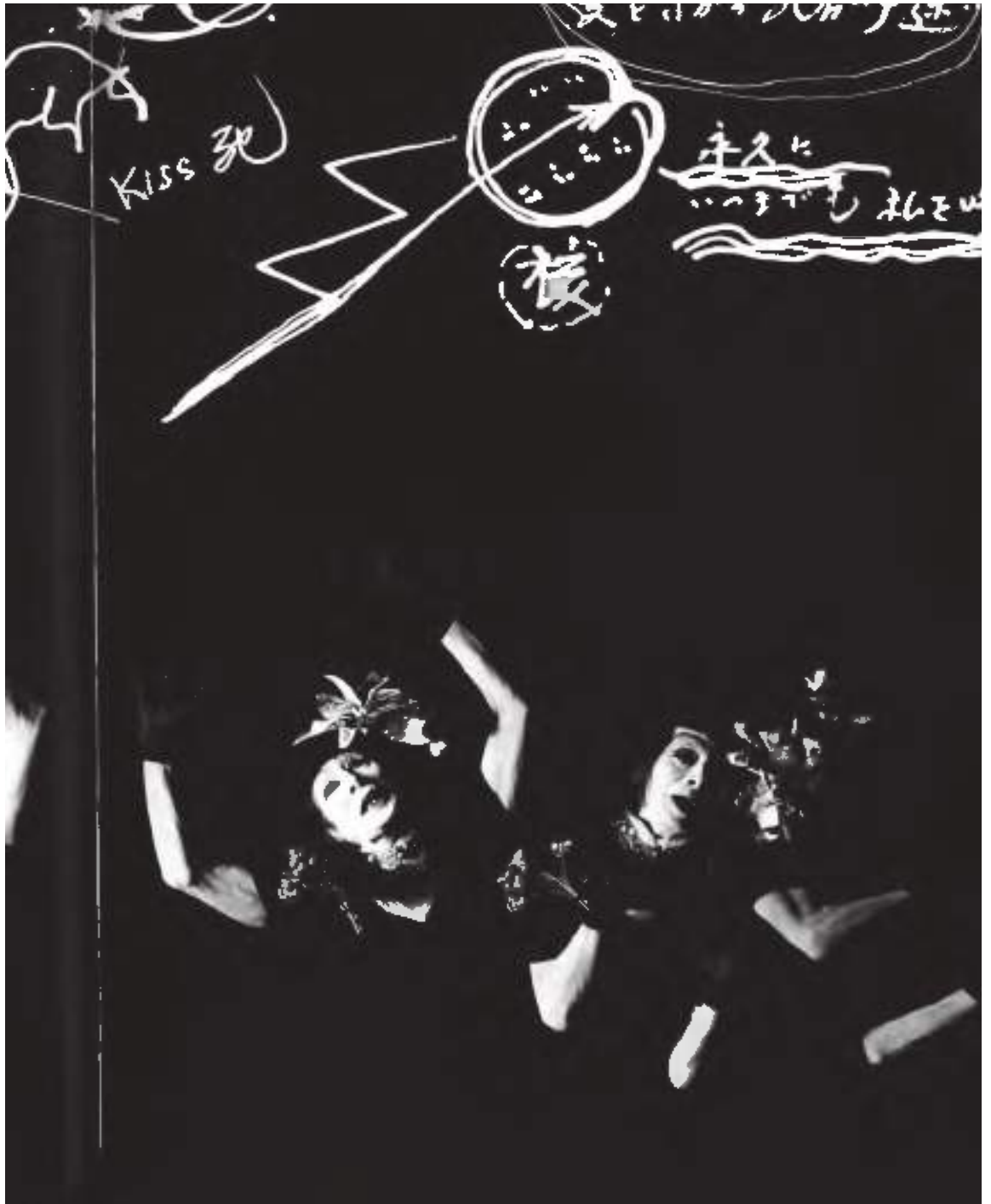**2.1** short-term **afterwardness**

2.2 medium-t... paranc...

TRAUMA: RUPTURE POINT

linear time
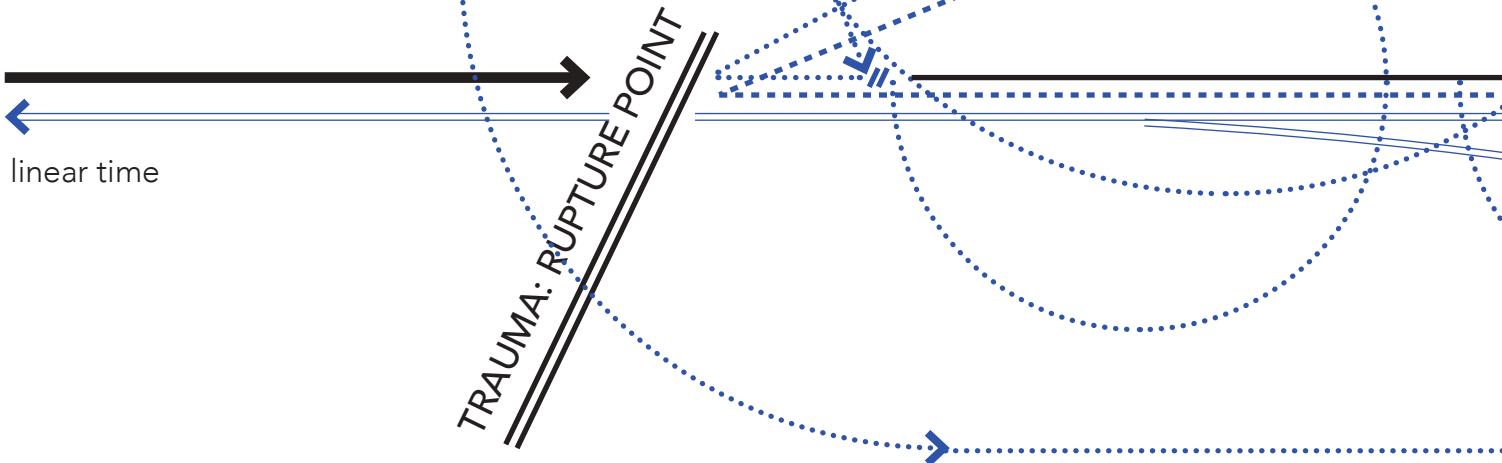
term
bia

2.3 long-term
amnesia

2.1

DEPLOYMENTS. CHOREOGRAPHING TRAUMA BETWEEN RITUALITY AND GEOGRAPHY, MEMORY AND ERASURE.

[short-term]

>
Eikoh Hosoe, *La Argentina*, 1977, in Viala, J. (1998), *BUTOH. Shades of Darkness*. Tokyo: Shufunotomo, Nourit Masson-Sekine. pp. 28-29.

[AFTERWARDNESS]

noun. afterwards + -ness. Coined by Jean Laplanche in his 1998 work *Essays on Otherness*, as a translation of Sigmund Freud's German term *Nachträglichkeit*, on the model of the French translation après-coup. Afterwardness is a concept in the psychoanalysis of Sigmund Freud, used to describe a "mode of belated understanding or retroactive attribution of sexual or traumatic meaning to earlier events... *Nachträglichkeit*, translated as deferred action, retroaction, après-coup, afterwardsness." (De Lauretis, T. (Basingstoke, 2008) *Freud's Drive: Psychoanalysis, Literature and Film*, p. 118).
 As summarized by Adam Phillips, "in one sense, Freud's theory of deferred action can be simply stated: memory is reprinted, so to speak, in accordance with later experience." (Phillips, A. (London: Harvard University Press, 1996) *On Flirtation. Psychoanalytic Essays on the Uncommitted Life*, p. 33).

"The performances of sacrificial rites and the erection or nomination of sacred places are one of the prime occupations of man. Directly obvious or camouflaged, they help to constitute life. Some civilizations today have lost their capacity for death rites. It is a sign of loss of capacity for living."

Quote of Hans Hollein, taken from:
Nakumura, T. (ed.) (1985) *Hans Hollein*. Tokyo: A & U Publishing Co., p.161.

Roger Luckhurst[1] recognizes several syndrome-clusters generated by traumatic events, including the afterwardness, the symptomatology described in Sigmund Freud's psychoanalysis as "a mode of belated understanding or retroactive attribution of sexual or traumatic meaning to earlier events."[2] The human mind, attempting to react to and overcome trauma, adopts this defense mechanism, connotated by a tension between interruption and continuity, blockage and movement, fluxus and stasis. The effects of this phenomenon can be further investigated through the concept of latency: the traumatic shocks, being individual or collective, are deferred and brought into action in a subsequent moment, thus determining a time lag even consistent with the moment at which the negative experience occurred. This unconscious process determines a significant temporal shift between the moment of the offensive attack and that of the reacting defense, generating, by so, a transitional temporal interval, here addressed as *mean time*, that the human mind employs to metabolize trauma.

Within these *mean time* intervals, it is possible to retrace the physical and metaphorical movement of dispositifs and bodies, of objects and minds whose trajectories and reiterated routines give body to a sort of constant pilgrimage and remarking operation aimed at exorcise trauma and overcome it. As seen in chapter 1.2, the first step to overcoming trauma is reconstructing its experience within memory.

Architecture, absorbing influences from and hybridizing with other disciplines - such as art, literature, poetry, philosophy, theatre, performance, and cinema - and defining specific spatial organizations and the consequent movement of bodies within space, has contributed throughout history to the construction and sedimentation of ritualities and ceremonies. These socio-cultural practices have always represented a "symbolic technique of making oneself at home in the world,"[3] enabling humans to re-size the eternal dimension of time (eon) and stabilize space and time through repetition, a practice that, for what is expressed above, assumes a fundamental relevance in the aftermath of a traumatic event. Nowadays, the friction generated between the syncopated emergence of the effects triggered by this permanent condition of impermanence and the attempt to resist them has pushed architecture to explore new forms of ritualities and strategies of adaption and reaction, enduring two main aims. On the one hand, trying to exploit the very apocalyptic atmosphere that, increasingly densely, surrounds our everyday life. On the other, to deline-

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1. Luckhurst, R. (2008), *The Trauma Question*, London & New York: Routledge Taylor and Francis Group.
2. De Lauretis, T. (2008), *Freud's Drive: Psychoanalysis, Literature and Film*, Basingstoke, p.118.
3. Han, B-C. (2020), *The Disappearence of Rituals. A Topology of the present*, Polity Press, p.2.

ate a warning message, a sort of memento to admonish about the multiple threats we are currently facing.

This chapter retraces a system of trajectories and practices that, wandering unpeacefully along the paths and the fractures opened up by trauma, construct with their movement rituals and reiterated practices to overcome it, configuring a fascinating relation between choreography and geography.
These two terms share a common root in the Greek word *-graphy*, which refers to the act of writing, of fixing notes, numbers, lines, measures, or letters, defining, thus, a system of signs through which interpret and orientate within a particular contextualized field.
Choreography,[4] on the one hand, is generally conceptualized as written notations on dancing. Measuring and coordinating the movement of bodies in space, it gives shape to overlapping of trajectories, following a routine, a sequence of steps defined to complete a piece, a ritual, a cycle. Choreography is a matter of posture that mediates and articulates the relation between body and time-space. Through rhythm modulation, it generates many combinations and effects. Geography, strictly linked to the term *gea-* (Earth), is a field of science that seeks an understanding of Earth and its human and environmental complexities.

The chapter investigating the relation between these two concepts and their spatial implications explores cartographies where space and time, places and buildings are reshaped and resignified through movement, being it precisely programmed or impetuously spontaneous. The frictions generated by this dynamic ferment are developed through different mediums, being them bodies, lines, or constructions, and incorporate "rhythms, processes, and uncertainties of trauma within the consciousness and structures of their works, where disorders of emplotment could be read as mimicking the traumatic event."[5]

The urban setting represents the ground where this relation between choreographia and geographia takes place, embedding an accumulation of layers in which the partially invisible memory of cities is deposited, a "geology of the urban memory in which one can move about through superimposition, juxtaposition, and grafting."[6] Within this stratification, it is possible to intercept layers configured as urban traumatized geographies, bearing the traces of the passage of various traumatic events and their subsequent system of scars. These layers are resewed together through bodily practice and choreographed movements across space. The succession of events, transformations, and human practices constantly settle the urban ground, stratifying layer after layer its urban mnemonic geology.

The urban mnemonic geology is thus stratified constantly, and the violent events impacting it provoke intermittent subtractions, permanent erasures, and punctual scars.

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4. The term choreography derives from the combination of the Latinized form of Greek *khoreia*, standing for dance and deriving from *khoros*, standing for chorus, as well as for the action of dancing in unison, and *graphein*, which means to write.
5. Luckhurst, R. (2008), *The Trauma Question*, London & New York: Routledge Taylor and Francis Group, p.88.
6. Rajchman, J. (1998), *Construction*, The MIT Press, p.80.

As in the cinema montage, through the definition of a proper narration, a sort of fictional language, as pointed out in chapter 1.2, it is possible to intervene with joints or connections to resew urban memory in an overlapping process that re-sew again the urban fragments, again, defining a false or natural sense of continuity.

This chapter starts from the analysis of the complex entanglement existing between architecture, body, and trauma, seeking to explore how the mutation of each of them influences and redefines, as in a game of checks and balances, its configuration, investigating, in particular, the emerging frictions thus produced. It draws a trajectory across projects and practices whose meanings and consistencency vary according to the diverse intensities that the traumatic event assumes - both in terms of impact's intensity and in that of space-time dilatation - and the heterogeneity of thickness and spatial configurations defined to deal with it. Starting from the purely ephemeral but intense movement of human body across space, intended itself as a generator of space, as seen in chapter 1.2, and a narrative tool to give impulse and strength to the individual and collective memory; passing through the hectic and unpeaceful movement of the thoughts displaced on paper, expressing a substantial rearrangement of forces, a sort of control room from which testing strategies of reconstruction or resistance, finally intercepting the cases in which traumatic events have been spectacularized and capitalized through the construction of fascinating and dystopic narratives.

TRAUMA, BODY, AND ARCHITECTURE: A MOVING ENTANGLEMENT TO EXORCISE TRAUMA

It has been shown how trauma is a phenomenon that, assuming different degrees, intensities, and speeds, puts in relation to what previously was clearly defined as an internal and external through a breach, a wound, or an opening that causes the breakdown of the initial apparently-balanced situation, introducing a complex density of perceptual interferences and generating a fragmentation and distortion in the sense of space and time.

If in the Modern Age, one of the recognized causes of what will later be referred to as Post Traumatic Stress Disorder (PTSD) is linked to industrialization and the resulting transport revolution, now, in the contemporary era, the Earth's systemic balance is constantly altered by violent anthropogenic phenomena that deform it, triggering repercussions that affect both human and architecture, that has always absorbed and metabolized the contingent conditions in which it has been operating. As a result, we are facing new disturbances, new unknowns, and the unveiling of new temporalities, phenomena that, bringing with them growing fears, are affecting and influencing not only the human body but also that of architecture. The complex interweaving of trauma, body, and architecture defines the background from which it is possible to trace and identify figures, devices, and strategies with which architecture has learned to occupy this new condition of permanent impermanence. This confusing transitional dimension has provoked and still is today severe symptoms both on the human and architectural bodies, generating a fragmentation that involves both the psychic and physical dimensions.

> The body of architecture should position itself between:
> Unlimited life (zoe) and limited life (bios)
> Eternal time (aeon) and measurable time (chronos)
> The spirit or soul (psyche) and the body (soma)
> The contemplating mind (nous) and the calculating mind (metis)
> Ideas (eidos) and formless matter (hyle)
> Foundations (episteme) and opinions (doxa)
> Essence and existence
> Amazement and disenchantment
> Stupor and interest
> Contemplation and valuation[1]

This sequence begins with Prometheus, the mythological figure embodying the human existential condition. His shameless challenge to authorities and impositions caused him eternal punishment from Zeus, condemning him to suffer the violent action of an eagle eating his liver every day for eternity. A subtractive operation consisting of removing, taking away an organ, a part of the body, an entity that at that time was idealized and unique, an organic

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1. Rizzi, R., "The End of Becoming," in Davidson, C. (ed.), (1997) *AnyBody*, The MIT Press, Anyone Corporation, p.252.

figure whose stripping was, properly for this reason, even more brutal. The second figure emerging from this taxonomy is Daedalus, considered "as the original architect of the Western tradition, then the first architecture of escape (also a literal line of flight) is the escape of the first architect. Daedalus is the architect of at least four major works: hollow cow, labyrinth, dancing floor, and feathered wings."[2]

As an architect, this figure is characterized by an incredible attitude toward reaction, reinvention, and construction. Finding himself enclosed and imprisoned in the same labyrinth he designed, he reacts by devising an additive part to attach to his body in order to potentiate his normal abilities, a pair of wings. Dedalo invented, therefore, what could be interpreted as a primordial form of prosthesis: a device that is added to the human's body to support him in escape and evasion, a concept of prosthesis and strengthening of the human body which, as we will see, will reverberate in Donna Haraway's cyborg.

If the two mythological figures have introduced, on the one hand, the theme of the blind and irresponsible aspiration of humans and, on the other, of a first siege and attack of the body through a succession of additive and subtractive operations, another figure is fundamental in this genealogy, constituting a pivotal point of reference to address and develop a discourse on the fragmentation of the body. The protagonist of Mary Shelley's gothic novel, *Frankenstein, or The Modern Prometheus*,[3] is characterized by the same arrogant and daring propensity for the challenge and inaugurates the Romantic perception of the loss of the body, "becoming a stimulus for a vision of a lost bodily unity fragmented by time and sense experience. The body becomes more an object of nostalgia than a model of harmony, manifested in part as a series of irreconcilable fragments: the parts of Frankenstein."[4] This dismembering process of form and body has started. Furthermore, it is not by chance that this fragmented condition emerged together with the first psychological studies investigating the mental diseases caused by the distortion of the space-time dimension.

If in the classical theory, the body was idealized and directly projected onto the building, which mirrored its ideal perfection, harmonizing all its elements with its proportions and measures; with the beginning of the 18th century emerged a different conception of the body, and therefore of the building, closely linked to the aesthetics of the sublime.

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2. Stoner, J. (2012), *Toward a Minor Architecture*, The MIT Press, p.41.
3. Shelley, M., (1818), *Frankenstein, or The Modern Prometheus,* London: Lackington, Hughes, Harding, Mavor & Jones.
4. Vidler, A. (1992), *The Architectural Uncanny. Essays in the Modern Unhomely*, MIT Press, p.77.

Da Vinci, L., *Vitruvian Man,* 1490.

Theodore Von Holst, *Victor Frankenstein becoming disgusted at his creation.* Illustration from the frontispiece of the 1831 edition. realized for the revised edition of Frankenstein by Mary Shelley, published by Colburn and Bentley, London 1831.

The building now objectifies the body's various physical and mental states, which recorded a slippage from the apparent calm, stability, and organic continuity of the classical tradition, to the shaken, distorted, and disturbed one of modernity. The buildings, as humans, are now described and interpreted through their capacity to evoke emotions of terror and fear, to host inhabitants that are slightly different from the Vitruvian model, as Burke wrote: "the human figure so disposed, does not naturally suggest the idea of square, but rather of a cross."[5] Here emerges the intense friction connoting the dichotomy between the body's physical and psychological dimensions, contraposition strictly related to the implicit presence of violence within architecture, and the perception of the loss of the body and its consequent fragmentation. The body, as architecture, becomes an object of nostalgia, an entity seeking to be re-constructed and re-assembled, through re-connecting together the separated and disassociated parts, as in Frankenstein, producing assemblages in which the original harmony of the classical model is lost.[6]

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5. Burke, E. (1968 [1757]), *A Philosophical Enquiry into the Origin of Our Ideas of the Sublime and Beautiful*, Notre Dame: University of Notre Dame Press, p.100.
6. An interesting reflection on the birth of horror novels, with macabre and dark atmospheres, is traced within the exhibition curated by the Instituto de Estudios Postnaturales of Madrid within the exhibition space of CentroCentro entitled *Un lago de jade verde* (14.10.2021 - 13.03.2022). Developing a reflection that critically questions the relationship between nature and culture, sewing an interesting relational filament that connects two phenomena so linked by a causal connection. On April 5, 1816, after long years of quiescence, the Tambora Volcano erupted in Cambodia, provoking severe consequences. That year was defined and remembered as "the year without summer" as the sky was long clouded by volcanic ash that affected the same color of sunsets, which took on the intense shades of red-yellowish that can be seen in Turner's paintings. That same summer, Lord Byron rented Villa Diodati (Lake of Geneva, Switzerland) to spend the summer there, joined by John Polidori, the poet Percy Bysshe Shelley, and Mary Shelley. The extremely unusual climate for the summer season and the suggestions caused by that particular atmosphere constitute the background scenario from which were outlined the figures of *Frankenstein* (Mary Shelley), the prototype of the *Vampire Dracula* (Polidori), and the poem *Darkness* (Lord Byron) that draws the scenario of that moment: "I had a dream, which was not all a dream. / The bright sun was extinguish'd, and the stars / Did wander darkling in the eternal space, / Rayless, and pathless, and the icy earth / Swung blind and blackening in the moonless air; / Morn came and went—and came, and brought no day, / And men forgot their passions in the dread / Of this their desolation; and all hearts / Were chill'd into a selfish prayer for light: / And they did live by watchfires—and the thrones, / The palaces of crowned kings—the huts, / The habitations of all things which dwell, / Were burnt for beacons; cities were consum'd, / And men were gather'd round their blazing homes / To look once more into each other's face; / Happy were those who dwelt within the eye / Of the volcanos, and their mountain-torch: / A fearful hope was all the world contain'd; / Forests were set on fire—but hour by hour / They fell and faded—and the crackling trunks / Extinguish'd with a crash—and all was black."

If, on the one hand, this fragmentation provoked a diffuse sensation of puzzlement and disorientation, on the other, it contributes to the opening up of new ideas and new paths to interpret the body as an admixture and continuing communicative entity between an internal and an external, finding new forms of expression.

At the end of the 1800s, the *Teatro dei nervi*[7] was inaugurated in France. The neurologist Jean-Martin Charcot, who was studying a method of treatment for hysteria, developed the practice of hypnosis through the staging of theatrical shows. This highly choreographed and calibrated practice originated through the array of bodies inside the room, a complex space. The neurologist's assistants, statically sit still on one side of the room, while hysterical patients, to counterbalance this composition, assume a more decomposed, restless, and jagged posture on the opposite side. The show came to life in the central space thus generated, densely loaded with tensions resulting from the static-dynamism, stop-torment clutch. Like a director, Charcot directed from this barycentric position, the hypnosis involving, in turn, the patients, taking the part of real actresses. Soon the *Leçons de Mardi* became a mundane event, and seated among the assistants, Henri Bergson, Guy de Maupassant, Emile Durkheim, and many others participated. The body of the patients, interpreted as a medium of the unspeakable, was subjected to continuous decompositions and recompositions in a sort of anatomical theater whose score was composed of a prologue, or aura, an epileptoid period, a period of clownism, a period of passionate attitudes and, finally, a period of delirium.

Such tragicomic and performative stagings of what is later called the "disease of representation"[8] gave impetus to the *Ausdruckstanz* and the *Tanztheater*, in which the dancer's body has become an expression of identity crises, neuroses, and fractures produced within body and mind by the horror and anguish of the new century. Among the first dancers to give impetus to this form of corporal expression figured Mary Wigman on the movements choreographed by Rudolf Laban. The latter, trained in painting and architecture, began his career as a dancer and choreographer in Germany, where he inaugurated the "expressionist dance," theorizing in 1928 a system of notation of the movement named Kinetographie Laban, still in use today as Labanotation, which seems to remark and recall Freud's sketches on the treatments of the hysteric's body, which seemed a sort of cryptogram, also


Le gladiateur

Le mal de dents

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7. Violi, A. (2002), *Il teatro dei nervi. L'immaginario nevrosico nella cultura dell'Ottocento,* Sestante.
8. Janet, P. (1893), "Dèfinition récents de l'hystérié", in Arch. De Neurologie", pp.25-26, quoted in Roccatagliata, G. (2001), *L'isteria. Il mito del male del XIX secolo*, Liguori, p.209.

Hypnotized subjects: one believes he is a gladiator; the other that he has a toothache. Late 1880s, in Crary, J., (1999) *Suspensions of Perception. Attention, Spectacle, and Modern Culture*, The MIT Press, p. 235.
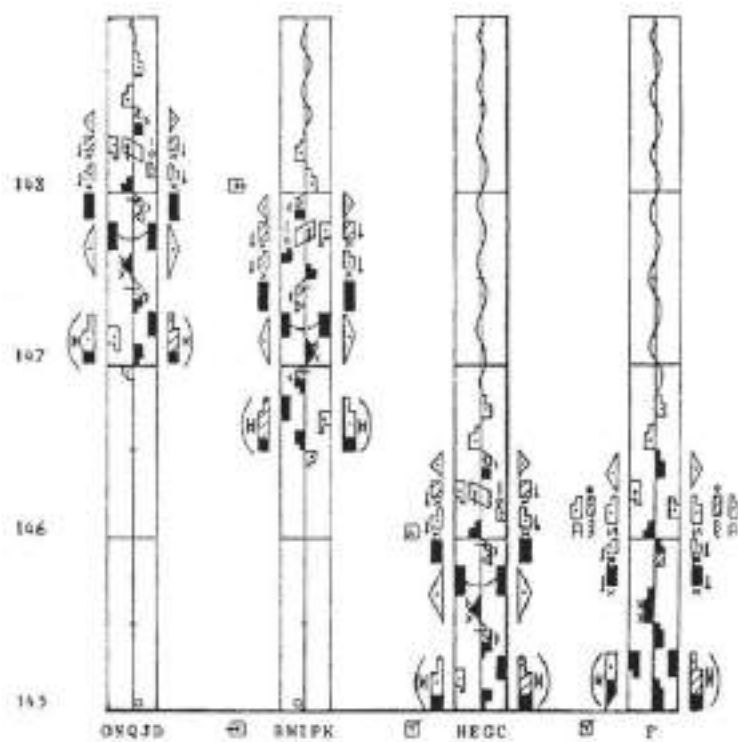
Hypnosis as theatrical exhibition, late 1880s.
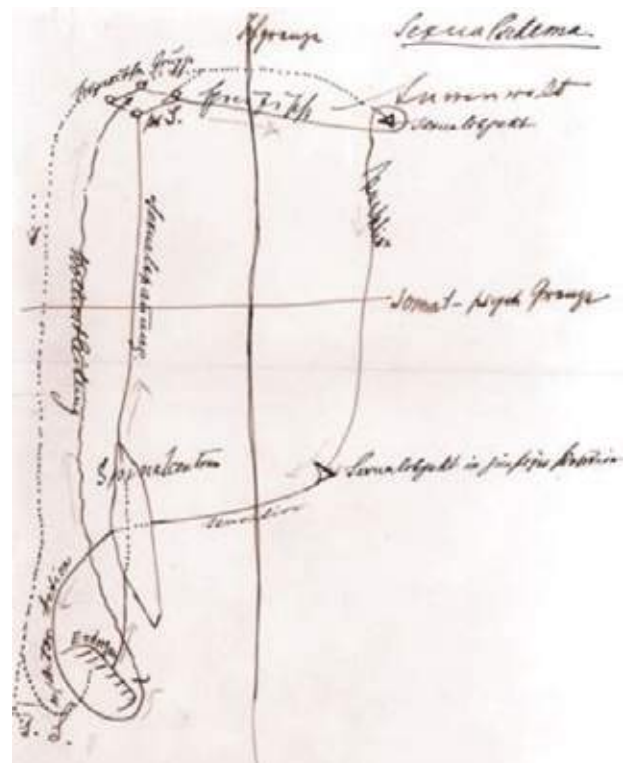
Unknown author, *Hypnosis at a theatrical exhibition,* 1880s. Artwork from the first volume (first period of 1888) of the French popular science weekly 'La Science Illustree'.

Freud, S., *Sketches og the neuronal flow of the mind*, 1895.

Sigmund Freud, *sketch of neurons and the flow of neural energy,* 1895.

Laban, R., *Labanotation or Kinetography,* 1928. Mary Wigman, *Le danse de la sorcière,* 1914.

reconnecting with the notational system defined fifty years later by Tschumi. The aporia of trauma, psychic disorder, and the impossibility of representing and clearly expressing shock finds a first expression, a first medium, in the human body that, through free movement and careful notation, between ephemeral dynamism and sign, textual writing, unfolds in space shaping it.

Dadaism further expressed an operation where the body was intended as an expressive model of movement to be eradicated from its traditional stasis and reformulated in modern terms. The fear of body loss was abandoned to open up the possibility of building a different corpse, delineated as a figure with jagged, insecure, and changeable edges, outcoming from tensions and perceptive interweaving, resulting from tracing movements and forces rather than from the relief of a defined and sharp shape. A body that, declaredly renouncing any form of organicity, is transformed into the Surrealist *cadavre esquis*, constantly recomposed through an operation of

> Psychic automatism in its pure state, by which one proposes to express — verbally, utilizing of the written word, or in any other manner — the actual functioning of thought. Dictated by the thought, in the absence of any control exercised by reason, exempt from any aesthetic or moral concern.[9]

A corpse, a body reassembled on a textual and figurative level that marks the end of an era, inaugurating practices and trends that will become more intense and marked after the great trauma of the World War II. "My body is everywhere: the bomb which destroys my house also damages my body insofar as the house was already an indication of my body."[10]

The World War II delivered the final blow to the already fragmented human body: it lays now in pieces, mutilated almost beyond recognition, bearing moreover the mental and psychical injuries related to the fear of a next possible nuclear war, perceiving the persistent presence of this threatening shadow, that will accompany humankind from this moment on, permanent still in our contemporaneity.

If the World War II, with its global industrialization and warfare production of deaths, has marked a profound shift both in the architectural theory and design practice, other phenomena result particularly interesting and meaningful, and that reveals how the war's violent dynamics had produced an extreme abstraction of the human body,

Hausman, R., *Fiat modes*, 1920.

Tanguy, Y., Ray, M., Morise, M., and Breton, A., *Exquisite Corpse No. 10*, 1928.

9. Breton, A., Goll, Y., *Surrealist Manifesto*, October 1924.
10. Sartre, J.-P. (1956), *Being and Nothingness. An Essay on Phenomenological Ontology*, Philosophical Library, p.844.

generating by so, a detachment capable of triggering such a global-scale trauma. The body has not only underpasses an operation of gradual and constant destruction, but has been substituted by another body of the same scale, with the same appearance: the mannequin. This object, also called in the military slang, jack-in-the-box, registers a spreading during the conflict and becomes the site of brutal and violent testing, suffering a process that, paradoxically, became a sort of justification of the violence itself, and in some cases registered, as will later be explained, a process of spectacularization. The human body is thus translated into an artificial body, a plastic corpse on which to develop destroying experiments of extermination.

Inserted within this negative context in which humans find themselves annihilated by the conflict, with a body not only fragmented but destroyed and made almost unrecognizable by the trauma of the war and observing its exact plastic double suffering a growing sequence of tests and experimentations, emerge in this period a series of artistic practices that tried, through dance and the choreographed movement, to recover the body dimension and to retrace and master trauma retroactively, in a sort of exorcism operation.

If Freud stated that the patient always returns to the unpleasant moment of the event because restaging it repeatedly helped belatedly to process the unassimilable materials to find ways to master the trauma retroactively, the place to be re-experienced in this context is unrecognizable, a sort of magmatic matter stressed and blocked within a deep fracture between the past and the future. Thus, is the very body the starting point for this reacting operation of re-sewing and re-assemble.

An operation whose poetic is deeply rooted in the concept of the "formless" conceived in 1929 by George Bataille in his entry for the *Critical Dictionary*:

> Formless [...] is not only an adjective having such and such a meaning, but a term serving to declassify, requiring in general that everything should have a form. What it designates does not, in any sense whatever, possess rights, and everywhere gets crushed like a spider or an earthworm. [...] To affirm on the contrary that the universe resembles nothing at all and is only formless, amounts to saying that the universe is something akin to a spider or a gob of spittle.[11]

11. Bataille, G., "Formless", in Documents 1, Paris, 1929, p. 382. Bataille's entry remains as one of the most effective acts of sabotage against the academic world and the spirit of system, this sabotage derives its effectiveness from the contrast

Breton, A., *Le Cadavre*, cover of the 1930, second Surrealist Pamphlet.

This concept embodies an invitation to destroy categories and reject idealized notions of art to get back to the ground, to the material, to the monster, to the unexplored — an exhortation to experiment and test new languages and new forms of expression. By deploying repeated trajectories and sequential postures, placing the body at the center of this stitching operation relieves and reconstructs the individual and collective puzzled memory. It is relevant to notice how reconstructing this system of lines, trajectories, and notations operating an embodiment of a disappeared and hitten matter, emerger a dense web that represents the first diaphragm of defense and recostruction: retracing the movement of the shock by camouflaging its paths, recalling its impacts or revealing its consequences constitutes a first important architectural strategy to delineate the criticality and metabolize it.

Within this context, the Butoh is inscribed. The Japanese movement, described generally as black dance or step, was born in the 1950s resulting from the drastic socio-cultural changes endured in the aftermath of World War II. This form of artistic expression, in which the body becomes the vehicle that reveals what was previously obscured and hidden, is strictly connected with the figure of the hibakusha. This term emerged in the 1960s — literally translated means "explosion-affected person" and formulated to avoid the adoption of the term survivor, which in the ancient Japanese tradition suggests and brings out a form of dishonor toward the dead — standing precisely to describe people that experienced the bomb directly. An event that marked a turning point in their lifespan and would forever affect their future life, described by Lifton "as a profound ontological shock, a sudden and absolute shift from normal experience to an overwhelming encounter with death."[12] Inscribed in such a context, the Butoh was conceived by Tatsumi Hijikata by mixing-up an entirely new conception of movement with the incorporation of several Zen notions related to the transition between life and death, which gave birth to this dance form. Born within an immanent ritual society, an "aestheticized society in which beautiful semblance will have taken the place of religion,"[13] this movement generated a considerable scandal: by deeply refusing any aestheticization, it took inspiration from the work of the graphic designer Tadanori Yokoo, whose style was considered at that time of awful taste, revealing explicitly its intention of achieving an anomalous structure

Tadanori Yokoo, *Made in Japan, Tadanori Yokoo, Having Reached a Climax at the Age of 29, I Was Dead,* 1965.

Tadanori Yokoo, *There Is No Escape, You Too Shake Sink Into Hell*, 1973.

between the formal rule — the very use of the dictionary form, that is related to an idea of totality — and the effect of surprise.

12. Lifton, R. J. (1968), *Death in Life: The Survivors of Hiroshima*, London: Weidenfeld and Nicolson, p.21

**13.** Han, B-C. (2020), *The Disappearence of Rituals. A Topology of the present*, Polity Press, p.59.

"that made radical use of universal terms for the express purpose of destroying the universal language."[14] It is possible, re-living, re-interpreting trauma in the most disparate ways and through the transpositional and malleable dispositif of their own bodies, to retrace and hear in their performances the violent laughter theorized and described by Bataille and later by Deleuze. A sudden, powerful and unexpected break of the still-life idea of what remains of an already exhausted and fragmented body: a violent rupture that refused any nostalgic refuge or to accord to the new spreading of the Western tragedy. The body is not a means of representing ideas within a space. It becomes the very means of interpretation, elaboration, and questioning of the space itself. No linear composition is possible in such a schizophrenic condition, in a traumatized context, nor is a desire to pronounce a discourse in a moment where every word is thought to be emptied of meanings.

The body is a vehicle to search for significance, the instrument of transcendental metamorphosis, conceived "more like clay, like an object."[15]

The same trajectory of the Butoh echoes within the practice of the Japanese Gutai group. Founded within the same context in 1954 by the painter Jiro Yoshihara in reaction to the totalitarian regime, that was promoting the notion of a national body, erasing, by so, any individual form of expression, its young members, through combining performance, painting, and interactive movements, gave form to an international common ground for experimentation and expression. Particularly interested in the relation between body and matter — the same word *gutai* translated literally stands for concreteness — they interpreted their bodies as means to physically engage with a huge variety of natural and artificial materials — ranging from paint, mud, water, and chemicals — through different actions that, were primarily explosive and irruent. Through breaking, exploding, tearing, and dripping, they explored the different forms of engaging the body with the physical world, declaredly seeking the scream of matter. In this way was created the performance *Challenge to the Mud*, where the artist, Kazuo Shiraga, enacted, half-naked in a pool, a hand-to-hand battle with mud, cement, clay, gravel, or, moreover, Saburõ Murakami's *Laceration of Paper*, where the artist physically crossed a series of enormous kraft paper screens through tearing and breaking them with his own body. Based on the body's impact on these screens and the consequent breaking sound, the performance reveals the material's hidden properties through these fractures. Performance after performance, they refused any preconfigured form, prioritizing the explorations of new ideas, moving through the invisible field of perception, and continuously questioning nature.

The moving body becomes, by so, an ever-changing memento, an in-progress and under-construction act of remembering and exorcising. Performance after performance, the echoes of the original aporia are slowly retransmitted, reverberating with a different rhythm. Thus the trauma is gradually overcome, always with the explicit acceptance that the traumatic experience will be perceived as weaker but will never totally disappear.

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14. Viala, J. (1998), *BUTOH. Shades of Darkness*, Nourit Masson-Sekine, p.14.
15. Claude Wampler, American actress and dancer, stated this in an interview reported in her bibliography in Goldberg, R. (1998), *Performance. Live art since the 60s*, Thams & Hudson, p.228.

Sketches by Y. Takada
from his notebook.
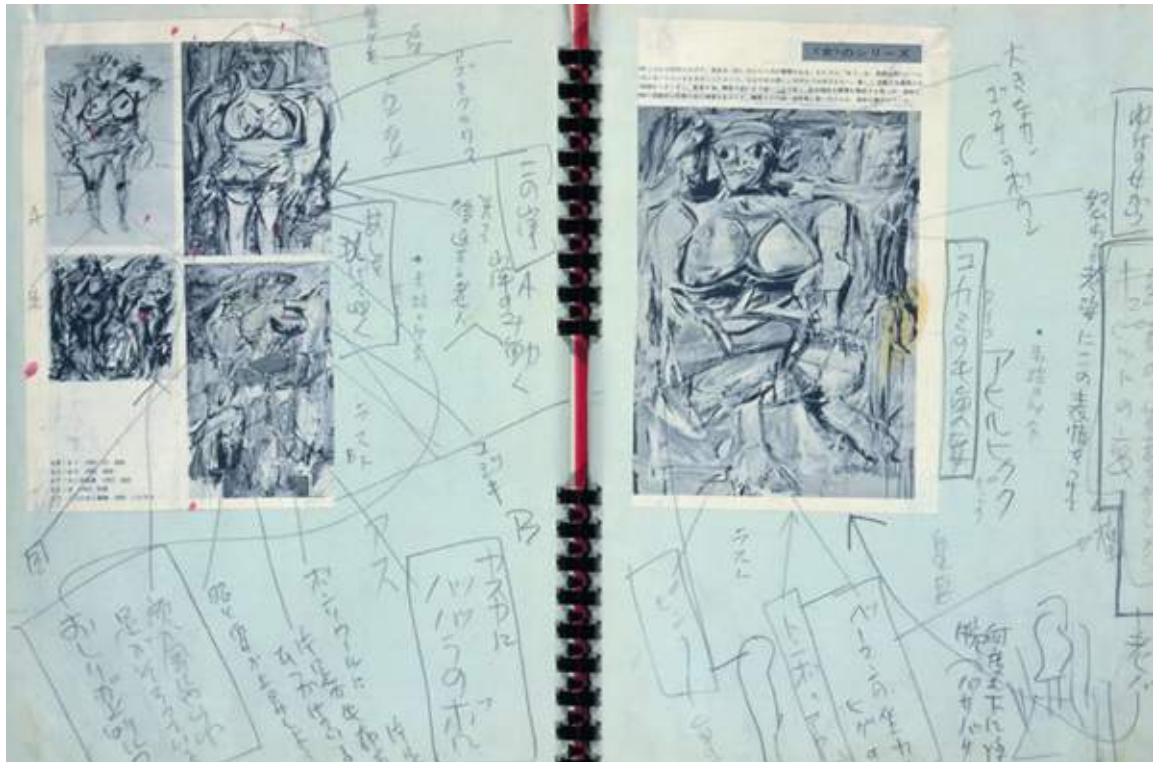
Takada, Y., *Sketches from his notebook*,
in Viala, J. (1998), *BUTOH. Shades of
Darkness.* Tokyo: Shufunotomo, Nourit
Masson-Sekine. p. 194.

Hijikata Tatsumi, *Nadare Ame Scrapbook*, p.
19, the Keio University Art Center.

Nouri M.S., Natsu Nakajima in
The Garden, 1982

> Rituals produce sociocultural axes of resonance along which may be experienced three different kinds of resonant relationship: vertical (e.g. to the gods, the cosmos, time, or eternity), horizontal (within one's social community), and diagonal (with respect to things).[16]

These ephemeral, short-lasting practices acquire thickness through repetition and reiterative, assuming the value of a powerful involuntary monument. *Mean* time embedded in the rituals of everyday life becomes, by so, a powerful and rearticulated interval that reconnects the fracture between destruction and reconstruction of the self and the community. Arnold van Gennep, in his *Les Rites de Passage*[17], describes the articulated process of formation of a ritual, recognizing in particular three stages: separation, transition, and incorporation. Retracing and re-interpreting them a clear connection with the two practices described before becomes apparent. The starting point is the separation phase, which consists of a loss of identity, of the body in itself, and is connotated by a violent rupture, often involving processes of alienation or movements across boundaries. In this moment takes place the first exploration outside the predefined and already broken borders of the physical and mental body. The artist, breaking dramatically with the past, performs a process of physical decomposition of the body, transmuting it into other material elements within processes of mimesis and fusion, which takes place "unbuild the human to find out the animal,"[18] thus bringing out the most bestial part, instinctive and primitive of the human being. Here we find some recurring operations, including punishment, intoxication, journey, changing clothes (externals), changing hair, losing old name, disguise, and abduction. The stage, representing an in-between time in which the participant is in the limbo of forming a new identity, is named transition, also called the liminal stage. It is characterized by confusion, experimentation, and testing, involving actions such as symbolical death, mutilation of the self, and breaking the taboo. The final stage of the process is the reincorporation of the individual within a community, within a particular environment, and is usually accompanied by a ceremony, often involving the dancing practice.

These practices express the dismembering of the body, the violent disruption and corrosion of its classical boundaries called architecture for a reinterpretation of its classical statement, for a shift, for the urgent reinscription of the real body, and not the classical and ideal one, within the built space. This phenomenon remarks and characterizes the work of many architects, among which Tschumi, Coop Himmelblau, and Daniel Libeskind, made of the dynamism and the intense reinterpretation of space their design poetic, declining, and molding it in extremely different ways. Even Cedric Price, within his exhibition, dedicates a whole category to the interval of self-destruction: a transitional time that nonetheless its violence and impetus, is not interpreted as an adverse event but as a cyclical moment intimately part of the construction process that has to be interpreted as a phase of experi-

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16. Harmut, R. (2016), "Resonanz. Eine Soziologie der Weltbeziehung", Berlin: Suhrkamp, p. 297, in Han, B-C. (2020), *The Disappearence of Rituals. A Topology of the present*, Polity Press, p.10.
17. Van Gennep, A., (2011) *Les Rites de Passage. Etude systématique des rites*, Editions A&J Picard.
18. Derrida, J. and Wills, D., "The Animal That Therefore I Am," in Critical Inquiry, vol.28, n.2, (Winter, 2002), pp. 369-418, p.374.

Saburō Murakami, *Passing Through, 1956*. Performance view, Ohara Kaikan, Tokyo, ca. October 11–17, 1956.

Shiraga Kazuo, *ChallengingMud*, 1955

mentation and reinvention.[19]

In this human body's reformulation — through a process of definition by negation operating through the killing of the old to make room for the expression of the new — emerges another exciting conception of the body. In this sense, is interesting to notice how Gilles Deleuze, four years before giving his lecture on *Leibniz and the Baroque*, developed, together with Guattari,[20] the concept of the body without organs. Antonin Artaud, in a radio play broadcast transmitted on the 28 November 1947, entitled *To Have Done with the Judgement of God*, anticipated this concept and, by declaring war to the organs, he was expressing the desire for a body freed from any habitual patterns or automatic reactions. Guattari and Deleuze then recover this term by establishing a stimulating alternative to the organic body, moving by a deep critique toward the western Enlightenment ideals, conceiving it as an unfolding entity. As with the Butoh and Gutai group, nonetheless, the permanence of an interior and an exterior, the Body Without Organs, does not present a fixed organization and formation. The borders between these two spaces are labile and can dissolve. What remains is a persistent and changeable system of forces and intensities that constantly recompose it. As Patricia Pisters describes it within the *Posthuman Glossary:*[21]

19. The same Price made the planned obsolescence a vital design tool, immediately renouncing the insistent search for an obsessive permanence of the body built as a means of self-affirmation and self-exaltation of the architectural discipline and its solidity to the detriment of its users. It is also interesting to note that the same architect was the only one of his time in London to be a member of the National Federation of Demolition Contractors, an institution that brought together all of Britain's demolition contractors. Demolition, deconstruction, and destruction are linked in the poetic Priceana and the Japanese practices just described, with an idea of reconstruction, experimentation, and rebirth. Suppose the repetition and the cyclic repetition of a process generates its interpretation within the collective imagination as a ritual practice. In that case, this phenomenon also occurs concerning the demolition and reconstruction of the human body and the same architecture. Price himself inserts some photos of the Temple of Ise taken by Yoshio Watanabe in his category dedicated to the reconstruction. This reference design opens the interpretation and reading of this time interval as not just a time of rebuilding but a possibility of renewing, reinventing, and giving new value to things. The temple of Ise, in particular, since the 7th century AD, has been ritually rebuilt every 20 years since 690 AD.
20. This concept has been defined by Deleuze and Guattari in two important texts: Deleuze, G. and Guattari, F. (1983 [1972]), *Anti- Oedipus: Capitalism and Schizophrenia,* Minneapolis: University of Minnesota Press; Deleuze, G. and Guattari F. (1988 [1980]), *A Thousand Plateaus: Capitalism and Schizophrenia*, London: The Athlone Press.
21. Braidotti, R. and Hlavajova, M., (2018), *Posthuman Glossary,* Bloomsbury Publishing Plc.

Fabre, J., *The Dance Section*, 1987.

For Deleuze and Guattari the body without organs is an evolving concept. In Anti-Oedipus it is introduced in relation to the body of 'the schizo' that resists the habitual organization of the body. Hence the reference to Artaud, who in all his delirious and artistic expression points out that underneath the traditionally coded body with an assigned place and role in society, underneath the organs, there is a chaotic, messy world full of intensive potentiality. [...] In A Thousand Plateaus Deleuze and Guattari invite us to 'make a body without organs', to experiment (artistically, socially, and philosophically) and find new ways of relating to the body: 'Why not walk on your head, sing with your sinuses, see through your skin, breath with your belly?'[22][23]

The body is, therefore, a dynamic and informal environment, a field of forces and contrasting tensions, an entity that floats free in space and, as for the *Maison Baroque*[24], gives up all functionality or organicity, becoming pure unconscious, representing the removed in all its pure potential, a field open to the fracture, the exchange between inside and outside, the emergence of the hidden or secreted side of the unconscious.

22. Deleuze, G. and Guattari F. (1988 [1980]), *A Thousand Plateaus: Capitalism and Schizophrenia*, London: The Athlone Press, p.151.
23. Pisters, P., "Body Without Organs," in Braidotti, R. and Hlavajova, M., (2018), *Posthuman Glossary*, Bloomsbury Publishing Plc, p.74.
24. Deleuze, G. (1988), *Le Pli - Leibniz et le baroque*, Paris: Les Éditions de Minuit.

FROM THE *INFORME* BODY TO
THE MASTER/SLAVE CONDITION:

Between the 1990s and 2000s a corpus of theoretical texts takes form, giving life to the idea of posthuman, embracing two main issues: an urgent return to technology and a question of the future of humanity. The human body does not only need to be re-sewn in order to bring back together the fragments generated throughout history but instead can be understood only through the construction of "assemblages, being wholes whose parts emerge from their interaction between parts, can be used to model any of these intermediate entities."[1] An assembly operation that is favored by the renewed centrality of technology, sanctioned by the figure of the cyborg outlined by Donna Haraway:

> The cyborg is resolutely committed to partiality, irony, intimacy, and perversity. It is oppositional, utopian, and completely without innocence. No longer structured by the polarity of public and private, the cyborg defines a technological polis based partly on a revolution of social relations in the oikos, the household. Nature and culture are reworked; the one can no longer be the resource for appropriation or incorporation by the other.[2]

The fragments of the human body can then be reassembled through the use of new technologies, thus defining a new hybrid and enhanced world, which somehow recalls the initially mentioned Daedalus, where more than the whole organic figure, assume a fundamental value the knots, the elements of conjunction, which hold together, in a labile balance, organic and inorganic, human body and new prostheses. The same trauma resulting from the relationship with a profoundly changed artificial world will be defined by Latour from this perspective:

> I see trauma as one of those distinctive hybrid assemblages that confront us today, imbroglios that mess up our fundamental categories of subject and object, human and non-human, society and nature.[3]

Nature and artifact are now mixed in a matter that has become contaminated, viscous, and radioactive. As early as 1989, Deleuze began to think and work around the concept of biodegradable, stating, "biodegradable is not a natural thing, but an artificial product. On the other hand it is a thing that does not remain a thing, it is something destined to pass away,

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1. De Landa, M., (2006), *New Philosophy of Society: Assemblage Theory and Social Complexity*, Continuum Intl. Pub. Group., p.5. The author recently published another volume deepening his reflections: De Landa, M. (2016), *Assemblage Theory. Speculative Realism*, Edinburg University Press.
2. Haraway, D., "A Manifesto for Cyborgs: Science, Technology, and Socialist Feminism in the 1980s," in Weed, E. (1989), *Coming to Terms: Feminism, Theory, Politics*, New York: Routledge, p.175, (First published in *Socialist Review*, n.80, 1985).
3. Latour, B. (2004), *Politics of Nature: How to Bring the Sciences into Democracy*, MA: Harvard University Press, p.66.

to lose its identity and to become a non-thing,"[4] it begins to record the spread of an ethic-aesthetic that recognizes the phenomena of decay, corrosion, erosion, and consumption, the narrative register through which to reconstruct the multiplicity of critical features characterizing the present.

A new centrality is assumed, within the cultural debate, by contaminated materials and by a reflection on the new invisible threats with which humanity is forced to relate, of new dangers that have taken on a space-time dimension that exceeds its intelligible capacity: Hyperobjects.[5] Produced by the same human being, these are diffuse and viscous entities that pose scalar dilemmas that are not solvable by establishing ontologically what is more accurate: ecosystem, world, environment, or individual. "The discovery of hyperobjects and OOO [Object-Oriented Ontology] are symptoms of a fundamental shaking of being, a being-quake. The ground of being is shaken."[6] Destined to survive human beings for several generations on the planet and, in addition to having caused and causing more or less accelerated environmental catastrophes, they are contributing to shaping new artificial geology.[7] In this mutated condition, *mean* time records an expansion: now, this time interval overcomes the human temporarily. Short-term practices still resist but what has mutated is their significance and strategies.

If the impact of war leads to the creation of rituals and ceremonies, practices, and movements intentionally re-walking the paths of trauma and re-inhabiting these places hit by it, in this mutated scenario, the attempt of reincorporating the body within this viscous matter has become impossible and these practices, rather then attempting to construct a physical manner to concretely re-occupy the scared places,

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4. Deleuze, G. and Kamuf, P., "Biodegradables Seven Diary Fragments," in Critical Enquiry, vol.15, n.4 (Summer, 1989),pp. 812-873. p.813.
5. Morton, T., (2013), *Hyperobjects: Philosophy and Ecology After the End of the World*, University of Minnesota Press.
6. Ivi p.19.
7. This concept, that will be deepened within chapter 2.3, is connected with the consequences of human agencies on Earth that have become so intense and erosive to produce materials that are consistuting an artificial geology. Trinitite is one of this. After the detonation of the first atomic bomb (At 05:29:45 am local time on Monday, 16 July 1945, Alamogordo, New Mexico, USA), during the well-known The Trinity, the ground zero was covered with arkosic sand, which melting during the detonation and combining itselft with the other minerals present on the site, formed a layer of green glass, trinitite,a new geological material, completely artificial. Another component of this artificial geology is composed by the digital waste, pointing out the urgency and importance of conceiving the digital technologies as materials, as a geophysic reality. To deepen this issue see: Parikka, J. (University of Minnesota Press, 2015), *A geology of Media*.

Arcimboldo, G., *Il cuoco*, 1570..

now draw narratives, paths and highly-protected experiences that assume the meaning of warnings and admonishments.

In this sense, an interesting reflection is the one Stacy Alaimo[8] defined as trans-corporeality, which reveals the new interpretation of the body, converted into a sort of archive of matters. Writing about the body's memory, she interprets this entity by wearing the specific gaze of a chemist-biologist and interpreting the results of the chemical body burden[9] of individuals living, which are obtainable through the molecular genetic/genomic technologies: by analyzing the components that can be revealed through different tests, it is possible to retrace the sicknesses, percentages of intoxication and pollution present within it, reconstructing, by so, the trauma that invisibly hits it daily. The body, giving up to any the remaining barrier, thus becomes a transcription of materiality. The tensions and relational energies that animate it no longer derive from an exchange between internal and external, much less from the relationship between a body and another body, but by the continuous flow of matter that passes through it, defining and shaping it constantly. It becomes the knot, the point of conjunction whose excavation, whose digging, reveals a sort of archeological data within which retracing the continuous flux of natural and artificial, biological and toxic flow of materials that transit through it incessantly, exploring, by so, its embedded and embodied relations with the Earth, "the entanglement between the skeleton, the visceral parts of the body and the environment."[10] This operation of unfolding what was traditionally conceived as a closed, perfect, and finite entity allows building a first relational bridge with the dimension of geological time, of a time whose dimension is elusive for the human being: "stone's intimate alterity demands acknowledgment of more-than-human temporal and spatial entanglement so that ecology becomes Long Ecology, an affectively fraught web of relation that unfolds within an extensive spatial and temporal range, demanding an ethics of relation and scale."[11]

If the Butoh and the Gutai group movement represent practices capable of enduring the embodiment of matters, employing the body as the first means through which enacting a mobilization, a counteraction, an attempt to react to trauma through the definition of new rituals capable of stratifying the collective imaginary, the projects developed by Stacy Alaimo demonstrate a first shift: the core strategy is not anymore the breaking of boundaries between the human body and matter, or the engaging with matter more intensively and proactively. In this project, mattering is already present, everywhere, and what is inten-

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8. The work is described within: Alaimo, S. (2010), *Bodily Natures: Science, Environment, and the Material Self*, Bloomington, Indiana University Press. To further deepen this topic see also: Alaimo, S. (2016), *Exposed: Environmental Politics and Pleasures in Posthuman Times*, Minneapolis: University of Minnesota Press.
9. Body burden is the term that indicates the result of absorption, distribution (tissue binding), metabolism, and excretion, the processes that are in dynamic equilibrium. Information taken from Wexler, P. (2014), *Encyclopedia of Toxicology*, Academic Press.
10. Fredengren, C. (2013), 'Posthumanism, the Transcorporeal and Biomolecular Archaeology', in Current Swedish Archaeology, n.21, pp.53–71, p.59. To further deepen this topic see: Neimanis, A. and Lowen Walker, R. (2014), "Weathering: Climate Change and the 'Thick Time' of Transcorporeality," in Hypatia, n.29, pp. 559–75.
11. Cohen, J.J. (2015), *Stone: An Ecology of the Inhuman*, University of Minnesota Press, p.41.
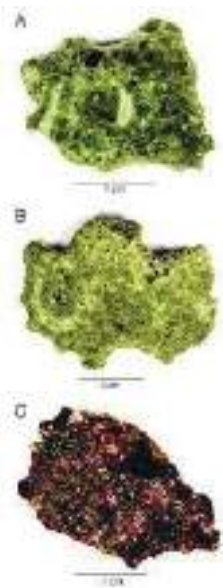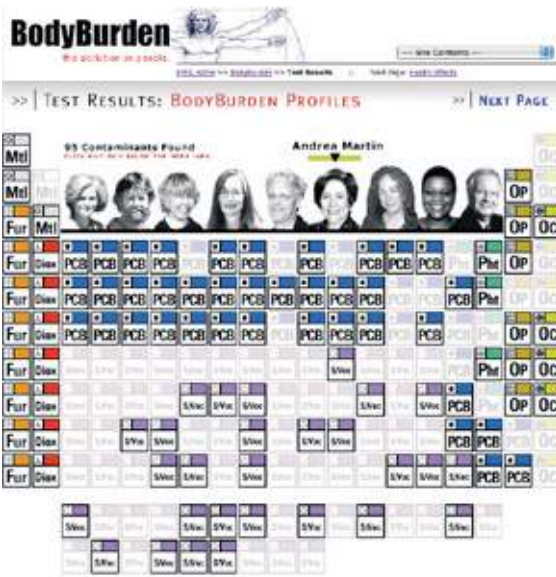
Body Burden Platform,
Test Results, 2014.

Photographs of trinite.

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A. Major, *Ice Palace Montreal Winter Carnival*, February 1884.
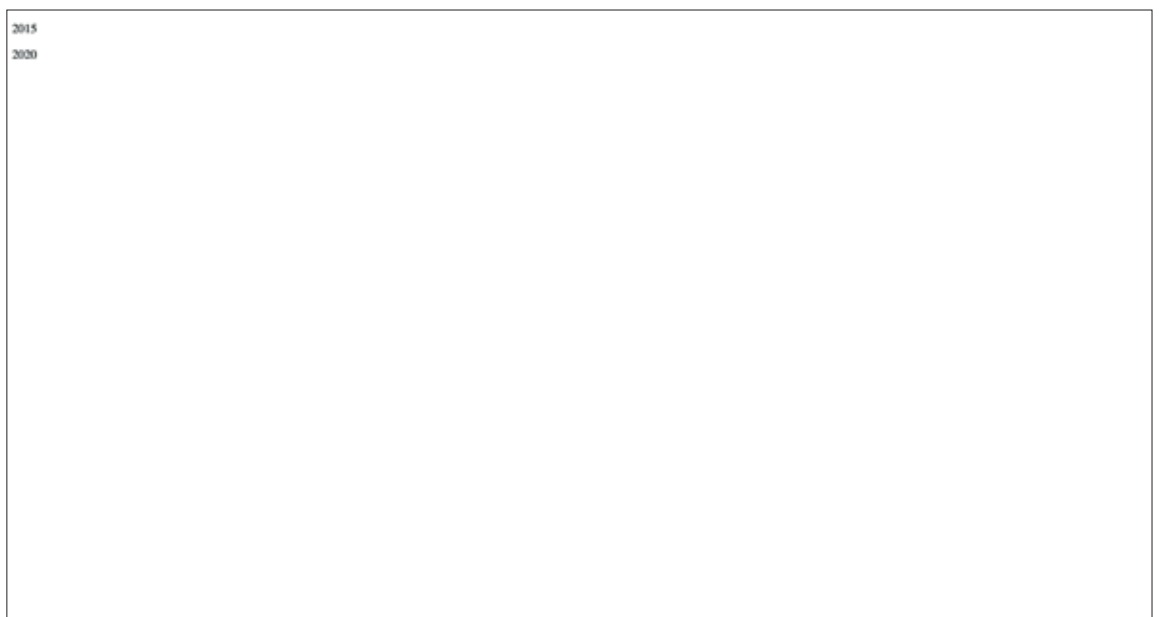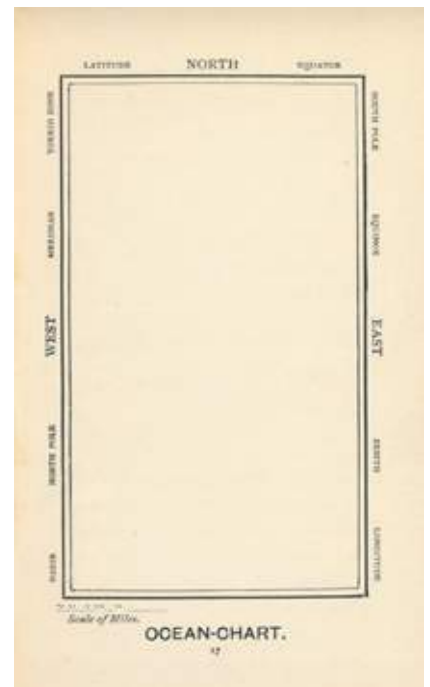
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Pettena, G., *Ice House*, 1891.

Chim↑Pom
Don't follow the wind.
Fukushima, Japan,
2015.

MARIACRISTINA D'ORIA

Chim↑Pom
Don't follow the wind.
Fukushima, Japan,
2015.

OCEAN-CHART.

2015
2020

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Holiday, H., Ocean
Chart, from Caroll, L.
*The Haunting of the
shark*, 1896.

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Chim↑Pom
*Don't follow the
wind*.
Homepage of the
installation website,
Fukushima, Japan,
2015.

ded to be revealed is the huge chain of environmental transformations that humans have triggered themselves: they are not passing unseen from our body but constitute a part of it. Alaimo shows, by working at the microscopic scale of the body particles, how the polluted and contaminated materials are already part of our organism and not something external or foreign.

In the case of Stacy Alaimo, the human body is continuously crossed by mattering, whose passage is detected through advanced technological detection tools. Thus moving a reflection from the most secret individual intimacy and material composition traces connections and links with the hyperobjects described by Timothy Morton; the exhibition project *Don't Follow The Wind* (2015), curated by the collective Chim↑Pom[12] operates an overturnment. The human body now infiltrates contaminated mattering, penetrating the exclusion zone of Fukushima, an evacuated radioactive area established after the nuclear disaster.[13] It is nomadic vagabondage, which Vidler[14] himself defines as the last evolutionary articulation of the concept of uncanny, an operation built on weighted movements, sequential postures, and tracking that allow you to reconstruct complex cartography with which to navigate the space-time complexity of this place, trapped in a distorted and suspended condition.

Heightened by an extreme tension between the desire to imagine a concrete future for a context deeply affected by a long-term trauma such as the nuclear and the indefinite exclusion of a possible presence within site, the project triggers a fascinating dichotomous operation that transmits and narrates this friction between flow and stasis, between physical and geological event and experiential, human event.

> ... an in-between, an entr'acte space, the gap between the pre- and the after-, the interval between two acts in a theatrical performance. Entr'acte space is a transgression, the space in which prohibition is violated, the space of sin. Everything that is impossible in normal life, which is forbidden, is sacrificed in this ritual interval, accepting a supernormal state...[15]

12. Born in Tokyo in 2005 and made up of 6 artists, the collective Chim↑Pom is renowned for its provocative installations and political performances with strong social message. With a provocative and ironic tone, serious and fun at the same time, the unconventional works of Chim↑Pom stimulate the imagination, analyze some of the problems of Japanese society and outline a better future in these times still unstable. Among the works of this collective: the performance *PIKA* (Hiroshima, 2008), *PAVILION* (2013/2022), and *Super Rat* (2006).
13. The Fukushima Dai-ichi disaster was a nuclear accident that occurred at the nuclear power plant of the same name in Fukushima Prefecture, Japan, and is considered the most severe nuclear accident since the Chernobyl disaster of April 26, 1986. The trigger was the earthquake and the Tōhoku tsunami of March 11, 2011, which caused the shutdown of the anti-seismic safety system, resulting in the interruption of the reactor cooling system. In the following days, three of the plant's six reactors went into complete meltdown. As a result, a state of emergency was declared on March 11 by evacuating the resident population within 3 km of the site (a radius later increased to 20 km on March 13 and 30 km on March 15).
14. Vidler, A. (1992), *The Architectural Uncanny. Essays in the Modern Unhomely*, MIT Press, chapter "Vagabonding Architecture," pp.207-215.
15. The Belgian artist Lieven de Boeck in his work *Fireworks II. Le Blue du Ciel* (2001) adopts these words to describe the 9/11 attack at the Twin Towers in New York. The work, contextualized within an exploration of the aporias, employs the process of diagrammatisation — by refusing any attempt to draw or

The project works in a context characterized deeply by a supernormal state, the exclusion zone of Fukushima. After the explosion and the consequent radioactive material dispersion, the city was abandoned, and its inhabitants were forced to abandon their homes, their lands, and their community, in a situation further complicated by the condition of uncertainty and unpredictability of this corrosive and constant trauma. The curatorial collective Chim↑Pom work adopts a poetic of denial and cancellation, which harmonizes with the exclusion condition of the area. In cooperation with former residents, the twelve participating artists installed Newly commissioned works within their homes in the exclusion zone. The decision to place these works directly in the restricted area, in the intimate and private homes of citizens who can no longer return home, conveys the profound tension of a suspended situation, crystallized, of a time and a place subtracted from the experience, latent. This time interval takes on the connotation of uncertainty, weaving its narrative on the dramatic condition of suspension, which is in itself subtracting the becoming, the process of becoming, the transformation, and the life of the place.

Although the exhibition was inaugurated in March 2015, on the fourth anniversary of the tragedy, the exhibition is virtually invisible, as the zone is still inaccessible to the public, densely occupied by the invisible threat of radiation. To be presented to visitors was *A Walk in Fukushima,*[16] which showed the ruins of the future of a city in erosion through an immersive video installation with films made in the radioactive zone. Visitors can virtually roam the evacuated areas making an almost direct experience of this geographically distant tragedy. The helmets take up traditional Japanese materials and symbols, handmade by the artist Bontaro Dokuyama in collaboration with the inhabitants of Fukushima. They represent their desire for a different future in this unstable present. The same white screen of the website[17] consists of white space, an expression of the impossibility of access and, therefore, of experiencing this place, its geographical, cartographic, and experiential cancellation again. A space that, however, is not a blank slate but rather a void full of tensions and latent potential, is animated and crossed virtually by the narrating voices of the artists who gave life to the project. Thus echoing what Karen Barad had said: "the vacuum is filled with the indeterminate murmurings of all possible sounds: it is a speaking silence."[18]

Let the silence speak or, again, interweave narratives as voices out of the field to restore

design any possible hypothesis for a future destination of the site and the use of any nostalgia and narrative in order to remember the victims or celebrate the heroes of this tragedy —, operating a shift, focuses the attention on the event itself, on the choreographed attack against architecture, that he describes by recovering the semantic register typical of the theatre tradition. The event is, by so, described as an act in-between two acts, as a sudden and irruptive moment capable of generating a supernormal state. The very title of this work explicates his reference both on a representational and theoretical level: the project developed by Bernard Tschumi, *Fireworks* at Parc de la Villette, Paris, 1992.

16. Conceived as a travelling exhibition. It was displayced at the Watari Museum of Contemporary Art, Tokyo, 19 September 2015 – 3 November 2015, and at the 20th Biennale of Sydney, Carriageworks, 18 March 2016 – 5 June 2016.

17. To listen to the inaccesible exhibition, visit the website: http://dontfollowthewind.info

18. Barad, Karen (2017): "Troubling Time/s and Ecologies of Nothingness: Re- turning, Re-membering, and Facing the Incalculable", in: New Formations 92, p.77.

consistency and meaning to places erased by human crossing is a strategy that can also be found in the project *Welcome to Amchitka*.[19] If Fukushima's exclusion zone is linked to a catastrophic accident, those characterizing Amchitka, an island in the ocean between Alaska and Siberia, are related to another episode: due to its distance from the mainland and other settlements, the island was exploited as a nuclear testing site. Somewhere in the vast ocean between Alaska and Siberia is a small but significant island: Amchitka[20]. The project consists of several materials that intend to communicate the state of forced exile and alienation caused by these tests. A series of maps reconstruct the morphology of the place and trace the military trajectories that have crossed it, detecting the three areas affected by the detonations. Accompanying this system of notations that reconstruct this place's real and imaginary geography, interweaving the rituals linked to the ancient Inuit cosmology to the processes of military infrastructure of this territory, a video physically reports the visitor on the island. An uninhabited place, told through a voice narrating off-screen, interspersed with recordings of some sounds that cross the ground, aimed at transmitting "the vibration of catastrophe resonates back through time. listen to the movement of the ground." Geographical notations become architectural notations, capable of giving thickness and rendering visible the invisible, the forgotten.

> Ruins signal simultaneously an absence and a presence; they show, they are, an intersection of the visible and the invisible. Fragmented, decayed structures, which no longer serve their original purpose, point to an absence — a lost, invisible whole. Nut their visible presence also points to durability, even if that which is no longer what it once was... Ruins potently epitomize the perennial tension between what is preserved and what is lost, what seems immediately understandable (or usable) and what needs interpretation (or reconstruction). as we have learned that trauma and discontinuity are fundamental for memory and history, ruins have come to be necessary for linking creativity to the experience of loss at the individual and collective level. Ruins operate as powerful metaphors for absence or rejection and hence, as incentives for reflection or restoration.[21]

These last two remote explorations, these two impossible wanderings, appropriate the concept of entanglement introduced and described by Karen Barad, employing her agential realism conception, according to which "agency is cut loose from its traditional humanist orbit. Agency is not aligned with human intentionality or subjectivity. [...] It is an enactment, not something that someone or something has."[22] Through a series of inter-connection and inter-actions they reconstruct cartographies forgotten but alive, urging a new and violent

19. Curated by Vijgen, with artists: H., Bennett, J., Vanden Eynde, M, Gross, S., Kokmeijer, E. and Vijgen, R., and exhibited in the Exhibition space 38CC, Delft, between 19 March 2022 - 22 May 2022.
20. Amchitka is a volcanic island, part of the Rat Islands, in southwestern Alaska (USA). Uninhabited since 1832, the island has belonged to the United States since 1867 and was used as a strategic airport hub for the United States Armed Forces, especially during the Aleutian Islands Campaign. Between 1965 and 1971, it was subjected to three nuclear tests by the United States Atomic Energy Commission, recording the detonations of *Long Shot* (1965), *Milrow* (1969), and *Cannikin* (1971). Still monitored for radioactivity control, the island has been declared a protected area since 1971.
21. Settis, S. (1997), *Irresistible Decay: Ruins Reclaimed*, The Getty Institute for the history of Art and the Humanities, p.vii.
22. Barad, K., "Posthumanist Performativity: Toward An Understanding of How Matter Comes to Matter," in Signs Journal of Women in Culture and Society, n.28, pp.801-831, (March, 2003), pp.826-827.

Map of nuclear test sites

Courtesy Alaska State Library, Theodore R. Merrell Photograph Collectio

The Atomic Energy Commission begins deto-nating nuclear weapons on Amchitka Island, part of the Aleutian Islands of southwest Alaska. The island is currently uninhabited, but evidence of past human occupation there dates back 2,500 years. When Amchitka lacks the right geological conditions for some of the tests, the program is expanded to Nevada.

call to arms of architecture.

If the two previous projects work through the development of narrative registers able to reconstruct these maps dispersed and suspended and, consequently, to bring back to the center of the debate the question of the fate of these two contaminated territories, the project of Naja&deOstos draws a further line of action, displacing this effort through the exploration of another tool: drawing. As noticed before, the aporia generated by trauma, the impossibility to explain, recall, and communicate the shocking event, generates a transitional space that has been utilized as a field of experimentation, formulation, and expression of new languages and aesthetics. Placing emphasis and radically accelerating the difficulties and obstacles related to representation, the aporia represents a blocking passage, the doubtful posture standing still on a threshold, undecided between the desire to advance and explore the impossible, and the precautionary stepping back in the field of the already known but injured. In his text on Francis Bacon, Deleuze dedicates a whole chapter to the diagram, interpreting the trajectories and thicknesses of the lines dynamically traced on the paper as a catastrophe, stating that through diagrammatization is possible to operate an abstraction capable of reducing the abyss of chaos to a minimum, to trace and find an asceticism, a form of salvation, rediscovering the rhythms of matter.

> The diagram is the operative set of traits and color patches, of lines and zones... it is indeed a chaos, a catastrophe, but also a germ of order and rhythms. As Bacon said: 'It unlocks areas of sensation [...] the diagram, of all the arts of painting, is the only one that necessarily, histerically, integrates its own catastrophe, and consequently is constituted as a flight in advance. It is suggestive.'[23]

By overwhelming the blank space of the paper with lines, and trajectory, by generating a chaos on the canvas, it is thus possible to take a further step toward a resolution, revealing spaces that have remained latent, suspended, and interrupted and triggering a reflection on the mechanisms that led to their subtraction from the human experience. In this direction is set the trajectory developed from the work *Ambiguous Spaces*[24] by Naja&deOstos, which crosses the field of the contaminated sublime landscapes, that will be further deepened within chapter 2.3, develops an investigative architecture that, by taking the same semblances and remarking the same destructive operations of the most potent warfare dispositif, the atomic bomb, adopts drawing

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23. Deleuze, G. (2002) *Francis Bacon. The Logic of sensation*, Continuum, p.102.
24. Naja&DeOstos (2008), Pamphlet Architecture #29.

to reveal the ambiguous spaces generated by war, and in particular from the atomic proliferation.

The project *Nuclear Breeding* draws an exploration on the site where the British experimented with their first atomic bomb, within the military operation called the Blue Danube. It was tested in Orford Ness, England, but ultimately detonated in Australia (Monte Bello Islands, Emu Field, and Maralinga), with catastrophic consequences for the native population. Starting from the unfolding of the veiled relationship between these two sites, the construction site, and the testing ground, and retracing, by so, the links of exploitation and colonization intertwining together these two geographies, the project, provocatively, investigates the whole production process of this catastrophe, analyzing the landscape effects of these devices — in the form of the craters, — simulating explosions and employing the idea of the chain reaction adopted within the nuclear simulations. The project explores the mechanism of the nuclear bomb itself. The trauma become the very object of representation, echoing a similar operation developed by the Belgian artist Lieven de Boeck that, through a process of diagrammatization unveiled the 9/11 terroristic attack in New York. Starting from the analysis and the observation of several nuclear bomb detonations — among which the Bikini Atoll of the Marshall Islands and the Nevada National Security Site in the USA — they mapped their physical effects and focused the attention on the element of the crater, understanding and interpreting it as a "landscape technique."[25] Through this analysis, the project recognizes four different clusters of intervention, intertwining them, through narrative techniques, with imagined characters who inhabit this invented landscape and its peculiar history in the attempt to re-inhabit and provocatively activate a landscape generated by the atomic bomb. Furthermore, in the process of progressive narrative exploitation and functional inversion of every single element of the detonation process, the project employs

> an irrigation device called Master-Slave, based on the handling machines scientists use to manipulate nuclear substances from a distance. The original device consists of responsive mechanical arms that enable the scientists to control contaminated environments without being directly connected to it. This design enables a single control unit — the user — to manipulate irrigation arms.[26]

"The *Nuclear Breeding* project explores the bleakness of the atomic theme. It seems that the extreme acting against humanity can only be touched by simple acts of fragility."[27]

This graduated sequence, punctuated by imbalances of weights within the entanglement of body, trauma, and architecture, demonstrates how the frustrating impossibility of physically operating on the ground — being it a contaminated or an exclusion zone — has gradually been revealed in practices and projects that, through a constant reinvention and experimentation, crossing the space of the body, of matter, the diagram and drawing, have gradually demolished the borders of this conflict. Cedric Price had inserted within his
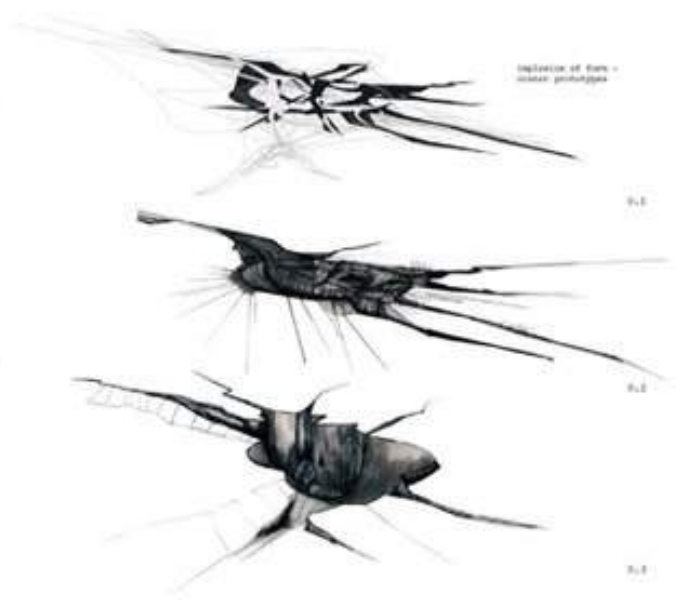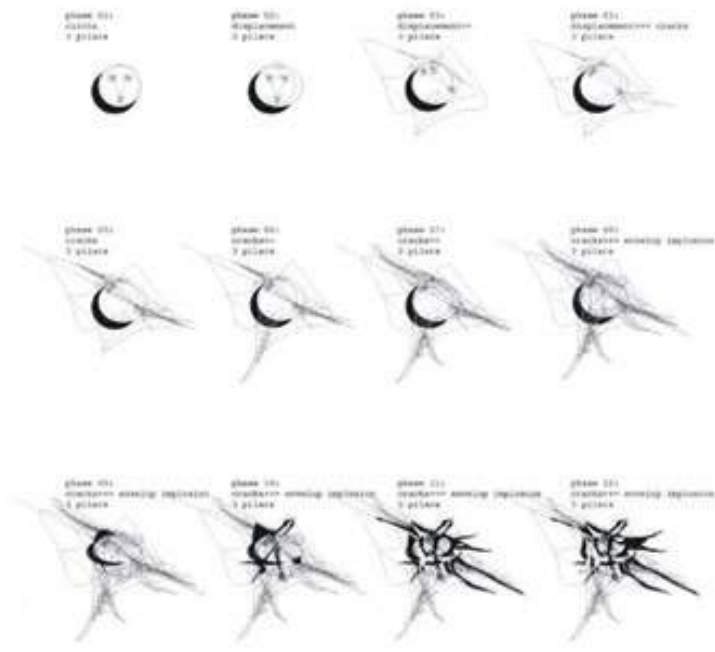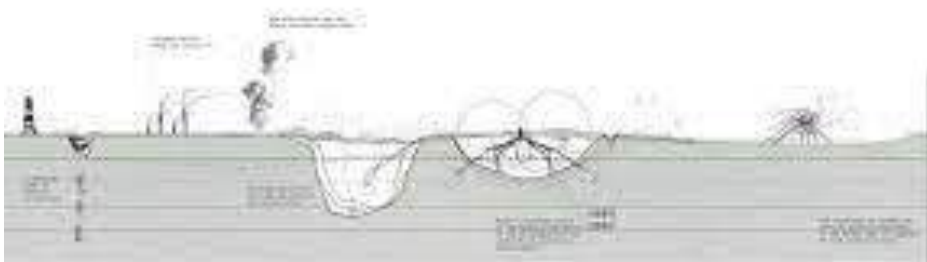
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25. Ivi p.25
26. Ivi p. 37.
27. Quote taken from the explanation that architects put on their web page. You can visit it at the following link: http://naja-deostos.com/projects/nuclear-breeding/

Naja&DeOstos, *The Nuclear Breedings*, 2008.

intervals the category named "the pleasure of frustration," introducing it with Charles Estienne's design for a labyrinth,[28] evoking a long tradition, an architectural device of control and transmutation, a tangle of paths, plots, and possibilities to explore, about which Bataille wondered: "At the center of the labyrinth lies the monster, our darkest part. How do you stop and defeat the monster?"[29]

If the enemy was in the middle of the labyrinth, now it no longer seems to reside in its center but permeates all around, submerging its very structure. Moreover, thanks to the emergence of figures with a monstrous appearance that turns out to be relationally operative both for the project and for critical reflection — from the *kin*[30] to the *weird*[31] to the *cyborg*[32] — it is possible to weave a network of critical reasoning woven through body and matter, able to find multiple solutions to get out of the maze, a structure that, initially unicursal, has become vertical, increasing exponentially its levels of complexity, where man, almost an external observer, immersed in a state of transience that goes beyond the temporal scale, is no longer at the center of the universe, but, with a first significant shift, occupies a decentralized position, which forces it to operate differently, expelled from the possibility of concretely intervening within the built and now contaminated space of architecture.

And we have come
to know all
Places
Ways
Mazes
Passages
Quarters and graves
Of the endless fall.[33]

Anonymous, *The forme of a Labyrinth*, in Estienne, C., Liébault, J. and Surflet, R., (1600) *Maison Rustique, or The Countrey Farme*, p. 347.

28. Estienne, C., *The form of the Labirynth*, 1600.
29. Bataille, G., "Le labyrinthe," in Œuvres complètes, vol. 1, ed. Denis Hollier (1970), Paris: Gallimard, pp. 433-41, p.440.
30. Haraway, D.J. (2016) *Staying with the Trouble. Making Kin in the Chtulucene*. Durham and London: Duke University Press.
31. Morton, T. (2016) *Dark Ecology. For a Logic of Future Coexistence*. Columbia University Press.
32. Haraway, D., "A Manifesto for Cyborgs: Science, Technology, and Socialist Feminism in the 1980s," in Weed, E. (New York: Routledge, 1989), *Coming to Terms: Feminism, Theory, Politics,* (First published in Socialist Review, n.80, 1985).
33. Thomas, D. (1989), *The Notebook Poems 1930–34*, London: Dent.

"When the observation of the incident is replaced by the contemplation of the event, a dizzying beauty reveals itself: a bacchanal pleasure, the ultimate orgasm that, for a split second, contains the sincerity of emptiness, when, for the duration of a fragment, there is nothing. A void that originates from a continuum of facts culminating in that one point, at that one boundary, within that one event, and after which everything is different."

de Boeck, L. (2005) Portfolio, p.34.

# CONSUMING TRAUMA'S IMAGINERY,
OR HOW TO CAPITALISE THE APOCALYPSE

The first category of Cedric Price's exhibition is "self-destruction," which immediately evokes a strong relationship with the theme of destruction, the end of architecture, also understood as the opening of new exploratory possibilities for this disciplinary field. Within this interval a project is inserted which is intertwined with the entertaining dimension of architecture, with the possibilities that it offers to generate a show from its own destruction, the etching entitled *Etching after Paolo Posi's design for the "Prima Macchina."*[1] A pyrotechnic machine is depicted, an ephemeral apparatus significantly in vogue during the eighteenth century. Different aspects suggest and stimulate a more careful reading of this work, and that put to system brings out an unexpected link between Cedric Price and the traumatic experience that, on the one hand, affects architecture while, on the other, it strikes surprised, the viewer. Born in China, pyrotechnic shows underlie roots deeply integrated in the ritual dimension of Eastern culture, which interpreted them as devices to achieve eternal life, adopting them within numerous rituals to exorcise the presence of any evil spirits. It is by their importation into the West that the origin of their link with the dimension of the spectacle is recorded: from the twelfth century, they have been used to celebrate military victories, inaugurating an era of pyrotechnic shows that will turn in the second half of the twenty-first century, in a distorted and cynical process of spectacularization of a much more lethal device, the atomic bomb.

These ephemeral machines, capable of producing attractive shows, bring together and anticipate through their nature in consumption, erosion of architecture, and even the consumption of the image. The event is affirmed and pervades every constructive meaning. Tschumi stated that architecture should be built and burnt just for pleasure.[2] It should dissolve its permanence in an ephemeral choreography for a violent energy-releasing design, reaffirming this statement on the occasion of the project for his *Fireworks at Parc de la Villette* in 1992, when he affirmed that "good architecture must be conceived, erected, and burned in vain. The greatest architecture of all is the fireworks: it perfectly shows the gratuitous consumption of pleasure."[3] The show, meticulously orchestrated, lasted half an hour and took place on June 20, 1992, in front of 100.000 spectators. The event is represented within a diagram that, realized according to the notational system characterizing the entire work of Tschumi, takes the form of a score of signs that direct the spectacular destruction of architecture.

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1. Vasi, G., *The Triumph of Hercules*, Rome, 1767. Project designed by the architect Paolo Posi in the occasion of the Festa della Chinea.
2. Tschumi, B., *Architectural Manifesto*, 1974.
3. Quote from the architect's website, http://www.tschumi.com/projects/47/#
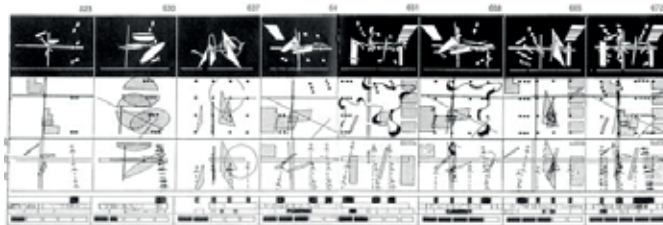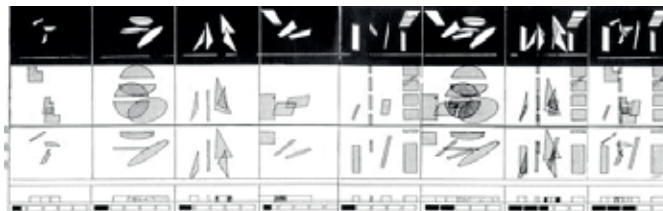
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Posi, P., *Etching of Posi's design for the "prima macchina"* 1751.

^
Tschumi, B., *Fireworks at Parc de la Villette*, Paris, 1992.

Again, the consumption issue of the voracious ingestion of images that, as Virilio pointed out, subject us to an actual daily bombardment, projecting us in exponentially accelerated trajectories towards an end.

The imaginary consumption intertwines its treads strictly with a dystopian and distorted sublime, "for post-trauma aesthetics Lyotard turned to the theory of the sublime, where representing the very failure to process the overwhelming event paradoxically figures its success as a work of art."[4]

Through this gaze, looking at this phenomenon as the extremization of a process that bears the traces of an ancient link with military tactics — it is possible to retrace a case study in which the adherence to the logic of capitalist consumption has spectacularly destroyed an entire territory, the Mojave Desert.

> The Desert is considered a place suitable for extravagances. I am not referring only to those of Bessie Johnson or Curtis Howe Springer, but also to the dune-biggy fanatics, solitary self-hitch hikers, seekers of legendary gold mines; and to those who detonated the first atomic bombs, proposed advanced missile systems and modelled gigantic earth sculptures. We must not forget that the first UFO sightings, or considered as such, and the pioneering conversation with the green men of the planet Venus took place in the Mojave. In a landscape where officially, nothing exists (otherwise it would not be a "desert"), everything is possible and therefore everything can happen.[5]

With these words, Banham describes the Mojave Desert as an environment where isolation, exceptionality, aridity, and distance give life to an extreme landscape that has represented, paradoxically, an incredibly fertile field of architectural experimentation, recording the proliferation of projects characterized by a constant oscillation between utopia-dystopia, reality-fiction, nature-artefact.
In this context, on January 11, 1951, the United States Department of Energy established the Nevada Proving Grounds (currently called the Nevada National Security Site), subtracting 3500 km^2 of desert landscape and converting it into a massive laboratory for testing nuclear weapons.
Thus, a natural landscape already inaccessible and seemingly inviolable is transformed into a threatening artificial landscape, contaminated and radioactive. "Ironically, the land that was denounced as a

4. Luckhurst, R. (2008), *The Trauma Question*, London & New York: Routledge Taylor and Francis Group, p.6.
5. Banham, R. (1982), *Scenes in America Deserta*, Thames and Hudson, p. 39.

wilderness in which white people's culture could prosper became cultivated by the invaders' bloody battles and desires."[6]

The subtraction activated by the U.S. government involves not only the physical dimension, corrupting the desert irretrievably, but provokes heavy cultural disappearance, demonstrating a blind indifference to the Native American communities who had rooted here secular cultures. The issue of colonialism and the violent erasure of the indigenous communities requires an extensive treatment, which is impossible here.[7]

Chosen precisely because of its characteristics of isolation and emptiness, this environment has large constant altimetric surfaces particularly suitable for atomic testing and is marked by an even more relevant aspect: photogenic. This last quality determined the inauguration of a new, dystopian, photographic current whose primary focus was the contaminated landscape, described by Peter Goin, one of its significant exponents, "une expérience du sublime infiltrée par les radiations."[8]

The NNSS is located within Nye County, Nevada, just over 100 km from Las Vegas. This proximity has been crucial for creating a symbiotic relationship from which the city cynically draws further material to establish itself more and more as "the sensational spectacle of all time."[9] The history of the NNSS can be divided into two distinct phases, each characterized by a different entertainment strategy and the masses' fascination. The first, called the "Nevada nuclear testing era"[10] was inaugurated on January 27, 1951, with the atmospheric blast of the bomb Able and ended on September 23, 1992, with the detonation of an underground nuclear test, *Divider*. In this period, 1021 nuclear devices were tested, 100 of which were atmospheric and 921 underground, labeling the site as "the most bombed place on earth."[11] In particular, the atmospheric tests — concentrated mainly in Frenchman Flat, Yucca Flat, Rainier Mesa, and Pahute Mesa — attracted the attention of the city of Las Vegas. Many tourists began to besiege the terraces of the city's casinos to witness the spectacular formation of atomic mushrooms. Thus, the process of territorial devastation caused by atomic tests decrees the inauguration of a real tourist boom in the city: the destruction is capitalized and converted into a show with which to entertain an increasing number of visitors. Casinos started to throw dawn parties where gamblers drove until a flash signaled the atomic bomb explosion at the Test Site. Tourism boosters promoted atomic cocktails (a mix of vodka, brandy, champagne, and a dash of sherry) and pinups such as *Miss Atomic Blast*

**6.** Hayashi, K. (2010), *From Trinity to Trinity*, Barrytown/Station Hill Pr, p.24.

7. Daniel R. Wildcat focuses on these erasure operations of the indigenous culture. He underlines, in particular, the critical difference between Western and indigenous notion of time: while the first one is shaped by progress and capitalization, the second is modelled by place. 'It has become obvious that indigenous cultures operate on assumptions, paradigms, and a unique sense of history and time that contradicts the Western notions.' See: Daniel Wildcat, 'Indigenising the future: why we must think spatially in the Twenty-first Century', published as a special joint issue with American Studies, Volume 46, No. 3/4, Fall 2005, p. 433.

8. Bénédict Ramade, 'Archéologie du future. Préface', in Ponte, A., *Desert Testing*, éditions B2, n.63, (May 2017).

9. Mackedon, M. (2011), *Literature of Nuclear Nevada*, <www.onlinenevada.org> Last accessed: September 26, 2019.

10. Ibidem.

11. Matt Blitz, Miss Atomic Bomb and the Nuclear Glitz of 1950s Las Vegas, (2016), <www.popularmechanics.com> Last accessed: September 12, 2019.
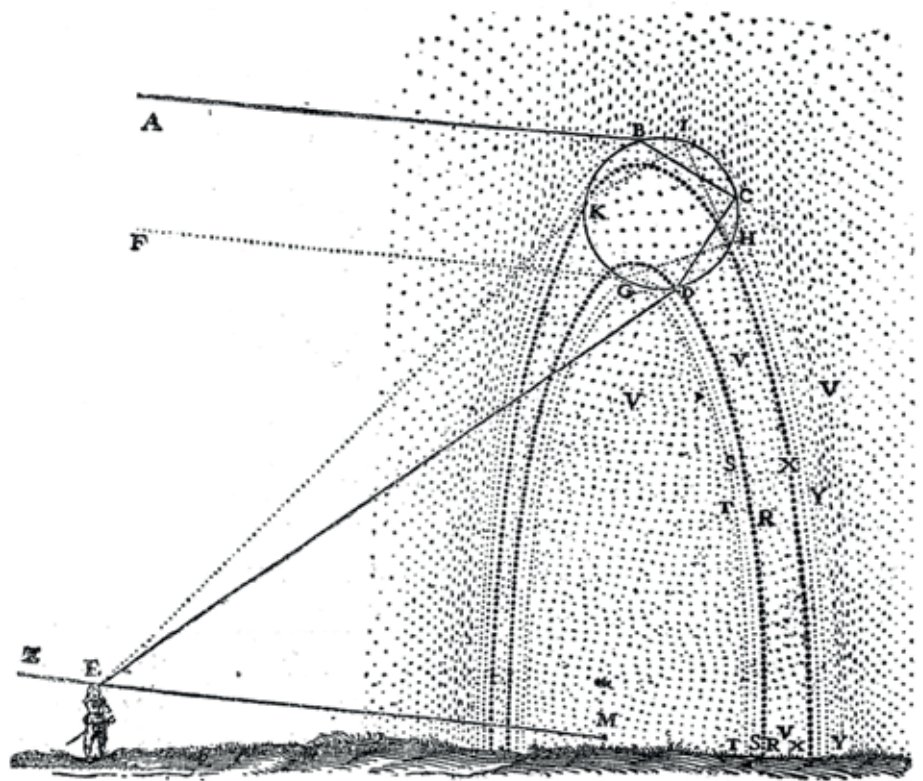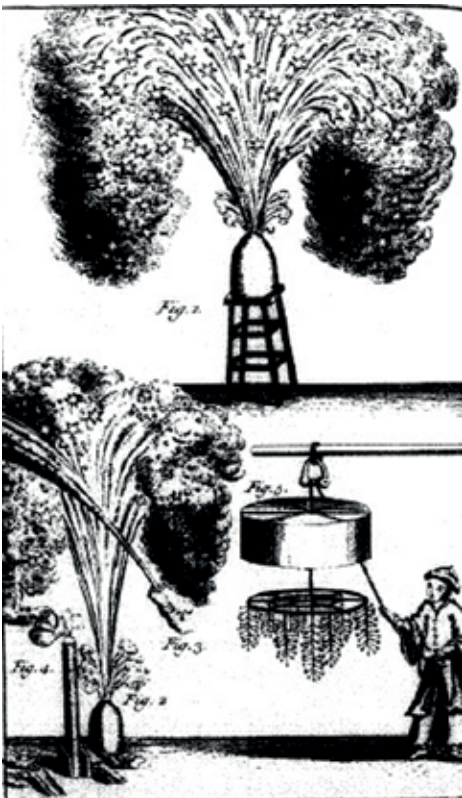
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Unknown author, *18th Century Illustration of Chinese fireworks..*

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Descartes, R., The arch and its observer, 1629.

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*Operation Buffalo
nuclear test, peration
Buffalo nuclear test,* 4
October 1956

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Marey, E-J., *Machine à
fumée,* 1901.

(1952), who radiated "loveliness instead of atomic particles."[12] *Miss-A-Bomb* (1953) and *Miss Atomic Bomb* (1957), whose images have been absorbed into the American Pop Culture lexicon.

In the process of progressive alienation, where the radioactive danger of the site is increasingly underestimated, the city promoted the blasts as a unique Las Vegas attraction by giving out calendar advertising detonations and the indication of the best spots to watch the explosions. Hotels began hawking their roofs as the perfect places to see the mushroom clouds, and the city soon received the nickname the Atomic City.

The mediatic infrastructure has been a relevant presence even within the NNSS itself: the government employed a crew of 250 cameramen, producers, and directors to chronicle the tests, assigning them unique spaces from which to film the explosions. One of these media spots was the News Nobb, "established as a good point for photographers and cameraman to watch and film the airdrop and detonation of Charlie, a 31-kiloton atmospheric test at Yucca Flat"[13] in 1952 and subsequently used to testify other succeeding tests. Within a short time, the site became "one of the most photographed and heavily-reported areas in the world."[14] The collective imagination was heavily marked by the high media coverage of these explosive shows, as proved by the National Atomic Testing Museum, hosted in Las Vegas, which exposes a considerable amount of objects marketed by exploiting the masses' fascination for the nuclear tests. A further episode, denoting the extremely cynical thrust sustained by the atomic event capitalization, dates back to March 17, 1953, when the Annie test was conducted. A nuclear device was detonated on a small settlement built ad hoc for the occasion, composed of two colonial houses and equipped with all the elements effectively findable within the typical American suburb: passenger cars, gas and oil station, distribution roads, and mannequins with clothing that were kindly given from the J.C.Penney Co. Only two weeks after the test, the same mannequins subjected to atomic radiation were displayed in the storefronts of J.C.Penney Co. on Freemont Street in Las Vegas, attracting a large audience of curious.

So here is a venerable cliché: the mannequin. That it is a thing, not just an image, has intrigued artists for about a century now. It inhabits space. [...] The mannequin is the dilapidated cliche of capitalism's fetishistic inversion, the automaton/commodity more real than the people who have made it, more vibrant than the world from which it sprin-

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Miss Atomic Bomb 1957.

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A postcard from Las Vegas from the 1950s, in the background an atomic mushroom from the tests inside the NNSS.

12. Ibidem.
13. National Nuclear Security Administration (March 2005), *Nevada Test Guide*, Nevada Site Office, , p. 35.
14. Ivi p. 36.

gs. In it we contemplate our own inability to command the processes of production or to knit together the concomitant fragments of a life. If the mannequin is the prisoner of forced choice, we can recognize its neutered body, which we know to be underneath the clothes, as the one whose identity has been forfeited by its inability to purchase a life. We jeer and we worship, honoring and despising the fetish, covering its new clothes while mocking its lack of agency. The shop window and its frozen inhabitants, that tableau mart, can only testify to our inability-even in our imagination-to transcend fragmentation and distortion, if not depersonalization.[15]

An episode that was critically evoked in some scenes of Michelangelo Antonioni's movie *Zabriskie Point* (1970), in which the Sunnydays Company promotes the construction of a new village in the desert with a commercial spot where the inhabitants are nothing but mannequins. The final scene of the same movie, an explosion in the desert, represents another strong criticism the director makes of American post-capitalism.

The second phase of the NNSS began in 1992 when all the nuclear tests (both atmospheric and underground) stopped thanks to the Comprehensive Nuclear-Test-Ban Treaty. This event gave a new input to a different type of nuclear tourism no longer developed outside the area but that started venturing within its borders. Visitors, forced to book their guided and strictly controlled tours a year in advance, are brought with buses inside the site to discover bombed villages, cars, military vehicles cemeteries, large craters generated by explosions, and dilapidated infrastructure. The tour provides some key stops, including the *Japanese Village ruins* (1955), a visit to *Survival Town* (1955) with a short stop to visit the two houses survivors of the nuclear tests, the *Apple-2 Houses* — a wooden two-story house and a brick two-story house —, the photo-op with the *Sedan Crater*, formed in 1962 using a 104-kiloton device, and finally passing through the nuclear waste dump.
While waiting for the resolution of the debate on the fate of Yucca Mountain, selected as the nation's High-Level Nuclear Waste Repository, this enormous transitional space remains a considerable tourist destination for all the curious, researchers, and scholars interested in visiting and experiencing the dystopian landscape, made up of craters and ruins, originated from nuclear experimentation during the Cold War.

The theme of recursion, of return, of the renewed superimposition of

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Mannequins, J.C. Penney Co. of Las Vegas, 1953.

15. Rosler, M.,"Experimenting On Mannequins: From Human Body to Plastic Body," in "October", n.100, on Obsolescence, (2002), pp. 8-9.

AT MICHAEL HEIZER'S DOUBLE NEGATIVE (1969-70), MORMON MESA, OVERTON, FEBRUARY 14, 1996

AT NEVADA TEST SITE, FEBRUARY 13, 1996

AT ROBERT SMITHSON'S SPIRAL JETTY (1970s), GREAT SALT LAKE, FEBRUARY 13, 1996

AT NEVADA TEST SITE, FEBRUARY 13, 1996

LOOKING TOWARD MANHATTAN, APRIL 23, 1996

a trajectory over an already traced rut, is firmly rooted in architecture and the human being. Recurrences and cyclicalities have constituted for humans the tool through which determining their temporal dimension to oppose to that of eschatological time, interrupting the messianic momentum towards the end. Furthermore, this same practice, especially with the occurrence of trauma, constitutes a necessary operation for the metabolization and exorcism of the adverse event. The places eliminated and erased from memory are put back into circulation and reintroduced back into everyday experience and imagination.

So, suppose the return avoids the terror of absolute entropy. In that case, mending a tangible link with a place that had to be eliminated from the mind allows you to build new narratives and design strategies to re-assemble the fragments generated by the shock. In this sense, the project *The Century with Mushroom Clouds: Project for the 20th Century* by the Chinese artist, whose work unfolds in a thematic field characterized by recurring issues, such as destruction, chance, cosmology, and mythology. Recognized for his pyrotechnic art, to use the sky as a personal canvas, his way of understanding pyrotechnic art fits and integrates with that of Chinese culture. As mentioned at the beginning of this paragraph, this culture does not intend fireworks as a spectacle to be capitalized, but as a ritual, a ceremony, within which "the moment of explosion creates chaos in time and space [...] conveying a Chinese view of human beings as a microcosm of the universe."[16]

At the end of the twenty-first century, Cai questions what image can synthesize, concluding:

> I felt that the mushroom cloud was one of the most important symbols of the twentieth century. After the destruction of Hiroshima and Nagasaki, military use of nuclear technology continued in the form of a 'deterrent' or threat. In a sense the mushroom cloud became increasingly conceptual, rather than real, as time went on. It becomes like the Great Wall of China because, practically speaking, the Wall doesn't really keep the enemy out. Once you climb the wall, no matter how long it is, you've gotten across. But strategically and politically it's extremely important to have this thing there. Displaying power, imposing power, is extremely important.[17]

Starting from this reflection, Cai reimagined one of history's greatest weapons of mass destruction as art. The mushroom-cloud forms in Las Vegas have been translated into fancy bikinis to dress in a beauty

16. Cai Guo-Qiang interviewed by Octavio Zaya in Friis-Hansen,D., Zaya, O., and Serizawa,T., *Cai Guo-Qiang*, London 2002, p.22.
17. Ivi p.21.

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Cai Guo-Qiang,
The Century with Mushroom Clouds:
Project for the 20th Century,
1996.

competition, an explicit evocation of the nuclear explosions, are juxtaposed with a chinese medicinal ingredient, the actual Lingzhi mushroom. Enacting a sort of pilgrimage through symbolic sites[18], including the Nevada National Security Site, Cai generates a ritual consisting of a sequence of short explosions (almost three seconds each), through which, in a sort of dialectic process, he puts in communication the destructive forces of the past with a process of creation and healing.

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18. Cai's pilgrimage counts within its stops: Michael Heizer's *Double Negative* (1969–70), Mormon Mesa, Overton, Nevada, Robert Smithson's *Spiral Jetty* (1970) Salt Lake, Utah, and at various sites looking toward Manhattan, New York.

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2.2

PARANOIC ARCHITECTURE. THE BUNKER: FROM A SAFE INTERNAL TO A THREATENING BLACK BOX.

[medium-term]
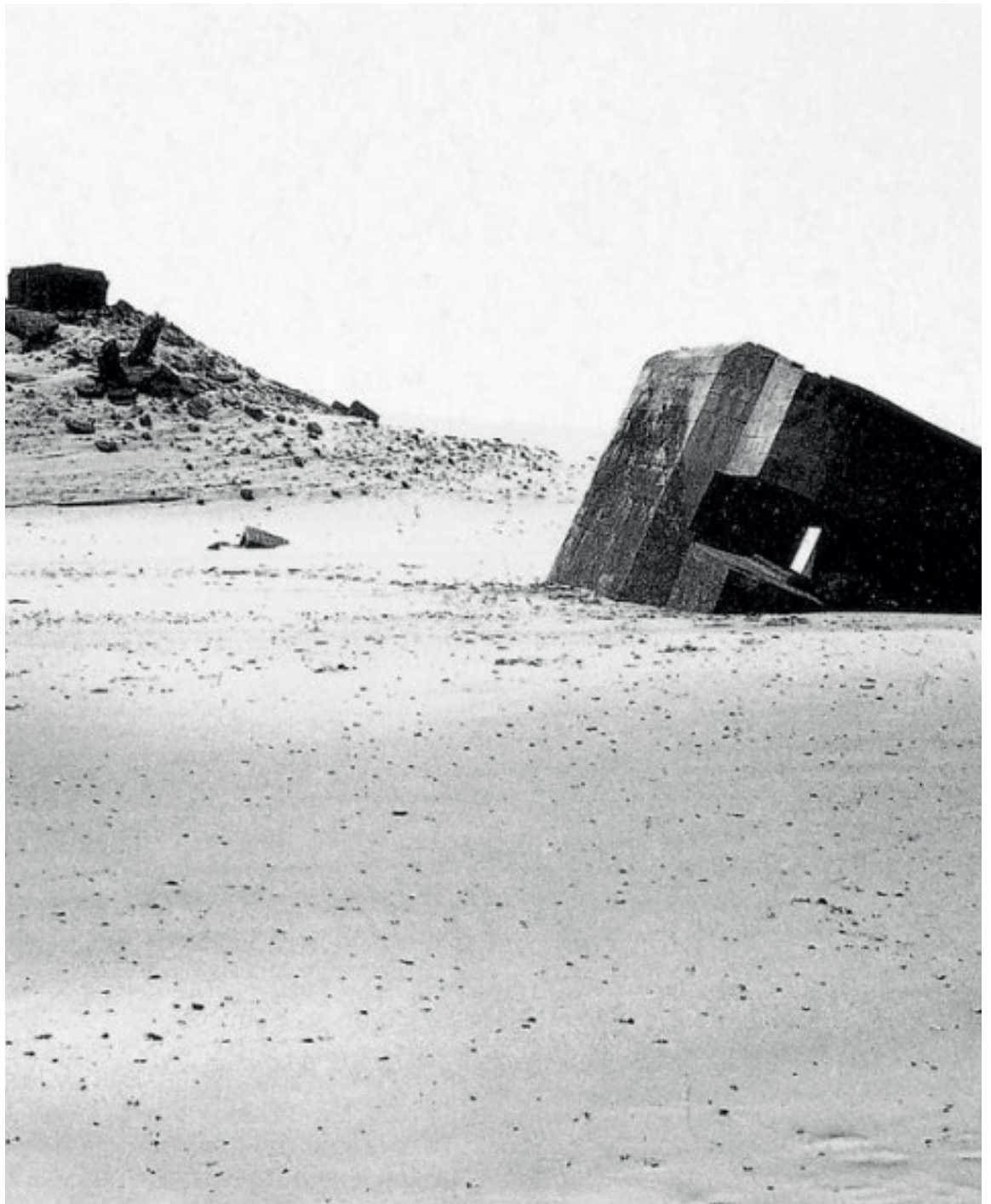
>
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Tilting, from
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Étude sur l'espace
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mondiale. Paris:
Édition Galilée, p.177.

[PARANOIA]

noun. Paranoia derives from the Greek para- meaning "beside" and -nous "mind", therefore, literally, beside the mind.

Initially used by the Greek physician Hippocrates to define the phenomenon that led some feverish patients to fall prey to deliriums, this term has been adopted by eighteenth-century doctors to describe the hallucinations of alienated people.

1. In psychiatry, psychosis characterized by the development of a chronic delusion (of grandeur, persecution, jealousy), lucid, systematized, with its internal logic, which is not associated with hallucinations, and does not involve deterioration of psychic functions outside of the delusional activity. These last two characteristics distinguish it from paranoid schizophrenia (see), to which it would otherwise be similar.

2. A state of mental confusion, or a condition, even temporary, manic, crisis, of psychic prostration: to go, to fall into p; being in paranoia.

The previous chapter underlined the relationship between afterwardness and a system of artistic and architectural practices unfolded from the strategy of return and repetition that succeeded in occupying dynamically — through a routine sequence of bodily or figurative — the time intervals generated by trauma. Superimposing new trajectories, new rhythms to the fractures violently opened by the shock, and repeatedly passing along its places and temporalities, these projects, attributable to dynamic notations of crossings, have activated metabolization processes opening the possibility of its overcoming. Moreover, these ephemeral practices, while developing on significantly reduced time intervals — seconds, hours, days —, generate, via their repetition, a temporal echo that grafts them within the dimension of memory and collective imagination, thus assuming a perceptive duration that is emphasized and reverberated, elevating them in some cases to the symbolic dimension of the rite. Within this chapter, there is a temporal dilatation. The range that describes the observed phenomena extends to the size of the years. In particular, critical reasoning is developed on an architecture that, par excellence, has symbolized the refuge of modernity: the bunker.

The image from which this recognition starts is the *Black Square* of Malevich, presented on the occasion of the *Last Futurist Exhibition of Paintings 0,10*.[1] In a period characterized by extreme social, political, and cultural tensions in Russia, Malevich presents a clear and defined figure. This geometry stands out against a white background, erecting itself as a representation of all the fullness and density of a space crossed by tensions, of an articulated relational world in ferment, ready to shape the beginning of a new era after the end of the past one. This work, the zero point of painting, is described by the artist as follows:

> It is from zero, in zero, that the true movement of being begins. [...] I transformed myself in the zero of form and emerged from nothing to creation, that is, to Suprematism, to the new realism in painting – to non-objective creation. [...] [Black Square is meant to evoke] the experience of pure non-objectivity in the white emptiness of a liberated nothing.[2]

By keeping within its perimeter all the possibilities for constructing a new world, this form simultaneously stages a decisive separation between what is inside and contained and what is removed and excluded from it. Thus, if the figure drawn by Malevich constitutes a decisi-

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1. The Dobychina Art Bureau presented the *Last Futurist Exhibition of Paintings 0,10* at Masovo Pole, Petrograd, from 19 December 1915 to 17 January 1916. It inaugurated a form of non-objective art called Suprematism. To further deepen the exhibition contents: Boersma, L. (1994) *0,10. The Last Futurist Exhibition of Painting,* Rotterdam: 010 Publishers; Drutt, M. (2015), *In Search Of 0,10: The Last Futurist Exhibition of Painting*, Basel: Fondation Beyeler, and Ostfildern: Hatje Cantz.
2. Gurianova, N., "The Supremus Laboratory-House: Reconstructing the Journal," in Drutt, M. (2003), *Kazimir Malevich: Suprematism*, New York: Guggenheim Museum Publication, pp. 44-59, p.54.

ve turning point in the artistic field, in the same way, the archetype of the bunker represents a transition towards a new era in the architectural field. It will contribute to developing an articulated taxonomy of architectures that, united by the need to define and perimeter a closed space separated from the outside, will define multiple varieties of configurations, re-articulating the essential relationship between container and contents, between the element to be protected and the element to be confined, between internal and external. So that full black, dense of tensions, begins to fray, to unfold, undergoing a metamorphic process that continually remarks the internal spatial organization.

The bunker represents the archetype produced and processed as a response to the combination of the shaking paranoia of the end and the effort to resist it. The etymology of this term is found in the Scottish homonym, stating for "bench, seat" (1758), and in the shortened bunk "sleeping berth," coming from the old Scandinavian indicating the "boards used to protect the cargo of a ship." This dispositif has undergone an extensive sequence of variations and manipulations throughout history without moving from its original semantic attitude: defining a covered, protected space where to store, usually buried or safely hidden, materials and goods, where to host humans during a threatening event.

During his reconnaissance through the bunkers of the Atlantic Wall, Paul Virilio states that these structures, in addition to representing strategic forts from which to conduct military operations, were also essential guardians of the memory of the war. This last component will give rise to a new form of sublime, elevating this device to a monument, thus triggering the emergence of *Dark Tourism*[3] that, moved by the fascination for war, develops trajectories that trace the vestiges of these military devices.

The bunker, therefore, evokes an archaeological issue, traceable both in the excavation and research operations activated to exhume these cryptic devices following the growth of attention for their architectural value, both in a more metaphorical dimension, in the search for "secret figures of our time."[4] However, the importance of these architectures is not limited to the memory and history that they concretize — a mnemonic apparatus that is not only linked to the conflict but also to the reminiscence of humans' innate search for a safe and secure space to shelter themselves from a multitude of threats besieging their existence — but it derives from the high experimentation to which they have given impetus. A new design field has been opened where to test and experiment with new architectural archetypes, configured according to the isolation and confinement strategies, and then manipulated within a process of hybridization that declined them in different destinations

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3. Dark tourism (also known as thanatourism, black tourism, or morbid tourism) is a particular touristic sector whose visitors are attracted from places historically associated with death and tragedy. Although this phenomenon records a long tradition — catacombs, gladiator games in Rome's Colosseum — it has been studied academically only recently. The term "dark tourism" was coined in 1996 by 1996 Lennon and Foley at Glasgow Caledonian University, while its variation "thanatourism" was first mentioned by A. V. Seaton in 1996. To further deepen this topic, see: Lennon, J. and Foley, M. (2000), *Dark Tourism: The Attraction of Death and Disaster,* London: Continuum*;* A.V. Seaton (1996) "Guided by the dark: From thanatopsis to thanatourism," International Journal of Heritage Studies, 2:4, pp. 234-244.
4. Parent,C., Virilio, P. (1997) "Nevers chantier," in *Architecture Principe*, Santa Monica, California: Form Zero Editions, p.24.

upsetting, in some cases, the initial meaning.

Although the massive bunkers described by Virilio are elevated to the symbol of an era, the articulation and design of safe environments, often carved through diaphragms inside the domestic space and hidden, is a much older practice. A critical antecedent could, for example, be traced to the panic room — whose primordial form is represented by the king's chamber inside the Egyptian pyramid. A hidden and safe environment, reachable only through the knowledge of the paths effectively studied to mislead any intruders. These environments-refuge, in addition to originating a series of fascinating dichotomous relationships, played on the relationship between inside-outside, content-container, light-shadow, and evidence-mystery, are closely linked to two other fundamental elements. First, in these spaces, increasingly isolated and hermetic, a relevant role is played by an advanced technological apparatus capable of guaranteeing simultaneously autonomy — in extreme environmental conditions — and communication — with an increasingly distant and imperceptible outside world. Secondly, it correlates with military language and, in particular, to the logistics that characterize these environments, the design of which is not limited to the spatial definition but provides for the articulate and detailed definition of a system of procedures that define its use: escape plans, maintenance procedures and guidelines for living in emergency conditions. Following these observations, this survey has been developed on the bunker archetype and the exploration of its subsequent evolutions and manipulations, starting from the concept of the cabinet, as described by Beatriz Colomina:

> A 'cabinet,' in English, means, in common use, a 'cupboard or case with drawers, shelves, etc., for storing or displaying articles'; a 'piece of furniture containing a radio or television set'; and, in the terms of politics, a 'group of ministers controlling government policy.' The cabinet is a space. In the first definition, this space is associated with the traditional domestic interior, the house; in the second, it houses the media; in the third, it has been displaced into the media itself. While cabinet members derive their title from the space where their meetings take place, that space, that cabinet, exists, above all, in the media waves, it is housed by radio, television, and newspapers. The cohabitation of these apparently disparate meanings indicates that the house is a military weapon, a mechanism within a war where the differences between defense and attack have become blurred.[5]

Thus, this exploration traces the semantic concatenation that the different compositional and spatial configurations of these devices have assumed, the sequence of spatial syntheses in which the interweaving of man, trauma, and architecture has been progressively reworked. Retracing the taxonomy of this securityscape, a disparate system of architectures is intercepted that, interweaving a symbiotic relationship with technological development, records two crucial processes of semantic distortion and variation in correspondence of two precise historical moments. The first, inaugurated with World War II, continued throughout the Cold War, continuing up to the contemporary, and is characterized by the co-existence of two parallel processes, activating an experimentation phase operating both on the composi-

5. Colomina, B., "Domesticity At War" in Assemblage, No. 16 (Dec. 1991), pp. 14-41, p.17. The author later published the book: Colomina, B., (2007) *Domesticity At War,* The MIT Press.

tion and the spatial organization of the bunker, and on the content that it protects.

> There is a crisis in the world.
> In our European countries, the rural crisis joins the crisis in our cities around the project of a reorganization of space. [...] A state of war is installing itself on our territories. [...] We close our eyes, willingly blind to the rupture which has already taken place starting at the end of the Second World War. [...] In short, our life can be read and discovered in the lifeless pages of an archaeological dictionary.[6]

Claude Parent and Paul Virilio trace a critical reflection: the world is in crisis, and, just since World War II, a severe fracture has been generated: a state of war has been continuously installed within the territory. The drastic change of the same warfare operating logic, undergoing a violent acceleration, and the emerging question of the eroticization of the ungrounding dynamic produces extensive colonization of the territory by the bunker. It assumes, within the urban space, the form of reduced domestic appendages to build, through paranoid serial repetition, entire territorial borders[7] to protect whole countries, combining in the latter case the hypogeal component to a character of massive monumentality that will be a source of inspiration and fascination for brutalism. In this same phase, a more mean process operates in the shadows. Suppose the mass media heavily publicizes the grand plans for protecting the territory through the installation and safety of these bomb shelters. In that case, this propaganda conceals the development of another process that simultaneously adopts and exploits the technology of these architectures to develop tests and experiments on the human mind and to define and strengthen new military tactics with which to arm countries in the expectation of a new imminent nuclear war.

This articulated system of hybridization operations has given shape and thickness to a continuous process that, inscribed in that constant millennial mania of the end of the world, has continued until contemporaneity. Here there is a second significant passage generated from the beginning of the 1980s, a decisive moment in which these manipulations are

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6. Parent,C., Virilio, P. (1997) "Nevers chantier," in *Architecture Principe*, Santa Monica, California: Form Zero Editions.
7. Fortifications represent the most massive and extensive works created during World War II, whose only precedents in territorial extent were the Great Wall of China and the ring of the citadel by Vauban. The saga of the Maginot Line marked the French preparation for the war, which was an outstanding example of architecture without architects: the idea of a continuous fortification from Alsace to Belgium was officially proposed in 1927 and completed in 1936. This massive oeuvre was hierarchically organized in two fortified regions, internally subdivided into minor sectors whose smaller units were the casemates. In the war's later stages, some of the largest bunkers that had remained completely intact were used to manufacture German military equipment. After 1936, the organization set up by the Nazi engineer Fritz Todt for the construction of the Westwall, which the Allies would call the Siegfried Line, designed a constructed border extending for some 560 km from Switzerland to the Netherlands and was conceived as a double set of belts. At the same time, on the Soviet side was under construction the Stalin Line, extending across a front stretching 1835 km. Furthermore, the Royal Navy decided to build coastal batteries, that were completed in 1942-1943 as autonomous units, built on land and towed into position out at sea, where they were sunk to shallow depths: the Shivering Sands Fort, that later Reyner Banham considered as a precursor of Archigrams projects. Finally, the most crucial fortification work undertaken during the war was the Atlantic Wall, proclaimed in the publication Signal as "Europe's construction site," 2685 km. This will be the primary source of fascination for P. Virilio.
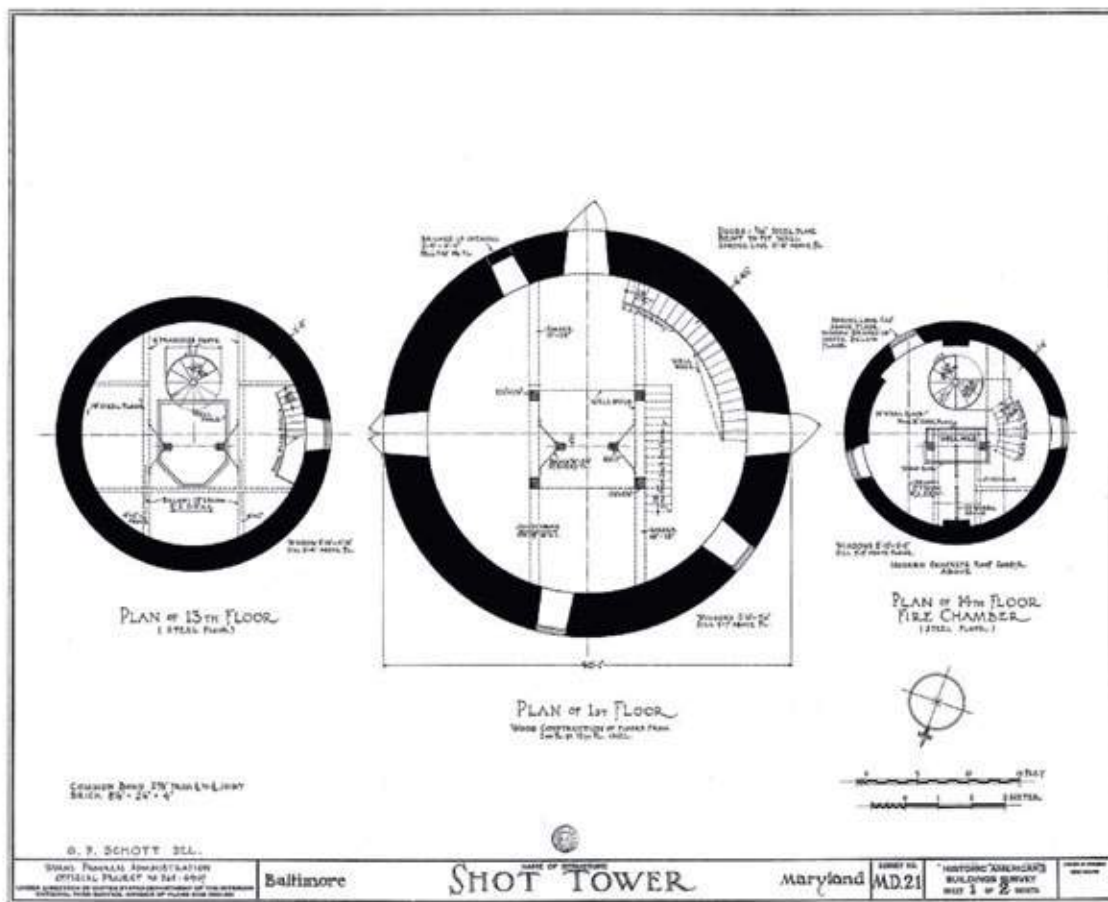
articulated on even more diversified and urgent levels. In this period began to grow the attention to the fate of nuclear waste and a general reflection on the danger of nuclear energy — that will find in the Chernobyl accident of 1986 justification for the intensification of paranoia already firmly rooted within the collective imagination since the World War II. Furthermore, this event is also linked to the strong and growing return of apocalyptic narratives that, during the 1990s, began to occupy more and more frequently the contemporary imagination, interspersed and, in some way, progressively confirmed by the intense succession of artificial disasters and natural catastrophes. The end of the 21st century marks a twofold trend with the event of 9/11 and the continuous chain of conflicts and terrorist attacks.
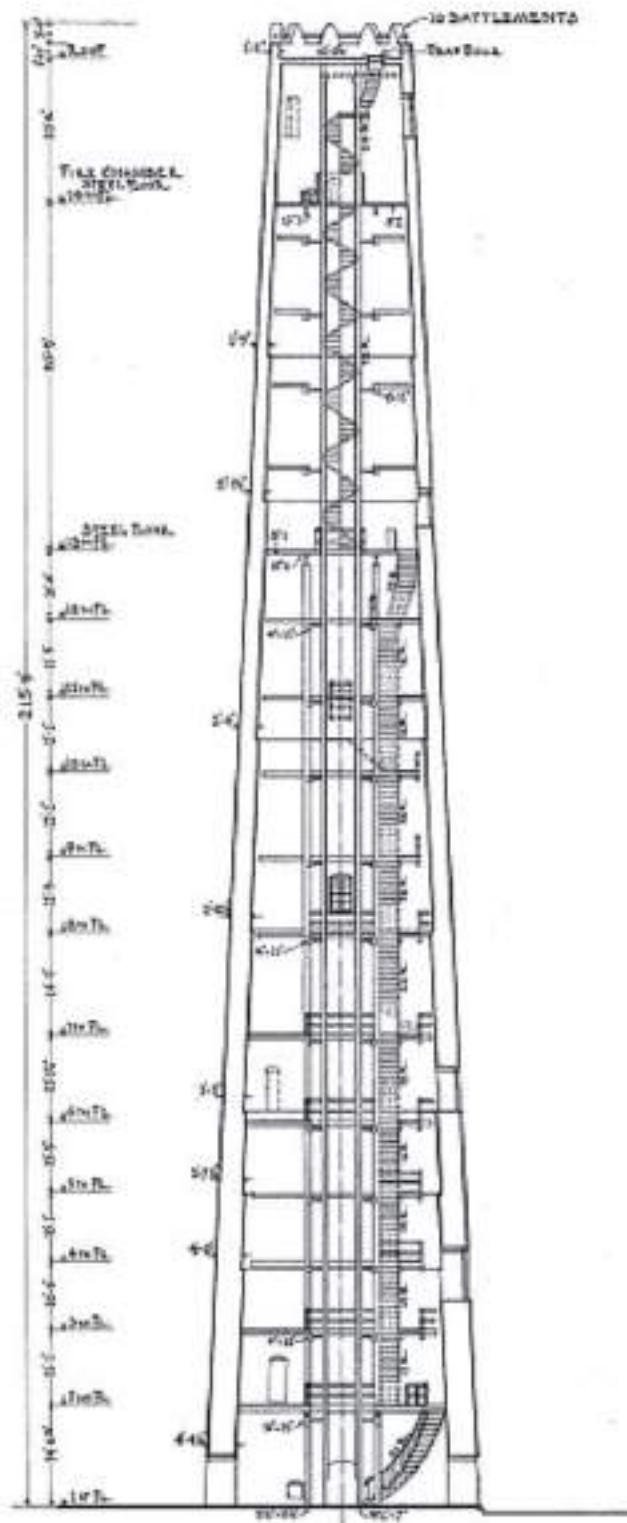
On the one hand, there is real rearmament of urban centers through the fortification and the introduction of a highly heterogeneous variety of devices to filter and limit the movements of heavy vehicles and strengthen the weak targets inside them.[8] On the other hand, we are witnessing an unbridled race for shelter that will see the obsessive colonization by the elitist class of the world of unspoiled landscapes; in particular, New Zealand, which is not inserted among the countries at atomic risk, is selected for the construction of luxurious and personalized luxury bunkers. A phenomenon that demonstrates all the friction and paradoxes

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8. Following the 09/11 attack, armament and fortification of the urban centers of the major American and European cities have overall operations. For example, the operation carried out by Thomas Mayne (Morphosis) in 2004 in Los Angeles where the seven building blocks around the Plaza of Caltrans were fortified by laying another facade that was superimposed on the first. The operation, sold as an energy improvement project, the facade introduced presents an intelligent and technological coating that can be automatically modular according to the light of the day and become transparent at night, consists of a tangible reinforcement of the existing buildings, to whose facades a system of curved steel tubes has been placed. Also, the interventions and products made by the Hardstaff Barrier Company, whose name suggests the intent: to create barriers that can ensure a reaction and protection even in the face of the most critical events. Leafing through the catalog of this Company, you can find, next to the traditional fences, guard rails, and traffic channeling elements, a series of devices named "Hostile Vehicle Mitigation," specifically designed to contain any armed vehicular attacks within urban centers or, again, you can find products to be used within the nuclear industry, the same comrade writes on his own website: Hardstaff Barriers has been granted Fit For Nuclear (F4N) status by the Advanced Manufacturing Research Centre (AMRC) after demonstrating its commitment to working in the nuclear industry. Hardstaff's barrier systems have provided edge protection, and delineation for Nuclear construction projects, including Hinkley Point C. Hardstaff has also provided Hostile Vehicle Mitigation protection to major existing Nuclear infrastructure high-security sites, including Sellafield. The Company catalog is available on the following website: https://www.hardstaffbarriers.com/wp-content/uploads/2020/05/Hardstaff-Product-Directory-Web-RG.pdf. Another project showing how these military elements are integrating more quickly within the urban context is the Rogers Marvel project. It deals with designing elements to support security measures by hybridizing them through the mixture with a refined and elegant style, thus originating the nogo barriers, sort of urban sculptures. Furthermore, another project is the securing of some New York pedestrian areas: introducing a series of devices and barriers concealed by the possibility of being used as sessions, people are protected from the impact of possible attacks (see "Battery Park City Streetscapes and Security" and "Financial District Streetscapes and Security" projects, both carried out in New York in 2008 and 2003 respectively). Yet, it is intriguing and suggestive to notice how the prismatic elements placed at the entrance of the pedestrian zones are called monoliths and present the sculptural form of massive monoliths. Finally, an interesting experiment in this regard is the design, by the same studio supported by Rock Twelve Security Architecture, of TigerTraps. These vehicle traps consist of a pavement section designed to collapse under the weight of heavy vehicles. Therefore a weight-sensitive pavement system supports the weight of pedestrians but is destined to yield below that of vehicular traffic. The device was installed on Vesey street and North end Avenue in Battery Park City in Lower Manhattan.

of a Western world that, guided by the timeless capitalist interest, engages in an egocentric effort, leaving behind the categories historically excluded from Vitruvian man once again. Finally, a final question is added to this trend, which is also fundamental. In the 1990s, the definitive and radical transition to the age of data took place. Technologies have definitively pervaded all aspects of everyday life, so much so that the primary raw material is represented precisely by data. The verticalization characterizing a constant global conflict all played on the subtraction of data and the leak of news and fought through technologies that operate in remote, has led to the emergence of a new architectural typology, that in some cases occupies existing bunkers and in others manipulating their spatial composition, is configured as a space built to protect data hermetically. Human has been moved to the outside of the object of shelter and protection. Architecture is urged to re-appropriate the Vitruvian *firmitas*, but to respond to the emerging question of hyperobjects — in particular, climate change, digital pollution, and the unresolved issue of nuclear waste.

Thus, within this category linked to the medium term, in which the metronome of Cedric Price harmonizes, slowing down, on the time interval of years, it is possible to recognize a succession of figures that, rooted deeply into the ground and continuing this game of weights within the entanglement body, architecture, and trauma, defining spatial organizations that, triggered by paranoia towards an imminent end, branch out into archetypal hybridizations of new architectures, weaving a system of complex relationships and semantic variations between the initial internal-external relationship, protection-threat. A series of devices that, starting from the archetype of the bunker, evolved by tracing significantly autonomous trajectories, recording a constant replacement of the object hermetically stored inside them and undergoing different dimensional and material variations. A highly heterogeneous family of devices has been formed: from the bomb shelter to the time capsule, from the isolation cell to the spacecraft, to the data centers and nuclear waste deposits (which will be deepen in chapter 2.3).

PLAN OF 13TH FLOOR
(STEEL FLOOR)

PLAN OF 1ST FLOOR
WOOD CONSTRUCTION OF FLOOR FRAM
2½ 6 IP 13½ FL. CELL

PLAN OF 14TH FLOOR
FIRE CHAMBER
(STEEL FLOOR)

SHOT TOWER

Baltimore   Maryland MD.21

CROSS SECTION
LOOKING SOUTH

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Bodine, A.A., *Phoenix Shot Tower,* 1821. Cedric Price included this project, part of the CCA collection, in his exhibition Mean Time (1999), introducing it, in particular, in the temporal category called gravity. This tower, which at the time of construction was the tallest building in the USA (71 m), operated precisely through gravity: molten lead was dropped from a platform at the top of the tower, through a sieve-like device, into a vat of cold water at the bottom of the tower to produce "drop shot" for muskets.

PERIMETER A SAFE INTERIOR

A strong ambiguous oscillation has always characterized the relationship between war and architecture. While the Vitruvian *firmitas* — the permanence of architecture — is strongly threatened by war, which erodes and demolishes its physical apparatus, surprisingly, the conflict itself has represented a powerful resource for the design and the production of theory, pushing architecture to seek innovative spatial and technological solutions and leading to the definition of a series of principles that compose the architectural tradition. War, therefore, must not be exclusively traced back to the phenomenology of destruction and ruin but should also be recognized as an inexhaustible stimulus for architecture that translated the threatening battlefield into a ground of great experimentation, thus defining "amazing technical achievement, bordering on the miraculous."[1] It is not a coincidence that Vitruvius, in his "De Architectura"[2] acknowledges the importance of military design by dedicating the entire Book Ten to war machines, highlighting the theoretical and technological interconnection between architectural theory and military design. Vitruvius explains how, thanks to the missile launcher's design, he defined a functional theory of proportions which he then transposed into the architectural discipline.

The architect's portrait presented in Vitruvius' oeuvre is both that of a designer of defensive constructions and an inventor of machines to destroy them. This double game would also be played in World War II. However, the dialectic between the defensive and offensive impact would involve vastly different scales, given all the technical revolutions that had taken place since the invention of gunpowder and particularly since the invention of aerial warfare.

It is since World War II that Claude Parent has recognized the break: the scale and intensity of the conflict and the damage caused by it have generated a syndrome that, accelerated by the propaganda operated by the new media during the Cold War, has been transmitted until today, branching out in different directions and semantic fields: paranoia. A pathology aroused by the hovering of an invisible and silent threat as much as densely present and rooted in everyday life: nuclear war.[3] What could be considered one of the

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1. Cache, B., (2011), "Vitruvius Machinator Terminator", in Projectiles: Architecture Words 6, Architectural Association London, p. 120.
2. *De architectura* (*On architecture*, published as *Ten Books on Architecture*) is a treatise on architecture written by the Roman architect and military engineer Marcus Vitruvius Pollio around 15 BC.
3. Recently has been produced the document: ICAN (February 2022), *No Place To Hide: Nuclear Weapons and The Collapse of Health Care Systems*, a report produced by The International Campaign to Abolish Nuclear Weapons (ICAN) evaluates the potential terrifying consequences of a Nuclear Explosion, examining the first hours of a humanitarian catastrophe that would last generations, within ten cities: Washington DC, London, Paris, Berlin, Moscow, Bejing, Pyongyang, Islamabad, New Delhi, and Tel Aviv. Reporting, fur-

most widespread and contemporary post-traumatic syndromes is typically defined in psychiatry as a psychosis characterized by the evolution of a chronic delirium that, unlike the irrational connotation of other types of syndromes, results in a delusional behavior regulated by its internal logic, then developed in a lucid and systematized manner. Paranoia is not associated with hallucinations nor involves the deterioration of psychic functions. While generating a rift within the individual and unfolding a radical change in his normal conduct, it is substantiated in a rhythmic and controlled process, characterized by the maniacal repetition, even obsessive-compulsive, of actions, postures, movements, rituals, and procedures. A paranoid process that has also been transferred to the field of art and architecture. Salvador Dalì, in the early 1930s, defined his artistic method as a paranoid-critical method, describing it in these terms:

> Everyone, especially in America, wants to know the secret method of my success. This method exists. It is called the paranoid-critical method. For over thirty years, I have invented and applied it successfully, although I do not yet know what it consists of. Roughly speaking, it would be the most rigorous arrangement of the most delusional phenomena and materials, with the intention of making my most obsessively dangerous ideas tangible and creative. This method works only on the condition of having a sweet engine of divine origin, a living nucleus, and a Gala. Moreover, there is only one.[4]

The same Koolhaas, taking up and quoting Dali, will intuit and recognize the application of paranoid disorder to architectural practice as a generative and creative act, stating:

> paranoid-critical activity is the fabrication of evidence of unprovable speculations and the subsequent grafting of this evidence on the world, so that a 'false' fact takes its 'real' facts. These falsehoods relate to the real world as spies to a given society: the more conventional and unnoted their existence, the better they can devote themselves to that society's destruction. [...] The essence of paranoia is this intense — if distorted — relationship with the real world: 'The reality of the external world is used for illustration and proof ... to serve the reality of our mind...' Paranoia is a shock of recognition that never ends.[5]

Paranoia is, therefore, a shock related to recognizing, marking an element, an entity, or a form and reproducing it obsessively in series, to untangle, on the one hand, the dense and tight system of criticality that it generates and is able to define, on the other hand, a general picture, a reference framework within which to attempt to confine it.

Since World War II, it is possible to trace these same processes of obsessive schematization-like, reproduction, and rehash — almost an application of the same paranoiac-critical method— around the bunker archetype. It has been decomposed and reassembled in a sequence of delirious and unthinkable combinations, in a progressive alteration that completely modified its meaning or extracted some semantic passages applying them to

thermore, the nuclear weapons possessed by each of them (Germany is the only not nuclear-armed state) and their medical system.
4. Dalì, S. (2007 [1963]), *Diary of a genius*, Solar Books, p. 24.
5. Koolhaas, R. (1994), *Delirious New York*, Random House, pp.200-201.

other fields to test new devices. The common thread of this process can be found in some elements that, although modified in their internal balances, embody and describe all the fears and perceptions of precariousness that will determine critical shifts within the architectural discipline in this era. The first concerns the importance of the constructive element of the wall, which gradually replaces the roof, marking a first significant fracture in the symbolic imagery and in the most functionally essential issues: the human's refuge is no longer traced back to the hut, but rather to the marked perimeter, to the clear separation, to the confinement. A condition generated during World War II, whose fighting dynamics, raised from the ground to the sky and made quick and invisible, have determined a rapid and specialized spread of camouflage: in this period, Dalì defined Himself as the specialist in invisible images, stating:

> Just as the camouflage of 1914 was Cubist and Picasso, so the camouflage of 1942 should be Surrealist and Dadaist' claiming that his 'most pressing project was to perfect for the United Nations a system of camouflage based on my radical theory of invisibility.'[6]

Thus, in this advanced invisibility search, the roofs of buildings are concealed, disappearing in some cases from the same maps. The war is now played on disorientation, the construction of a fake trace, and deception. The ephemeral, the construction of actual temporary apparatuses thus returns to its traditional escamotage role to cover reality, now tied, however, to the urgent question of survival.[7] Its deployment builds an illusory and distorted reality capable of disorienting an enemy who, operating from the sky, is deceived by the aerial view of these landscapes that hybridize reality and fiction.

To this element, already in itself significant and representative of a historical phase that, despite these strategies effectively engineered, will return urban fabrics and pieces of landscape completely erased and annihilated by the conflict, is added the fact that, during the Cold War, two significant figures emerged: the astronaut and the aquanaut.[8] As a testimony to that irreducible *hybris* of humans, pushing them, once again, to overpass the limits of space until then explored. These figures, in addition to generating an extreme fascination that will quickly introduce them into the collective imagination, trigger intense experimentation in the architectural field, leading to a series of new hybridizations that,

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6. Dalì, S. (1942), *Total Camouflage for the Total War*, in Cohen,J-L. (2011), *Architecture in Uniform: Designing and Building for the Second World War*, CCA and Hazan, p.192
7. In particular, during World War II, as J-L. Cohen underlines within his *Architecture in Uniform* (Ibid.) two strategies were developed: against the daily-light raids the camouflage, and for night raids the blackout — in certain respects the most extreme attempt at invisibility. Regarding the camouflage practice, a significant example was the creation of a faux Paris to deceive the zeppelins that bombarded the French capital at night. In an area to the northwest of Paris, the electrical engineer Fernando Jacopozzi laid out a network of fake streets and squares and fake railway stations meant to recreate Paris. To further deepen this topic, see Vauthier's article *Le Danger Aérien* published in 1920 on L'illustration, where he devoted several pages to the Jacopozzi project.
8. Lydia Kallipoliti draws an exciting reflection on this point within the essay: Kallipoliti, L., "Masters and Slaves," in Axel, N., Colomina, B., Hirsch, N., Vidokle, A., Wigley, M., (2018), *Superhumanity: Design of the Self*, e-flux Architecture, University of Minnesota Press, and The Graham Foundation, p.114.

with the bunker, share the conditions of isolation and alienation from the external context. Referring to the bunker as the massive and seemingly motionless object of the monolith, Virilio[9] builds, starting from it, the "aesthetics of disappearance," which moves from a fundamental observation: the absence of bunker foundations. Instead, these structures resting on platform, revealing themselves as objects with relative autonomy, suspended and "floating" in the ground, in a condition that allows them to move with it when it is upset by the bombing, thereby reducing potential structural damage. Without foundations, without roots, these objects can disappear, change, and turn into something else: an inverted bunker is no longer a bunker, "disappears like a bunker and continues to live like another."[10] Disappearance manifests through camouflage, exhumation, inclination, sinking, and diversion, operations that act not only on the container but also on the content, around which the aesthetics of what is hidden, secret, inextricably condenses.[11]

This absence of foundations — which defines the bunker as occult and floating box, a sort of fortified capsule — combined with the hermeticism and fascination generated by the mystery of its contents and the widespread paranoia of this period, determines the formation of other devices, much more cynical and devious, that hybridizing and combining in successive and obsessive alterations the airtight space organizations of the bunker, giving rise to a constellation of structures aimed at the study of the human mind and the prolongation of a conflict to be played on a more subtle, psychological plane. Thus the bunker, from human's refuge, is distorted in the space-laboratory within which it is studied and subjected to much more cynical operations, revealing the distorted character of this "new architecture based no longer on the physical proportions of man, but on his psychic faculties."[12] The confinement and containment strategy continues to characterize its essence but varies the meaning and consistency of its content, interpreted as a space that hides, in its darkest recesses, all the fears and phobias of the insistent effort to define a space that can offer protection and shelter.

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9. The exhibition "Bunker archéologie" is set up at the headquarters of the Musée des Arts Décoratifs, in Paris, between 10 December 1975 and 29 February 1976. The promoter is François Mathey, who will invite Paul Virilio to expose the reflections and research on the bunker he has been developing since 1958.
10. Virilio, P. (1989), *Esthétique de la disparition*, Paris: Editions Galilée, p.53
11. A reference of particular importance is the text: Bachelard, G. (1957), *La poétique de l'espace*, Paris: Les Presses Universitaires de France, in which the author argues that imagination, before rational knowledge, includes the content of enclosed spaces, inaccessible, the content of which already exists because it has been imagined. In describing closets, chests, and closed drawers, Bachelard writes: "for us, whose task is to describe what we imagine before it is known, what we dream before verifying it, all the closets are full." (ivi., p.141).
12. P. Virilio, "Bunker archéologie," in *Architecture Principe*, n.7 (October, 1966), p.8.

TECHNOLOGICAL SHELTERS: BETWEEN HYPERINTERIORIZATION AND ALIENATION

The structure of the bunker results from a constant and progressive operation of manipulation, distortion, repetition, and evolution that synthesizes and condenses all the paranoia that has accompanied humans throughout history, pushing them to test and refine the design of a device where to find shelter in the course of increasingly violent and deadly conflicts.

This archetype has recorded since the Cold War a process of semantic hybridization that has determined its transposition into other areas, following an evolutionary trajectory articulated on two distinct levels. Connected, on the one hand, to the "bunker mentality," and therefore to the persistent search for hermetic security that has always characterized it, and, on the other, its conversion into a device perpetuating the constant and invisible warfare in which we are immersed.

During the Cold War, it developed and spread anxiety and paranoia heavily about three main dangers — "Atomic Danger," "the communist menace," and "space visitors"[1] — were threatening humans from the exterior.

Basements and bunkers became the architectonic solutions provided by the American government to diminish social panic, determining extreme experimentation within the design field, in which the domestic space is reinterpreted and shaped on the strategy of hyperinteriorization that, grafted on a solid correspondence and connection between living spaces and military discipline — which is reflected on a spatial array of the domestic dimension that maximizes protection, autonomy, and control — determines an intense fascination with dark space, dark, hypogeal and hidden.

If the design of domestic environments is revolutionized, the same happens for the territory and the landscape, entirely transformed by the spread of this paranoid feeling, which in America alone, under the guidance of Kennedy, is proposed "a budget Increase of $3.23 billion for the military and $207 million for civil defense, and introduced the idea of the

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1. Beatriz Colomina describes in this terms the three main dangers affecting Americans in the 1950s. Drawing the image of the gender conflict that was taking place within the new postwar houses, she wrote: "the new male, at once unsuited for monogamous family life and scientifically aware of the radiating dangers on the exterior, stepped back into the house as woman's strongest rival — rather than a complementary partner — promoting a new gender segregation within the domestic realm." In Colomina, B. (2003), *Cold War Hothouses: Inventing Postwar Culture From Cockpit to Playboy*, Princeton Architectural Press, p.220.

fallout shelter to prepare for possible Soviet attack."[2]

Paranoia, incessantly propagated thanks to the mass media emerging in those years, enters everyday life, together with the notion of nuclear warfare, pushing the population to invest all their efforts in realizing a new American dream: to build their own bomb shelter. The language and the military organization penetrate every aspect of life, and the single-family home becomes the main outpost, the first position from which this new invisible war is fought. As Beatriz Colomina states, in fact:

> the house itself was defending the nation. The housewife had become a soldier on the home front; the kitchen, the command post from where she not only controlled the domain of her living space but was purported to defend the nation. [...] The organization of the domestic space during the Cold War years and even the language used to describe it echo this movement of military logic into the private sphere.[3]

The echo of warfare is not limited to the definition of the spatial organization of the house. However, it produces a heavy infrastructure of the territory, originating a constellation of domestic appendages, the family shelters, which will occupy the private gardens of each family. An example is the Kennedy administration's implementation of the National Fallout Shelter Survey.[4] In order to ensure the safety of every city in the event of potential nuclear fallout, many architecture students are recruited to verify the efficiency of these devices dispersed in the territory, whose diffusion produced, in 1967, "space for some 155 million people, in 172,000 structures throughout the country, had been located and an additional two million spaces were found through a Smaller Structures Survey."[5] The same acceleration in the heavy infrastructure of the territory through the construction of these shelters is recorded in Switzerland, where, since the 1960s, millions of single-family scale nuclear shelters have been produced, giving rise to a complex system of interstitial spaces that connect the intimate and private dimension of the house with different milieus and regimes. If, as Virilio had stated during the drafting of his *Bunker Archeology*:

> The monolith does not aim to survive down through the centuries; the thickness of its walls translates only the probably power of impact in the instant of assault. The cohesion of the material corresponds here to the immateriality of the new war environment.[6]

A series of pervasive operations mark the transition to a post-apocalyptic era, where the monolith, a symbol of the end of an era and, at the same time, of the inauguration of a new one, is obsessively repeated, stratifying itself in the form of isolation and protection cells whose scale varies from that of the individual to the more expanded one designed and

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2. Kenneth, R., (2001), *One Nation Underground: The Fallout Shelter in America*, New York: New York University Press, p. 2.

3. Colomina, B. (2003), *Cold War Hothouses: Inventing Postwar Culture From Cockpit to Playboy*, Princeton Architectural Press, p.14.

4. Kenneth, R., (2001), *One Nation Underground: The Fallout Shelter in America*, New York: New York University Press, p.75.

5. Ibidem.

6. Virilio, P. (1994 [1975]), *Bunker Archeology*, Princeton Architectural Press, p.19.

defined for entire cities. A series of pervasive operations mark the transition to a post-apocalyptic era, where the monolith, a symbol of the end of an era and, at the same time, of the inauguration of a new one, is obsessively repeated, stratifying itself in the form of isolation and protection cells whose scale varies from that of the individual to the more expanded one designed and defined for entire cities. Urban fabrics are thus colonized by a system of appendices that represent interstitial apparitions of a war made invisible and pervasive. The architecture itself becomes a testimony of this paranoia in the process of transmutation and metamorphosis that will decree a thickening of those functional, formal, and symbolic bonds that once linked it to war, relationships thickened and distorted thanks to technological advancement: "wherever landscapes are rapidly transformed by new technologies or ideologies, there is war."[7]

The fascination produced by the bunker, its rediscovery, and the unveiling of its internal mechanisms then begin to be distorted and manipulated to generate a series of spaces that will produce a progressive expulsion of the human body from the architecture itself, an exiting favored by the same technology that had allowed the definition of these spaces. Thus, if "for beauty is nothing but the beginning of terror which we are barely able to endure, and it amazes us so, because it serenely disdains to destroy us,"[8] more negative and dangerous aspects emerge from an increasingly intrusive technological permeation.

The first demonstration of this widespread paranoia and the pervasion within the intimate and private space of the house of military and militarizing technology is a device that, starting from the 1960s, began to spread in a capillary form within the domestic spaces: the "panic room." A spatial diaphragm integrated within the house but simultaneously convertible into a wholly independent and airtight space, able to protect the owner from possible intrusions, domestic invasions, or external attacks that might threaten the intimate space of domesticity. The panic rooms count an ancient genealogy — starting from the treasury room of the Egyptian pyramids, passing through the "castle keep" of the feudal lords and the "priest holes" where the 17th-century priests found shelter from the persecutions of Catholics in England — which has branched out into the contemporary. In the second after the war, these devices began to spread more and more, declining according to different materialities: from the most expensive, reinforced with sheets of steel or fiberglass to concrete, to the "boxes" made with grids of steel bars (such as those employed by the US State Department). Configured as housing capsules structurally independent from the domestic environment in which they are housed, they are technological environments equipped with external ventilation systems and communication equipment to enable the volunteer prisoner to contact external security. These diaphragms represent real military garrisons within the domestic space: they must be periodically subjected to verification and maintenance to ensure the constant presence of essential supplies of emergency and survival items. Furthermore, as well as the bunkers described by Virilio, they adopt a

7. Woods, L., (1997), *Radical Reconstruction*, New York: Princeton University Press, p. 23.
8. Rilke, R.M. (1923), *Duineser Elegien*, Leipzig: Im Insel-Verlag, First elegy. With these words, in the exhibition organized in 1975 at the Musée des Arts Décoratifs, in Paris, Virilio describes the bunker.

camouflage strategy, hiding behind many domestic functions: cabinets, sliding bookcases, and fireplaces. Although this device can evoke, at first glance, the atmosphere of a mystery novel, in reality, it is pervasive and, in contexts characterized by a high level of risk, it is prescribed compulsorily by the State. This is the case in Israel, where since 1992, a law obliges building constructors to realize shelters as integrated rooms within every residential unit. The introduction of this room, generally called *Mamad*[9] — standing for "apartment's protected space" — was suggested already in 1963 by Colonel Eli Ratzon, who stated:

> It is not mere eventuality, let alone abundance of resources, which lead us to emphasize... the question of shelter and refuge. There is no other country like ours, which has been for years in a constant state of alertness (and may well remain in this condition for many years to come). Likewise, there is almost no other country which is as reduced and narrow in its surface, surrounded by enemies, and exposed throughout most of its land area to bombardment and shelling, with such a small alert [sic], and all of it is essentially a "front" and a "battlefield." [Therefore], years ago we have already reached the conclusion that every building must contain a bomb shelter.[10]

With these two projects emerges the domestication of security spaces and starting a strict and dangerous relationship between domestic safety and military control. Finally, to emphasize even more explicitly the connection between these two spheres is the production of manuals that report procedures to be followed in case of concretization of a threat, escape plans, and behaviors to be held in a sort of do-it-yourself survival course.

Another interesting case is the presentation of the *Underground World Home*, on the occasion of the New York World's Fair of 1964-1965 focused on the theme *Peace Through Understanding* and was dedicated to *Man's Achievement on a Shrinking Globe in an Expanding Universe*. The Flushing Meadows is colonized by a constellation of devices and architectures that concentrated and concretized the desires and fears of a society that recently came out from the war arming itself with radical and extreme mechanization of the domestic space — not by chance, the Fair was described at the public through the following words "a world computerized to the Teeth, a push-button world"[11] — whose interior was highly disturbed and rigidly controlled. In this context is inserted the *Underground Home*, a traditional Suburban ranch house presented completely buried, pretending to provide, through this slippage underground, protection from possible new threats of nuclear fallout. This house, recording its roots in the paranoia and nervousness of the cold war, was the result of a process triggered years before, in the late 1950s, when the city of Plainview, Texas, commissioned the construction of a prototype bomb shelter, intending to develop an affordable way for its citizens to survive a nuclear blast based on the fallout shelter specifications given by the Department of Civil Defense. The same designer plays a

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9. Bird-David, N., and Shapiro, M., "Domesticating Spaces of Security in Israel," in Low, S. and Maguire, M., (2019), *Spaces of Security. Ethnographies of Securityscapes, Surveillance, and Control*, NYU Press.
10. Ratzon, E., (1963), *Shelter and Refuge: Security Construction*, Tel Aviv: Maarachot IDF, p.15.
11. Colomina, B., "Domesticity At War" in Assemblage, No. 16 (Dec., 1991), pp. 14-41, p.17. The author published later the book: Colomina, B., (2007), *Domesticity At War,* The MIT Press.

fundamental role in this context: Jay Swayze was a local builder, but furthermore, a Texan military instructor who stated:

> "I saw the merit of utilizing the earth as protection against radioactive fallout. As a former military instructor in chemical warfare, I knew that the three ways man could destroy himself were nuclear fission, nerve gas, or germ warfare. [...] The nuclear age was upon us, and long-range planning was necessary to protect humanity from possible ill effects."[12]

After winning the contract, he started to define this prototype by working on the combination of a typical military shelter and a traditional ranch house, defining the lines of what would later become one of his greater obsessions: an austere 1,8 x 2,4 meters bunker designed to house six inhabitants until it was safe to return to the surface. Swayze, who wanted to develop an underground house that could conjugate safeness to comfort and style, was intrigued by the possibilities of living in subterranean housing, and for this reason, he tested his theory himself by building a new home for his family – one far larger than the 4,5 square meters bomb shelter – where he moved in with his wife and two daughters. He started, thus, to work obsessively on this project for underground life, willing to convince the rest of the world to move underground. After the first failures, he looked at the New York Fair as the final opportunity to show his project to the millions of expected visitors and, obviously, to trigger a capillary selling process for his units. In Swayze's sales strategy, the buried operation is offset by the opportunity to enjoy two advantages: "a constant temperature" and "security from natural or man-made hazards."[13]

Another essential element on which the former soldier will set his tactics is linked to the relationship between internal and external and the visual issue. Admitting that the absence of a direct visual relationship with the environment could have psychological repercussions solves the problem by using a device that entertained the living rooms of the wealthy European bourgeoisie during the nineteenth century: the panorama. He says that he thought, after looking out his window, that "an artist could do it a thousand times better," in this way, the windows are replaced by murals that imitate different landscapes, allowing the underground inhabitants the possibility of changing their sight when wished. The inside-outside relationship is not limited to introducing these views but managed through a spatial articulation that defines, within the underground space, a space outside the house and inside it. The process of hyperinteriorization is concretized in this way in all its paradoxical and paranoid obsession: the very spaces of the courtyard and the garden are reproduced in a hermetic and internalized version, and the outside is completely expelled from the house, an element that Swayze himself will value in his biography, entitled: *Underground Gardens and Homes: The best of two worlds, above and below.*[14] An isolated and protected house represents the first level of alienation, of spatio-temporal distortion where the interior is not distinguishable from the external, of a space that no longer allows

12. Swayze, J. (1980), *Underground Gardens & Homes: The best of two Worlds, Above and Below*, Hereford, Texas: Geobuilding Systems, p.19.
13. Ivi p.20.
14. Ibidem.

any natural temporal orientation but is thoroughly modulated, according to the needs of its user, through technology. Another figure returns here whose reappearance returns the extreme artificiality of the operation: the dummy, jack-in-the-box, which is used as the model inhabitant in the images accompanying this architecture's explanatory brochures.

The widespread and entrenched feeling of panic inherited from World War II that as a ghost will continue to cast its shadow up to our contemporaneity, hybridizing it with the robes of the atomic bomb is combined with the advances obtained in the field of psychology and neurology during the sixties, as well as with technology, which as will be seen in the next paragraph will play a fundamental role. During the Cold War, the archetype of the bunker began to hybridize with other architectures and vehicles extremely innovative inaugurated in this period and built on the measure of two very particular figures: the astronaut and the aquanaut, which marked a further acceleration in the process of colonization and occupation of uncharted territories increasingly extreme, such as space or the most hidden seabed.

> An augmented and engineered type of man became of larger cultural interest, portraying a new universal human subject. Unlike the Vitruvian Man or Le Corbusier's Modulor that idealized a cosmic subject representative of humanity as a whole [...] The augmented man, with replicate bionic components and mechanized parts, was not merely preparing for a future of space exploration, but an active attempt to design exoskeletal armor for war.[15]

Two figures fit into that sequence of broken and fragmented entities that animated the progressive articulation of the relationship between body, trauma, and architecture. A whole sequence of Frankensteinian semblance figures started to succeed in hybridization between the human body and machine. Many of these were designed by the engineer of General Electric, Ralph Mosher: the *Yes Man* (1956), the *Handyman* (1958), the *Pediculator* (1962), the *Walking Truck* (1969), and the *HardiMan* (1965-1971). A succession of potentiated artificial humans, a series in which the very names of these anthropomorphic machines underline the additional feature and capacity they were bringing with them. A sequence that reached its peak right with the master-slave device. If robots were introduced to make it easier for man to do the heaviest jobs, thus leaving more free time to his original, this relationship originates a dystopian narrative in which artificial intelligence, surpassing human intelligence, starts to take over.

The emergence of these hybrid assemblages, coupled with the simultaneous inauguration of new studies in the field of behavioral psychology — focused on the evaluation and investigation of these new technologically advanced individuals, pushed to overstep their limits,[16] could develop in extraneous and extreme situations — combines with the

15. Kallipoliti, L., "Masters and Slaves," in Axel, N., Colomina, B., Hirsch, N., Vidokle, A., Wigley, M., (2018), *Superhumanity: Design of the Self*, e-flux Architecture, University of Minnesota Press, and The Graham Foundation, p.114.
16. At this time, individuals' behaviors and sensory reactions in extraneous and extreme situations began to be investigated, removed from their daily context and introduced within devices that radically limited their external perception. A combination of different elements characterized this study: the destabiliza-
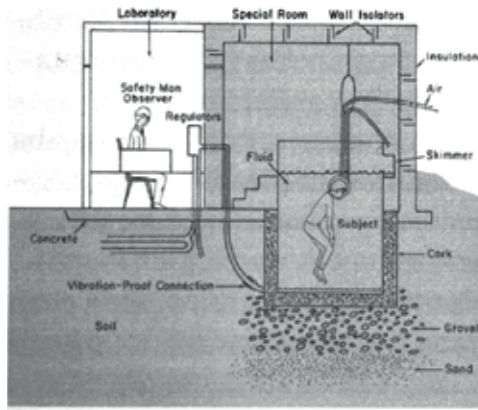
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Sensory Deprivation Room, section from the Zubak, J, (1969) Sensory Deprivation: Fifteen Years of Research. New York: Meredith Corporation, 1969.

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John Zubek and an assistant prepare a special dome used in sensory deprivation experiments at his University of Manitoba laboratory in 1959.

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Submiting to immobilization in Zubek's lab. Few could endure more than twelve hours of complete immobility. DAVID PORTIGAL AND CO., COURTESY OF UNIVERSITY OF MANITOBA ARCHIVES
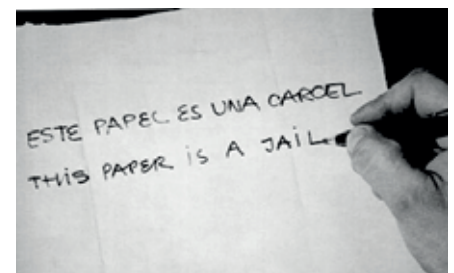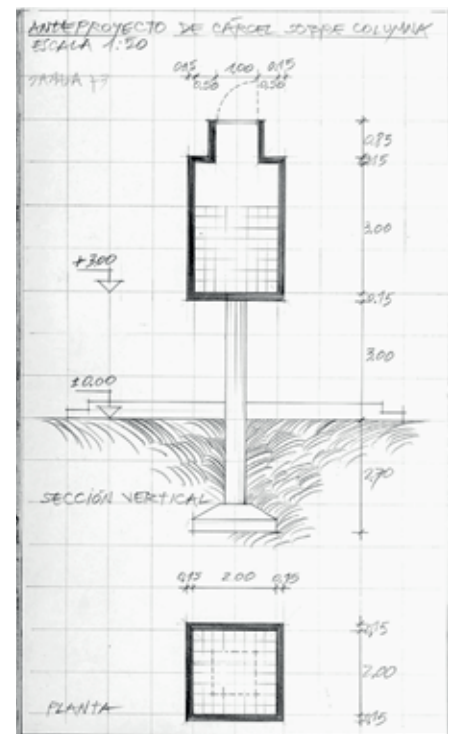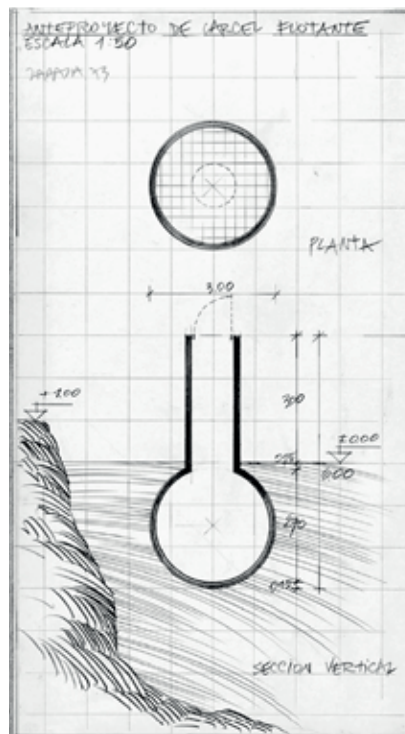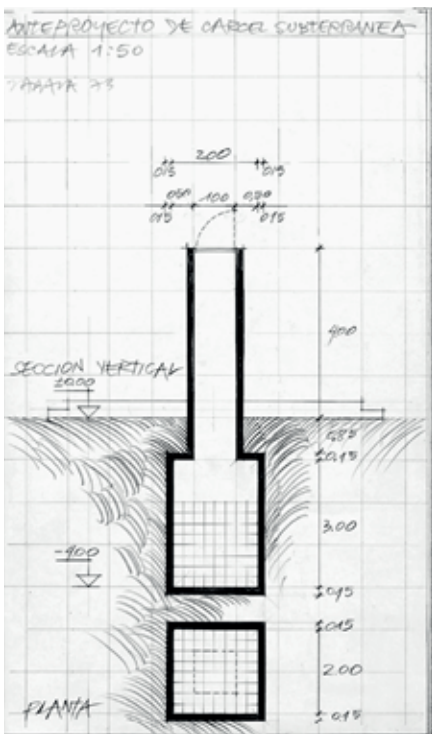
Zabala, H. (1973-74) *Anteproyectos de arquitectura carcelarias.*
From the left:
Anteproyectos de carcel subterranea;
Anteproyectos de carcel flotante,
Anteproyectos de carcel sobre columna.

widespread panic sensation characterizing that period, giving rise to some experiments in the architectural field that develop and extremize those that, during the war, were required and necessary conditions: isolation and total separation from the outside. A true cognitive revolution is emerging, prompting the United States to develop new studies on individual and collective perception.[17]

This is how the isolation rooms originate. Regarding architectural spatial organization, they are configured as windows-free rooms, in which a bed is hardly placed and equipped with a unidirectional mirror from which the psychologist realizes his observations. If in the late nineteenth century, Charcot involved his patients directly and physically within the hypnotic practice, generating a performative space that integrated the bodies and movements of patients and doctors, later joined by a consistent public, now the study of human psychology is detached from the patient. A first deviation occurs in a condition reminiscent of those chambers used to handle the dangerous chemicals used a few years before scientists developed nuclear bombs, the *Master-Slave Manipulator Rooms*.[18] Thus that process of the extreme fragmentation of the human body and search for a possible rediscovered unity, of an even artificial organicity, resulted in the 1950s in the master-slave device in which the human body, in the role of "master," is finally freed from all possible injuries and extremely tiring jobs, which are delegated to the "slave," or mechanical replication, the machine's armor, designed to exponentially increase human capabilities, to handle materials that otherwise would not be workable. The persistence of the schizophrenic frustration of the man resurfaces, driven to search for new ways to increase their abilities and power by an innate and deeply rooted lack of completeness.

The cell of forced isolation hosts the same process, to change is the object to manipulate and conduct research on: the human mind, the human body. These sensory deprivation rooms had a forced ventilation system housed in the roof and homogeneous artificial lighting. Electrodes were placed on the patient's body to record his brain activity, and his eyes were covered with a translucent material that, although allowing him to perceive the bright

tion produced by the new scientific discoveries — especially the advances in the field of relativity with the consequent renewal of the observer's position —, the first experiments of psychoactive substances, and, again, the first attempts to conceive spaces that could support man in the exploration of space — with the consequent study of the effects of space-time disorientation reported by astronauts at the Musée des Arts Décoratifs, in Paris, where Virilio describes the bunker.

17. Schuld, D., "Lost in Space. Consciousness and experiment in the workof Irwin and Turell", in Frigg, R. and Hunter, M., (2010), *Beyond Mimesis and Convention. Representation in Art and Sciences*, London: Springer, p.233.

18. Although the term was already widely used since the 1950s to refer to artificial anthropomorphic manipulation systems, it was in 1974 that it was patented by NASA (Patent #4046262.4). It is interesting to notice that Diller and Scofidio realized a homonymous installation in 1999, at the Cartier Foundation, as part of the exhibition "1 Monde Réel," whose aim was to display Rolf Fehlbaum's collection of toy robots. Reasoning on the robot's common interpretation as a surrogate of the human body and extremizing the dystopic fear related to the possibility that the robot could invert the master-slave relationship, the installation design consisted of a giant glass vitrine and a glass enveloped of the gallery. Within this element, a non-stop robots parade took place. The spectators' direct view of these walking machines is intermittently interrupted by an airport scanning device that substitutes it with a scanned image, evoking the problematic issue of the micro–surveillance system.

condition of the environment in which he was immersed, prevented him from recognizing the shape of the room. In addition, the patient was constrained to a state of absolute immobility, with legs and feet immobilized and placed inside cardboard tubes. At the height of the patient's ear, a microphone was located, and a homogeneous background ambient noise was also created, automatically generated, and intended to mask any sound coming from the body.

A condition of complete isolation that could also be reproduced by the cylindrical shape and made of metal or, again, in small rooms made of wood, also recognized as immobilization boxes. The most severe experiments were conducted in microarchitectures that allowed this experience to be carried out in a hydrodynamic environment only for concise periods. In this case, the spatial organization consisted of two environments: a control cabin and the isolation chamber. The first, without windows, was where the researcher had to focus on the stimuli and impulses from the tester. The latter is located in a tiny room equipped with a water tank in which it is immersed in a vertical position, floating at a temperature of 34 degrees, in water that is slowly renewed to produce no effect on the subject.

We are witnessing here an essential distortion of what had been designed to allow a better condition of life for human. To define its purpose, one could paradoxically use the same words Swayze wrote in his autobiography to describe the underground shelter he developed:

> the clamor of traffic, jets, noisy neighbors — all are gone with a turn of a switch and you are free to rest in silence, or experience for the first time the full range of sensations that today's sensitive stereo systems are able to produce.[19]

Also in this case, the device maintains a constant internal temperature, ensures a complete absence of stimuli from the outside, and the human can relax quietly inside, accompanied in his float inside a tub, by a background ambient noise that permanently eliminates any possible disturbance and interference.

The tester only wears a helmet that allows him to breathe, receiving air through a tube connected to the outside. The entire insulation cell is bordered by an air chamber that allows maximum acoustic insulation. Such extreme experiments, initially conducted to study the impact of daily work and the resulting stress to which the new lifestyle was subjecting people, will reveal later to have been funded by the military program. Through these tests, the government wanted, during the Cold War, to study and understand how to control human thought. Mind repercussions and stimuli absence also introduce relationships with other projects, in which the condition of isolation is conceived as the entrance of an "other world."[20]

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19. *The Underground Home: New York World's Fair 1964-1965*, advertising brochure (Texas:Underground World Home Corporation, n.d.).
20. Analyzing the structures and microcells used to carry out these tests, we can see paradoxical parallelism with some of the living capsules that radical architects were developing to experiment with new life

These are immersive and alienating experiences, which can be achieved through the use of different *manoeuvres* depending on the type of distortion and the function that these spaces assume, thus defining a further slipping: as Beatriz Colomina observes reflecting on the Underground House, the fundamental logic of the bunker and the shelter is no longer to be underground but to define a parallel dimension: "heterotopic fiction, a space out of space, where it was possible to play out the blurring of the traditional division between public and private, between outside and inside." Following this logic, Preciado then defines "bunker" as the bed of Playboy founder Hugh Hefner in which "the chemical geography of the bed had folded onto itself, producing a thick and total narcotic interiority, a psychedelic bunker."[21] Thus emerges the fundamental concept of artificial immersion, understood as an artificial environmental condition, obtained thanks to the use of technologies, within which man is:

> immersion means to engage with one's immersion in artificial environments, assisted by technical equipment, for instance, a virtual reality helmet or an electronic visor. Through these technologies, humans are finally taken seriously as beings for whom it is natural to immerse themselves – and not only in water, the 'wet element,' but in elements and environments generally. The method has been common for some time, for instance, in the context of pilots' training in flight simulators; however, the modern problem of hallucination management and immersive change was already anticipated in nineteenth-century panoramas. A core aspect of artificial immersion, as a phenomenon, is the potential replacement of whole environments – not only of the images, usually framed, one looks at in galleries. Immersion as a method unframes images and vistas, dissolving the boundaries with their environment. [...] Architecture is, above all, the design of immersions.[22]

Architecture is therefore defined as the design of immersion, the definition of artificial environments that determine a detachment of humans concerning the natural environment. If in the case of the *Underground House*, this purpose was justified by the atomic threat, these examples show how this condition has been exploited and built to define environments capable of alienating human beings from the outside, operating through two different strategies.

The first operation proceeds by annihilating every external perception and stimulus. The detachment is total, operating through subtraction. Human is inside an environment devoid of stimuli, a condition that allows the study of brain processes, on the one hand — as in the

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forms in those years. Among other things, they are influenced by new emerging figures and, in particular, driven by a vast impulse towards mobility and dynamism, which testifies to the fact that space was also looked at in that period. Another important concept related to the configuration of these cells is that of "coisolation," formulated by Peter Sloterdijk in direct connection with the broader definition of "anthropo-technology," simultaneously threatening and developmental. The concept of coisolation describes, through the image of the bubble (deriving from the trilogy Spheres, written between 1998 and 2004), the individual sphere of each human, defining an isolation condition that opens up multiple occasions of interaction with others through the adjacencies.

21. Preciado, B., (2019), *Pornotopia. An Essay on Playboy's Architecture and Biopolitics*, New York: Zone Books, p.158.

22. Sloderijk, P. (2011), "Architecture as an Art of Immersion", in Interstices: Journal of Architecture and Related Arts, n.12, Unsettled Containers (originally published as Sloterdijk, P. (2006). Architektur als Immersionskunst, Arch+, n. 178 (June, pp. 58-63), p.105.

case of sensory deprivation cabins — and on the other, is used as a military strategy and tactic for the weakening of the mind, within the meticulously conjectured facilities to carry out interrogations, as can be inferred from one of the reports issued by the CIA, *Human Resource Exploitation Training Manual*[23] published just two decades after the experiments developed by John Zubek. By explaining already from the title the function of these austere spaces, consisting of the exploitation of human resources, this document contains guidelines for the creation of environments in which to carry out interrogations, the so-called "questioning rooms," which are described as follows:

> The 'questioning' room is the battlefield upon which the 'questioner' and the subject meet. However, the 'questioner' has the advantage in that he has total control over the subject and his environment.[...] Here is a basic list of desired equipment and a preferred arrangement of the room and its furniture:
>
> > a. should be at least 3 x 4 meters with only one entrance;
> > b. no windows, or windows that can be completely blacked out;
> > c. should be soundproofed and carpeted;
> > d. should be free of distractions, with bare walls, the suggested
> >   color scheme is an off-white for the entire room.[24]

The interrogation cell is defined as an airtight environment, possibly without windows and isolated from any outside sound, an environment free from any distraction to the eyes, possibly painted white, where it is possible to generate a condition of estrangement and despair such as to make the prisoner confess.

Suppose some elements of the bunker, such as the hermetic closure to the outside, and the rigid shear of communication with it, are extremized and reinterpreted within these experiments, which see it reproduced on the scale of an environment for a single person and will serve to conduct operations far more cynical and violent than the initial attitude and purpose of this architectural archetype. In that case, other projects use this architectural figure to express a malaise or, still, to develop a critical narrative of the contemporary situation, elaborating projects intended to remain on paper but that will be imprinted in the collective imagination by incorporating the register of social denunciation. The bunker, the shelter, becomes an inhospitable, violent space, not habitable by humans. A project in this sense is the series entitled *Anteproyectos de carceles* by Horacio Zabala. Trained as an architect and then embarked on the artistic profession, his series concretizes the paranoia against the dictatorial military regimes that were taking hold in South America in those years. His diagrams are critically called anti projects precisely to take distance from the coding system used by this discipline and to develop a reflection on the relationship between space, freedom, and its counterpart, imprisonment. Zabala represents a system of repressive spaces, intertwining with this series of architecture a reflection on the concept of interstitial freedom, coined by one of his masters, Abraham Morales, who connected the conception of creative behavior with the necessary liberation from the dominant systems.

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23. CIA (Central Intelligence Agency,), *Human Resource Exploitation Training Manual*, 8 June 1988.
24. Ivi pp.E3-E4.

Zabala establishes an interesting correlation between the topology of space, the wall interpreted in this case with the dual and existential value of protective barrier, and the generative device of interstitial space and socio-cultural mechanisms. Only within these interstitial margins of these confined spaces obtained through the adoption of a model that expresses the total repression of every human freedom can it derive a sheltered and protected margin where to experience liberty. In particular, the series presented by Zabala, on the occasion of the homonymous exhibition held at the Centro de Arte y Comunicacion (CAYC)[25] in Buenos Aires, consists of three micro-architectures, each defining an interstitial margin proper to accommodate one person: on a column, floating, and sub-planar. Each table consists of a section and a plan, and each explains the subject is imprisoned there, all reserved for artists. Considered a work of strong "ideological conceptualism,"[26] Zabala himself defined this series of drawings:

> Since the architectural plans [...] are understood at a medium or massive level and commonly do not form part of the aesthetic language — they are utilitarian —, I tried to turn them into a conceptual proposal where, somehow, the participant's gaze — mental spectator — is not only aesthetic but also reflective about the immediate reality of Latin America.[27]

A similar trend is observed in Spain during the same period. Also, in this case, it is an artist with a background in architecture, Medina, who gives life to another series entitled *Premature Architectures*. Spanning from the individual house to the monument, this series of buildings does not concretize a proposal for an ideal architecture but instead condenses and shapes all the contrasting and concerning feelings derived from years of subjugation under Franco's regime. Through this series, the architect sought to "highlight the absolute contradiction between the most immediate reality of urban space and the structures that supposedly shaped it."[28] Dealing with the problems that unfolded daily on a social and political level, these projects are conceptual and unrealizable, in most cases influenced by the very atmosphere that was spreading in the country at that time. For example, one of these projects is the *Tower for Suicides*, which was linked to the fact that in Madrid, between 1977 and 1984, the number of suicides from the Tower of Madrid increased dramatically.[29]

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25. Horacio Zabala exhibited his first prison architecture in 1973 at the Centro de Arte y Comunicación (CAYC) in Buenos Aires, along with intervened maps, objects, texts, heliographs, and a tubular structure that formed a repressive space. Zabala joined in those years the "Grupo de los trece". A collective constituted in 1971 within the framework of the CAYC, whose production was focused on analyzing social and political contingencies of the context itself.
26. Glusberg, Jorge, in the presentation of *Anteproyectos*, Buenos Aires, Centro de Arte y Comunicación, 1973.
27. "De este lado de las rejas", in Panorama, Buenos Aires, año XI, n. 353, 1974, p. 46.
28. Médina, V.,I., (2002), *Ir y venir de Valcàrcel Medina*, Antoni Tàpies, Comunidad Autonoma de la Region de Murcia, Disputacion de Granada, p.161.
29. In the catalog of the exhibition dedicated to this artist, there are some data about this phenomenon: "25.08.1977 - Telefonica employee jumps off the fifteenth floor of the tower of Madrid; 16.08.1979; - Woman in sixties attempts suicide from the eighteenth floor of the Tower of Madrid; 10.03.1983 - Presumed suicide of a Renfe engineer who fell from the Tower of Madrid; 19.10.1984 - women aged about 50 dies after jumping off 32nd floor of the Tower of Madrid (all data reported are taken from the digital newspaper ABC).

The artist, in this case, took the narrative position and language of a Real Estate Agency to describe the apartments located within this tower, stating that they had "all the necessary facilities for those who wish to end their lives, without annoying reuse of monuments, skyscrapers, railway lines, lakes, bridges and other structures whose urban consideration is significantly altered by such transformations of use."[30]

An architecture that manifests itself as an expression of violence, giving shape and order to spaces that, at different scales, allow to express and reflect the invisible and precarious condition of a war that is attacking humans from multiple directions, a cryptic architecture, "infra-architecture,"[31] as Virilio defines it in 1966, hidden from the gaze, which is understandable only through perception, becoming aware of it through imagination.

An architecture that not only continues to show itself by explicating and operating a disappearance, of itself as a container, like an envelope, and of its content, eroded and violently erased, but at the same time becomes synonymous with precariousness, whose obsessive redesign openly manifests the increasingly invisible and permanent character of war, thus describing the same dynamics.

The second strategy to achieve this immersive condition operates at the antipodes: for filling and overcrowding of stimuli. Interestingly, as was the case with the experiments carried out by John Zubek, also for voluntary visitors to the *ZEE* designed by Kurt Hentschlager, a declaration shall be signed in which voluntary prisoners of such devices take full responsibility for any psychological damage or seizures that may result from the experience of such persons. The interior is filled with a phantasmagoric atmosphere produced through the use of strobe lights and buttons, combined with an artificial fog, multiplying the reflections and effects, and by an immersive sound, in an experience that will be remembered by one of the visitors as a:

> immersive environment of flickering light in which the "real" physical world mutates into a primordial soup of pulsing sound, mist, and colored light...This is the world as viewed by a dying robot clone from the inside of a Turner landscape painting.[32]

This overcrowding, this overload will define a mode of protection and defense of the space itself or, again, punishment for any unwanted intruders. This application is adopted, for example, by the *Smoke Cloak System*, which can saturate with a high-intensity fog the environment in which motion sensors detect an unexpected and extraneous presence. The filling, ephemeral, is produced by the introduction of "negative air conditioning," as defined by Sloterdijk. In this same sense operates the *Foam Security of Sandia National Laboratories*,[33] which since the 1960s employs a watery foam that, with a degree of

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30. Medina, V.I., "Torre para suicidas", in Fisuras, n.8, 2000, p.10.
31. P. Virilio, "Architecture criptique," in Architecture Principe 7 (Octobre 1966).
32. Hart, C., *Essay on Hentschläger's ZEE*, 2014. To read the essay visit: https://www.yumpu.com/en/document/read/24734766/-feed-claudia-hart-essay-engl-kurt-hentschlager.
33. The issue of the relationship between composition and spatial organization and protocols based on the procedures to use and protect oneself within shelters is becoming increasingly important and urgent, as will be seen in the next paragraph and, in particular, in Chapter 2.3. The security distribution system, the advanced protection technologies, the infrastructure of the networks of connections, and the plant system constitute, inside the building, an articulated and complex system that winds, silent but fundamental, within the most intimate spaces of domesticity. A fascinating reflection in this context is that developed

expansion of 400:1, pervades and fills the environment, thereby immobilizing the intruder. A last extreme and radical device that operates through the filling is the one adopted as punishment and retaliation by the Israeli army against the Palestinian territory. The houses of Palestinian fighters, in a tactic of extreme counter-insurrection, are filled with concrete to make them uninhabitable indefinitely, in a sort of war ritual called *Concrete Punishment.*[34]

The pervasiveness and density with which these spaces were initially conceived as a refuge for man are progressively occupied and distorted by the technological component, which transforms them into other environments, in parallel dimensions, in the process of progressive alienation that is increasingly colliding with the natural inclination towards progressive internalization that spread immediately after the World War II and during the Cold War, generating friction that makes these spaces increasingly inhospitable, less and less habitable and livable by human beings. The alienation and distortion triggered by the increasing occupation of an ample interior space by technology, therefore, determines this first process of expulsion of man, which is put at the door.

within the text: Manaugh, G. (Farrar, Straus, and Giroux), *A Burglar's Guide to the City*. The author studies and analyzes architecture from the perspective of the burglar. The latter, an expert intrusion professional, analyzes the buildings starting from this hidden skeleton, through which he develops his shots: between panic rooms, through walls, down elevator shafts, and across rooftops.
34. To deepen this topic see: Delso, R., *Cronopolis. El Conflicto Temporal del Espacio Arquitectonico en la Era del Tiempo Global*, Tesis Doctoral, Universidad Politécnica de Madrid, Escuéla Superior de Arquitectura, Departamento de Proyectos Arquitectonicos, 2019.

Scene taken from
the movie *Zabriskie
Point* (1970), with the
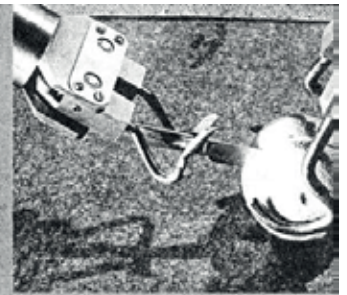mannequins of the
Sunnydays Company.

DARK NARRATIVES: BETWEEN THE LUXURY INTERIOR AND THE DATA EXPULSION

The previous section traced the hidden and cynical process through which the enclosed and rigorously confined space — which initially had been the refuge for humans from possible external threats — has transformed into a menacing space. A device within which developing, through the application of increasingly advanced technologies, experiments conceived to mark the evolution of instruments and systems that, paradoxically orchestrated by the same paranoia, are aimed at sharpening tools and weapons with which preparing in advance and anticipate a defense toward an enemy became invisible. A progressive radicalization of the interior space's immersive features has produced an expulsion of man, no longer able to get familiar with and inhabit an environment that evolved into hostile and violent.

Contemporaneity, in which, at ever tighter intervals, this millenarian paranoia for the end of the world continues to emerge, records a significant trend, which operates through perforations, heatings, and verticalization deeply developed in the ground, operations that prolong an invisible but widespread and asymmetrical battle. The conflict, in current conditions, is all played on the plane of the *securityscape*, which Hugh Gusterson calls:

> asymmetrical distributions of weaponry, military force, and military-scientific resources among nation-states and the local and global imaginaries of identity, power, and vulnerability that accompany these distributions.[1]

In particular, Gusterson's argument falls within the complex context of nuclear weapons, but on closer inspection, it could be extended to describe what is happening on and below the Earth's surface. It is a dynamic that works by renewing the ancient military and architectural links with the issues of colonization, resources exploitation, and capitalist production, that in this context are pushed to the extreme, generating two movements directed both towards the depths of the Earth, towards a hypogeum world suddenly redeemed by millennia of prejudices that associated it with a dimension of darkness. Two excavation processes with substantially diverse purposes: the first traces a run for shelter that has definitively abandoned all democratic and egalitarian pretensions, finally making its link with the power explicit. Apocalypse's shelter is a luxury commodity, and only the billionaire elites can afford it. The second movement, in-depth, is instead guided by the same productive logic that, definitively connected to the technological world of data and information, is shown on the surface only through the abstract and agile image of the cloud, masking a heavy and dramatic infrastructure of the territory. Both movements reproduce the archetype of the

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1. Gusterson, H., (2004), *The People of the Bomb: Portraits of America's Nuclear Complex*, Minneapolis: University of Minnesota Press, p.166.

bunker in an obsessive and paranoid way. In the first case, it is manipulated, abandoning the issue of the minimal and modest space that had characterized the appearance of the many domestic shelters-appendages, built quickly under the pressure of the concrete threat of war, defining luxury resorts equipped with every comfort. The second case reiterates the bunker in its most monumental and massive connotation: it is an architecture that no longer has room for humans. It is articulated in spaces now occupied mainly by technology, concretizing that third definition that Beatriz Colomina had given to the term cabinet, stating that in this configuration, "it has been displaced into the media itself:"[2] the data centers. Denoting today one of the most substantial economic and strategic resources in the world, these are making their way within the geological strata, invading the underground, the only safe place from the attacks of missiles and drones, also products of contemporary revolutionary technology. These computer systems occupy, in some cases, the bunkers in disuse of the world wars, while in others, they assemble new monumental architectures, which, however, no longer provide a space dedicated to humans and are therefore identified as post-human architectures.[3]

Thus begins to emerge the dissected profile of a terrain that, as will be seen in the next chapter, is formed by a mixture of natural and artificial strata, dug in negative by extremely strategic and functional anthropic voids. The reconstruction of this porous system brings out the essential question of a reformulation of postures and lexicons in the narratives and projections that unfold on the territory, requiring its analysis from a more conscious perspective. The human tendency to naturalize the ground interpreted as an immutable platform of natural elements to colonize through the overlapping of volumes, products, and activities, must be overcome.

> Such an understandable tendency leads to an overwhelming sense of ground, as an inherently horizontal phenomenon — the very surface of the Earth stretching to and beyond the horizon. Such a perspective radically underplays the importance of the vertical accumulation and composition of ground. For, increasingly, the terrestrial material beneath the feet of our fast-urbanizing species is anything but 'natural' geology: it is vertically accumulated phenomenon of manufactured ground.[4]

Therefore, in this last part of the reflection dedicated to the medium-term, the operations of ungrounding, excavation, and surveying — be it land or open sea — allows meeting two devices that integrate the bunker taxonomy, incorporating, however, antipathetic strategies: the defense of humans and their exclusion.

The apocalypse and, consequently, the aspiration to possible salvation has become a luxury good. Scrolling through one of the many web pages listing tips and best practices to assume if a threatening nuclear event would manifest itself concretely, they speak clearly:

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2. Colomina, B., "Domesticity At War" in Assemblage, No. 16 (Dec., 1991), pp. 14-41, p.17. The author published later the book: Colomina, B., (2007), *Domesticity At War,* The MIT Press.
3. Young, L. (2019), *Machine Landscapes: Architectures of the Post-Anthropocene*, John Wiley & Sons Inc, introduction.
4. Graham, S. (2018), *Vertical. The City from Satellites to Bunkers*, Verso books, p. 301

Fallout shelters and bomb shelters are very different, but they both serve a purpose.
In most parts of the world these days a bomb shelter doesn't make much sense but
with the global threats that are emerging.
A fallout shelter may make sense if you have the money.

For a long time, the underground urban world has represented, within the elitist imagination, a hidden and dirty dimension where a criminal population, acting in the shadows, was a real threat to the social order: an underworld from which to keep away and to marginalize. However, the last decades recorded a decisive revaluation of this buried dimension, now understood as the safest place to hide from a military surveillance system that has shifted vertically from the ground into the sky. A complex surveillance infrastructure consisting of drones, satellites, and helicopters now buzzes literally in the air, looking for the next target to hit.

In this context, the proposal of Swayze's *Under Ground House* seems to emerge, redesigned in a brand new version 2.0 that makes luxury, which will be declined with greater rigor and effectiveness also on the level of illusionism, its primary strategy. In this way, the underground imaginary is redefined. This world, developing in-depth, abandons its dusty clothing to make room for environments molded with comfort, technologies, and sophisticated materials.
The link between these underground architectures and military strategy is as present as ever and emerges from the very election of the context. The tactic is to choose a neutral territorial target not affected by conflicts or social tensions, not at potential risk of a nuclear attack, or, again, to colonize abandoned military structures, whose spatial composition already configures highly controlled and protected spaces. These are luxury residences of huge sizes, covered in precious materials and equipped with all comforts. Inspired by science fiction movies and outer-space scenarios, they bring out the subtle and implicit connection between the technologically militarized world that defines protocols and manuals to build these spaces and the entertaining universe that associates them with fundamental video game components such as simulation and role-playing, triggering an operation of spectacularization.

This underground colonization process is orchestrated by two figures: the architect and specialized construction giants. The interventions carried out by the architecture studios often define solutions that evoke the bunker's sinister and fascinating atmosphere, imitating its airtight language through the use of massive structures in concrete or steel. In many cases, however, the salvific aspiration is exhausted only on a purely formal and metaphorical level that shapes an intimate space, subtracted from prying eyes and equipped with security systems focused fundamentally on the intrusion risk but which do not respond to a possible nuclear attack.
In this context is inserted the new wave of techno-capitalist colonialism of New Zealand started by many billionaires of Silicon Valley: after seeing many proposed projects designed by world-famous architects, return the image of shelters wholly detached from the Western world, an escape from stress rather than a shelter from an atomic threat. In this context

is inserted the *Bunker House* designed for Peter Thiel,[5] a billionaire investor co-founder of Paypal that bought a vast property right on the shores of Lake Wanaka, intending to build his private refuge. The unrealized project was entrusted to Kenzo Kuma, who divided the functional program into different volumes, modulated and integrated within the existing landscape, using light and natural materials, and inserting a pavilion dedicated to relaxation and meditation. Another project that appropriates the poetics of the bunker to build design narratives is the *House in Toyonaka*,[6] in which the spaces are configured as a series of internal boxes concerning the outer airtight perimeter, ensuring light and ventilation while maintaining a high degree of privacy. A safe hermeticism can also be found in the *Safe House*,[7] designed by Robert Konieczny. Responding to his clients' need for maximum safety, the architect creates a kind of fortress-monolith made of concrete in whose perimeter mobile walls are introduced made of light steel and filled with mineral wool. Finally, the same operation is conceived in the *Brexit Bunker*,[8] an extension of the domestic volume made of steel-clad with large windows on the garden and a skylight on the roof, which is hardly suitable to withstand the impact of a nuclear event.

On the other hand, capitalizing on this condition of permanent impermanence and paranoic fear of the apocalypse, hyper-specialized construction companies are growing worldwide. In particular, in America, to accommodate this demand that has exploded in the elite market, companies specialized in constructing such golden cages are spreading. Among these, the Rising S Company, which has created the most expensive bunker so far built, the *Aristocrat*, and on its homepage communicates, "we deliver and install anywhere in the world!"[9] Accompanying this information with a set of data that should definitely convince the customer to rely on their expertise. "we are the only bunker manufacturer that fabricates our very own blast doors in house. MADE IN AMERICA!"[10] Relying upon a new economy based on a renewed capitalism and nationalism, the dilapidated customers can scroll through the page to check all the available bunker models, strictly divided by price ranges. From the most modest *Economy Shelters* (45.300 €) to the *Standard-bomb Shelters*, up to arrive, passing through the *Silver Leaf Series* and the *Admiral & Extreme Series*, at the *Luxury Series*[11]

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5. An interesting reflection on the reasons for this robust operation of technocolonialism in New Zealand is advanced within the book: O'Connell, M. (2020), *Notes from an Apocalypse: A Personal Journey to the End of the World and Back,* Doubleday, where the author connects it to what was outlined in the libertarian manifesto published in 1997 with the title *The Sovereign Individual: How to Survive and Thrive During the Collapse of the Welfare State* by James Dale Davidson, in which the author advanced some predictions about the advent of the online economy and cryptocurrencies outlining the figure of the sovereign individual. The latter "will act like the mythological gods, in the same physical environment as ordinary citizens but in a politically separate dimension." It is precisely within this text that New Zealand is indicated as the place chosen to develop wealth in the digital age by providing the possibility of operating the strategy of seasteading: building artificial islands in international waters. These "floating utopian states" constituted a parallel and autonomous world that would allow investors complete freedom outside the control of democratic governments.
6. Fujiwara Muro Architects, Osaka, Japan, 2018.
7. Robert Konieczny, Warsaw, Poland, 2004-2005.
8. Rise Design Studio, London, Great Britain, 2020.
9. Quote taken from the homepage of the Company's website: https://risingsbunkers.com.
10. Ibidem.
11. All the bunker series is available on the Company's website, which presents the specific characteristics

(whose price starts from 3.770.500 €). The basic prices offer a relatively modest layout of the rooms that the company promises to customize according to the will and availability of customers. Another company fully inserted in this market is the *Atlas Survival Series*: the extensive catalog in which to choose the ideal bunker combines the nationalist tendency with a market strategy: in the *Premium Series*, several models bear the names of the American states: from Alaska to Florida, from Massachusetts to Texas. Within these bunker templates, in a sort of ready-made operation, are recognizable combinations assembled to evoke referring of some Modern architects: from Louis Sullivan to Frank Lloyd Wright, to Mies van der Rohe.

All models are equipped with military-grade nuclear, biological, and chemical air filtration systems, a mudroom and decontamination shower, air and gas-tight waterproof doors, and power sources, as well as highly customizable: "times have changed. If you're going to be hunkered down below ground for a while, it may as well be in style."[12]
Another trend of these construction companies is the tendency to build new fallout-proof residential units inside disused bunkers inherited from the Cold War. This context includes, for example, the activities of Survival Condo and Vivos.

In 2008 Larry Hall, a computer developer who previously worked within a data center for government contracts, decided to buy an ex-missile silo built during the Cold War, which hosted a nuclear warhead between 1961 and 1965. Ironically enough, the same structure that used to host the weapon has been converted into an ideal fallout shelter to survive it. The ambitious and expensive project is named *Survival Condo Project* and developed into an inverted condominium that, instead of developing vertically toward the sky, inverts its direction to bury its volume for fifteen floors, divided into twelve apartments. Each full-floor unit can accommodate six to ten people, and, remarking and looking back at Swayze project, there is space for collective activities and social services: a swimming pool, a classroom, medical facilities, and general stores. Furthermore, concretizing the principal ideals of the Texan military's advertising campaign, the presence of gardens and greenery that could give its "outer-space-of-the-house" the appearance of an environment as close as possible to the natural, this apartment building of maximum hypogeal security is equipped with an aquaponic and hydroponic system that, already active, will allow the sustenance of future inhabitants. The windows, strictly present in every room, no longer consist of the crumbling images directly drawn from the ancient panoramas but are replaced by LED screens with filtered light that modulate the survivor's day by rhythming it with different landscapes and following the variation of sunlight that occurs outside.

and the starting price for each model. For further information, visit the website: https://risingsbunkers.com.

12. Taken from an interview with Ron Hubbard, owner of the Atlas Survive Shelters, realized by Jenny Power and published in the online magazine Insider on 16 September 2021. The full version of the interview is available on the website: https://www.businessinsider.com/doomsday-bunkers-texas-survival-shelters-job-diary-2021-9.

The complex has resources and provisions to support 75 people for up to five years, an efficiently calibrated and organized structure that offers an additional service dedicated to its tenants: a survival security team, an armed corps of guards that, in addition to offering an introductory training course to the inhabitants of the hypogeum condominium, protect it by roaming inside armed.

Similar dynamics can be traced to the complex built by a San Diego entrepreneur, Robert Vicino. He reuses a former military depot, with an attached ammunition maintenance plant, in South Dakota, creating a real underground gated community, *xPoint*, within the 575 abandoned weapons warehouses, extremely resistant structures made of steel and concrete to resist nuclear explosions. Trident Lakes, north of Dallas, finally pick up the idea of the post-apocalyptic gated community. Here the luxurious and autonomous apartments are equipped with an additional safety measure: in case of chemical, nuclear or biological emergency, the properties would be sealed with autonomous locks and armored doors, so clearly separated from the outside. In such a situation, however, the tunnels would have remained open and connected to an underground Community center.

The language with which these projects are presented testifies their strong connection with the playful dimension of video games: from the configuration of the web pages of these large companies, which seem to present a series of models with which "play war" to be customized according to personal taste, the formal language used to shape the interior, which refers to space exploration or anticipates a post-apocalyptic atmosphere, up to the same training protocols required to become part of these prepper gated communities.

Here emerges again the issue of imaginary consumption, of the voracious ingestion of images. Most of the population, being left outside the expensive and hardly accessible designing process of a customized and efficient fallout bunker, is converted into a passive audience of this imminent approximation of the end. The critical interpretation in such a condition stands in the strict relation generated between warfare and simulation, between being consciously involved in building a real refuge and being passively overwhelmed by a continuous flow of images and messages that have the effect of blurring the borders between reality and fiction. It is not a case that the US Army is developing severe and deep research on the best play-role players to recruit them to play a new game, the driving of drones. On the contrary, this simulation process has increased the consumption of violent and petty images in an operation that has done nothing but contribute to the atrophy of a gaze and a perspective long-dormant. For example, by typing on the web *nukemap* it is possible to choose from one's home sphere, the location, the type of explosion, and the extent of the impact of the detonation of customized atomic bomb.[13]

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13. To create your personal version of the atomic bomb, visit: https://nuclearsecrecy.com/nuke-map/

In this situation, recovery and reuse operations of the old monumental monoliths — abandoned on and within the ground by warfare — are accessible only to big companies that, in many cases, exploit the post-apocalyptic fictional narrative as the primary key to the success of their project. All the others must be content to admire the ruins of these buildings, which have increased the stages and a load of Dark Tourism[14] in the last decades. In fact, according to Graham: urban tourists now move in increasing numbers to discover tunnels and underground shadow architectures of bunkers, underground and tunnels that preserve and delimit "authentic" tourist spaces. Since the end of the Cold War, bunkers have become ready-made attractions for tourists, as noted by John Beck, who observed a proliferation of illustrated guides, tourist sites, and books dedicated to this theme in the last twenty years. Tourism is no longer attracted by museums and sunsets but by ruins, bombed landscapes, and the memory of the tortures and pains of war, developing a sublime technology.

> As a result, major Cold War command bunkers in Cheshire and Kent are thus now accompanied by tourist signs on local road junctions un-ironically directing motorists the way to the nearby 'secret Cold War nuclear bunker.' Daily tourist trips operate around the vast archaeologies and architectures of thermonuclear war that are sedimented within and through the Nevada Proving Ground north of Los Angeles or the nuclear weapons test sites in Australia.[15]

If a first deviation occurred, as seen above, in the election of the subjects admitted within the contemporary bunkers, another far more radical shift is presented in the functional logic connotating a new architecture typology emerging in recent years.

Each society is shaped by its raw material. The contemporaneity has marked a crucial radical shift in respect of the previous industrial and productive revolution: the primary resources to build on and exploit are not anymore deriving mainly from the environment — then subjected to a process of industrialization and transformation — but somewhat artificial and anthropic ones, as marked by Parikka,[16] humanity has started to produce a brand new artificial geology, which is already sedimenting its strata and combining them with the geological ones. The age of the hyperobjects has produced artificial materials that, for their high level of danger and contamination, on the one hand, and for their immense value and power, on the other, require a recalibration of the agency of containment. These materials start to occupy densely the center, already freed from human presence, of the now-distorted shelter which hosts and keeps safely hidden and segregated a non-human world.

If the issue of nuclear waste, because of its long-term consequences, will be deepened within the next chapter (2.3), here what emerges is that of data. With its critical and diffused

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14. Dark tourism (also known as thanatourism, black tourism, or morbid tourism) is a particular touristic sector whose visitors are attracted from places historically associated with death and tragedy. Although this phenomenon records a long tradition — catacombs, gladiator games in Rome's Colosseum — it has been studied academically only recently. The term "dark tourism" was coined in 1996 by Lennon and Foley at Glasgow Caledonian University, while its variation "thanatourism" was first mentioned by A. V. Seaton in 1996. To further deepen this topic, see: Lennon, J. and Foley, M. (2000), *Dark Tourism: The Attraction of Death and Disaster,* London: Continuum*;* A.V. Seaton (1996) "Guided by the dark: From thanatopsis to thanatourism," International Journal of Heritage Studies, 2:4, 234-244.
15. Graham, S. (2018), *Vertical. The City from Satellites to Bunkers*, Verso books, p.301
16. Parikka, J. (2015), *A Geology of Media,* University of Minnesota Press.

infrastructure and through the exploitation of its highly inconsistent materiality, it leads people to think of dealing with a cloud of information, with intangible and invisible technologies, hiding, in this way, a whole system of deep and infrastructured operations within the territory, strongly affected by buried critical networking cables and by the emergence of brand new typologies of containers: the data center. The origins of data centers are traceable in the 1940s, and, not surprisingly, the process of technological innovation that determines the invention registers, once again, a deep link with warfare. Indeed the first programmable computer, the *Electronic Numerical Integrator and Computer* (ENIAC), was designed by the U.S. army to calculate artillery fire during World War II and was even used on the Manhattan Project by mathematicians and scientists to develop the first thermonuclear bomb, which would eventually be dropped on Hiroshima and Nagasaki in 1945. However, despite dating back to World War II, these devices have only begun in recent decades to take on a dimension that requires the design of entire buildings to house them. These dispositifs, standing for a massive archive of information, enormous and ever-active operating systems are consuming massive amounts of energy and colonizing vast areas, both on the surface and the underground of Earth. As recently noticed by Liam Young:[17]

> The founding machine landscapes of the Post-Anthropocene are already here, critical and fundamental, embedded in the ground of the Earth and the fabric of the planetary city, [...] their cooling fans spin, the electromagnetics hum, the LEDs flicker, and it smells of rare Earth. Machines are making the world, and we are on the outside peering in, faces pressed to the glass windows of an empty control room.[18]

If the 1999 proposal by Diller and Scofidio in the *Master/Slave* installation in Paris had been formulated as a provocation, feeding its design charge from a sci-fi imaginary in which machines increasingly took control over humans, overcoming them through advanced artificial intelligence, that described by Liam Young seems to be the concretization of this scenario. Technology, magnified and praised for decades by humans as a means to finally become superhumans, has ended up decentralizing them from their barycentric position within the architectural space. This sublimated artificial intelligence, now at the base of the world economy, is substantiated in "a post-anthropic architecture,"[19] in a sort of ghost in the shell, thus defining the basis for the tracing of a taxonomy of a zone of human exclusion: impregnable and airtight black boxes, going to define, in this way, real:

> machine landscapes that impose their own fragmented temporality from within generic architectures to which we do not belong, but at the same time constitute the cultural link of our generation.[20]

17. Liam Young is an architect operating in the spaces between design, fiction, and futures. He runs the M.A. in Fiction and Entertainment program at SCI-Arc in Los Angeles, is the founder of Tomorrow's Thoughts Today, and a core faculty member of Strelka's The New Normal speculative urbanism think-tank (of which are part Geoff Manaugh and Benjamin Bratton).
18. Young, L. (2019), *Machine Landscapes: Architectures of the Post-Anthropocene*, John Wiley & Sons Inc, introduction.
19. Fogue, U. (2022), *Las arquitecturas del fin del mundo. Cosmotécnicas y cosmopoliticas para un futuro en suspenso*, Barcelona: Puente editores, p.146.
20. Young, L. (2019), *Machine Landscapes: Architectures of the Post-Anthropocene*, John Wiley & Sons Inc, p.59.

The *Met Office Supercomputer*[21] and the *Facebook Data Center*[22] provide an example of these architectures. Both characterized by an above-ground volume equipped with large windows to accommodate offices and workstations, they, almost like icebergs in the desert, concealed in their huge basement spaces reserved solely for servers. For example, the Prineville data center has 15.300 square meters of computer equipment room topped with an innovative 9.300 square meters of mechanical equipment penthouse. Humans' spaces are distributed on a surface of 2.100 square meters, organized around an interior courtyard. The machine's dominance is not limited to a matter of size but is witnessed by the same plant design of the building. In order to ensure maximum efficiency, the machine rooms shall be equipped with appropriate: computer equipment rooms, and the mechanical penthouse together function as an occupied air handler: the desert air is pulled inside through fan walls, and then misters inject moisture and drop the temperature several degrees to keep servers functioning properly.

Nonetheless, within the last decade, their efficiency and functionality, together with the increased proliferation of spy planes, drones, and satellites, have been registered as an old-new strategy for designing these buildings that have assumed a determining strategic value in the world's economy. This strategy consists in fighting against this vertical control through the operation "to burrow – and burrow deep."[23] The opacity of the ground to the gazes of these flying and suspended dispositifs has triggered an operation characterized by the reiteration of sequential burying, a process that, with the opening of new deep voids within the ground, retraces and colonizes what lays already within it unused and unclaimed in a condition of suspended latency: the abandoned Cold War bunkers, silos, and tunnels, as well as already exhausted mines.

Due to this underground exploration and colonization strategy, vast Cold War bunker have been occupied by ultra-secure data centers, substituting the anti-aircraft artillery with a massive system of machines, as in the case of Albuquerque, New Mexico. The site where the first atomic bomb was experimented on and detonated,[24] inaugurating a critical and traumatic branch of the hyperobjects epoch, has been nowadays re-colonized by another branch of this issue: hyper technology. The Strategic Data Services Group occupies two former Atlas intercontinental missile silos, extending on a surface that counts a total of twenty-two-floor installations with a hundred servers on each floor. The appropriation of ex-military bases also characterizes the *Bahnhof's Pionen Data Center* in Stockholm, whose machine army occupies a former Cold War bunker 30 meters under solid bedrock. Deep buried within the mountain, reachable only through a tunnel, and protected by an entrance door thick 40 cm, this data center is considered capable of resisting a hydrogen bomb. Furthermore, its "intangible" data system is highly protected by a security control based on a backup supply provided by two German submarine engines in case of power-off.

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21. Met Office and Microsoft, *Met Office Computer*, Exer, Great Britain, 2016.
22. Sheehan partners, *Facebook Data Center*, Prineville, Oregon, 2011.
23. Graham, S. (2018), *Vertical. The City from Satellites to Bunkers*, Verso books, p. 361.
24. On this site was developed the Trinity Test, the first nuclear weapon detonation conducted by the United States Army at 5:29 a.m. on July 16, 1945, as part of the Manhattan Project.

Buried sixty meters underground, Iron Mountain's *WPA-1* facility occupies the site of a former limestone mine. It exploits the adjacent natural lake for cooling operations, and the site configuration guarantees high levels of protection for both artificial and natural disasters. The same is guaranteed in *Subtropolis*, which defines itself as "an underground business park." With its armed security, monitored video surveillance, card, and PIN access, it represents one of the most secure data centers in the world.

The formal language used for the modeling of the interior spaces, combined with the artificial atmosphere that characterizes them as hyper-technological underground and, at the same time, alien to any relationship with the surface, introduces these devices within that system of architectures that exert a new techno-sublime.

If the ground colonization is undertaking an intense acceleration, the same is happening for the colonization of the seabeds. The *Project Natick* consists of the immersion, the sink, of a cylinder of twelve meters in length and three meters in diameter containing 864 Microsoft servers that took energy from one single cable and has obsolescence of five years. In explaining the reasons for the more extended durability of the data centers sunk in the sea, Microsoft states that the first one guaranteeing a major safety for the machines is the absence of humans around them — an issue further related also to the emergence of a new figure: in substitution of the old burglar, now the threat comes from the hacker.[25] Here the shift is clearly explicated: far from being only decentered from the design process, humans now have to give up also to the idea of relating to these machines, which have become extremely efficient and, at the same time, sensitive. This project has triggered, in a chain, the realization of other similar sunk capsules. In particular, in 2018, an autonomous underwater data center operation was positively tested. It is also a cylindrical capsule containing 12 server racks dropped into the ocean off the Scottish Orkney Islands.

These underwater data centers, constantly updated bottled messages, echo for their formal structure and conversion into authentic black boxes, airtight and inaccessible, the time capsule device that will be taken up in the next chapter. Burying, concealing, and hiding a set of contents sheltered in a profoundly critical era to convey a message to the civilization of the future is an operation that in some way relates to that made by these last references. The fundamental difference is the semantic shift of the conveyed message. It is not linked to the transmission of knowledge for the future society but instead remains isolated in its hermeticism, impossible to decipher and approach, abandoned and temporarily concealed, waiting to return to the production system.

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25. If, in the course of the Cold War, the astronaut and the aquanaut figures had appeared on the scene, now to emerge is that of the hacker. A particular reflection is dedicated to this new irreverent profession within the book: Pater, R. (2022), *CAPS LOCK. How Capitalism Took Hold of Graphic Design, and How to Escape from It*, Amsterdam: Valiz, who dedicates the whole chapter "The Designer as Hacker," stating: "a hacker is often thought of as someone who breaks into computer networks with malicious intent. [...] this term emerged in the sixties at the MIT aI Lab in the US. It was used for students that messed around (hacked) with the switching networks for model trains. Hackers were interested in building their computing systems by exchanging expertise and ideas amongst each other. [...] Now that the digital networks are critical infrastructures, the role of the hacker re-emerges at the centre of society," p.372.

The exploratory reconstruction of these new post-human archetypes ends in Tasmania, where work on the *Earth's Black Box* project has been completed in recent months. The box is a fascinating technological device characterized by a particular economy of visibility. Usually installed inside aircrafts, trains, ships, and other means of transportation, while remaining constantly operational, only reveals its contents when an adverse event occurs, thus representing a technological ingenuity that becomes visible only after a collapse. The last project examined in this context combines these two connotations by introducing into its systemic flow of information the phenomenon that would lead to the unveiling, the opening. Born from an idea that emerged during Cop 26 in Glasgow and the collaboration of the University of Tasmania, the project was born to trace and collect all the salient actions, the words of political leaders, medical, technological, and scientific innovations, but also and above all data related to the slow-motion catastrophe that is being recorded on the planet: acidification of the oceans, loss of biodiversity, the concentration of carbon dioxide in the atmosphere, temperature of land and sea. Equipped with a memory that allows you to collect data for fifty years, this structure looks like a monolith wrapped in a steel skin of 7.5 cm thick and extends for ten meters. The structure, whose narration through the online platforms combines an extreme hermeticism towards the architectural space defined by this volume with a continuous flow of data, testifying that this collection of information has already started, thus generating an exciting contrast between flow and stasis, hermeticism and unveiling. This narrative is about the hope that this immense amount of data, recorded in silence, will never be revealed, that this Pandora's box will never be opened.

When a black box is made, the greatest hope lies in the fact that it would not be opened and, therefore, maintains its hermeticism. However, the bunkers of the Cold War, which in many cases have been sealed for their toxic content, have recorded an operation of unveiling and opening in recent years. As a result, Pandora's boxes have been opened and what has emerged is particularly impressive.
While all this happens, inside the abandoned bunkers, new forms of life are created and grow in the shadows, whose shape reminds and refers to new beings emerging from a post-human world. From the kin to the weird, to the terricles. A recent study conducted by Matthew Flintham inside bunker caves on the Norwegian island of Tjøme, who explores in his article:

> The paradox of the Cold War bunker as a powerful symbol of entropic ruination, as an enclave of constancy and survival. Despite being the architectural actualization of a premature burial site [...], the sealed bunker is not without life or even culture.[26]

The naval military base of Toråsthe Norwegian island is embedded within the Larvikite rock formations. This military infrastructure was initially built as a defensive site to prevent a potential Nazi invasion. Soon it was occupied by the Nazis themselves, undergoing significant changes to its structures based on the directives of the Organization Todt that in those years was giving rise to the largest construction site of the war: the Atlantic Wall, in

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26. Flintham, M., "Vile Incubator: A Pathology of the Cold War Bunker," in Journal of War & Culture Studies, Vol.13, n. 1, (February 2020), pp. 11-32, p. 13.

order to strengthen and strengthen it, preparing it for a further invasion, this time by the Soviets, digging massive tunnels inside the rock formations of this landscape and building a control center whose camouflage strategy reproduces the top of a mountain. This massive architecture, occupied by the Norwegian military after the Liberation of the Allies (1945), was used as a base for the underground resistance operation *Stay Behind*. The structures were finally completely sealed in 1999. The final burial of these devices is linked to the fact that many of them kept inside chemical and biological agents released as weapons over the territory,[27] thus generating within what was before intended to be safe internal toxic and unliveable conditions. A paradox that gets even bigger is that the mycotoxins released by the unutilized weapons have functioned to stimulate a "survival mechanism" for other non-human species. Ironically, "while Cold War bunkers were produced to preserve the vestiges of humanity, they might ultimately incubate and nurture other species of life."[28] Thus, the abandoned and buried bunker became a sort of incubator, a space acting as a dispositif to support a biological in-vitro process for the extremophilic organisms and crystalline formations growing within it, producing, by so, a sort of posthuman bunker culture. Lydia Kallipoliti[29] states that architecture has demonstrated, throughout history, its attitude to reconstruct microcosms by applying the strategies of isolation and containment, assuring in this way, the preservation of a determined system of practices, living patterns, and socio-cultural construction. The same concept can be applied to these forgotten hermetic structures, whose condition of enclosure and isolation has generated the perfect condition for developing new forms of posthuman survivor creatures.

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27. If bunkers are auto-generating their own hostile environment, Gravensen states that "any pathology of subterranean military architecture must include the study of Sick Building Syndrome in which there is a growing body of evidence to support the negative effects of fungal spores and/or mycotoxins within it." (Ivi, p.15)
28. Flintham, M., "Vile Incubator: A Pathology of the Cold War Bunker," in Journal of War & Culture Studies, Vol.13, n. 1, (February 2020), pp. 11-32, p. 13.
29. Kallipoliti, L. (2018),*The Architecture of the Closed Worlds. Or, What Is the Power of Shit?,* Lars Muller Publishers.

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SITOGRAPHY

2.3

INVISIBLE BATTLE FIELDS. CARTOGRAPHIES OF ERASURE AND ARTIFICIAL GEOLOGIES.

[long-term]

*The archaeological
site of Göbekli Tepe,*
Turkey, 8000 bC.

MARIACRISTINA D'ORIA   PART 2 | THE EMERGENCE OF *MEAN* TIME ARCHITECTURES.

[AMNESIA]

noun. From modified Latin amnesia, from Ancient Greek (amnēsía, "forgetfulness"), a noun derivation from (mimnéskō, "to remind, to remember") prefixed with the alpha privative.

1. Amnesia refers to the loss of memories, such as facts, information and experiences. People with amnesia — also called amnestic syndrome — usually know who they are, but, they may have trouble learning new information and forming new memories. Amnesia can be caused by damage to areas of the brain that are vital for memory processing. Unlike a temporary episode of memory loss (transient global amnesia), amnesia can be permanent.

"The monument has gradually been transformed from an object that originally communicated permanence to an object that was about fragility and lost, removed from the present for reasons of history and sentiment."

A. Thordis, The fragile monument, 2012.

MARIACRISTINA D'ORIA

The theory of trauma was born as a crypto-psychological hybrid, configuring itself as a hermetic and mysterious code to decipher that has crept into the depths of our minds, between the folds of time. The link between the trauma that consolidates and the passage of time changes constantly, leading to sudden variations and sudden changes, bringing out suddenly and in all its strength, a removal that had been forgotten. One of the conformations that can give rise to the articulation and evolution of this relationship is amnesia: crept into the folds of our mind, the traumatic event generates a short circuit obscuring some areas, preventing us from tracing some parts of our memory. This symptom can occur temporarily or, on the contrary, permanently. The doctors of Salpêtrière, where this investigation has somehow begun, studied two types of amnesia: retrograde and anterograde. In a constant rebalancing of the distances between present and past, intercepted and interrupted by the traumatic event, memory is eroded. In the first case to be eliminated is the sphere of memories that relate to a period before the event: going back in time the memory is blurred. It becomes painful and inaccessible.

On the contrary, the second variation of this pathology prevents new memories from accumulating by adding new remembering within a shaken, agitated, and reticent mind. Within the human mind are layered sequences of experiences, fragments of places, landscapes, people, and discourses, constituting that complex system of memories. Memory can be defined as a neural network activated according to a precise series: when remembrance is called to mind, a group of neurons begins to send electro-chemical signals through the synapses according to a specific sequence. Amnesia, therefore, represents an obstruction, a disconnection, a barrier that prevents the entire sequence of that network from being reconstructed and re-traversed.

A process of remembering, of stratification, but above all of tracing and crossing through complex networks, articulated canalizations, dead ends and violent leaps: a discontinuous operation that through constant time jumps allows the reconstruction of a figure, a moment. This process can be traced — transposed to the dimension of the territory, the landscape, and architecture — to the words with which Cedric Price defines the time interval "chronicles," in which you can read: "de-layering of time: long-delayed completion of monuments; superimpositions and re-erections; buildings meant to be temporary that stayed." The chronicle, represented by a calendar whose pages are browsed by time, constitutes a complex time interval, which, in order to be analyzed, needs exploratory investigations and coring that can investigate the relationships woven between different events, between different artifacts and phenomena.

Precisely this operation of unveiling, de-layering, and tracing connections, not always direct and immediate, introduces this third investigation within the mean-time focused on the long-term, on time, immeasurable for the human mind, the aeon, on a dimension that, because of its scale, it presents itself at the same time as terribly unstoppable and surprisingly challenging. Price's exhausted metronome describes ever slower trajectories, now measuring the temporality described by the centuries. A dimension that in itself contains and retains at the same time the no-longer and the not-yet, in which making predictions is complex and in which the operation that you can try to trigger is to anticipate the impossible.

This chapter will analyze the anthropogenic processes that have been related to geological time and, in particular, the issue of nuclear waste repositories.
The verticalization in the ground, anticipated in the previous chapter, now reach much higher depths. The sections do not present their most representative point in the vicinity of the landline, but continue and develop through the geological layers in a constant and uninterrupted process of superimpositions and overlappings that has stratified the memory of the landscape. Architectures and volumes that live in a double condition begin to become space on the surface and inside the ground, explaining all the issues that have emerged so far. On the one hand, they radicalize and condense a robust engineering and technological system, enhanced precisely per the enemy to be defeated: nuclear waste; on the other, on the surface, volumes develop that attempt to recover the most symbolic and ancient component of architecture, aspiring to convert themselves into the message, of danger, for which they were erected. The question of containment, like an echo intrinsically present within the relationship between body, trauma, and architecture, reverberates with louder and longer sounds, becoming urgent in front of a hyperobject, nuclear waste, that escapes control: invisible, widespread, and immense space-time dimensions.
The theme of nuclear waste encourages the crossing of different issues that generate a complex system of relationships spread over different temporal and dimensional scales in a game of continuous calls and references. Reconstructing cartography, understood as "space and time, navigation,"[1] is an operation that can assemble the different consistencies of which this hyperobject is composed, requiring explaining at least three fundamental concepts related to gaze, matter, and context.

If the gaze with which Cedric Price invited visitors to explore his exhibition was semi-dormant, distracted but alert, able to capture slight variations, interstitial spaces within which to prefigure and imagine, in a constant anticipatory and open operation; the look that is now intended to be adopted is the relational one suggested by the approach of Donna Haraway e Karen Barad.[2] In particular, the latter develops the concept and practice of ethi-

1. Rosi Braidotti during the International Summer School, "Post-human and New Materialism," Utrecht, August 2021,
2. To deepen more the work of Karen Barad: Barad, K. (2007), Meeting the Universe Halfway; Barad, K.,

co-onto-epistem-ology, defined on the basis of its field of formation, quantum physics. By centering her theory around the concept of quantum entanglement, she shows that the human being is only a part of the world and that, therefore, it must abandon its freestanding perspective and operate an agential realist perspective that can trace the relationships and inter-actions between man and subjects.

The "entanglements are relations of obligation," therefore, the phenomena should not be observed as distinct and disassociated events but investigated the links between them, thus tracing their variable and changeable corporality. By adopting the point of view of a quantum-physic, Karen Barad revealed complex cartographies, retracing the overlapping and superimposed relations between different space-times connected to traumatic events that shook the entire Earth, with a particular referring to the atomic age, triggering reflections on topics such as erosion, entanglements, inseparableness of space and time, memory, and colonization. Timothy Morton also urges the adoption of a similar method, appropriating the instruments of quantum physics:
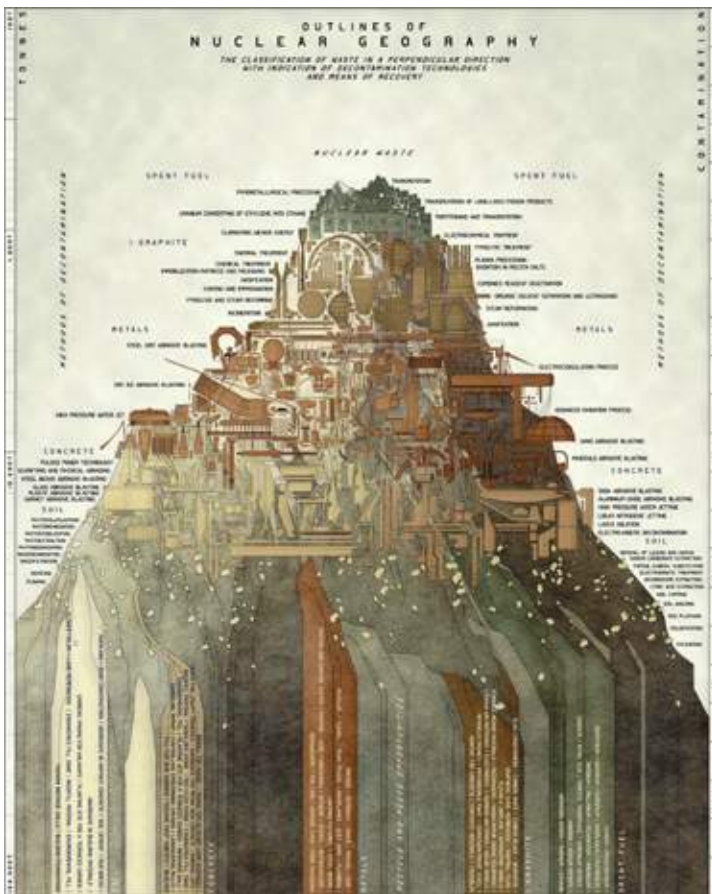
> The quantum real is a play of difference within which partcle-like phenomena arise, just as for deconstruction language is a play of difference out of which meaning arise. A hologram is a form of writing.[3]

In this case, particle phenomena emerge, spread, and generate chain reactions whose consequences reverberate only after millions of years, triggering slow-motion catastrophes that, already started, probably will continue even after the extinction of the human being. By intersecting the concept of entanglement with that of responsibility and diagrammatization we can reach what Karen Barad calls "a quantum understanding of space, a relational approach, an aethico-aestetic point," a reading of the environment of which we are part through the observation of these games of differences, but also of temporal and scalar waste, of territories eroded and excluded to human traversability.

The temporal dimension addressed by this chapter, extended and laid on a geological time marked by centuries, and the phenomena observed within this, inscribable within the Geological consumption, bring out a second important aspect that will be explored here: the ground. If in the previous chapter, we have seen, thanks to the reflections developed in particular by Graham, how the processes of verticalization carried out by the renewed and advanced military technologies have led to a race for shelter that has been recognized in the underground as the ideal place to take refuge and find salvation, now this relationship with the ground is complicated, assuming a new degree of complexity. It does not unfold more only in depth but in an exorbitant multidirectionality characterized by several actions

(2012) "On Touching" , and (2014) "Diffracting Diffraction."
3. Morton, T. (Minnesota Press, 2013), *Hyperobjects. Philosophy and Ecology after the End of the World*, p.46.

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Humboldt, v. A.,
Geological Strata,
1861.

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Blasiotti, S.,
Outlines of Nuclear Geography,
from the work *Nuclear Matter(s), Architecture Responsibility in Time and the Future of Nuclear Waste*, 2021.

carried out by this hyperobject, which could be traced through the genealogy.

The first phenomenon is rooted in their very origin and involves radical colonization of territories considered forcefully "not civilized," or pretextly declared as such. Entire landscapes are thus transformed and anthropized through excavation, extraction, and exploitation operations to obtain a precious raw material: uranium. Vast graduated craters form inside the ground, whose variation in depth marks the linear time of progress, the linear time of their consumption, the rhythm changing radically depending on the location and context. From here, the filament forks to reach different directions and products: one goes towards the military bases, also carefully selected within seemingly desert and wild contexts. Inside these sites, uranium is processed and transformed into a lethal weapon, with which to conduct tests or, again, to take action through the bombing of World War II. The radioactivity and the phenomenon of radioactive dispersion generate the transfer of particles from miles away, it is not only the directly bombed sites that suffer the consequences of such explosions, but the places where these radioactive particles, depending on the speed and direction of the wind, are transported.

Then there are the sites where these weapons are stored, latent and powerful, becoming an invisible and threatening weapon with which to deal with international crises. The direction of the second filament is linked to energy production: sites and areas host another architectural typology: the nuclear power plant, which integrates the space and production organization with high technology and security system. These sites bring with them the problem of nuclear waste and slag. They are now being stored, in a way that is defined as temporary, within the production centers themselves, but the emerging objective since the Chernobyl disaster has been the construction of permanent nuclear waste repositories. Describing a trajectory that starts and originates from the depths of the ground, this material returns, being buried inside a special coffin of maximum security, becoming a kind of capsule directed towards its center, a bullet intended to remain unexploded and hermetically contained in its depths for centuries.

An extremely complex cartography emerges, in which any direction and uniqueness must be abandoned. This hyperobject propagates, in the form of ever-changing matter in the air, stratifies, through a superimposition of layers, within the territory giving rise to new artificial fossils, the trinitite, which produces on its background a series of almost archaeological excavations of extractive sites that testify to its passage, moving then to logistic platforms, moving violently on testing grounds or, again, seeing itself employed within production territories.

Thus, in addition to verticalization, the question of deterritorialization, dispersion, and atmosphere emerges. Within his *Phenomenology*, Alphonso Lingis states:

'The actual Earth,' as Thoreau puts it, now contains throughout its circumference a thin layer of radioactive materials, desposited since 1945. The deposition of this layer marks a decisive geological moment in the Anthropocene, a geological time marked by the decisive human 'terroforming' of Earth as such. The first significant marks were laid down in 1784, when carbon from coal-fired industries began to be deposited worldwide, including in the Arctic, thanks to the invention of the steam engine by James Watt.[4]

It is about relating and interweaving new dialogues of resistance with hyperobjects, which Timothy Morton defines as "objects massively distributed in space and time, as much as to trascend localization,"[5] in front of which emerges that aporia of representation.
Linked to the trauma of an erosive phenomenon in slow motion and perceiving the strong and acute criticality of infinity framing, to relate to a scale made geological, the project wonders, stops or, as will be seen in the chapter, opens up new avenues of exploration to represent the environment, with its critical issues, and initiate a process of understanding and metabolizing trauma through the construction of narratives, cartography and poetics aimed at defining the complexity of these objects to question the strategies to be adopted to contain them.

Two fundamental themes emerge within the chapter: consumption and monumentality. Within the landscapes and plants crossed by nuclear, in its various forms, consumption, erosion unstoppable and progressive operates slowly and constantly. Entire maps of the cancellation have been drawn, highlighting areas of exclusion and landscapes made inaccessible to man. At the same time, the agency of consumption also intervenes in the architecture, developing two synchronized and simultaneous actions. The first, acting from the outside, join the normal erosion made on the surface of architecture by atmospheric agents and the passage of time, while the second comes from the same interior of architecture. Man is no longer inside it, an environment that has abandoned all aspirations to become its refuge and has been replaced by harmful and toxic materials that constantly erode the same architecture.

In its broader temporal momentum, the latter, declining into nuclear waste repository, operates an alteration of the monumental significance. These buildings are usually articulated on two levels, one hypogeum very often configured as a tunnel or a massive warehouse with simple geometry, intended to store nuclear waste by confining radiation, the other superficial, that in addition to being intended for carrying out maintenance activities, often results from the formal experimentation of an assembly of monumental objects and is linked to the need to transmit to the generations of the future more distant a message of danger and warning.

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4. Morton, T. (Minnesota Press, 2013), *Hyperobjects. Philosophy and Ecology after the End of the World*, p.5.
5. Ivi p.138.

This is the example of the *Waste Isolation Pilot Plan* (US Atomic Energy Commission, 1999), designed in a clear reference to the Stone Age, or, again, the proposed *Spike Fields project* (designed by M. Brill for Sandia National Laboratories, 1992), which is presented as a system of sharp and threatening pyramids.

Thus emerges the relationship, even cynical, with the Great Funeral Monuments erected throughout history. A story that reconnects to that progressive metamorphic process that transformed the bunker dispositif from a safe space efficiently separated from a threatening outside to a hermetic guardian over toxic waste, built to protect humans by negating — and by so temporarily erasing — huge territories from their experience, toward a progressive expulsion of the human body from the inner to the outer space at an accelerated speed in the direction of the negative horizon.

DESERT(ED) ISLANDS.
AN ARCHIPELAGO OF COLONIZED POINTS NEMO
AND SUBDUED WILDERNESS.

We find maps everywhere in our media-rich environment, but their forms are not very diverse. If you look at most maps used today, we see the offspring of colonial mapping practices. If the North is 'up', this is a remnant of maps invented in Northern Europe. If the Atlantic Ocean is left-centre, this stems from European interest in shipping routes between the Americas and Europe. This historical perspective is relevant because of the strategic role that colonial maps have played in the forceful annexiation of indigenous world. Colonial mapping practices not only established an Eurocentric worldview, but also a capitalist view of land as a form of private property that can be owned, traded, and sold.[1]

Maps and geography are not neutral, and they have never been such.

The processes of colonization inaugurated with the discovery of America, and from that moment on spread exponentially, have adopted this system of representation declining and setting it according to their interests, inaugurating a first significant cynical shift between the world to be represented, with its morphological, topographical, cultural and social richness, and the world represented, flattened between geographical coordinates, dimensional distortions and filled with substantial white spaces to signal potential areas of expansion as not civilized and unexplored. It is interesting to note in this sense that there was a first gap between the pre-colonial and the colonial maps. In the first cartographers had the habit of introducing dangerous mythological figures near the corners, such as dragons and giant octopuses, to mark the risk of moving away from the limits of a still flat Earth.
Following the first colonial expeditions, these monstrous figures are replaced by the images of the natives who lived there, so presented to the world "enlightened and civilized" as the new monsters to defeat. Within these maps the natives[2] are depicted as cannibals, with six arms, centaurs, hermaphrodites. An almost caricatural iconography that, inserted and interpreted within the socio-cultural context of the time and supported by the use of cartographic tools extremely interested, determined the start of brutal colonization, a process that, as also seen in the previous chapter, continues to protract in the contemporary.
Eager to fill and civilize these empty geographical spaces, driven by the motto "going west,"

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1. Pater, R. (Amsterdam: Valiz, 2022), *CAPS LOCK. How Capitalism Took Hold of Graphic Design, and How to Escape from It*, p.235.
2. In this regard, the reflections introduced by Viveiro de Castro and Donoski in their book on the cosmologies of the natives and natives, whose life was built on a cyclical and ritual time, are extremely interesting, a slow time built on the cyclicity of nature. In the same maps made by the natives to orient themselves within the extreme environments that inhabited emerges a completely different conception of the world and the earth. They are maps built on the basis of cosmology, maps that contain elements of the future and the past but, above all, within which, rejected any hypothetical adoption of geometry, interpret every element present in their environment as a living being and, specifically, navigation becomes a constant crossing of space and time.

which today seems to be replaced by "going outer space," the colonizers embark on the conquest of the Americas, giving life to a process that continues to the present day and that has been itself an accomplice of the identification of these territories from the target of nuclear, involving and exploiting them in the different historical phases.

The white space of the map thus begins to undergo a series of erosions, which consume the soil; a continuous process of subtraction that superimposes on the previously white portions a foreign notational system, rigid, imposing a control that pours into every aspect of life that in that "empty" space before developed.

Capitalist processes have made geography and mapping the instruments of control and submission of these territories, hiding the logic of exploitation and cancellation of entire civilizations under the facade of an operation of civilization. These are rigid grids and marked boundaries, meticulously calibrated and suspended temporalities. In an attempt to overcome this double staggering reality, James Corner proposes to adopt the agency of mapping to "uncovering realities previously unseen or unimagined, even across seemingly exhausted grounds." Thus, mapping can become a tool through unfolding potentials; it re-makes territories repeatedly, each time with new and inedit consequences.

Starting from this concept, it is, therefore, possible to trace and connect the sites through which the history of nuclear power has unfolded, starting from the extractive mines, passing through military platforms, nuclear test territories, reaching contemporary nuclear power plants, areas of exclusion and the issue of waste deposits. To do this, here, we intend to reconnect to the concept of the island, or better that of *Desert Island*, as it was elaborated by Derrida. The islands, as Derrida describes them, are produced by movement, geography, and imagination. Immersed in a condition of mutual becoming, the island is the place of solitude: exile, ex-ile. A no man land to which humans feel an intrinsic attraction:

> Dreaming of islands—whether with joy or in fear, it doesn't matter—is dreaming of pulling away, of being already separate, far from any continent, of being lost and alone—or it is dreaming of starting from scratch, recreating, beginning anew. Some islands drifted away from the continent, but the island is also that toward which one drifts; other islands originated in the ocean, but the island is also the origin, radical and absolute.[3]

If dreaming of islands means dreaming of being transported elsewhere, of being separated from the mainland, of approaching a new beginning, the state in which the places crossed by the history of nuclear power are immersed seems to approach this condition in its most dystopian connotation.
Each of these sites is, in fact, a deserted island, or better, desertified because of the same harmfulness of the material extracted or placed in it. To generate the condition of isolation of these places, there is a combination of natural and anthropic elements: in some cases, it is the same sea — just think of the bombing of the Bikini Atoll — or, still, the desert —

3. Deleuze, G. (2002) *Desert Islands and Other Texts. 1953-1974*. Parìs: Les editions de Minuit, p.10.

where the extreme environment generates the ideal conditions to favor an isolated and distant conformation —. In others, isolation is achieved through the introduction of massive physical perimetry and advanced security facilities, designed to protect the secrecy of the missions that some of these islands conceal and, at the same time, protect the human being from the harmful materials that others contain.

Tracing the entanglement described and intertwined by the hyperobject of nuclear means, therefore, intercepting an archipelago of deserted and desertified islands. If Slodetjik claims "from this exemplary shipwreck onward, the island in the distant ocean served as the site of revision processes against the definitions of reality on terra firma."[4] These islands, located in the middle of the desert, in the middle of the wilderness or, still, in the middle of the ocean, are all immersed in a condition of geographical or morphological uniqueness and have also represented a territory of experimentation and testing for the redefinition of reality on land. Navigating and landing on the different islands, through multiple and complex trajectories, the uranium was processed to become useful material and then tested in widespread test shafts, detonated to clear entire cities or employed in an articulated system of platforms to produce energy. The same Enrico Fermi, head of a group of researchers involved in the *Manhattan Project*, will be described in a coded message sent to President Roosevelt: "The Italian navigator has just landed the New World."[5]
It is 2.20 pm on December 2, 1942, and the campus of the University of Chicago has just activated the *Chicago Pile 1*: the first self-fuelled chain reaction has begun. Thus a new world is inaugurated, or probably what could be defined as the beginning of the end of a world: the nuclear age begins. Thus begins the process through which man has generated a hyperobject destined to survive and threaten future generations:

> in the ideal of beginning anew, there is something that precedes the beginning itself, that takes it up to deepen it and delay it in the passage of time. The desert island is the material of this something immemorial, this something most profound.[6]

The imaginary and semantic forefather of this insular formation is the Point Nemo,[7] which contains all the elements that these islands reiterate and see exploited: extreme isolation, presumed uninhabitability, and alienation. Starting from this ancestor, an archipelago of

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4. Sloterdijk, P. (2011) *Foams. Spheres III*. Semiotext(e), p. 287.
5. Arthur Compton, director of the US atomic bomb project's metallurgical lab, told James Conant, head of the National Defense Research Committee, on 2 December 1942. The message, for how it has been transmitted, usually is composed by other two sentences: Conant asked, "How were the natives?" Compton replied, "Very friendly." The first atomic fire in history had been kindled, and the same colonialistic culture is totally ready to push its already-damaging processes even further.
6. Deleuze, G., (The MIT Press, 2004), *Desert Islands and other texts*, p.14.
7. Point Nemo is the Ocean pole of inaccessibility (49.0273°S 123.4345°W): the ocean island farthest from land. It lies in the South Pacific Ocean, 2.704,8 km from the nearest lands, a place so remote that sometimes the closest human beings are astronauts aboard the International Space Station when it passes overhead. It is this very relation of proximity that has been converted, since the 1971, into a dangerous relation: all the decommissioned satellites and other space debris are brought back from orbit and precipitate in this point, giving rise to what is recognized as the *Pacific Cemetery*, which hosts today more than 250 spacevehicles.
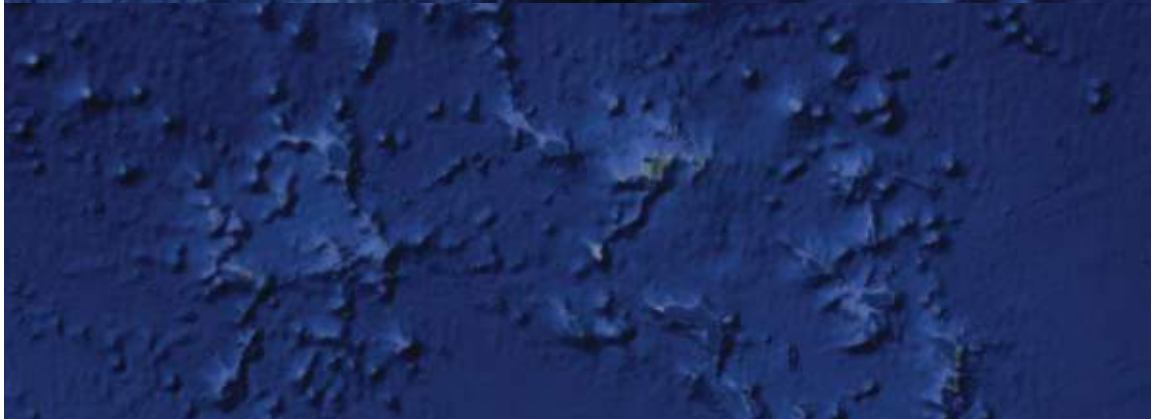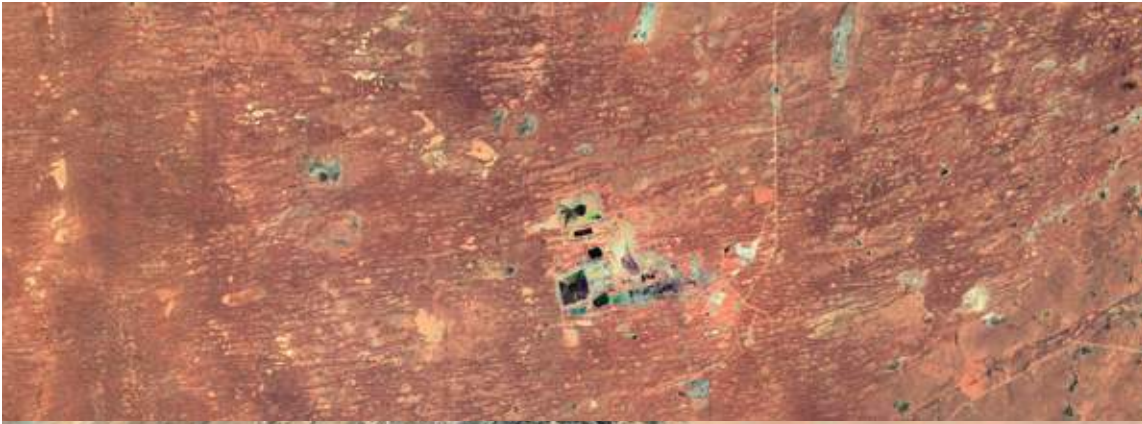
^^
Point Nemo,
Pacific Ocean.
45º52.6'S
123º23.6'W

^
Saipan Island,
Pacific Ocean.
15°10.51'N
145°45.21'E

v
Bikini Atoll,
New Mexico,
Pacific Ocean.
11°35'N
165°23'E

vv
Nevada Test Site
Mojave Desert.
37°07'N
116°03'W

^^
Olympic Dam,
Australia,
30°26'46.33"S
136°51'58.80"E.

^
Rossing Mine,
Namibia,
22°36'4.04"S
15° 1'17.44"E

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Wind River Mine,
Wyoming,
US,
42°48'30.60"N
107°31'20.41"O

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Cigar Lake Mine,
Canada,
58° 4'7.00"N
104°32'26.00"O.
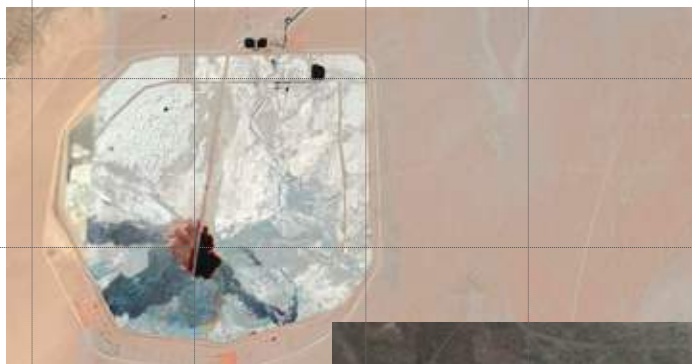
Olympic Dam,
Australia,
30°26'46.33"S
136°51'58.80"E.

Chernobyl Nuclear Power Plant,
Russia,
51°23'20.11"N
30° 6'21.42"E.

Arlit,
Niger,
18°46'10.79"N
 7°21'9.75"E.

Cigar Lake Mine,
Canada,
58° 4'7.00"N
104°32'26.00"O.

Rossing Mine,
Namibia,
22°36'4.04"S
15° 1'17.44"E.

Nevada National Security Site,
United States,
37° 6'59.22"N
116°11'20.17"O.

Fukushima Nuclear Power Plant,
Japan,
37°18'59.65"N
141° 1'29.81"E.

Kazatomprom Mine,
Kazakhistan,
45°22'13.39"N
68°50'3.08"E.

deserted or deserted islands is traced, where different types of islands emerge, each characterized by its temporality and by different internal rules and mechanisms of operation. From the analysis of some of these islands, it is also possible to trace a genealogy of the different architectures that have related to them, that have inhabited them, contributed to their desertification, or that have remained on them as shipwrecked survivors of a contamination process.

The first islands that make up this dispersed archipelago were and, in some cases, are still the scene of mining and testing processes. These landscapes are often far away and isolated and are part of what has been defined as "sacrified zones." Their original residents, basically natives and unofficially recognized populations, are seen as already impacted or, even worse, do not have a political force to combat these projects.

In the first case, these sites host the uranium mines. They enjoy a transience that is directly proportional to the full exploitation of the resources of their subsoil, of the material they can offer. These sites, which arise near the natural deposits of uranium dispersed within the Earth's surface, are characterized by enormous and monumental subtractions of soil. The ground is excavated, generating monumental works in negative; the passage of these operations leaves traces that recall ancient inscriptions but remain as evidence of the infrastructure and operation of these extractive platforms. A research carried out in 2017 stated that in the world there are more than 4.500 uranium deposits: latent and potential islands waiting to be generated by subtraction and thus join this complex archipelago. Once the mineral resource is exhausted, what remains is a site where rather large amounts of radiation have been released and which therefore remains excluded in its isolation, not being able to be reused or redeveloped in the short term.

Within this logic of exploitation and colonization is grafted the genealogical origin of the nuclear age. Suppose the first extraction processes of this metal are recorded from the end of the nineteenth century in the Czech Republic. In that case, its massive extraction is recorded with the beginning of the twentieth century in America, where at the beginning, its salts were used for the creation of fluorescent paints used for mass dials and other medical applications, later revealed to be extremely unhealthy. The massive demand for uranium increased during World War II when the nations involved began developing and testing their nuclear bomb versions. Thus, in the territories already affected by the processes of violent colonization, the trajectories of other even more harmful and petty operations arrive.

This system of mining sites is joined by a set of territorial fragments that formed the background for nuclear tests that, starting from World War II, lasted during the Cold War until 1991. A succession of atmospheric and underground tests led to the formation of 107 territories-guinea pig. If, in the case of mining sites, the landscape presents itself with a series of substantial negative terraces, testifying to the amount of material stolen and, at the same time, the duration of this process, in the case of these post-war islands, the scenario changes considerably. A very peculiar space-time transitional conditions characterize these landscapes. Even if they are not the places where the conflict developed, the so-called battlefields constitute part of that system of areas that the military infrastructurization

of the territory has occupied — including military bases, training camps, testing, and war production sites. An articulated and diffused system whose sites are subjected to an operation of exclusion and disappearance, an archipelago of inaccessible, segregated, and heavily guarded islands removed, more or less permanently, from the community access and use. "The enterprise of destruction is first and foremost the production of disappearance,"[8] writes Virilio, who also states that "in reality, the art of war participates in that aesthetic of disappearance which is probably the essence of all history."[9]

Furthermore, these peculiar islands are characterized by a "militarisation not only of space but also of time,"[10] which seems to be crystallized, fragmented, and suspended between the expectation of an intervention that could bring them to a new condition of normality and the traumatic memory of the conflict passage, living a transitional phase from destruction to reconstruction, from contamination to purification, from segregation to release.

The testing practice on these sites has bequeathed them a system of architecture in ruins, built specifically to be subjected to nuclear testing and to verify the level of destruction of weapons under development. An example of this is the Nevada National Security Site, on whose land there is still a vast sample of artifacts subjected to this process: infrastructural sections, American building types, and fragments of Japanese villages. This constellation of planned ruins rests on ground deformed by explosions, a dystopian lunar landscape marked by large craters. Precisely because of this particular conformation and, pushed as we have also seen in the previous chapters, from war's imaginary fascination widely diffused by media throughout history, a part of these landscapes has been converted into highly controlled and programmed touristic attractions. As a result, a growing number of visitors, who become increasingly shameless and impudent, attempt to cross inviolable places and penetrate the most hidden military secrets.

Furthermore, another legacy that unites these test sites, much more severe and heavy, is that within them, they host deposits of nuclear waste, thus having to face the onerous and threatening issue of the residues of the tests conducted on their surface. In addition to the NNSS, which will be deepened within the second paragraph, an example is provided by Runit Island, part of the forty islands that make up the Enewetak Atoll of the Marshall Islands in the Pacific Ocean. The U.S. conducted a series of nuclear tests there between 1946 and 1958. The crater originated from one of these tests, called the *Cactus test,* and generated with a detonation on May 6, 1958, was used, in a process of exploitation and reuse extremely cynical, to deposit loose waste and topsoil debris accumulated in the surrounding islands. A filling operation lasted three years, from 1977 to 1980, and ended in loading the crater, finally entombed in concrete. The work carried out, a concrete dome called the *Runit Dome* and called by the locals "The Tomb," measures 115 m in diameter and a thickness of 46 cm and, with an area of 9.000 square meters, covers an estimated volume of 73.000 cubic meters of radioactive waste. A sarcophagus that operates that strategy of nuclear burial

8. Virilio, P. (Paris: Galilée, 1984), *L'Horizon négatif: essai de dromoscopie*, p. 60.
9. Ibidem.
10. Ibidem.

was then re-proposed in many other sites, whose containment has already shown subsidence starting from 2013.

We, therefore, move from islands in which the training operation is attributable to a process that acts in negative and that leaves on the ground the signs and traces of the operating and infrastructural system that has operated there to islands characterized by a higher level of contamination and on which the first shipwrecked begin to appear: artifacts drastically affected by the trauma of nuclear detonation and deposits initially declared temporary, which contain nuclear waste destined to remain there for a very long time.

Within this widespread and complex archipelago, through which the hyperobject of radioactivity is articulated and developed, there is an island system characterized by settlements for the production of nuclear energy, whose cooling towers densely populate the collective imagination, almost rising to the new monoliths of contemporaneity. These sites are usually introduced in areas very close to urban centers. These productive islands are 450 and are presented as the generic template of a highly technological system that is declined in different contexts and is practically unchanged. The formal and spatial composition of these settlements is fundamentally linked to the productive one, resulting in the repetition of the same elements that this process supports: the nuclear reactors, within which nuclear fission reactions take place, a hydraulic system that feeds the steam supply system and a cooling system that is completed by the homonymous towers. These sites have a relationship with the temporal dimension that makes explicit the high criticalities characterizing not only the operational phase, which generally covers an interval between 40 and 80 years, but also that of dismantling, in which the time increases, reaching 160 years, as was estimated for the Calder Hall reactor, in Sellafield, England, which closed in 2003 will be abandoned entirely only in 2115. The time dilation in the occupation of the land by these plants is also linked to the fact that, in most cases, nuclear waste is stored inside them. As will be seen in the next paragraph, the question of a permanent deposit for such materials is characterized by a long history of criticality. The reprocessing phase of the waste, in any case, provides for storage of at least five months at the plant that produced them, a period that is often prolonged and extends over the years. In this phase of temporary rest while waiting for a transfer to another island, these substances are housed in special pools of water to allow the cooling of the radioactive material.

Over the last few decades, and thanks to the development of new and increasingly advanced technologies, new models of nuclear power plants have been outlined and configured in which passive safety systems have played a fundamental role. The operating systems that control them have been designed to trigger the shutdown of the nuclear reaction following the identification of a possible overheating, a system that has proven to still present high criticalities and that has been revised following the severe accident of Fukushima. Precisely from this traumatic event, an operation of revision and rethinking of these productive islands was triggered, to increase their containment and safety. One of the proposed solutions is that of the *Small Modular Reactors* (SMRs), a cloned and reduced version of the large nuclear power plants whose advantage would be fundamentally linked to a productive issue, having regard to the use of prefabricated and modular panels for their construction,

and safety, which should result from the fact that being smaller in size, such plants would produce a more contained and manageable environmental impact than their "ancestors." A first model of this possible new genealogical branching was prototyped in Russia in May 2020: the floating nuclear power plant Akademik Lomonosov, anchored in the port of Pevek, a port city in the Arctic.[11] These vessels, designed to move and navigate through ice-covered waters, constitute one of the main means of transportation in this area and represent an iconic symbol within the collective imaginary of the nordic population, an image that the dynamics of this productive process have now appropriated. The nuclear ship develops for 144 meters in length and has a section of 33 meters, and is still underpassing a testing phase. If it were to overcome it, it could happen that the archipelago of deserted islands, located in the open sea, as well as in the desert, or, again, settled near the urban areas of the sea, can count on new islands, floating and mobile

Within this system of sites, naturally configured or eroded to the point of being converted into islands radically transformed by anthropic intervention, it is possible to recognize different temporal dimensions, and different degrees of temporality intertwined with geological time, stratifying in the depths of the ground.

The islands were, for Robert Smithson, a speculative site capable of triggering reflections on temporality, boundaries, scale, and human relation with geology. Everchanging surfaces modeled by the sea and its movements, that in a constant variation triggered a constant search for new balances, for a new collaboration between nature and human, stating:

> I like landscapes that suggest prehistory. As an artist it is sort of interesting to take on the persona of a geological agent where man actually becomes part of that process rather than overcoming it. [...] Imagine yourself in Central Park one million years ago. You would be standing on a vast ice sheet, a 4.000-mile glacial wall, as much as 2.000 feet thick. Alone on the vast glacier, you would not sense its slow crushing, scraping, ripping movement as it advanced south, leaving great masses of rock debris in its wake.[12]
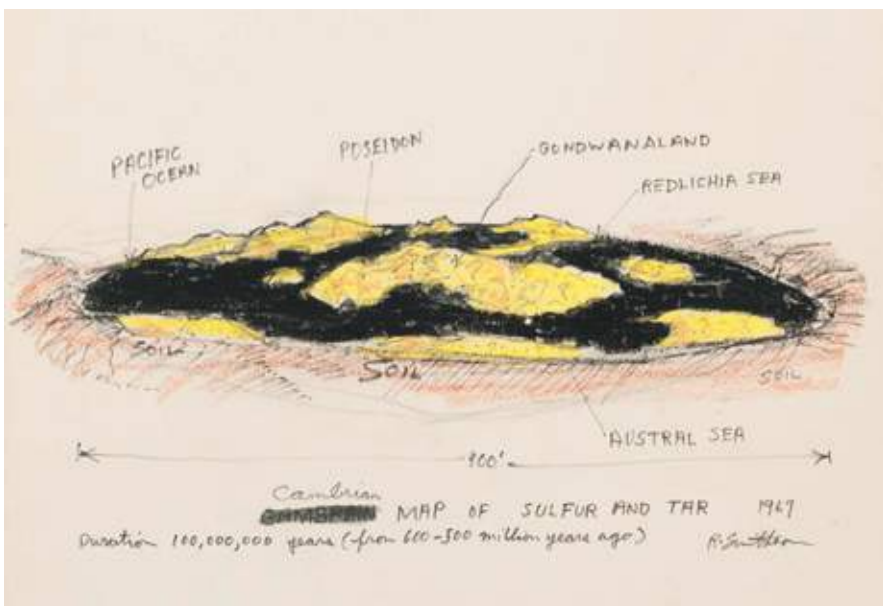
Memory and amnesia are issues raised and shaken by geological time, with which the processes that originate this archipelago of islands also clash.
Sites of exclusion, erosion; the corrosion that interests them also affects the memory of the human being, on the one hand, unable to interface with a temporal dimension much wider than its duration, on the other, traumatized to such an extent by the encounter with this hyperobject, operating a defense mechanism that cuts a time interval too painful to retrace. The issue of memory and the critical issues that geological time represents for it will be addressed in the next paragraph.

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11. The project to build floating nuclear power plants is not entirely new and has its predecessor in the MH-1A ,the first floating nuclear power station. A pressurized water reactor was obtained in a converted Liberty ship as part of a series of reactors in the US Army Nuclear Power Program. Its life was rather short. In fact, built from 1963 showed the first critical issues in 1967, was then anchored in the Panama Canal Zone where it was used until 1975. Its dismantling began in 2014 and was completed in March 2019.
12. Marian Goodman Gallery, presentation of the eshibition "Robert Smithson. Hypothetical Islands," 2020.

>
Robert Smithson,
Island Project,
1970, Holt/Smithson
Foundation, Licensed
by VAGA at ARS, New
York.

PACIFIC
OCEAN

POSEIDON

GONDWANALAND

REDLICHIA SEA

SOIL

SOIL

SOIL

AUSTRAL SEA

800'

Cambrian

~~CAMBRIAN~~ MAP OF SULFUR AND TAR 1969

Duration 100,000,000 years (from 600–500 million years ago.)

R. Smithson

<
Robert Smithson,
*Cambrian Map Of
Sulfur And Tar,*
1969, Holt/Smithson
Foundation, Licensed
by VAGA at ARS, New
York.

DARK MONUMENTALITIES:
CAMOUFLAGE AND
FAKE READY-MADE OPERATIONS

The previous paragraph explored the delineation of possible cartography that allows tracing the different thicknesses and the time scale that characterize the hyperobject generated starting from the nuclear era. The device through which this exploration was started is that of the island, which contains in itself a semantic meaning, that of exile, and symbolic, a physical separation, a distance, and an "other" dimension that allows us to develop a double reflection. On the one hand, to understand and trace the actual dimensions and connections of a pervasive and articulated system, and on the other, to record a new trend that, starting from the end of the twenty-first century, interests and affects architecture: the design of spaces in which the human being no longer occupies the center of gravity. This new trajectory, which has been detected, for example, in the case of data centers, is fundamentally linked to the consequences of the production processes triggered by contemporary Prometheus. Processes, procedures, and operations require a dual repositioning of the architectural discipline.

On the one hand, it is called to rethink and address the issue of containment from a perspective reversed concerning its traditional attitude, being found to contain substances that operate a corrosive action from within that overlaps with the planned obsolescence already inherent in its DNA at the time of construction, and the erosive action of atmospheric agents and potential natural disasters that, depending on the context, will face. The other aspect in this disciplinary shift involves the very language of architecture, its symbolic and formal apparatus, which has always concretized a series of narratives, warnings, and messages with which to dialogue with the human being, with its users. If in ancient monuments, the processes of affirmation and consolidation of the different systems of power that have followed one another in history are still clearly legible, in a context such as that of nuclear waste deposits, the formal and symbolic language is recovered and used to carry out another type of communication. The aim is to express a message of warning and admonition, the expression and explication of harmful content from which to keep away.

The last islands of this reconnaissance clearly explain these conditions and are generated starting from the intersection of three essential elements: large-scale artworks installed outdoors, archaeology of the future — involving the issue of monumentality and its inversion — and nuclear waste. In the contemporary world that we have helped to shape, the environmental conditions are constantly upset by natural and anthropogenic disasters whose manifestations take place violently and suddenly, generating immediate damage and wounds on the territory and the urban fabric within which they manifest, or slow-motion catastrophes, invisible that do not imply radical changes in the short term and thus conceal much more critical corrosion and pollution mechanisms. The islands that will be scoured, with their tortuous underground developments and the different surface joints, reconstruct

the genealogy of an experiment, articulated on the three axes described above, focused on a new type of settlement, posthuman and maximum safety: the geological repositories of nuclear waste. The introduction to this discussion can take place through the following reflection, developed by the archaeologist William Rathje, founder of *Garbage Project*:[1]

> In the three or so million year of humankind, we have never had more than we have today to try to understand our relation to our artifacts — what we manufacture, use, and discard — and how our artifacts both mirror and shape our actions and attitudes. In the sweap of evolution, we have transformed ourselves from hunter-gatherers chipping stone tools to skyscraper dwellers carrying calculators. In the process, our own creations have gained ever more functions, until today our behavior takes place in a physical environment largely of our own making. Constantly faced with dilemmas and disasters in our self-made world, how do we decide what to do (and make) next? Many of our best minds focus their attention on artifacts by inventing and testing new technologies; others study people's self-reports of their actions and attitudes. Ironically, the "technologists" pay little attention to studying actual artifacts. The real world, however, is neither just attitudes not just artifacts; it is people constantly interacting with both.[2]

Humans produce waste that shapes and modifies the environment in which they live, waste of distinct nature. Between 1952 and 1989, *Garbage Project* researchers developed an exploration of fifteen landfills across the US, finding out that the process of biodegradation was not taking place at the expected speed. Their vaste volumes were obstructing the decay process, slowing it down. What is interesting about this discovery is the way it was communicated to the general public. Rathje compared the volume of the landfill to that of one of the most famous World's monuments: the Egyptian Great Pyramid of Giza, where the waste itself was replicated almost 25 times. This communicative operation raises two critical questions, both related to measurement. The first, of a material nature, refers to an icon rooted in the collective imagination to convey the problem detected; the second, on the other hand, is linked to the time dimension and, more specifically, to the intentionality of remaining in time. This comparison thus unfolds a relationship as unexpected as it is crucial:

> monuments and accumulation of trash share some characteristics by virtue of their sheer material scale [...] this aligns my understanding of the detritus of human residence — whether in the form we call trash or those now celebrated as cultural heritage monuments — with ideas about waste as spatial and material, and decay as temporal and processual.[3]

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1. The Garbage Project was founded in 1973 by William Rathje, professor of anthropology and fellow archeologist at the University of Arizona with the intention of critically questioning the garbage production and to draw a reasoning about possible ways to deal with a problem that will project its consequences on the future generations lives, encouraging a deeper understanding of the resource depletion and the environmental and landfill-related problems. In particular the project intended to study, through the analysisi of its garbage, the modern civilization.
2. Rathje,W.L, (September/October 1984), "The Garbage Decade," in American Behaviolar Scientist, vol.28 n.1,, pp. 9-29.
3. Joyce, R. (New York: Oxford University Press, 2020), *The Future of Nuclear Waste. What Art and Archaeology Can Tell Us about Securing the World's Most Hazardous Material*, p.2.

These conditions are explained by a new type of island that is beginning to form within the archipelago described in the previous paragraph: the permanent nuclear depot intended to host, in fact, a particular type of garbage: nuclear waste. Nuclear waste is the byproduct of technology, military, and civil service, which exploits the structure of the atom to release energy, creating a radioactive material that continues, during its decay, to emit energy. As noted in the previous paragraph, this emission characterizes the whole nuclear fuel cycle "starting from the mining and mineral processing, to nuclear power generation, and the decommissioning of nuclear power plants, as well as in military weapon production."[4]

A process that ends, in fact, with the production of nuclear waste, a particular type of slag characterized by very long disposal times, which can be associated with geological time for the interval they occupy. The sites that, since the 1980s, have been designed to accommodate and preserve these substances are also called geological repositories. Here sedimentation is expected in abysses ranging between 400 and 500 meters, thus pushing within the deep geological formations for an estimated period of 10.000 years.[5]

The operation of these underground storage islands is fundamentally based on the concept of passivity, consisting of the realization of a permanent and definitive structure that does not provide any type of intervention or human presence after the moment of closure of the plant. Once the large underground vacuum has been obtained, often located near caves already present in the subsoil and equipped with a geological characterization that guarantees resistance and impermeability, the sites remain in operation for an operating time directly proportional to their storage capacity: a functional life that is progressively eroded and reduced to the extent of their filling. Within this additive process, in which nuclear waste is deposited, carefully encapsulated, between the geological layers of the Earth, a series of technical and natural barriers play a fundamental role, which are used to increase the separation between the toxic material and geological substrate. In a progressive process that increases the layering of containment materials around toxic waste as it sinks deeper. At the end of this period of operation, usually estimated at a time span of 100 years, the deposit is hermetically sealed.

As in the project *Concrete Punishment*, the tunnels in which the encapsulated waste is housed, like underground catacombs, are filled with inert materials, often bentonite, while at the entrance of the vast infrastructure distribution tunnels are introduced massive reinforced concrete tiles, permanently preventing any further activity within the complex. In this way, a labyrinth of tunnels is buried underground, joining three fundamental environments:

4. Giusti, L., "A Review of Waste Management Practices and Their Impacts on Human Health," in *Waste Management 29* (2009), p. 2229.
5. This particular time-frame has been selected and adopted from the US Environmental Protection Agency (EPA), arguing that this lenght of time was based on the calculation of cumulative risks exposure to sufficient radiations to produce deadly effects exceeding an arbitrary acceptable level. To further deepen this information see: EPA, "40 CFR PART 191: Environmental Radiation Protection Standards for the Management and Disposal of Spent Nuclear Fuel, High-Level Transuranic Radioactive Waste; Final Rule," *Federal Register 58*, n. 242 (December 20, 1993), pp. 66401-66402.

the underground laboratory, the pilot deposit, and the deep geological repository. The first represents the inaugural volume of the whole complex and allows to study, in-depth, the geological characteristics of the rock within which the deposit will be obtained. The latter consists of two parts that could be ironically traced back to a sort of observation room, the pilot depot, where the waste is studied for a very long period within which the tightness of the capsules and the effects of any radioactive leaks into the environment is verified, and the permanent burial site, the deep deposit, where these are permanently housed.

The two projects presented here return the design genealogy of as many islands permanently forbidden to human intrusion. Two different paths operating deep verticalization in the ground have distinct destinies. The first traces the concrete formation of the first of these devices, in Onkalo in Finland; the second is the dense design reflection that accompanied an unrealized project, in Yucca Mountain, in Nevada, which tells of the start of conceptual experimentation that is intertwined in the place where it all began, in Alamogordo, New Mexico.

The first design story opens with a funeral. The actual conclusion of the geological deposit of nuclear waste in Onkalo, Finland, is presented by the media as "the first nuclear waste tomb"[6] or even as the realization of a "nuclear necropolis."[7] Right from the start, the ritual process of burial, deeply rooted in the history of civilization, and the negative and chthonic process of dangerous rejection are linked together. A narrative in which the attempt to celebrate this new conquest of technology could be recognized, consisting in burying, finally, away from the eye and from any physical contact, one of the most persistent and harmful threats of the last century: nuclear waste.

The chosen site, Onkalo in Finnish means "cave," is located on the Baltic Sea, 300 km from Helsinki, and was selected for its conformation, particularly suitable for economizing excavation operations, and for its geological characteristics: it consists of gneiss, a metamorphic rock with a high level of stability from a geological point of view, which allows minimizing water infiltration, particularly corrosive and dangerous for this type of deposit.

Following the strategic trend indicated by Graham as "to bury, and bury deep,"[8] the construction of the deposit, articulated in four distinct time phases between 2004 and 2019, took the first seven years only to the excavation, the material subtraction operation that led to the tunnel of access to the deposit, which develops an adapted spiral to the characteristics of the bedrocks, and the voids prepared for the burial of contaminated waste, reaching a depth of 520 meters below sea level. In this way, a sort of underground treasure chamber has been created, hidden and protected deep inside the soil, where they will be left. It is assumed for at least 10.000 years of the waste of atomic production.

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6. Article published on the online magazine ZMEScience. See the link: https://www.zmescience.com/science/news-science/what-the-worlds-first-nuclear-waste-tomb-in-finland-could-mean-for-nuclear-energy/
7. Ibidem.
8. Graham, S. (Verso books, 2018), *Vertical. The City from Satellites to Bunkers*, p. 361.

The functioning of the depot, whose construction was completed in 2019, will start in 2023 to enter at total capacity in 2025. The operational phase of the plant will then be developed by filling: inside the depot will be stored, for an estimated time of less than 100 years, or until 2120, the nuclear waste present and produced in Finland, coming in particular from the nearby sites of Olkiluoto and Loviisa.

The basic unit on which this procedure is articulated is the encapsulation of the waste that will be housed, for this journey in the direction of the center of the world, inside special capsules 5 meters long and consisting of a combination of different layers of iron, copper, and bentonite, explicitly designed to act as a barrier to corrosion of the innermost part made of cast iron. These capsules recall, curiously, another device with which man colonized, with particular intensity during World War II, the subsoil: the time capsules. These objects, from the most disparate and exuberant forms and made in order to transmit to the human being of a distant future — from 100 to 6.000 years — a cross-section of life on Earth, through scientific magazines, objects belonging to everyday life, books, photos, texts, were also buried in the ground, accompanied by a celebratory ceremony and, as in any self-respecting burial, by the installation of a commemorative plaque. In the case of Onkalo, thousands of highly technological and efficient capsules are deposited. Each will house several beams of nuclear waste and then be filled with argon gas and sealed with a first internal steel lid, a content that, in the hope of all, the man of the future will never have to meet. Once this operation is completed, the sealed capsules will be conducted, through a particular vertical connection system, underground and housed inside special containment compartments distributed along the 430 underground tunnels that make up the plant, where they will be further sealed with compressed bentonite in such a way as to resist intact to the small movements of the rock. Gradually, as the galleries exhaust their available space, they will be filled with bentonite clay to ensure, through the construction of a new artificial full, the definitive exclusion of humans within this space.

The plant will then reach its useful life when all the tunnels of this underground necropolis are filled. At this point, near the tunnel, a massive reinforced concrete dowel six meters long and with a diameter of 6 meters will be built. The resurfacing corresponds to the emergence of a further issue that unites the design of all deep geological repositories: the project of soil on the surface. If the human being has always sought, in his inherent drive of self-affirmation dictated by the hybris, to resist time and create works destined to last for the greatest possible time interval, in this case, the challenge proves to be particularly difficult: geological deposits are made to last at least ten thousands years. An eternal time compared with the reduced human temporality, a time interval in which Price's metronome seems to have stopped definitively, characterized by a constant but microscopic displacement. If the very nature of these deposits, equipped with efficient passive safety systems, is characterized by the inherent desire to exclude man, around the question of communication and the architectural and formal language to be adopted for the treatment of the intervention of soil that, like a signal buoy, marks the localization of these toxic capsules, an articulated and animated debate has been created in which two main strategies can be recognized. The first, found in the Finnish deposit, prolongs the same constructive logic of the site: the burial of the waste must be explained outside with the same logic of disappearance, conce-

alment, and camouflage. During World War II, as we have seen, this technique was adopted on a territorial scale to generate disorientation and deception in the air artillery, while in this case, it is adopted as a strategy of complete dissimulation. What is on the surface does not present any relationship with what is hidden underground. The activities, the landscape, and what was life before the settlement of the deposit must resume and continue. In this way, the oblivion of harmful sediment in depth will be favored through the repetition of daily practices on the surface. A strategy that aims, therefore, to engage a process of generalized amnesia: after many generations, the very existence of the site will be forgotten, an operation of erosion of memory aimed at the very security of man. Precisely this strategy is adopted within the Onkalo site. The territorial trauma to which this area has been and will be subjected, consisting in the phases of construction, operation, and closure of the deposit, is destined to be overcome through programmed amnesia that will erase the traces and the very knowledge, in the distant future, of its existence, thus generating an evident fracture between a geological trauma that will secretly continue to unfold, contained within the buried capsules, and a surface of the ground that, having stitched up the wounds, will gradually lose memory and signs of this dark presence.

The second strategy of soil treatment, of occupation of the surface in whose depths the slags are buried, triggers a diametrically opposite operation. Instead of hiding and hiding the geological deposit, a whole series of devices are designed and outlined aimed at communicating its presence and concretizing a message of danger for human beings of a very distant future. The second island intercepted by this navigation through geological repositories is located in Nevada, within the military area nicknamed Nevada National Security Site. It is, therefore, a navigation that returns to a previously affected site by nuclear history. In fact, during the Cold War, its desert territory was converted into a testing ground for numerous superficial atomic tests and underground. [9] The design history of this depot, which ended with a definitive suspension of the project in 2011, is particularly decisive. In the first place, it prolongs the postcolonial process that continues to characterize most of these contaminated islands: the location chosen for the construction of this nuclear depot is Yucca Mountain: a central place in the lives of the Western Shoshone and Southern Paiute people, who shared them for religious ceremonies, resource uses, and social events right in this place, that continues to be considered a sacred place. After having corroded the surface of a place that for centuries had been inhabited and affected by the ritual practices of the Native Americans, developed on a conception of cyclic and ritual time, the intention to strike this community is again revealed, coming to propose the introduction within the sacred mountain of the deposits produced by a population utterly foreign to these places, from a linear and capitalist conception of time.

The design proposal for the buried deposit inside the mountain does not differ much in the spatial and functional organization: it consists of a massive infrastructure composed by 65.000 km of tunnels that reproduce the same system of housing radioactive time capsules.

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9. Between January 27, 1951 and September 23, 1992 were tested in the area today known as Nevada National Security Site (before called Proving Grounds) 1021 nuclear devises, 100 of which atmospheric, and 921 underground, labelling this site as the "most bombed place on Earth."

Observing the section of the project immediately emerge to mind the great voids created for the realization of the Maginot Line or, again, the famous section of Humboldt with the representation of geological time, when it was still characterized only by the overlapping of natural stratigraphies. This section that is gradually colonized by the reiteration of this template: more than twenty geological nuclear deposits now occupy the depths of the Earth.

The second aspect that characterizes the genealogy of this project is its relationship with the *Waste Isolation Pilot Plant* (WIPP) developed by the Department of Energy (DOE) near Carlsbad, New Mexico, the first nuclear geological repository in America. Also in this case the logic of colonization is repeated. The deposit was built in New Mexico, a few kilometers away from the site where on July 16, 1945, the Trinity Test took place, the first nuclear detonation in history: Alamagordo. Conceived starting in the 1970s by the United States Atomic Energy Commission, the project underwent several variations, being interpreted in 1991 as a "research and development facility to demonstrate the safe disposal of radioactive wastes resulting from the defense activities and programs of the US exempted from regulation by Nuclear Regulatory Commission."[10]

In that same period, the proposal for the construction of a successor to this WIPP depot began to be put forward, to be built right in Yucca Mountain. The US Environmental Protection Agency (EPA) was appointed to verify that the project submitted by the DOA met all the required environmental standards and introduced another important request to issue such a permit: that a plan be defined to control access to the site,

> including a conceptual design of monuments that would be used to identify the controlled area after permanent closure [...] the monument designed, fabricated, and emplaced to be as permanent as practicable [...] to assure that relevant information will be preserved for future generations.[11]

Therefore, the design of the Geological Repository of Yucca Mountain is developed based on the WIPP project, undergoing alterations and important changes related to these additional requests. Here then emerges again the question of monumentality that is now intertwined with another type of waste, the nuclear ones, and that will inaugurate in the 1980s a new field of semiotic studies: *Nuclear Semiotics*. Interesting reflections begin to develop that revolve around a barycentric question: how to communicate messages over long periods. In 1991 the American Human Interference Task Force[12] was established. A scientific com-

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10. Hora, S.C., von Winterfield, D., and Trauth, K.M., *Expert Judgment on Inadvertent Human Intrusion into the Waste Isolation Pivot Plant* (Albuquerque, NM: Sandia National Laboratories, 1991), p. I-5.
11. EPA, *Criteria for the Certification and Re-Certification of the Waste Isolation Pilot Plant's Compliance with the 40 CFR Part 191 Disposal Regulations. Background Information Document for 40 CFR Part 194* (Washington, DC: US Environmental Protection Agency, 1996), pp. 5-1 to 5-2.
12. Among the outcomes of this meeting there are some fundamental publications: Givens, D.B., "From Here to Eternity: Communicating with the Distant Future," in ETC: A Review of General Semantics 39 (1982); Adams, M.R., and Kaplan, M.F., "Marker Development for Handford Waste Site Disposal," in Waste Management '86". vol.1: *General Interest*, (Tucson: University of Arizona, 1986); Kaplan, M.F., Archaeological Data as a Basis for Repository Marker Design (Columbus, OH: Office of Nuclear Waste Isolation, Battelle Memorial Institute, 1982); Kaplan, M.F., and Adams, M.R., "Using the Past to Protect Future: Marking

mittee made up of engineers, anthropologists, nuclear physicists, and behavioral scientists gathered to discuss how to formulate a message capable of communicating to the human being of the future the harmful contents of these deposits and thus dissuading him from entering them.

Hyperobjects, therefore, begin to pose critical questions that are reflected not only on the physical design of devices capable of containing their negative effects but root new questions about language, about the urgency of transmitting messages to a distant future, and, therefore, the crucial question of its reformulation. An operation of reformulation and experimentation started on Yucca Mountain's scenery. In 1991, two teams of experts, team A and team B — formed by architects, scientists, anthropologists, archaeologists, linguists, astronomers, and anthropologists — were called to design the ways to transmit this message to the man of the future.

Team A, including architect Max Brill, focuses its proposal fundamentally on landscape modeling, giving life to different configurations designed to shape a hostile environment, in which the very articulation of the spatial elements can repel the visitor, leading him to retreat. Different proposals are thus outlined that reiterate the perimeter of the footprint of the waste repository with harsh elements, thus configuring a hostile design, which is articulated in different proposals: from the *Forbidden Blocks*, which are conceived according to the idea that "the place should not suggest shelter, protection or nurture... it should suggest that it is not a place for dwelling, not for farming or husbandry. This would be most strongly communicated if the place obviously tries to deny inhabitation and utilization. It might be the best design as a place difficult to be in, and to work in both actually and symbolically."[13]

A proposal that will later be rearticulated in the S*pike bursting* through *Grid project*. Continuing to adopt a threatening language, now the surface of the site is articulated through overlapping a grid that, deforming, originates giant stone thorns that cast sharp shadows on a rough terrain. Finally, the designers themselves will give voice to the message that these forms intend to transmit:

> This place is a message... and part of a
> system of messages... pay attention to it!
>
> sending this message was important to us.
> We consider ourselves to be a powerful culture.
> This place is not a place of honor... no
> highly esteemed deed is commemorated here
> .... nothing valued is here.
>
> What is here was dangerous and repulsive to us.
> This message is a warning about danger.
> ...

Nuclear Waste Disposal Sites,2 in *Archaeology 39*, n. 5 (1986).
13. Brill, M. "Thinking... "As Much Fun as Sex, Drugs, and Rock'n'Roll", in *Environmental and Behavioral Studies: Emergence of Intellectual Traditions*, (New York: Plenum, 1990), p.215.

This place is best shunned and left inhabitated.[14]

Therefore, through the use of a threatening formal language and rejecting any celebratory meaning and commemorative intention for the transformation of this site, the designers concretize in sharp and pointed forms the feeling of danger that the recipients of a message so far away probably would not understand through the written word. The sense of repulsion is achieved through menacing earthblocks and crude shapes. Radically opposed is instead the proposal elaborated by the team B that moves starting from the following statement:

> We cannot guarantee that any simple or complex message, even when recognized and correctly interpreted, will deter a human being from inappropriate action. ... Nevertheless, carefully designed warnings could be expected to reduce the chances of inadvertent intrusion into the WIPP. Moreover, an intrusion would not be casual, but would be a planned event. As such, there would be a greater likelihood to consider cautionary data.[15]

Starting from the recognition that a message sent to a very distant future cannot retain its original meaning, team B articulates the project by adopting the formal language of an archaeological site, reproducing a ready-made version of the Stone Age. Here the colossal stones erected to delimit a space that, it is thought, should be an astronomical observatory of the Neolithic are replaced by two series of granite pillars, the outermost consisting of 32 elements and the innermost of 16, which delimit and circumscribe the footprint of the waste repository. The area thus perimeter is intended to host three information volumes: one above ground and two hypogea. On the ground inscribed by the two sets of pillars, a complex system of fragments and objects feeds the feeling of being faced with ruin. Moreover, all the surfaces of the inserted elements are inscribed with texts, in different languages, which reveal to the visitor of the future the nature of the place and its danger, as well as providing him with important notions regarding nuclear power. The final effect that the project aims to achieve is, therefore, to build an artificial archaeological site composed of ready-made ruins and monuments that, subjected to the erosive action of time, of an estimated time of 10.000 years, will take on the appearance of the ruins to which the designers were inspired. The poetics of decadence, consumption, and the aspiration to translate this place into a sublime and threatening landscape, is expressed by the same introduction of the report that this team presented in 1991, which opens with a passage from Ozymandias:

> I met a traveler from an antique land
> Who said: Two vast and trunkless legs of stone
> Stand in the desert.
> Near them, on the sand,
> Half sunk, a shattered visage lies, whose frown,
> and wrinkled lip, and sneer of cold communal,

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14. Dieter G. Ast et al., "Appendix F: Team A Report: Marking the Waste Isolation Plant for 10.000 Years," in *Expert Judgement on Marker to Deter Inadvertent Intrusion into the Waste Isolation Pilot Plant* (Albuquerque, NM: Sandia national Laboratories, 1992), F-49 to F-50.
15. Ibidem.

Tell that its sculptor well those passions read
Which yet survive, stamped on these lifeless things,
The hand that mocked them and the heart that fed;
And on the pedestal these words appear:
"My name is Ozymandias, King of Kings:
Look on my works, ye Mighty, and despair!"
Nothing besides remains.
Round the decay
Of that colossal wreck, boundless and bare.
The lone and level sands stretch far away.[16]

The reconnaissance through this island, located within the Mojave Desert, has therefore made it possible to trace projects that have been elaborated in an attempt to communicate with the generations of the future. A challenging and critical task that has originated, precisely within this context, a field of extreme experimentation giving life to the Nuclear Semiotic. From this moment, the elaborations of these messages will be articulated in the most disparate proposals: from the use of the famous symbol of the skull and crossed bones should be placed over the repository proposed by Carl Sagan to the proposal to communicate the danger through the mathematics of Stanislaw Lem, subsequently distorted in the proposal of storing information inside DNA, arriving to conceive to use living beings, and no more buildings, as a vehicle for the message. In this direction was formulated the project of Builfrench author Françoise Bastide, in partnership with Italian semiotic professor Paolo Fabbri, *Ray Cats*. They proposed to genetically modifying a cat species to change color when it comes close to radiation: the cat became the message.

The navigation through these islands permanently inaccessible to man has therefore allowed us to trace some semantic processes articulated through architecture and that, once again, have determined a further slippage.

Archeology helps us to imagine the unimaginable future best when it presents the past, not as a retrospectively predicted from the present through assumptions of uniformity, but as exceeding our present understandings and experiences. Art offers a vocabulary particularly attuned to helping us express the inexpressible and, in concert with the kind of knowledge production engaged in by archaeologists as specialists in living materials, might help us project futures. But we should never mistake those futures for what we must come, any more than we mistake the pasts we dramatize for what must have been.[17]

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16. Shelley, P.B., *Ozymandias*, on Examiner, 1818.
17. Joyce, R. (New York: Oxford University Press, 2020), *The Future of Nuclear Waste. What Art and Archaeology Can Tell Us about Securing the World's Most Hazardous Material*, p.14.

MARIACRISTINA D'ORIA PART 2 | THE EMERGENCE OF *MEAN* TIME ARCHITECTURES.
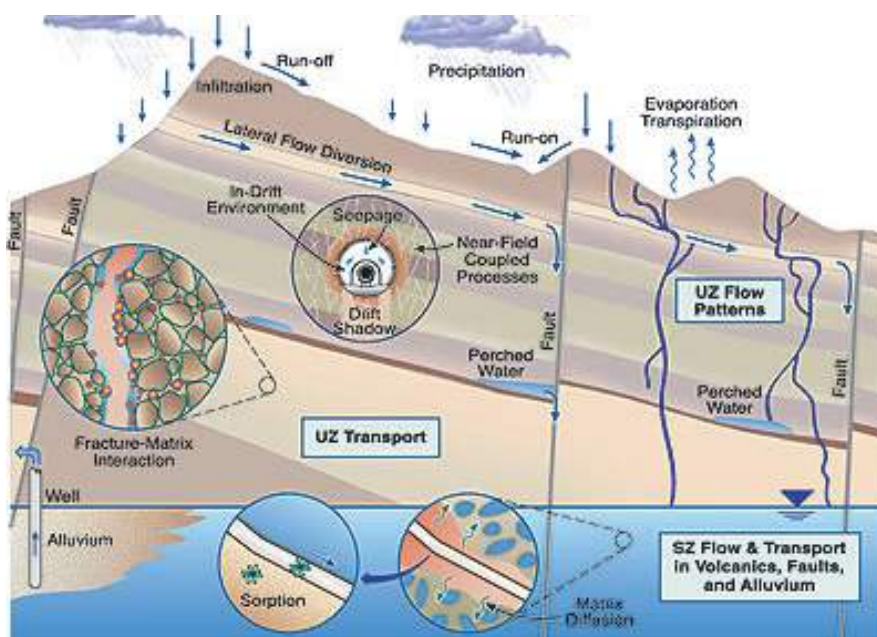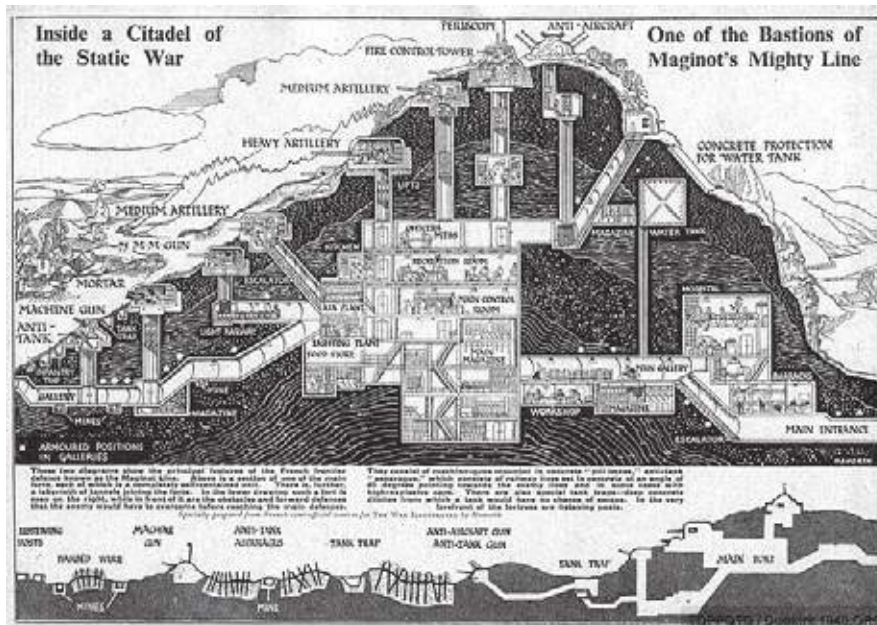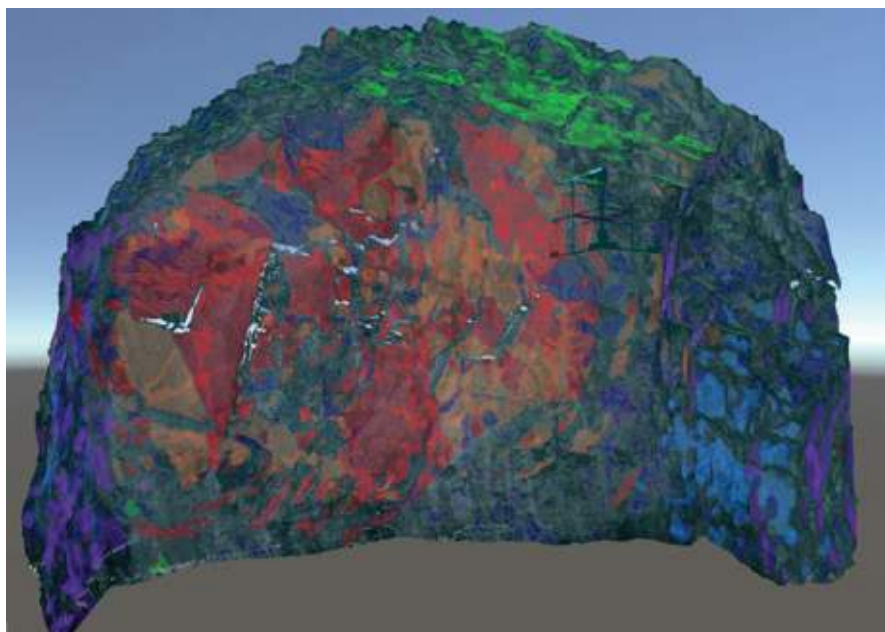
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INFINITY MINUS INFINITY
INTO ETERNITY

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LEARNING FROM *MEAN* TIME

NEGOTIATED PERMANENCE. INVERTED MONUMENTS AND POSTHUMAN TEMPORALITIES

"Between stasis and mobility, a certain slowness makes us discover a field of actions, where the eye stops being able to track the course of an object. [...] If this slowness is extreme, our eye, our memory loses the recollection of the point of departure."

(P.Bury, 1964).

CONCLUSIONS

Developing and moving through the transitional space-time fragments opened up by trauma and defined as *mean time* — explicitly referring to Cedric Price' homonym exhibition — the investigation of *expiring architectures* records its roots in the rhythm of the metronome. Thus, searching for the diachronies, distortions, and irregularities unfolded by traumatic events, the research constantly recalibrated the amplitude of its explorative tool, the temporal interval, to intercept what Hejduk defined as the "densities that silently implode."[1]

The perpetual tension that has pushed architecture to reformulate itself throughout history constantly embodies the relationship between the intrinsic human paranoia dictated by the irreversibility and uncertainty of existence and the inability to tame the extreme natural forces, nowadays retraceable and converted in the emergence of hyper-objects, that intermittently threaten architecture and humanity at large. Thus, the friction between the continuous search for an unattainable permanence and the inevitability of decay has simultaneously constituted the triggering and menacing stimulus at the very base of architectural practice.

The perception of imminent ends of the worlds has always cast its shadow on humanity, whose need for finitude derives from the instinctive impulse to circumscribe a measurable and intelligible temporal period to oppose the eternal flow of time, eon.

As shown in chapter 1.1, the Western construction of eschatological narratives is rooted in the concept of apocalypse that, adopted as a vehicle to transmit religious and political meanings, records with Modernity its exit from the salvific and mystical dimension to relate indissolubly to the consequences of capitalist processes and technological progress. Interestingly, this shift coincides with the emergence of systematic research on trauma in psychoanalysis.

This shifted notion of catastrophe records an essential variation in the causality relation: humans are no longer solely passively suffering the traumatic events, but also, above all, human beings are the very cause of these events. The catastrophe, the apocalypse, in addition to being an event that humans have always faced, embodies a real condition that humanity has to confront daily in the so-called Anthropocene era, where the distance separating it from the imminent end of the world is reduced progressively.

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1. Hejduk, J. (1998) *Such Places as Memory*.

Thus, the planetary equilibrium, constantly threatened by anthropic perturbations, finds itself in a permanent condition of impermanence, tightly connected to the discipline of architecture, which has been displaced throughout history to navigate these uncertain critical intervals, in a constant urge for operation. The relation between architecture and trauma is, thus, investigated with a specific focus on the interception of transitional time intervals whose various extensions define the operative field within which the observed traumatic phenomena intervene and the displaced reactions formulated through architecture expire.

A sequence of interstices of different intensities and velocities which is detected through the reinterpretation of Cedric Price's mean time, a concept through which he underlines the shift that occurred in the indeterminacy issue, passing from identifying a design strategy to, simultaneously, materializing and describing the very condition of architecture.

Clarified the shift in the object of observation from the general architectural field to the specific ground defined by the impact of artificial disasters, the explorative design method employed by Cedric Price is embodied and understood as a means through which digging the exploration within transience and trauma, precariousness and shock, and temporariness and violence.

Thus, chapter 1.1 records a shift in the observed phenomena, forcing Cedric Price' once-serene gaze to constantly rebalance its posture, alternating paranoid and schizophrenic perspectives in the attempt to grasp the traumatized space-time slivers generated by the impact of anthropic shocks, and much more quiet periods, in which the trauma's violence requires a "half-closed eye," capable of disclosing phenomena, lines, and practices more vaguely.

Architecture, fluctuating between different states of entropy and dynamism, mirrors the same mental state of trauma's victims, giving thickness to projects that blur and elide boundaries between the real and the unreal, operating introducing disturbing ambiguity, generating a slippage between nightmare and dreaming, shaking the fixed certainties of the present to define and individuate new escaping lines of survival.

Once delineated the semantic gradient of the term *mean* adopted by the research, has then been investigated, in chapter 1.2, the concept of trauma, explored from the architectural perspective. By delineating a connection between the traumatic event and the philosophical concept of the fold, trauma is here described as a perturbating generative force, whose impact on the urban and architectural space introduces further dynamism in it, which interpreted as an *informe*[2] matter, records a further intensification of the continuous mutation that normally describe and reshape it.

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2. George Bataille conceived this concept in 1929 in his entry for the Critical Dictionary, describing it as: "a term serving to declassify, requiring in general that everything should have a form. [...] To affirm, on the contrary, that the universe resembles nothing at all and is only formless, amounts to saying that the universe is something akin to a spider or a gob of spittle." (Bataille, G., "Formless", in *Documents 1*, Paris, 1929, p. 382.)

Secondly, two critical effects of the trauma are investigated: the spatio-temporal distortions, strictly connected with memory disorders, and the aporia, responsible for the appearance of blockages and interruptions that impede the representation and the complete understanding of the traumatized phenomenon. Within the chapter, furthermore, these symptoms are intertwined with architecture through parallels that highlight the resonances existing within the entanglement between body, architecture, and trauma. Within this relational matrix, the constant shifting between the traumatic agent and the traumatized reagent articulates three different agencies, trauma on architecture, trauma of architecture, and trauma as architecture, each of which is investigated through an articulated system of projects that compose a dense filigree of disturbing symptoms and reacting processes.

The first one indicates the action-reaction relationship between the traumatic event and the architectural discipline, interpreting architecture as the medium of disaster and, simultaneously, as the means to repair the scars it produced. The other two agencies reveal issues and components much more subtle and hidden.

Firstly, architecture assumes the role of the trauma's agent, becoming the device through which trauma is operated, projected, and imposed on a heterogeneous apparatus of corpses, from human to territorial bodies.

This agency recalls both the implicit violence enacted by the very materialization of architecture - and its consequent impact on the territory -, and the tensioned frictions coming from the relation between the preconfigured design space and the unexpected movement of bodies within it. In addition, trauma has been employed intentionally within provocative unrealized projects to trigger discussions and critical questioning on complex and threatening situations. Favoring so, a radical and renovated understanding of the design potentialities and the real physical consequences provoked by catastrophes activated within the so-called Anthropocene era. An operation exemplified by the introduction of violent elements within the domestic space. The human archetype, the house, is thus converted into an uncomfortable, threatening, and even dangerous space, revealing an extremization of the uncanny concept. This operation, enacted through the architectural drawing, has brought essential topics to the debate, such as the alienating processes deriving from the rise of authoritarian powers and exploitative processes shaking the very relation between nature and architecture.

Furthermore, another crucial element emerges within this paragraph: the progressive diffusion of the speculative design approach, tightly connected with the paranoia for the end and the mourning for the loss. Paper becomes the testing ground and battlefield to confront the aporia of representation produced by the impact of a physical trauma and the perception of its potential sudden apparition. Through drawings, critical texts, and diagrams, numerous architects have tried, and still attempt, to formulate a renewed and experimental design practice, even and mainly on an imaginative level.

The relevance of the employment of experimental and explorative design methods as a means of detection and reconstruction of the complex cartographies of the contemporary entropic condition emerges. Thus, revealing the importance of this practice, nowadays

embodied and expressed through two disciplinary tools. On the one hand the drawing, which has represented both a space of escape and imagination. On the other hand, by means of architectural installations and exhibitions, through the shaping of spatial experiences trigger a constant process of reformulation.

Finally, in chapter 1.2, has been analized the agency trauma as architecture, which reveals, as in the previous one, a tight connection with the employment of representational practices as means to understand and metabolize trauma. To overcome the aporia generated by trauma, architecture itself enables the representation of trauma, through the definition of inverted archives, where the collected elements are the violent scars produced by the conflict, or through the diagrammatization of the very dynamics of the event, drawing by so a parallel between the design programmed construction and the event choreographed destruction — defining by so a further field of investigation and testing ground for the contemporary project.

Thus, once conceptualized the research's definition of mean time, drawn from a reinterpretation of Cedic Price's term, the general relational system characterizing the relations between architecture and trauma has been retraced. This operation intercepted a series of revealing inversions and shifts operated by design to react to trauma and overcome the aporia it generated.

The second part of the work explored these issues in the contextualized field of the nuclear era. Nowadays, numerous criticalities are rising in this field: from the constant threat of an imminent nuclear war - which potential activation is crucial in the worldwide game of central powers, - to the urgent issue of nuclear waste disposal. The very tripartition of this section, corresponding to the different time lengths inhabited by the multiple traumas it provokes (days, years, centuries), expresses itself the complexity of the effects it generates: from the sudden shock to the slow and disruptive erosion.

The first interval, the short-term, underlined the relationship between afterwardness and a system of artistic and architectural practices unfolded from the strategy of return and repetition that succeeded in occupying dynamically — through a routine sequence of bodily or figurative — the time intervals generated by trauma. Superimposing new trajectories, new rhythms to the fractures violently opened by the shock, and repeatedly passing along its places and temporalities, these projects, attributable to dynamic notations of crossings, have activated metabolization processes opening the possibility of its overcoming. Moreover, these ephemeral practices, while developing on significantly reduced time intervals — seconds, hours, days —, generate, via their repetition, a temporal echo that grafts them within the dimension of memory and collective imagination, thus assuming a perceptive duration that is emphasized and reverberated, elevating them in some cases to the symbolic dimension of the rite. The practices traced moved agile and fast on the surface, in a situation of body contact that progressively recorded a necessary detachment due to the contamination of the matter and the impossibility of seeking an integration or, better, a collaboration of postures.

The original ritual choreographies have thus been translated into trajectories in which the body is increasingly heavily mediated by the environment that surrounds it, a distancing made possible by the introduction of filtering and distancing devices, retracing a progressive recourse and return to contemporary armor that now allows a safe distance contact with contaminated environments.

In the second phase of this exploration, dedicated to the medium-term, with a temporal dilation, the observed processes began to pierce the intimate space of the house, progressively occupied and distorted by the technological component, which converted it into mean dispositifs: from the bunker to the underground house, from the panic room to the sensory deprivation cell, from the torture rooms to the data centers.

From this chapter, two critical aspects emerge. Firstly, the progressive and invasive introduction of technology, whose operative application shifted from securing and guaranteeing a comfortable, safe interior for humans to secure the interior from humans, through the introduction of control systems aimed at impeding and filtering their access within architectural spaces. This alienating process determined a significant shift of humans from users to interference. In these remarks, Lydia Kallipoliti states that architecture has demonstrated, throughout history, its attitude to reconstructing microcosms by applying the strategies of isolation and containment, assuring in this way, the preservation of a determined system of practices, living patterns, and socio-cultural construction. Within the chapter has been underlined how this containment process has gradually undergone a shift. The human being has been brought outside architecture's main focus, replaced by technology and databases.

A further issue emerges: in addition to being expulsed from the very technology it has created, humanity is also subjected to violent processes developed in secured and hermetic spaces. Thus, starting from manipulating the very principle of the bunker, the interior spaces become increasingly inhospitable, less and less habitable, hosting processes of traumatizing experimentations.

Moreover, the paradoxical, dramatic inversion of the bunker emerges in two retraced phenomena. On the one hand, these massive structures are reused through their conversion into hermetic and safe data centers. On the other, their complete oblivion, represented in the last image drawn in the chapter's conclusion, constitutes a critical reasoning point. A cold war bunker abandoned and unaccessible by humans has been colonized by bacterias that, developing metabolic processes with the toxic substances left by humans, gave rise to new forms of life, in a process where humans are entirely excluded.

Finally, chapter 2.3, dedicated to the long-term, has scoured the anthropic processes related to geological time and, particularly to the issue of nuclear waste repositories.
The verticalization in the ground, anticipated in the previous chapter, now reaches much higher depths. The sections do not present their most representative point near the landline, but continue and develop through the geological layers in a constant and uninterrupted process of superimpositions and overlappings that stratifies the memory of the landscape.

On the surface and inside the soil are left architectures embodying a double condition that synthesizes all the issues that have emerged so far.

On the one hand, they radicalize and condense a robust engineering and technological system, enhanced precisely per the enemy to be defeated: nuclear waste; on the other, on the surface, volumes are developed that try to recover the most symbolic and ancient component of architecture, aspiring to convert themselves into the message, of danger, for which they were erected. As an echo intrinsically present within the relationship between body, trauma, and architecture, the question of containment reverberates with louder and more prolonged sounds, becoming urgent in confronting the hyper-object. This nuclear waste escapes control: invisible, widespread, and with immense space-time dimensions.

These projects, reacting to a sort of slow-motion catastrophe, question the very meaning of monumentality — the nuclear waste repositories. Time duration is no longer a cultural aspiration but a question of survival. These architectures, inheriting many essential features from the bunker archetype, combine a simple, thus massive underground container — the deposit — with an external volume often articulated in a sort of ready-made operation to give these sites a monumental aspect. While classical monuments are linked to the memory transmission, in this case, operating an inversion, they are connected to the warning: they no longer ensure a precious containment from an external threat but, paradoxically, contain and confine a toxic and dangerous interior.

Through this system of relations, the research traced the entanglements emerging from the different temporal dimensions and the associated practices, revealing intertwined connections between buildings and architectural speculative processes, memory and forced or unconscious amnesia, rituality and exorcism, intentional provisionality and unexpected permanence.

> The quality of monstrosity here does not affect any real body, nor does it produce modifications of any kind in the bestiary of the imagination; it does not lurk in the depths of any strange power. It would not even be present at all in this classification had it not insinuated itself into the empty space, the interstitial blanks separating all these entities from one another.[3]

The *mean time expiring architectures*, inhabiting and confronting the interstitial spaces opened up by trauma, have increasingly colonized our contemporaneity and architecture's theoretical and physical space. Through their retracement, the research identified frictions, recurrences, returns, and echoes of these monsters within the deteriorating fossil of architecture. Drawing, finally, a first conclusion in assuming how in the era of post-human condition, of more- than-human and trans-human tendencies, architecture has probably lost its role of privileged human shelter, having to confront a permanent condition of im-

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3. Foucault, M. (1989), *The Order of Things. An archaeology of the human sciences*, London & New York: Routledge, preface, p.xvii. [first edition: Foucault, M. (1966), *Le mots et les choses*.Paris: Editions Gallimard]

permanency constantly crossed by violent and long-lasting traumas. In such a condition, emerged clearly how, on the one hand, the growing complexity of the contemporary threats requires transdisciplinary approaches to define innovative and lasting materials to contain the corroding of the slow-motion contemporary disasters. On the other hand, the rising paranoia for an imminent nuclear war has triggered the increasing production of bunkers: endured, on a large scale, by construction companies and entrepreneurs who develop new economies based on the standardized production of these shelters, recording a relevant loss in the architectural quality of these spaces, both in their formal and compositional elements. In addition, the construction of luxury bunkers indicates an advanced phase of colonization. Here architecture operates in strict relation with the client, customizing the space in relation with the pretentious ideas he advances configuring his comfortable manner of enjoying the apocalypse. These operations, which have already accompanied the architectural discipline, do not present a consistent solution to face the critical issues of today.

Recalling the introductive piece "Haunted Landscapes on the Anthropocene"[4] it is possible to retrace a reflection that synthetizes the trajectory drawn through this work:

> Our hope is that such attention will allow us to stand up to the constant barrage of messages asking us to forget — that is, to allow few private owners and public officials with their eyes focused on short-term gains to pretend that environmental devastation does not exist. [...] Our era of human destruction trained our eyes only on the immediate promises of power and profits. This refusal of the past, and even of the present, will condemn us to continue fouling our own nests. How can we get back to the past, when we need to see the present more clearly? We call this return of multiple pasts, human and not human, "ghosts." Every landscape is haunted by past ways of life.[5]

The research, constantly adopting the sequence as its detective tool, retraces the genealogy of actions-reactions embodied in and produced by the constant unfolding and mutation of the balance within the entanglement between body, trauma, and architecture, attempting to delineate a transitive-partial reconstruction of the relation between, following Foucault, the monsters and the fossils that this acting-reacting operation has produced within the architectural field. Retracing, by doing so, a taxonomy in which the disturbing component lies in the short distance that separates the known elements from the fantastic ones, or in this case, from the extreme elements produced in traumatic contexts.

Drawing on these considerations, and reasoning on the relevance of the design process intended not only as a tool to intervene materially on the landscape but, additionally as a powerful explorative practice to trace possible scenarios for the future, the architectural tendency to confront the aporia provoked by the contemporary entropic condition emerges. These practices, through drawings, diagrams, mappings, performances, installations, and transdisciplinary explorations, attempted to recontruct complex cartographies.

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4. Tsing, a., Swanson, H., Gan,e., Bubandt, N. (2017), *Arts of Living on a Damaged Planet: Ghosts and Monsters of the Anthropocene,* University of Minnesota Press.
5. Ibidem, G1..

The representation, being it unfolded on the paper surface or through a spatial experience, simultaneously became an explorative tool to trigger the reasoning on possible future scenarios for the design.

These tools for investigation have been employed, not only in the critical questioning of the contextual, theoretical, and physical conditions but also for the exploration of new paradigms and methodologies through which reconstructing complex cartographies enabling the interpretation of our contemporary entropic condition.

Finally, if the starting point of the research records its roots in the Cedric Price's exhibition, the investigated projects, and the designed and realized installations, resonate with it. Thus, starting from Price' methodology, and drawing from it a parallel reasoning and practice, emerged the potentials of the exhibition and installation as explorative means and stimulating experimental testing grounds to trigger an operative reconstruction of the complex condition of permanent impermanence within which we are immersed.

Finally, the research, detecting the *mean time expiring architectures* retraced a progressive tendency that transversally crosses the entire work. The reconstructed taxonomy of architecture inscribed and defined within the transitional space-time frames defined by trauma records a gradual topological inversion, shifting from protection to containment.
This ambiguous tendency, which explicitly emerges from the investigated case-studies, roots its origins within a series of devices, objects, and architectures - both physical and imagined - whose reconstruction and investigation could be explored in the future.

SCENES IN
AMERICA DESERTA

MARIACRISTINA D'ORIA PART 2 | THE EMERGENCE OF *MEAN* TIME ARCHITECTURES.

Exhibition:

Mariacristina D'Oria

Exhibited in:

September 17 - October 18, 2019.
promoted by the Pordenone's Architects Registration Board,
Pordenone, Italy.

Abstract

In 1982 Reyner Banham wrote Scenes in America Deserta, tracing the profile of an unprecedented America, in which a wild and seemingly infinite horizon replaces the segmented and syncopated vertical line of metropolitan skylines: an immense expanse of sand sporadically interrupted by the vertical walls of imposing rocky monuments, inside which can be identified, sporadically, the traces of some human settlements. The Mojave Desert is an extreme landscape in which isolation, exceptionality, dryness, and distance have determined the conditions for the proliferation, even paradoxical, of an incredibly fertile field of architectural experimentation. Banham's text constitutes the sub-trace for the definition of the travel itinerary. Furthermore, starting from the observation that within this extreme environment, everything can happen, have been investigated phenomena and events belonging to the sphere of the possible or even the improbable that have developed here, focusing attention, in particular, on the area between Los Angeles, Las Vegas and Phoenix (which intercept respectively the Mojave Desert, the Great Basin Desert and the Sonoran Desert). From this perimeter emerged a constellation of case studies, events, and architecture that testify that this extremely arid landscape has been a fertile ground for the proliferation of a series of unusual projects. The selected project experiences, defining an exciting sequence of background-figure relationships with the desert, have made innovative choices, responding in a creative way to crisis situations or, still, founded fragments of ideal cities within which subvert the order of the traditional American metropolis, arriving, finally, to exploit the condition of isolation and apparent "emptiness" offered by this landscape to start a series of dystopian experiments: nuclear tests during the Cold War.

Thus, within the different stages of the journey, unusual projects have been intercepted characterized by a constant oscillation between utopia - dystopia, reality - fiction, nature - artifice, and success - failure.

For each of the places visited, a plan has been reconstructed with the intention of representing the transitional conditions characterizing these spaces, in which time flows in a different way, undergoing strong accelerations and then slowing down, almost stopping.
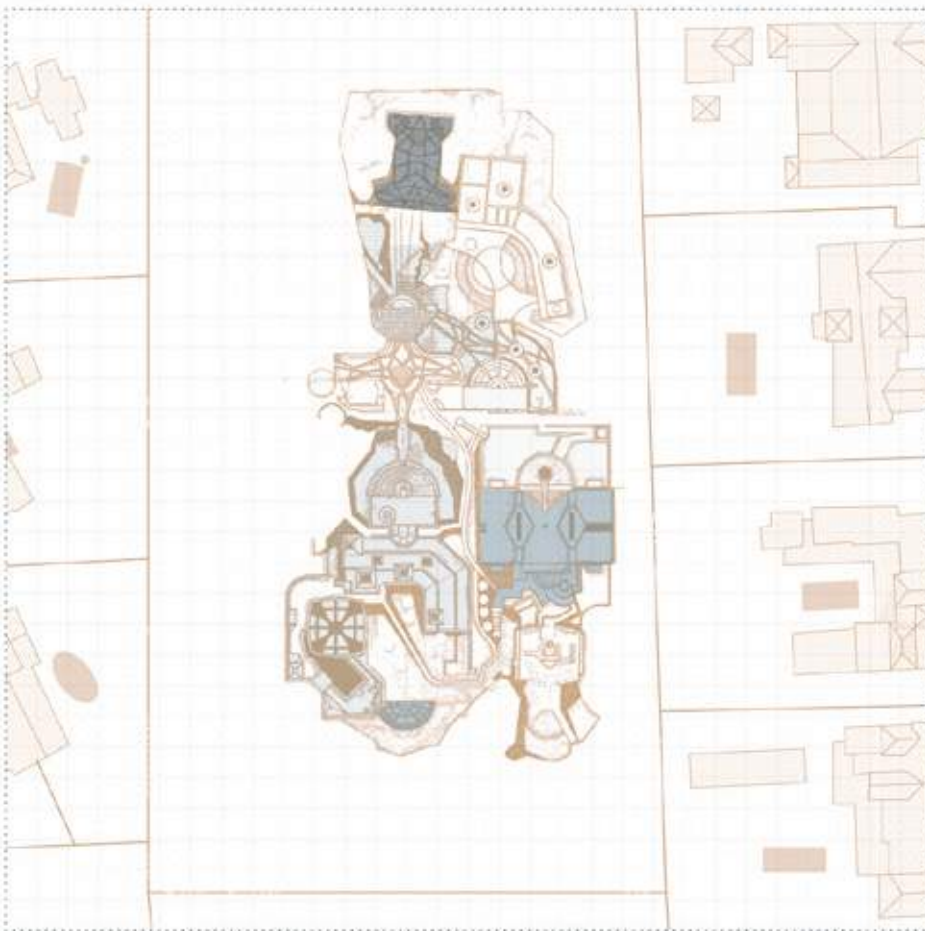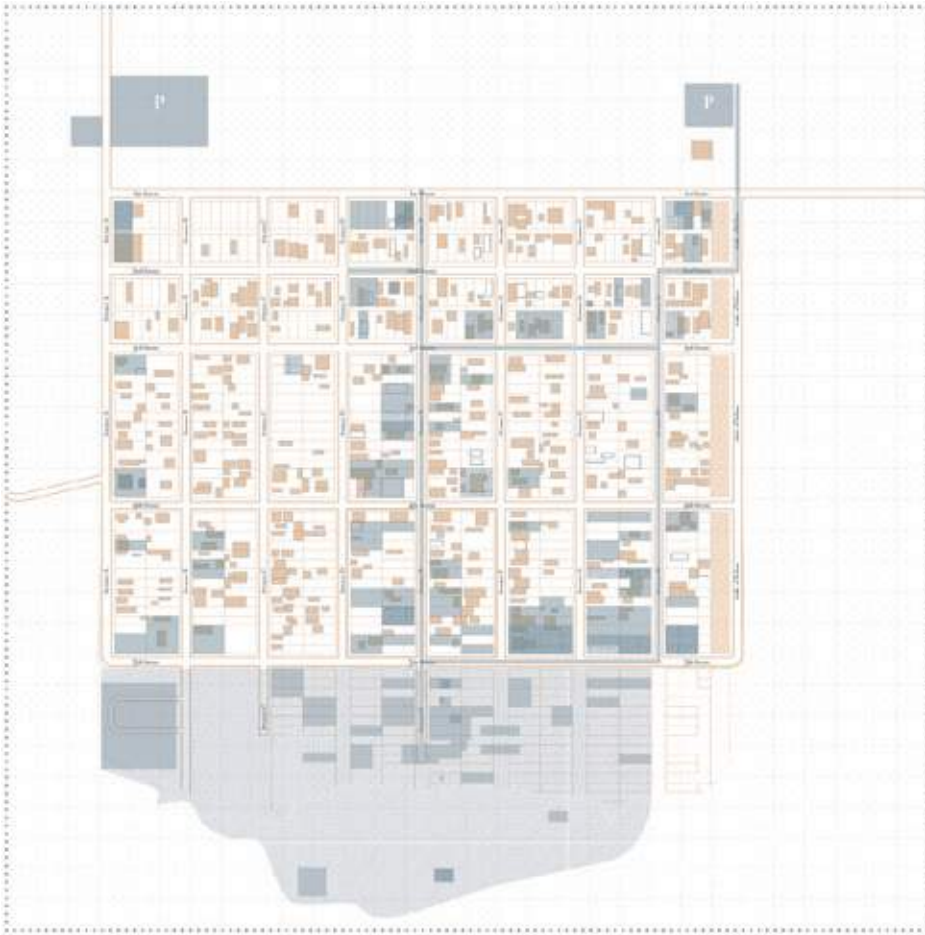
> >>
The settlement is located along the Salton Sea, an artificial lake created in 1905, due to a severe flood of the Colorado River. This artificial body of water, extended for 100 km2, was converted in the fifties and sixties a coveted seaside resort that welcomes millions of vacationers, including Frank Sinatra and Dean Martin, and then converted, in the seventies, with the spillage of pollutants inside, in a shelter of precarious, outsiders and dirty kids. Bombay Beach (1) and Salton Sea Beach (3) are the two sides of the same coin. If, in the case of the second settlement were not activated redevelopment processes, in the first, from 2016 the Bombay Beach Biennale (BBB) is inaugurated. Here the transition time, waiting to define the fate of the Salton Sea, whose waters have reached very high levels of pollution and salinity, the transition time that this settlement goes through is occupied and exploited by the temporary installations produced by the Bombay Beach Biennale.

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Cosanti (6) is the result of a gradual and constant construction process, an architecture introduced in an extremely arid environment whose different parts gradually and slowly thicken starting from an initial core, the house of Paolo Soleri. The importance, as for Arcosanti, does not lie in the result, but in the process.

Price, C., *Categories "Cedric Price: Mean Time" at the Canadian Centre for Architecture,* (document from Mean project records, inv. 181: Mean; reference number*: DR2004:1031:001), 1999.*

"Time present has no length as a line has no thickness."

01. Autodistruzione

02. Ricostruzione

03. Previsione

04. Anticipare l'impossibile

05. Cronaca

06. Sincronizzazione

07. Intervallo

08. Simultaneità

09. Incertezza

10. Il piacere della frustrazione

11. Sospensione del Tempo

12. Distorsione del Tempo
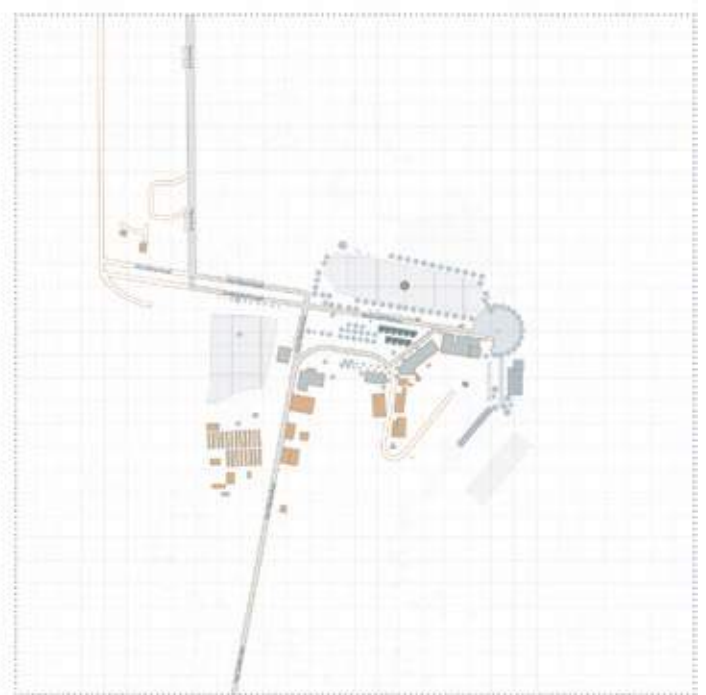
13. Gravità

14. Misurare a passi

>
Zzyzx is named after Curtis Howe Springer who in 1944 declared this word the last of the English language, establishing a spa with mineral baths, a radio studio and a track private landing. Thus, in the heart of the desert: Boulevard of Dreams, Sunrise Boulevard, The Castle way, structures that evoke a distant world, now almost completely disappeared.
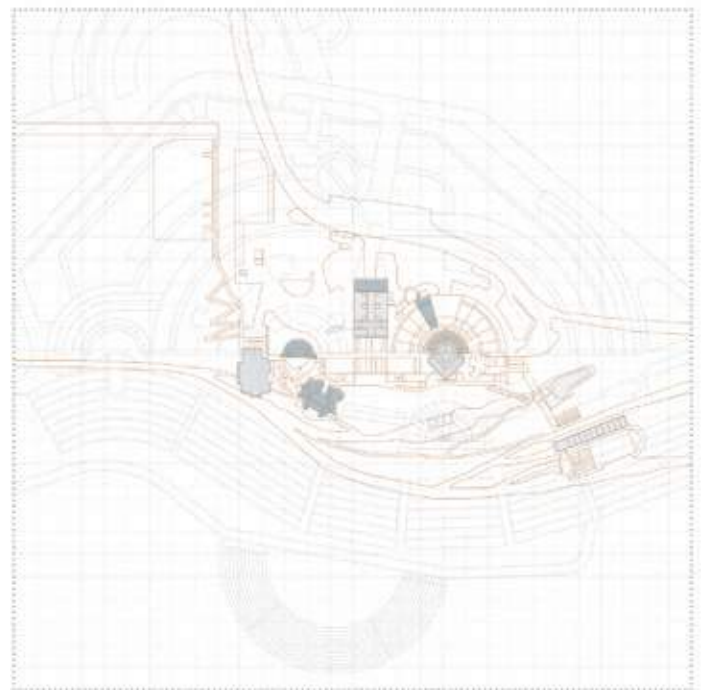
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Taliesin West (2) concrete, however, a crystallization of time. Here all the structures have been preserved as well as used and arranged by Frank Lloyd Wright, a process of conservation and museification, which is periodically interrupted during the annual architectural workshops organized within this ideal model.

>>>
Arcosanti is a utopian laboratory in which the work of the inhabitants determines its growth and ensures its maintenance. The time of work marks the rhythm of the community that inhabits it and which, at the same time, submits it to a constant operation of mutation and growth. The foundry represents one of its vital hearts: here the bells of Soleri are made, whose sale is one of the main sources of income of the community.

The Desert is considered a place suitable
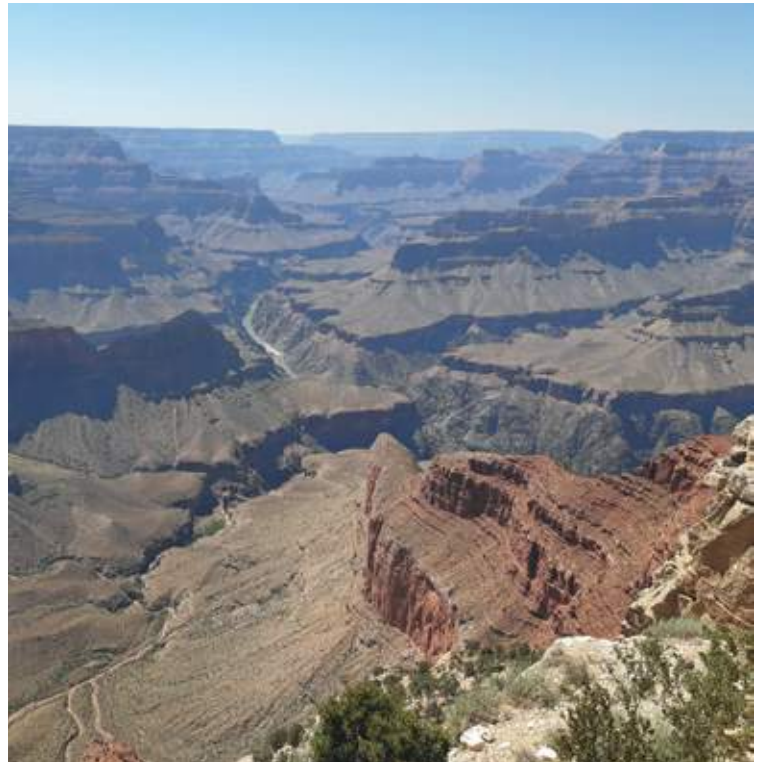for extravagances.

I am not referring only to those of Bessie Johnson or Curtis Howe Springer, but also to the dune-biggy fanatics, solitary self-hitch hikers, seekers of legendary gold mines; and to those who detonated the first atomic bombs, proposed advanced missile systems and modelled gigantic earth sculptures. We must not forget that the first UFO sightings, or considered as such, and the pioneering conversation with the green men of the planet Venus took place in the Mojave.

MARIACRISTINA D'ORIA

In a landscape where officially, nothing exists (otherwise it would not be a "desert"), everything is possible and therefore everything can happen

R. Banham, 1982.

GEOMETRIES
OF TIME

EXPLORING THE ENTANGLEMENT THICKNESS

with Taufan ter Weel

MARIACRISTINA D'ORIA
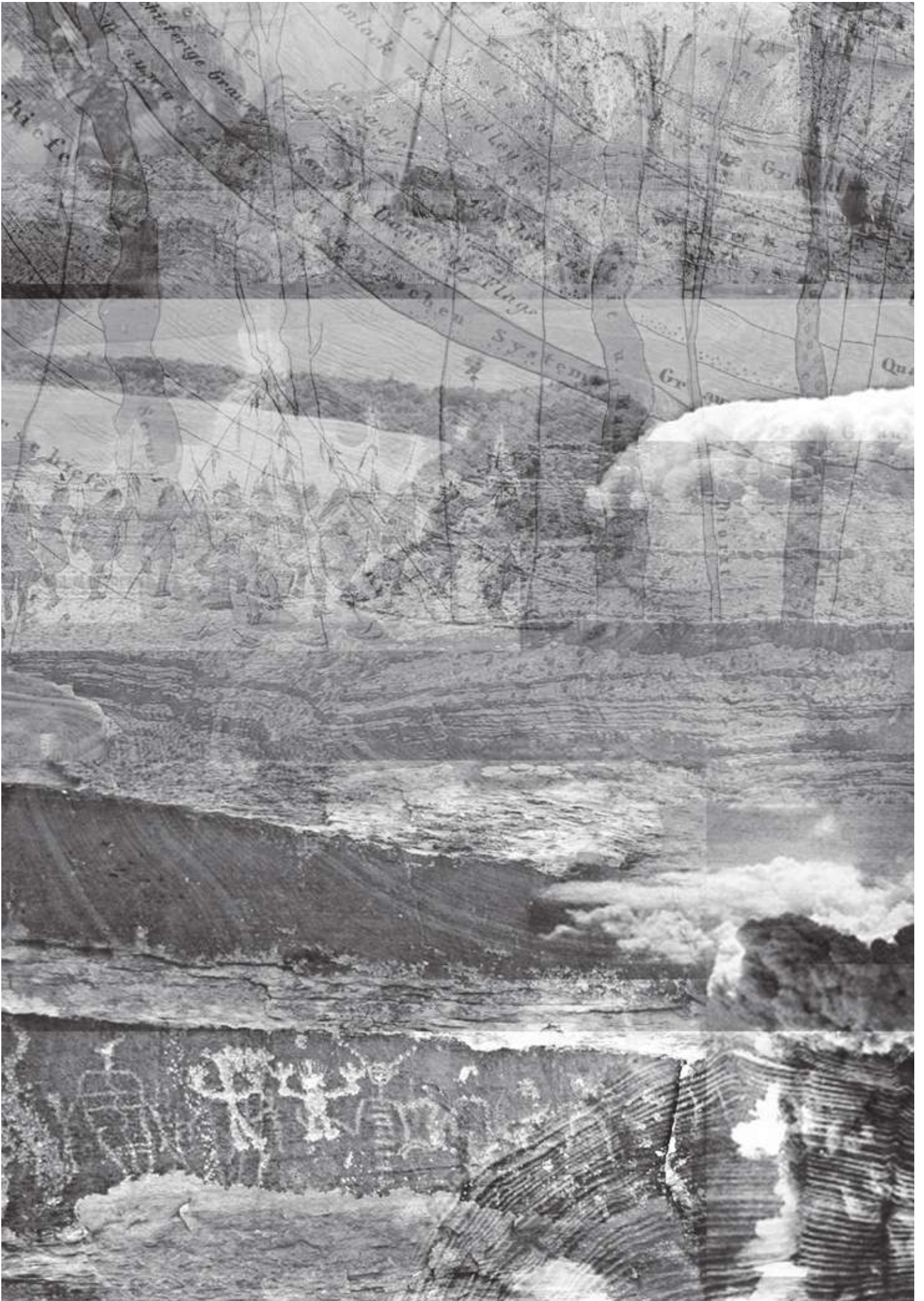
Multimedia Installation by:

Mariacristina D'Oria and
Taufan ter Weel (PhD candidate, TU Delft)

Exhibited in:

Stazione Rogers, Trieste, Italy (13.09.2021 – 15.09.2021)
and Ljubljana, Slovenia (24.09.2021 – 28.09.2021)

Presented at:

> ECLAS Conference 2020, International Federation of Landscape
> Architects, Swedish University of Agricultural Sciences, Uppsala,
> Svezia (online event);
>
> CA2RE | CA2RE+ Conference | REFORMULATION,
> Ljubljana, Slovenia.

Abstract

In the matter of the global catastrophe we are facing today, the multimedia installation explores different scientific abstractions produced from the Enlightenment onward in connection with their social and environmental implications. More specifically, we question and contextualise the tensions between the increasingly blurring absolute representations of reality and the relative spacetime of entangled processes by means of architectural diagrammatisation and multimedia experimentation. The work aims to critically examine the concept of tabula rasa, the succession of superimpositions and erasures that constantly reshapes the formation, morphology, and very meaning of landscape, as well as the notion of void or vacuum without matter or energy.
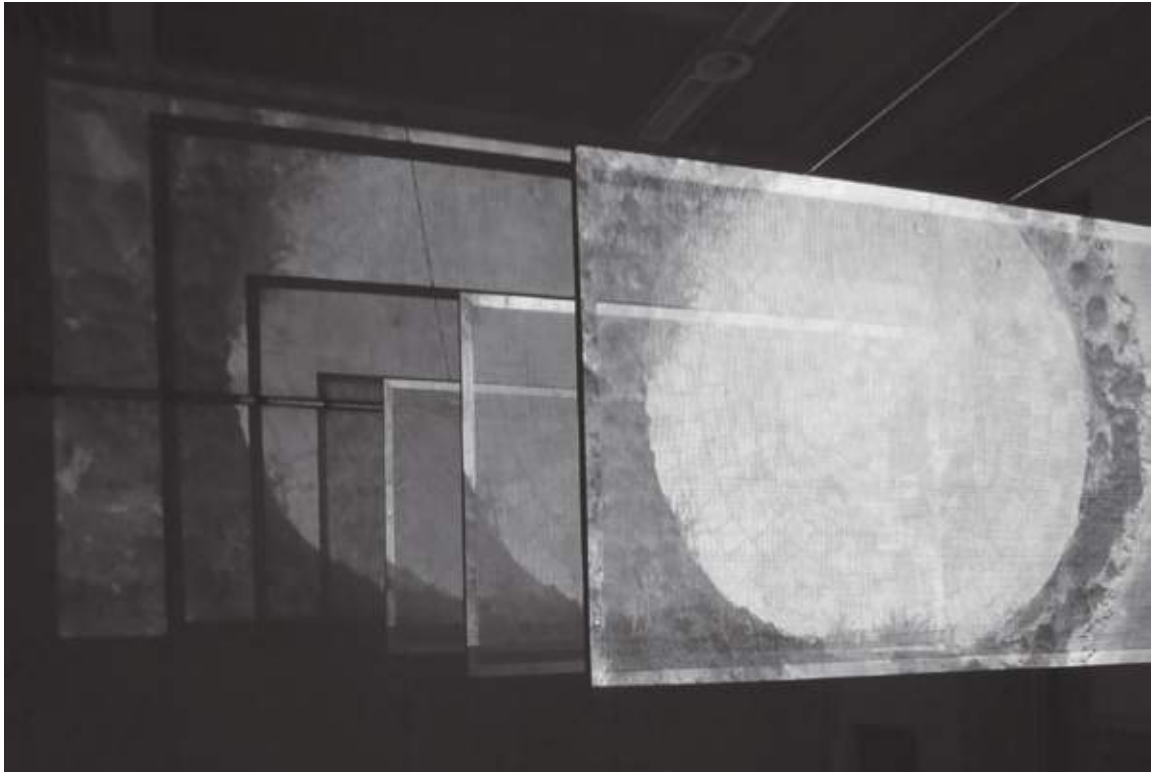
Introduction

To anticipate the uncertainties, the catastrophe we are facing, whether environmental, biological, or social, the multimedia installation explores different scientific abstractions of space and time produced from the Enlightenment onward in connection with the implications for how we engage with the landscape. We question and contextualise the tensions between the increasingly blurring absolute representations of reality and the relative space-time of entangled processes. By means of architectural diagrammatisation, the work cuts across deep time, traceable in geographical strata; the linear time of progress; the cyclical time of seasons, tides, and bodily rhythms; and lastly, nonlinear, relative, and relational concepts of space-time.
It aims to critically examine the concept of tabula rasa, the succession of erasures and superimpositions that constantly reshapes the formation, morphology, and very meaning of landscape. Since time cannot be disentangled from space, and space-time not from matter-energy, we want to take this further and call into question the notion of void or vacuum without matter or energy. As Karen Barad puts it, "the vacuum is filled with the indeterminate murmurings of all possible sounds: it is a speaking silence."[1]

1. Barad, K. (2017): "Troubling Time/s and Ecologies of Nothingness: Re- turning, Re-membering, and Facing the Incalculable", in: New Formations 92, p.77.

Entangled landscapes

In resonance with Barad's words, our installation seeks to explore the complex entanglement we are confronted with today, moving beyond the absolute void, that is, space as an empty container predominant in modern geometry and physics. Instead, it experiments with the delineation of an under-construction map recovering the murmurings with which every place is potentially filled.

The point of departure is the Mojave Desert, central in the current debate about building a nuclear waste repository inside Yucca Mountain. This extreme landscape stands in the collective imaginary as one of the archetypical loci of wilderness, a concept that has been historically instrumentalised to justify colonisation, capitalism, and exploitation. Under the formula "going West," large territories have been occupied, erasing lives, ecologies, rituals, and practices that densely inhabited these spaces. Critically arguing against the presumed emptiness of these places, rituals and everyday rhythms are retraced in the attempt to retrieve an erased conception of cyclical time from a pre-colonial past: cycles, calendars, myths, and indigenous' practices begin to emerge, amplifying what is today only a weak trace of these civilizations.
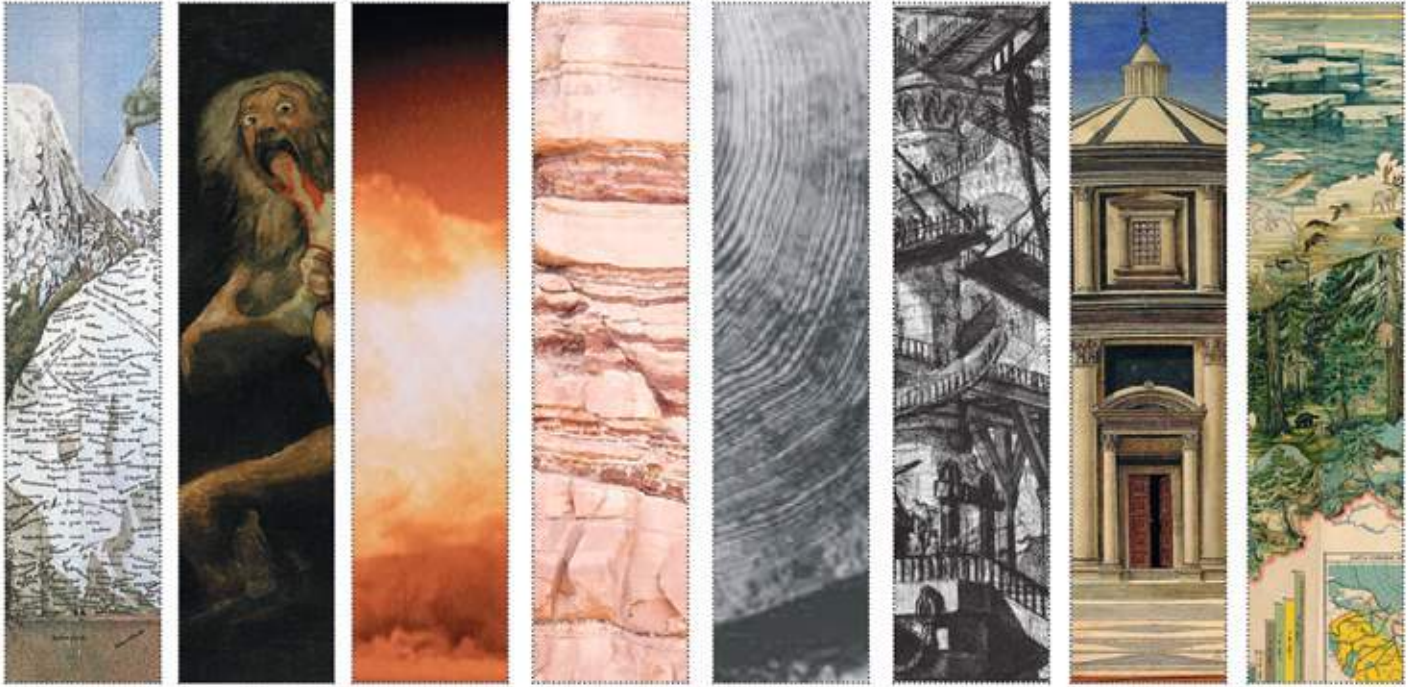
Humboldt, A. (1807):
*Tableau Physique
mapped vegetation*;
Goya, F. (1819-1823):
*Saturn Devouring His
Son*; Manhattan Project
(1945): *Trinity Test*;
Geological strata;
Dendrochronology;
Piranesi, G. B. (1745-
1750): *The Prisons*;
Alberti, L. B. (1480-
1490): *The Ideal City*;
Fedorov, N. (1928):
*Zoogeographical map of
the Soviet Union*.

Diagram as Explorative Method

We understand diagrammatisation as a material-discursive process that reconfigures our relation to the world, exploring latent potentials within an associated milieu and suggesting a broader set of relations connecting multiple environments — spaces and times. A diagram is deterritorialised, not bound to a particular territory, scale, and time frame, but allows for drawing trans-spatial and trans-temporal relations and exposes connections between abstractions of space, time, matter, and energy. Moreover, it is an operational device capable of opening up new areas of sensation and intensity. Diagrammatisation entails a focus on technicity: technical processes and objects produced by supposedly enlightened and advanced humanity, enabling us to underline the frictions and discontinuities they generated.

According to the Stoics, time is cyclical: the universe is eternal and evolves following the relentless repetitions of its cycles. In an anthropomorphic fashion, they defined three mythological figures, identifying respectively: aeon, the eternal time that embraces past, present, and future; Kronos, the linear time defined by the continuous succession of events; and Kairos, the time of crisis and opportunity responsible for the episodic universal conflagrations that open up cyclical ways to rebuild the world.

Following Henri Lefebvre,[2] the notions of time and space are understood here as being socially and culturally produced rather than neutral or objective. David Harvey draws on Lefebvre's dialectics, distinguishing the tripartite division of absolute, relative, and relational ways of understanding space and time. First, there is a certain absolute notion of space and time found in classical Euclidean geometry, the modern Cartesian coordinate system, and Newton's space as a container isolated from time. Second, a relative conception of space-time can be attributed to Einstein's relativity theory, non-Euclidean geometries, and a certain shifting sense of space-time, which Harvey calls "time-space compression"[3] and can be associated with technological development or technicity. Last, he identifies a relational approach to space-time, which derives from Leibniz' monad, wherein space and time cannot exist outside the processes of their unfolding. This concept of relational space-time opens up the possibility to move beyond a solely dialectical understanding of space and time and provides a point of intersection with Barad's understanding of practice as being material-discursive (both ontological and epistemological) and matter as an entangled process. Practice is a matter of accountability and "response-ability" rather than objectivity, as Barad, with Donna Harraway, suggests. With regard to the presented artefact, this could lead us to Félix Guattari's notion of the production of subjectivity and his ethico-aesthetic approach, emphasising the irreversibility and responsibility inherent in the creative act.[4]

2. Lefebvre, Henri (1991 [1974]), *The Production of Space, trans. by Donald Nicholson-Smith*, Cambridge MA, Oxford: Blackwell.
3. Harvey, David (1989), *The Condition of Postmodernity*, Cambridge MA, Oxford: Blackwell.
4. Guattari, Félix (1995), *Chaosmosis: An Ethico-Aesthetic Paradigm*, trans. by Paul Bains and Julian Pefanis, Bloomington, Indianapolis: Indiana University Press.
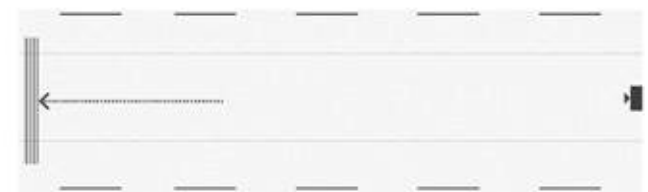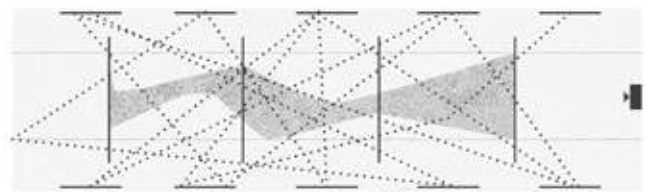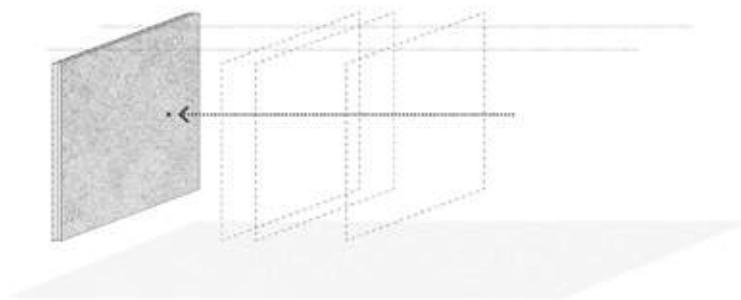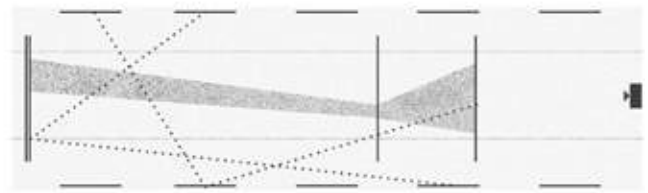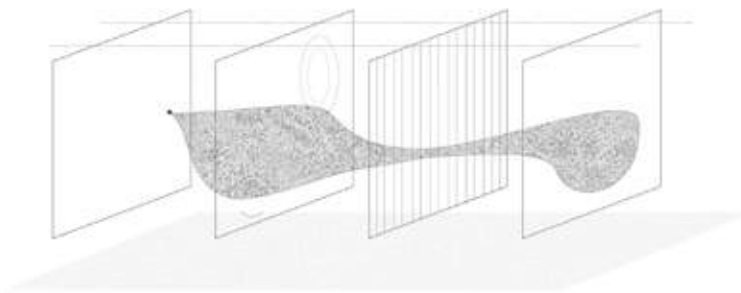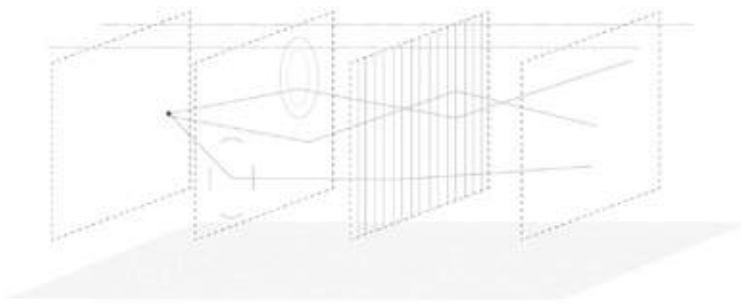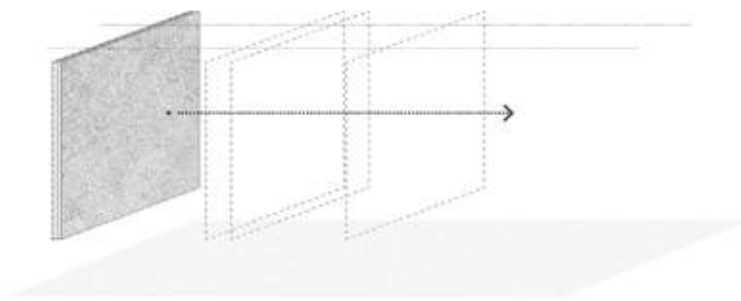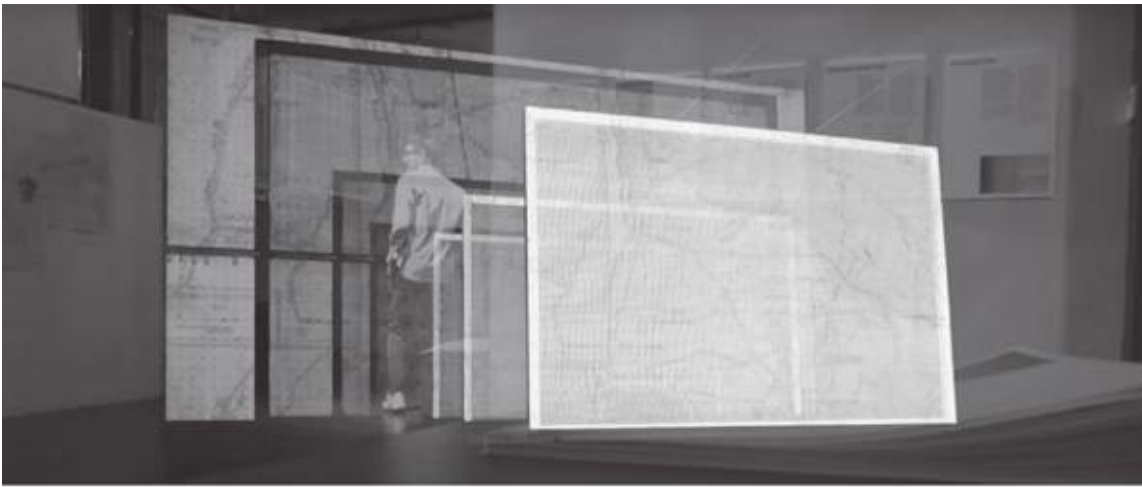
The Multimedia Installation

The multimedia installation puts into operation the diagram, performing an exploration across, on the one hand, different abstractions of time and space, and on the other, the entanglements between various landscapes in formation, generating a warped cross-section or archipelago of places and multitude of times linked by the resounding echoes of exploitation.
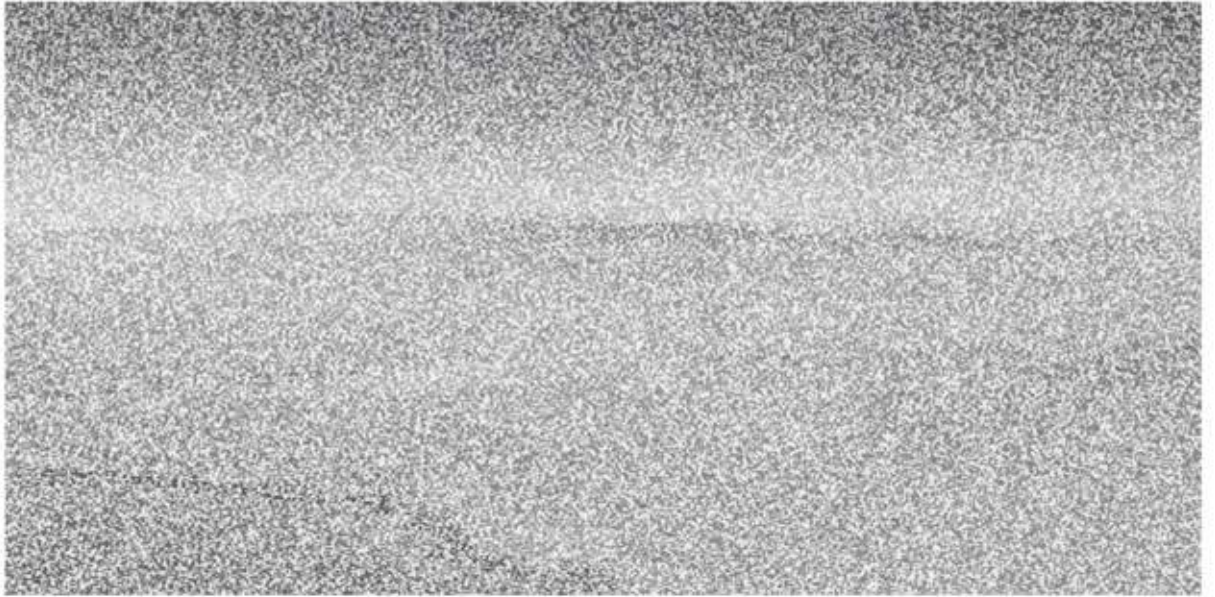
In the beginning there is noise, white noise. According to Gauss, white noise contains all frequency components distributed throughout the entire spectrum with equal intensity and implies that every two instances in time have different values — there is no correlation in time, no repetition. Immersed in this vast sea of all possible tones, the audience is facing aeon, eternal time, endless space. From this infinite field of possibilities, the installation renders an aerial view of the Mojave Desert and two panoramic views of the Grand Canyon, immediately questioning the temporal scale of this landscape exposed by its geological strata: the endlessness of its formation in deep time.
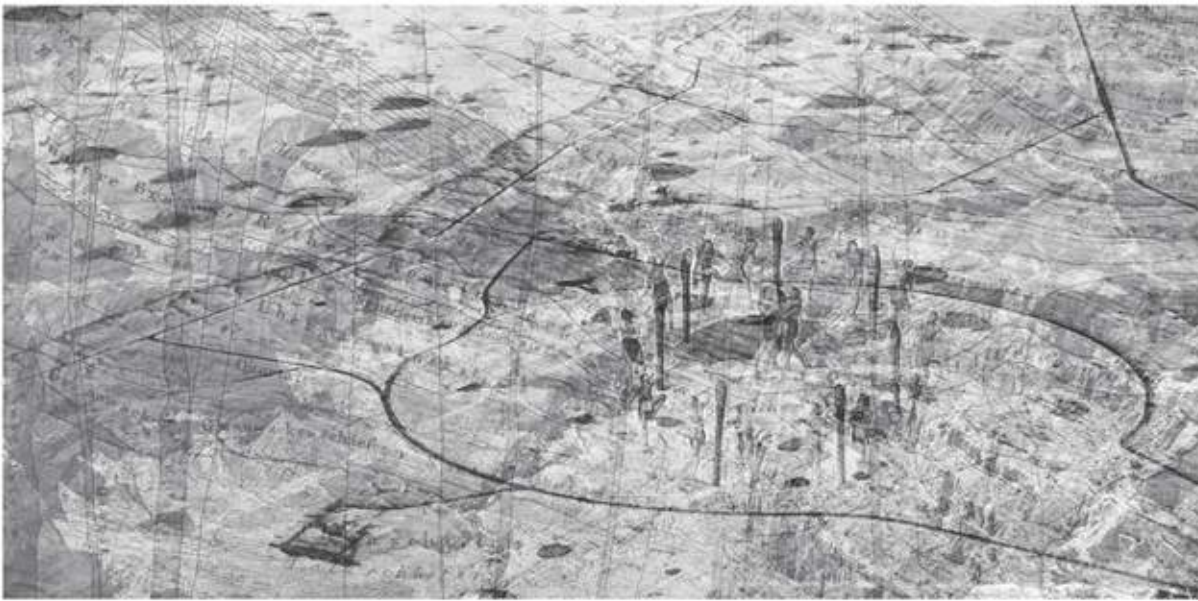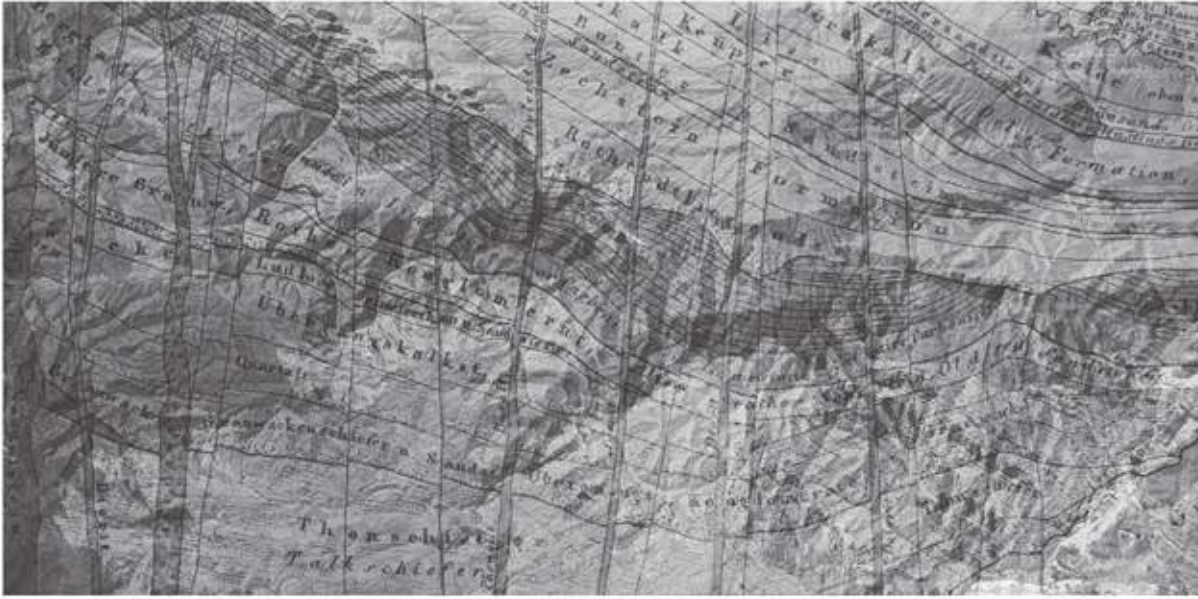
This landscape is the empty surface and playing field of colonial and capitalist practice. Two sites of exploitation emerge from the desert: Yucca Mountain and Nevada National Security Site, where nuclear testing not only contaminated the native's land but erased their entire existence. They trigger the unfolding of a multiplicity of landscapes exposed to similar processes of colonisation and erasure. A collage and ten panels show different spaces and times, geographically and historically separated but nonetheless connected by being subjected to imperialist and colonial exploitation such as nuclear testing and military use justified by being supposedly deserted islands.

The sonic space consists of generated sounds (through computation and synthesis) and field recordings made in different places in the world. The recorded landscapes and concrete rhythms are convolved with and modulate or trigger generated sounds and stochastic processes; fixed media are combined with self-generative processes. The sounds are distributed to four loudspeakers composing an artificial landscape. Synchronised with the sound, the moving images are projected on different surfaces and semi-transparent layers, creating an entanglement of interrelated landscapes, maps, and abstractions of space, time, matter, and energy. The environments are manipulated again: the linear time of progress and capitalist expansion cuts across the cyclical rhythms, radically disrupting and rearranging them. Isolated fragments and sites start to be connected by these processes of colonisation, moving from stochastic probability distributions (space- time-matter-densities) to interactions between linear and cyclical rhythms back to noise.

The installation becomes a continuous reciprocal rhythm and relational diagram in itself.

MARIACRISTINA D'ORIA PART 2 | THE EMERGENCE OF *MEAN* TIME ARCHITECTURES.
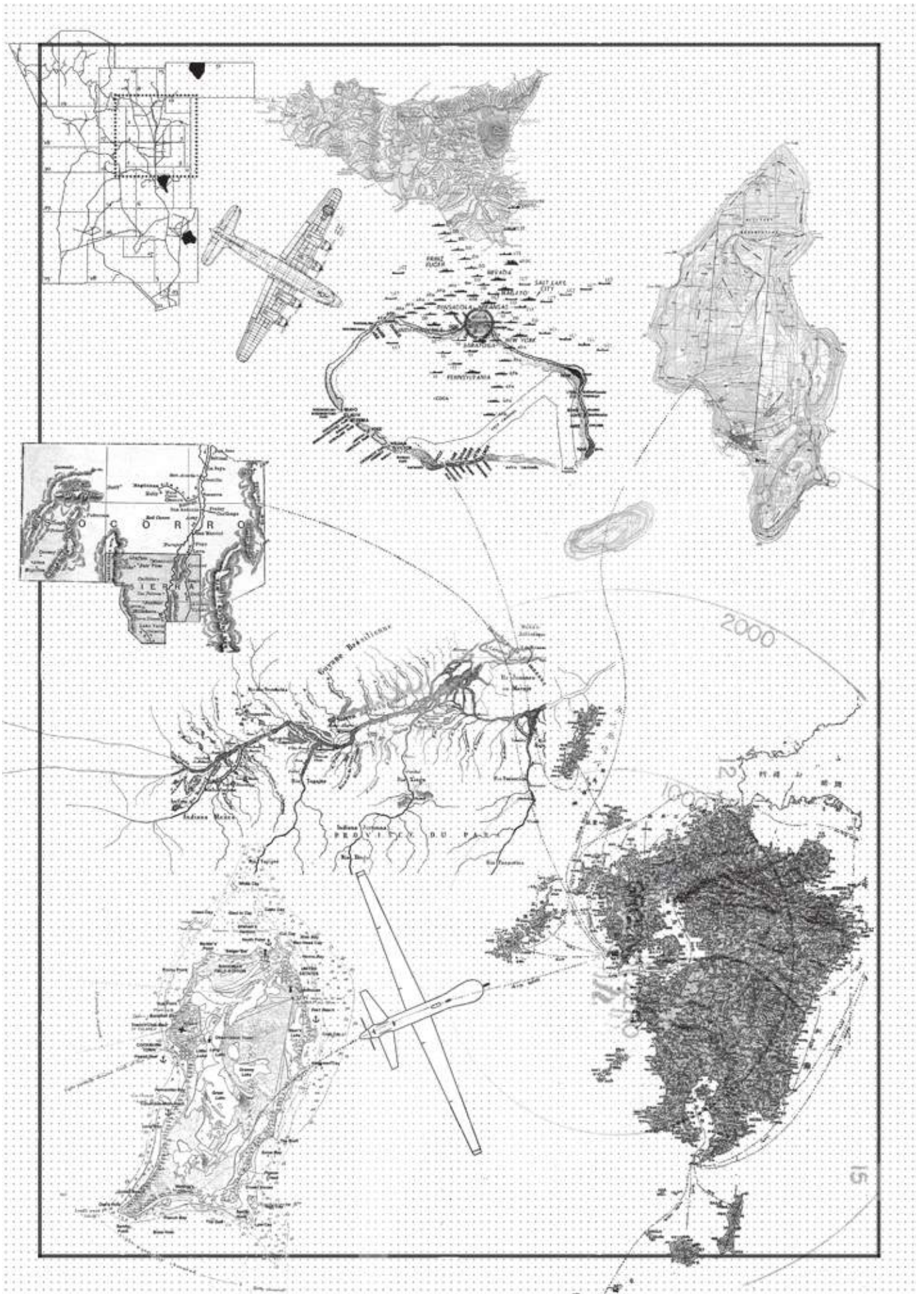
MARIACRISTINA D'ORIA

MARIACRISTINA D'ORIA
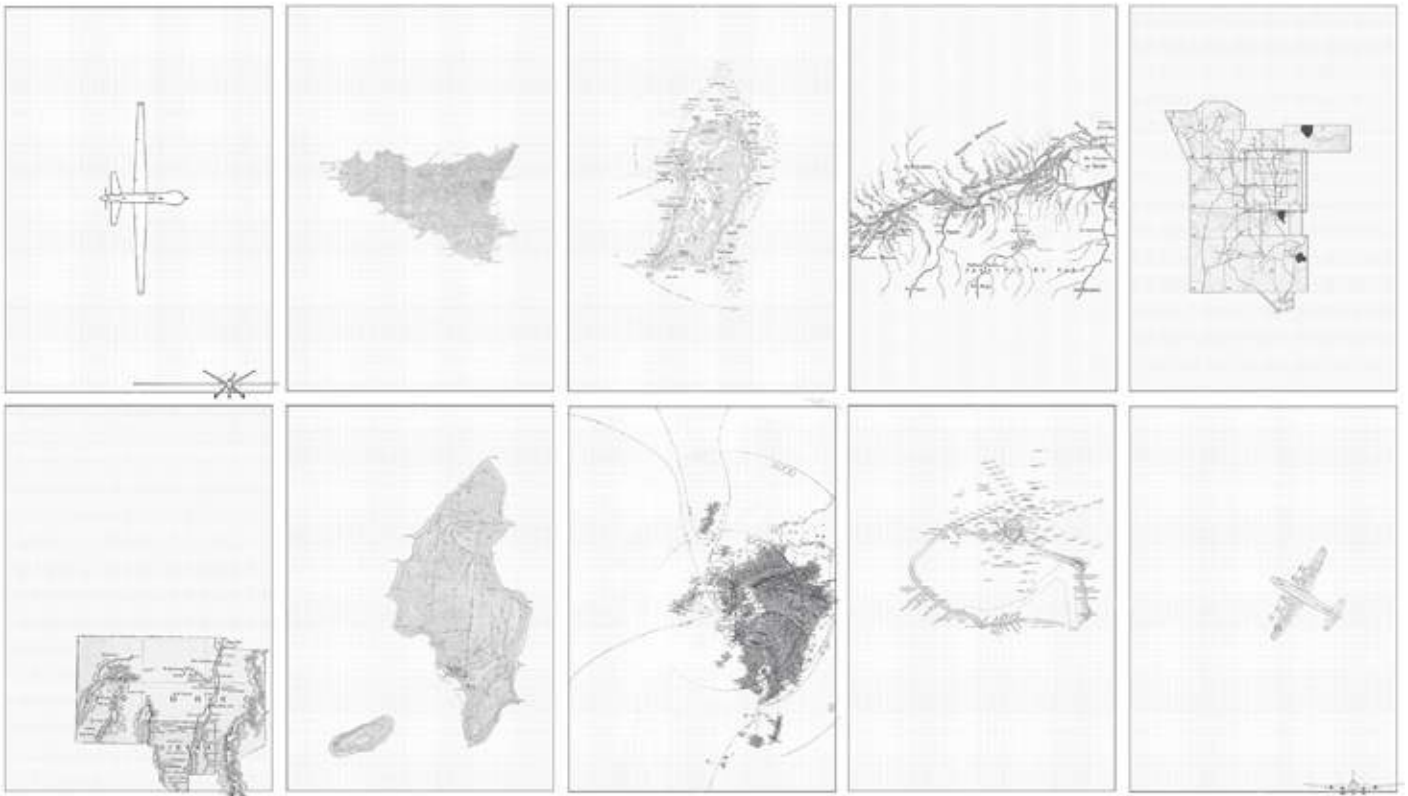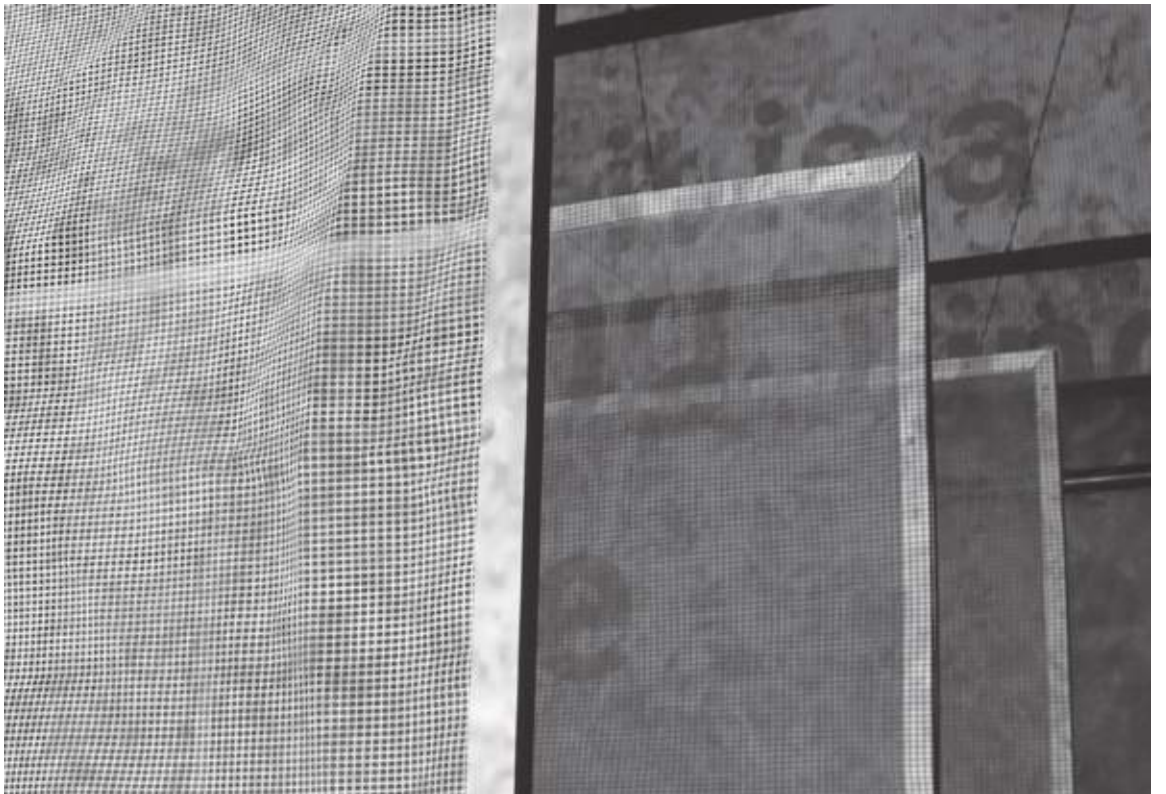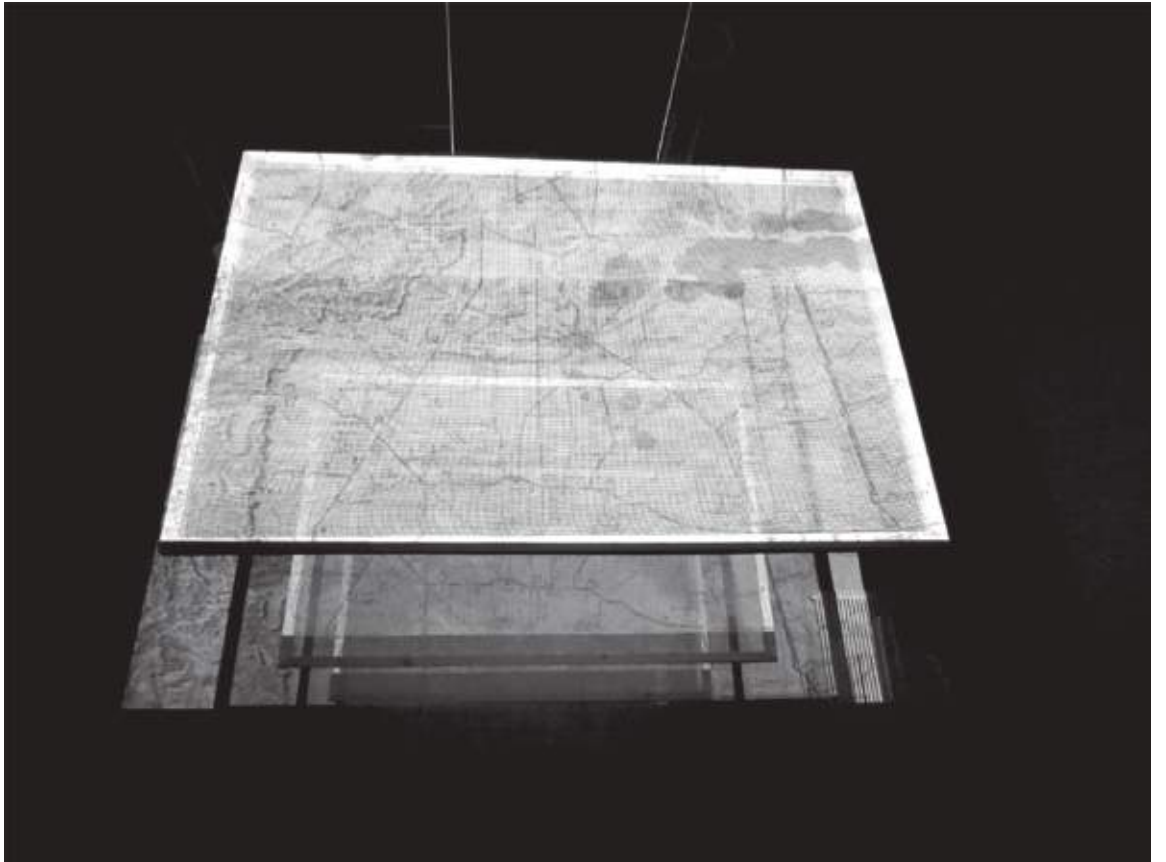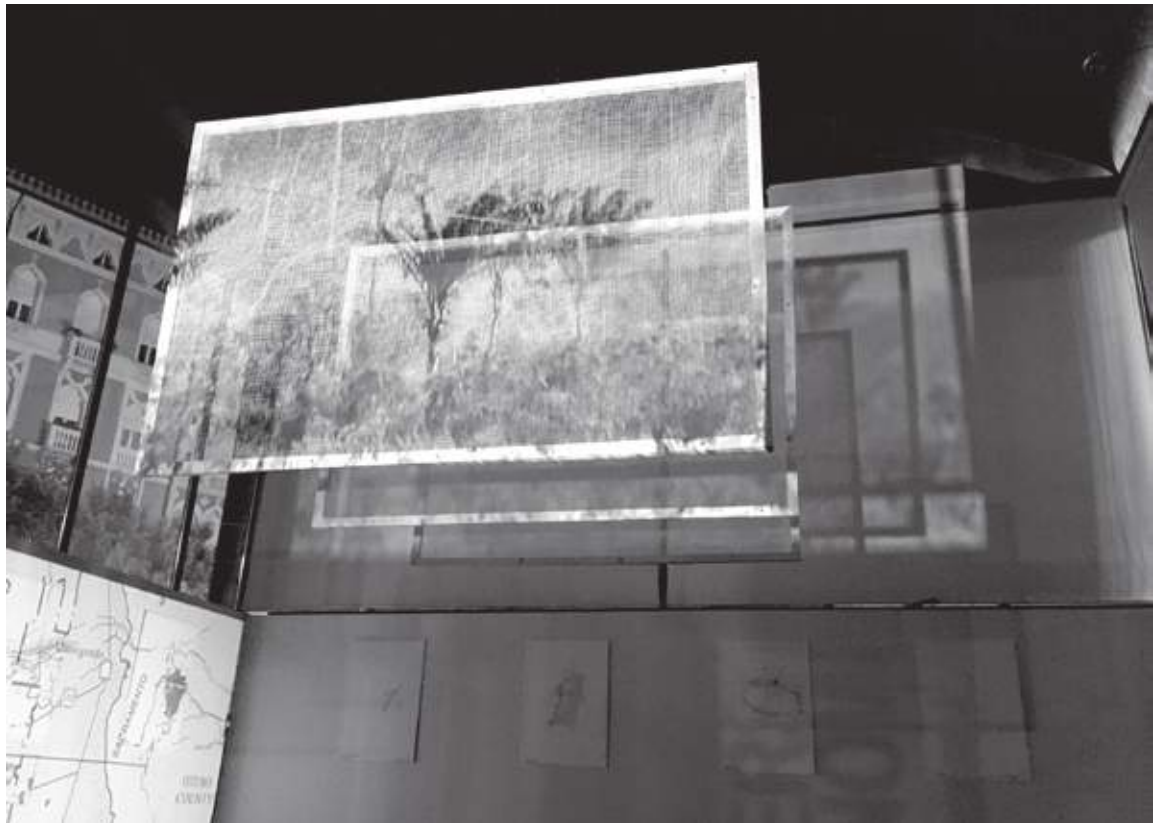
TIME-CAPSULE
TRANSCRYPTS

AN EXPERIMENTAL TAXONOMY OF FORMS AS A VEHICLE FOR DESIGN OPERATION

with Gianluca Croce

Artifact by:

Mariacristina D'Oria
Gianluca Croce (PhD candidate, Units)

Exhibited in:

Delft, Nederlands (28.03.2022 – 01.04.2022)

Presented at:

CA2RE | CA2RE+ Conference | RECOMMENDATION,
Delft, Nederlands.

Abstract

The perception of a contemporary era dominated by the looming threat of one or more catastrophes brings out the awareness of the need to preserve our existence traces, away from their probable disappearance and the possibility of their space-time transmission. Our research aims to investigate the concept of "time-capsule" in its most disparate forms, highlighting how, in its principles of protection, conservation, and communication and its spatial configurations, there are relationships of continuity and contiguity only apparently random. The purpose of establishing a genealogy of the formal relationships between different objects — such as an Etruscan tomb or a bunker from World War II — is to demonstrate how the diverse functional needs end up coinciding in the recurring use of some primary forms, sometimes even as a result of their assemblage.

Retracing the time-capsule taxonomy.

Ziqqurat of Ur
Sumerian
Nasiriyah,
Iraq, 3000 bC.

Rosetta Stone
Egyptians
El Rashid, Egypt
196 bC.

Cenotaph for Newton
É.-L.Boullée
France, 1784.

Century Safe
A.Deihm
Centennial Expo,
Philadelphia
1876.

Depthscrapers
Japan
1931.

The Crypt of Civilisation
T. Jacobs
Georgia,USA
1937-1940.

Mercury Spacecraft Int. Arrang
NASA Cape
Canaveral,
USA, 1959.

San Cataldo Cemetery
A. Rossi
1971-1976.

Citizens' Time Capsule
Ant Farm
New York, USA
1975–2000.

Onkalo Nuclear Waste Repository
Finland,
2004–2023.

Nuclear Waste Repository
Andra
Bure, France
2022-2030.

Great Pyramid of Giza
Egyptians, Giza,
Egypt, 2550 bC.

Colombarium of Vigna Codini
Ancient Romans,
23 bC.

Wunderkammer
Rudolf II,
1607-1611.

De la Terre à la Lune
H.de Montaut
1868.

Mundaneum
Le Corbusier
1929.

Residential shelter
C.W.Glover,
Montréal,
Canada, 1941.

Time Capsule II
Westinghouse El.&
Man. Comp.
New York Expo,
USA,1964.

Osaka Time Capsule
Panasonic Corp.
Osaka Expo,
Japan, 1970.

Einstein Tomb
Lebbeus Woods
1980

Waste Isolation Pilot Plan
US Atomic Energy
Commission,
New Mexico,
1999-.

Svalbard Global Seed Vault
Spitsbergen, Svalbard
islands
2008.

Tomb of Agamemnon
Ancient Greeks,
Micene, 1250 bC.

Dado tomb
Etruscan, Italy
300 bC.

La voragine infernale
S.Botticelli
Italy, 1480–1495.

Temple of music
R. Fludd, 1617-1626.

Mundaneum
P. Otlet,
H.La Fontaine,
Bruxelles, 1920.

Maginot Line
France,
1928-1940.

Boîte-en-valise
M. Duchamp, Collection
Peggy Guggenheim,
Venice, Italy, 1941.

Apollo 11 goodwill messages,
NASA, USA, 1969.

Media Van
Ant Farm,
California, USA
1972.

Spike Field
M.Brill,
Sandia National
Laboratories,
1992.

Underground house Plan B
S.Makhno, Ukraine,
2020.

Aedicula tomb
Etruscan, Italy
500 bC.

Tumulus tomb
Etruscan,
Italy, 350 bC.

Teatro della memoria
G.C. Delminio , 1550.

House in Lincoln's Inn Fields
J. Soane,
1812-1913.

Mausoleum of Max Dvőák
A. Loos, 1921.

Time Capsule I
Westinghouse El.&
Man. Comp.
New York Expo, USA,
USA, 1939.

Atlantic Wall
Germany,
1942-1944.

Undergroud Nuclear Metropolis
O.Newman
New York,USA
1969.

Voyager Golden Records
NASA Outer Space,
1977.

Living Capsule Tree Mountain
A. Denes
1992

Immortality Drive
NASA,
International
Space Station
2008.

| ANCIENT AGE | MEDIEVAL AGE | MODERN AGE | CONTEMPORARY AGE |

TIME CAPSULE   **BURIAL**   **COLLECTIONS**   **BUNKER**   **SPACE SHUTTLE**   **NUCLEAR WASTE REPOSITORY**

intro
The perception of a contemporary era dominated by the looming threat of one or more catastrophes brings out the awareness of the need to preserve our existence traces away from their probable disappearance: hence the need to question ourselves on how to address this issue in architectural terms.

Our research aims thus to investigate the concept of the "time-capsule" in its most disparate forms, highlighting how, in its principles of protection, conservation, and communication and its spatial configurations, there are relationships of continuity and contiguity only apparently random.
Let us start with the proper notion of time-capsule: "a container used to store for posterity a selection of objects thought to be representative of life at a particular time" (A. Dehim's The Century Safe, Centennial Expo Philadelphia, 1876). Although this concept is purely modern, the idea of preserving and transmitting the physical traces of our temporal and spiritual passage is a recurring aspect in the history of humanity and, therefore, of architecture.

The purpose of establishing a genealogy of the formal relationships between different objects — such as an Etruscan tomb or a bunker from World War II — is to demonstrate how the diverse functional needs end up coinciding in the recurring use of some primary forms, sometimes even as a result of their assemblage. Therefore, the aim is to offer a formal repertoire as a tool for the design of a contemporary time-capsule that is in itself, in its architectural configuration, a sort of formal compendium or, more specifically, a "time-capsule of the time-capsules of history."

retracing a taxonomy
The taxonomy of time-capsules traces an inhomogeneous and disconnected set of devices and architectures that differ in dimensional and functional terms but which share the definition of a container object intended to protect its content and transmit it to different space-time dimensions. Within this set of objects, six categories are recognizable: tomb, archive, bunker, time-capsule proper, spaceship, and nuclear waste deposit. (fig.1)
The reduction of the devices analyzed into pure forms, or of their assemblage, therefore suggests that the shape of the object considered a "time-capsule" must necessarily present itself as a recognizable element, even when this consists of a monolithic or a simple parallelepiped. Especially in some examples, distant in space and time that share the same formal configuration, this defines a transversal and universal need for the symbolic recognition of the container that conveys the message.

container

The aim of transmitting the architectural message to a distant and uncertain future forces us to think about the container by referring to the taxonomy we have produced. If each "time-capsule" is often in itself an assembly that derives from other archetypal forms of further spatial configurations of different time-capsules, our transcripts repeat this operation, declining the symbolic spatial repertoire of the taxonomy according to the different critical and paradoxical conditions of the places in which they are located.

content

The time-capsules offer a selection of specific or disparate objects of a particular civilization or illustrious person. We, as architects, have the idea of preserving architectural projects and theories that have been related, directly or indirectly, to crises and disasters to transmit their memory. The spatial organization of the archive is declined, within our sequence of transcripts, in an exploratory process through different spatial and performative qualities.
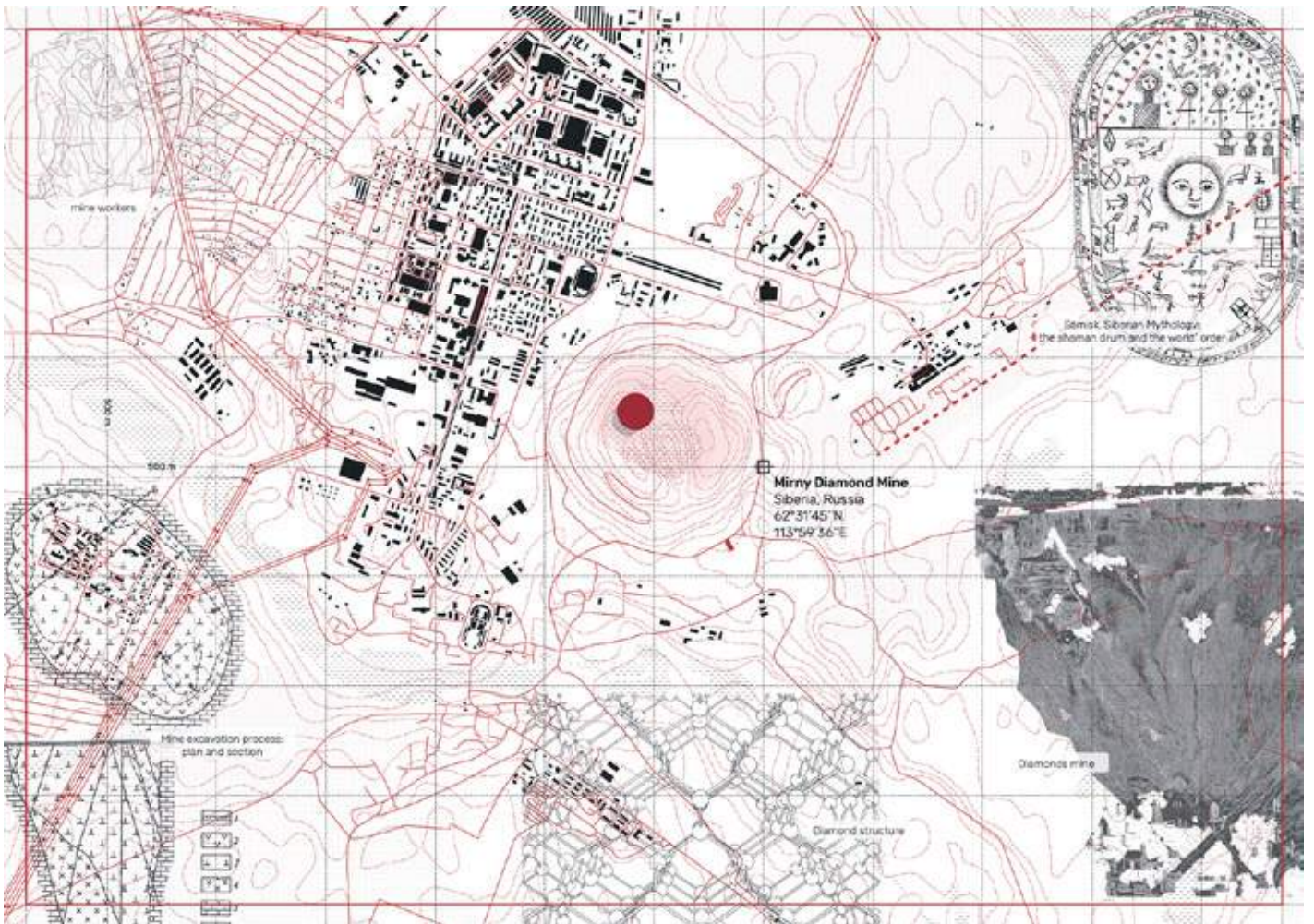
materials

Having to hypothesize an object that can preserve its contents indefinitely and choose a significant material, each time-capsule is materially designed in concrete. Given the ability of concrete to assume the imprinted form, this lends itself to becoming not only the container of the archive but the material of the archive itself. Therefore, each archived element is not separated from the container but is an integral part of it, through its reproduction, partial or total, in real or reduced scale, in negative or positive. In this way, we set ourselves the goal of choosing a durable, purely architectural medium, but we also intend to sever the traditional separation between container and content, meaning and signifier. We are also aware of the fragility of materials defined as lasting: the idea of their degradation and slow and inexorable destruction, especially of the outer part of our time-capsules, is an integral part of that inexorable process that involves all things. Therefore, the time-capsules are also designed to turn into ruins for the archeology of the future.

contexts

Our time-capsule transcripts are located in symbolic and extremely different contexts. The choice of each of them derives from its peculiar condition of urban fragility or environmental disaster. In this way, we decline and explore the potentiality of our taxonomy within Venice (Death in Venice), Yucca Mountain (Sacred Toxicity), Mirny mine (Diamonds are a dead's best friend), China-Kazakhstan border (Hyporborea's gate), and Cujubim (Savage Hades).

Ziqqurat

Colombarium

Tumulus tomb

Mausoleum of
Max Dvôák

Soyuz spacecraft

Living Capsule
Tree Mountain

Pyramid

Dado tomb

San Cataldo
cemetery

Spike Field

Osaka Time Capsule

Time Capsule II

Dante's Inferno

Mundaneum

Atlantic wall bunker

Depthscrapers

Tholos tomb

Undergroud Nuclear
Metropolis
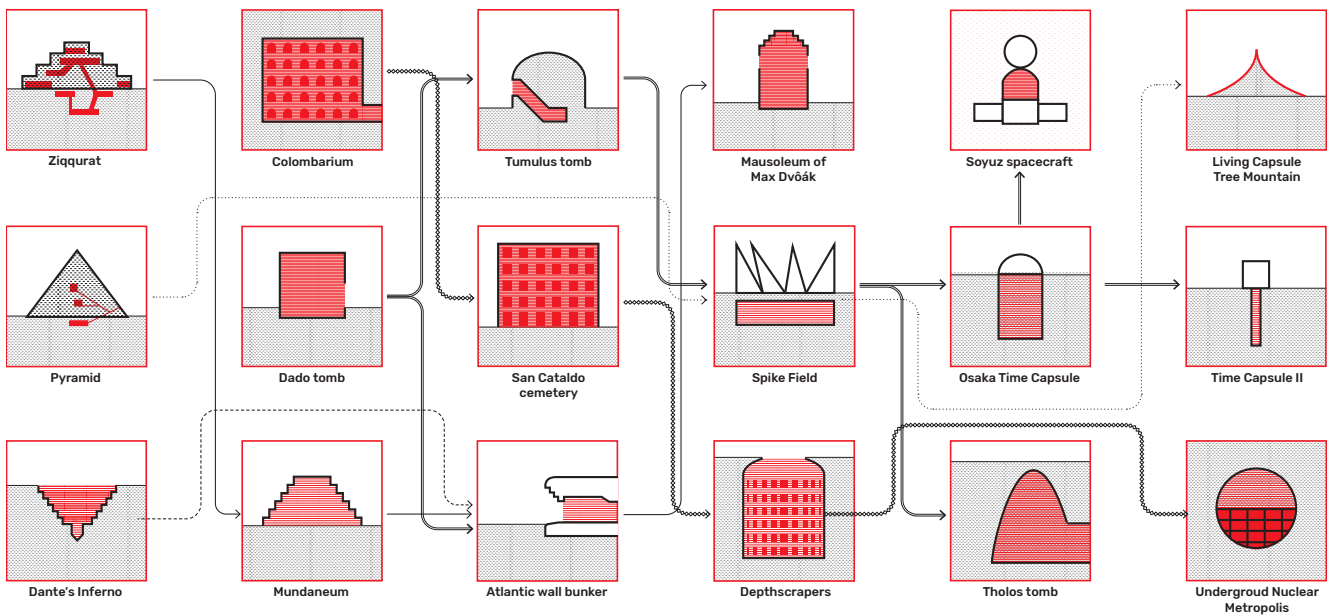
*Retracing the time-
capsule taxonomy. The
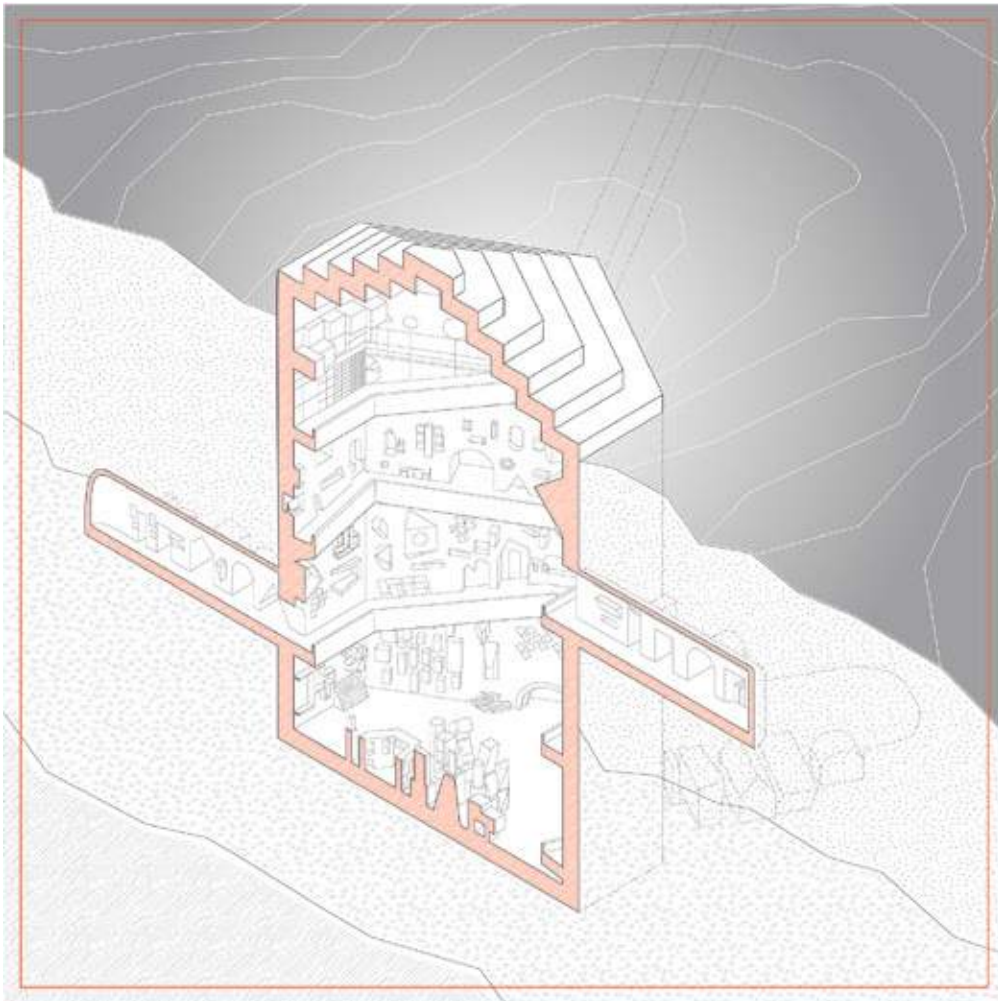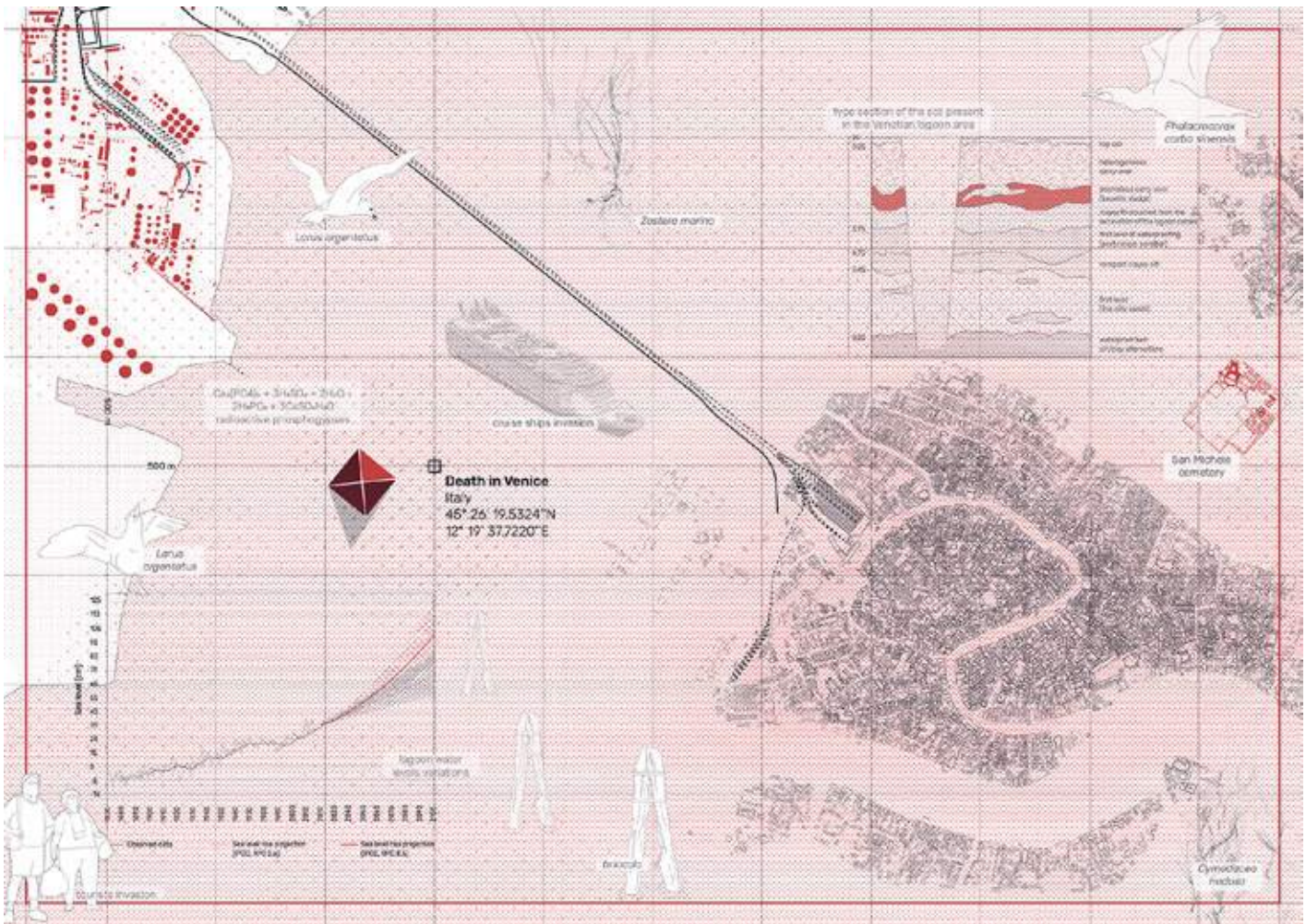relation between the
external and the interal
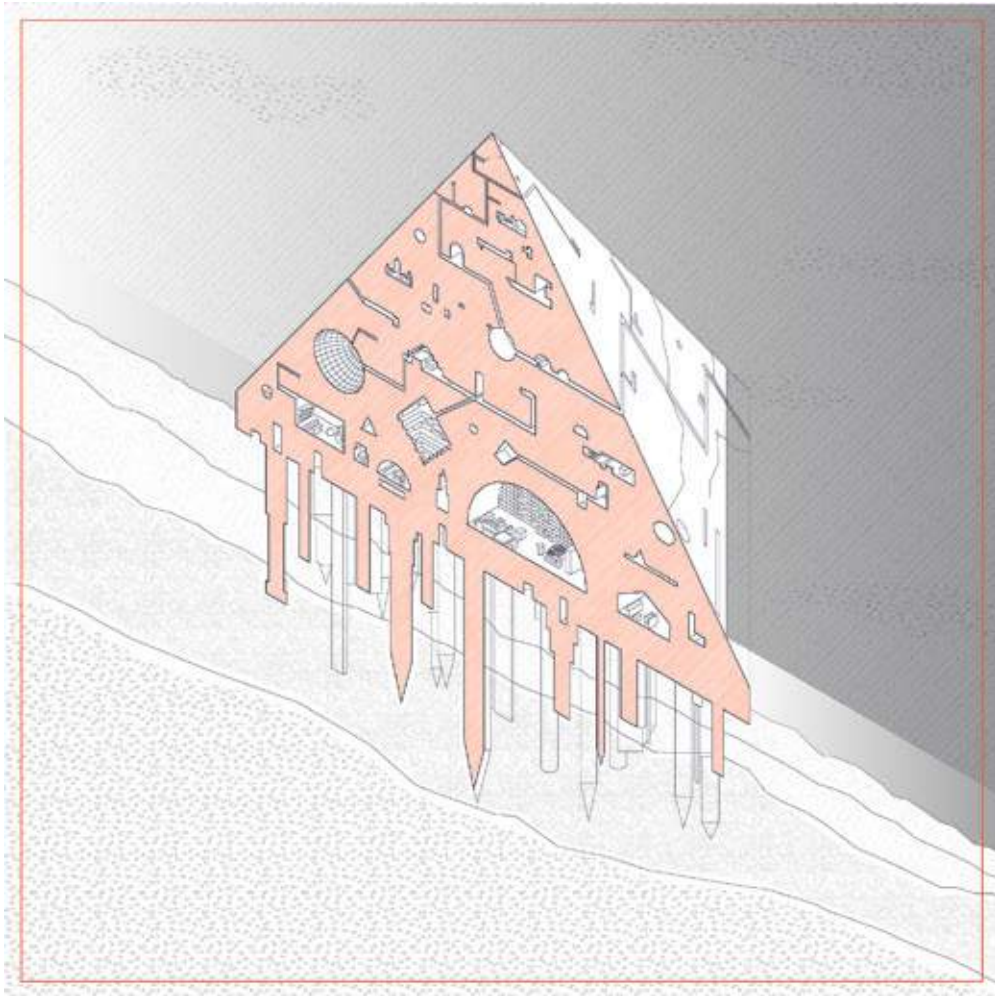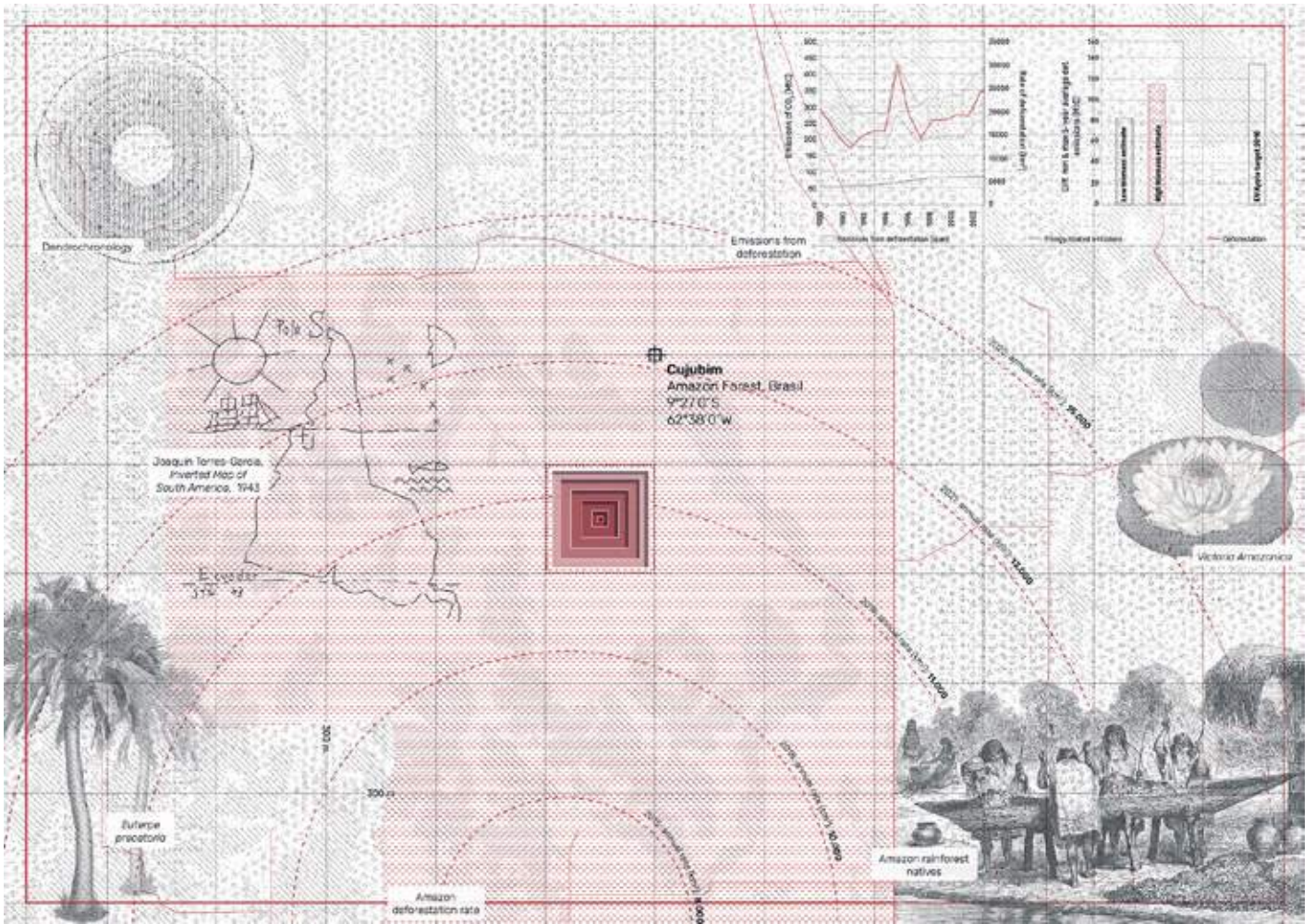shapes.*

Diamonds are a dead's
best friend
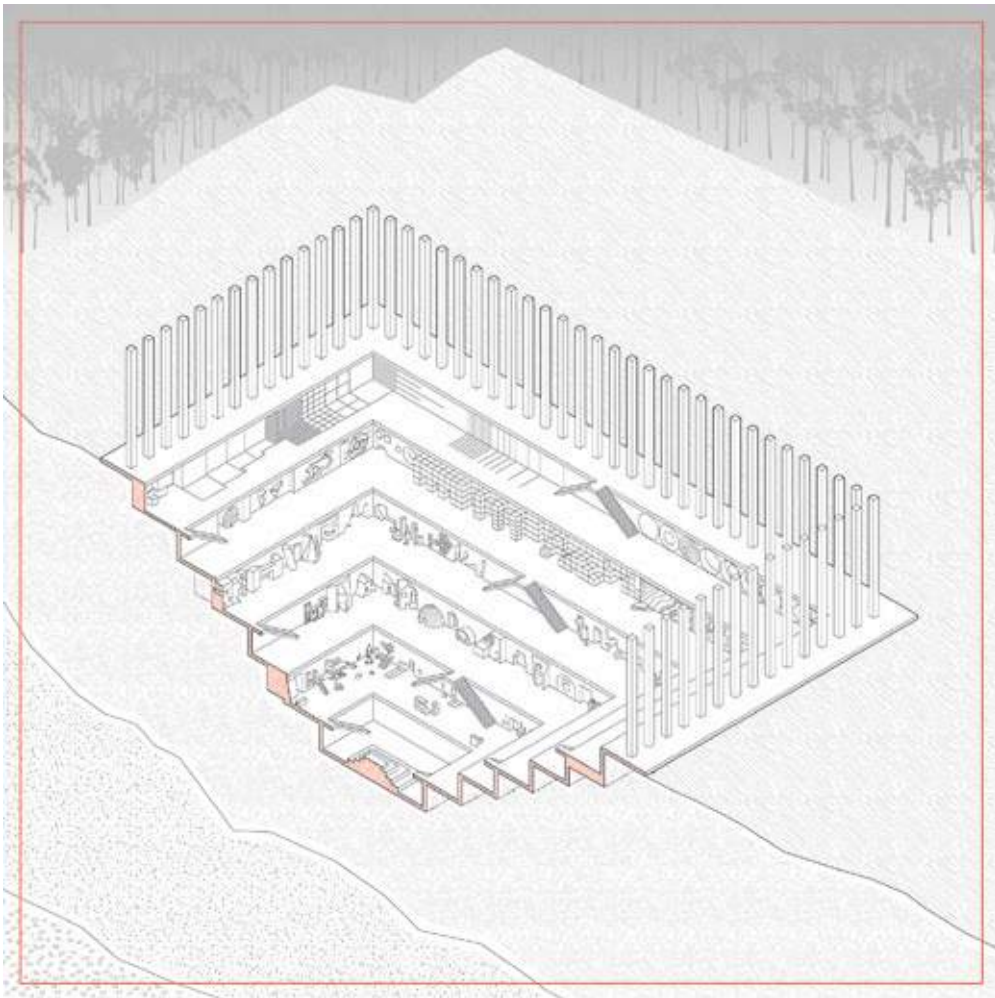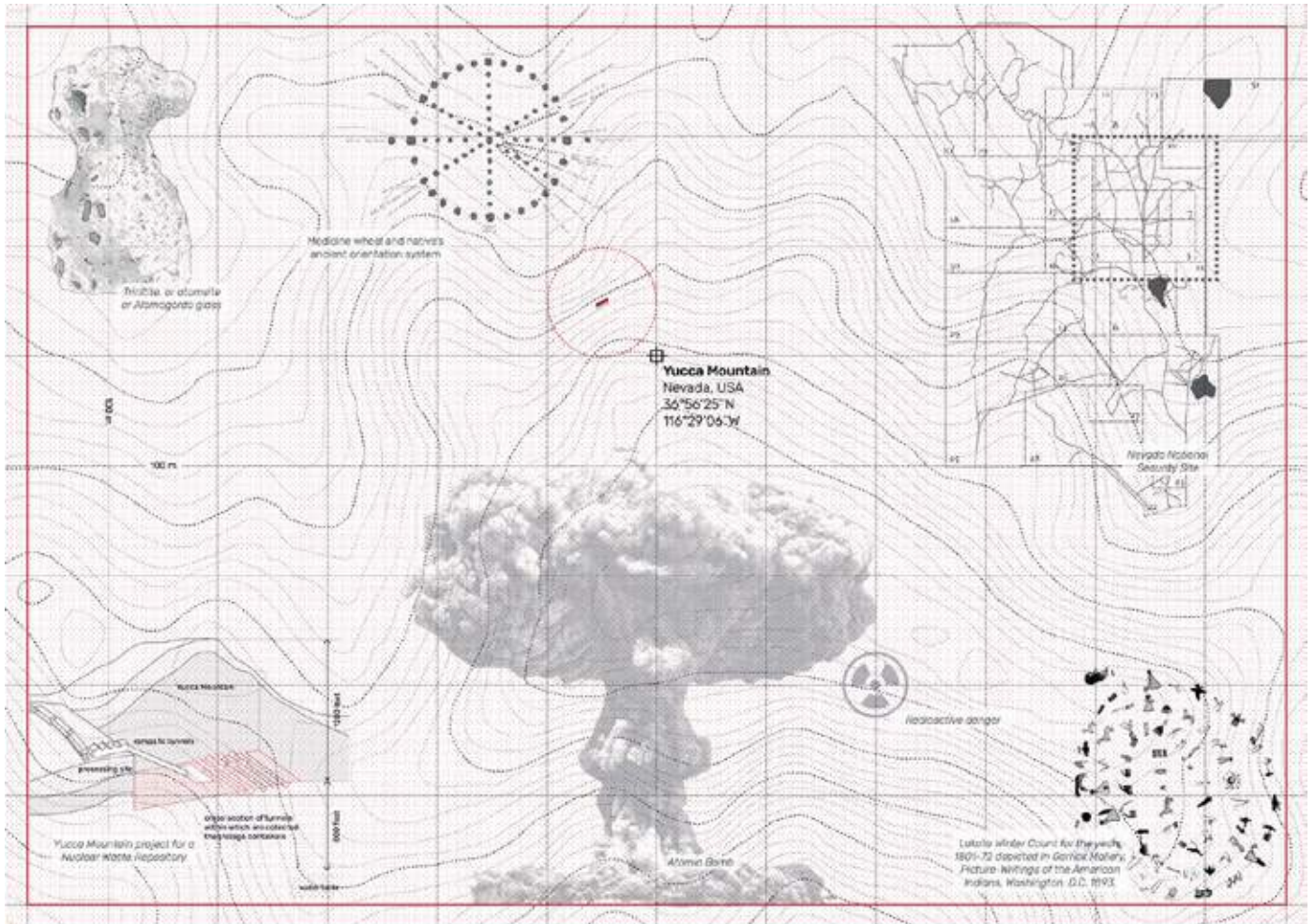Mirny mine
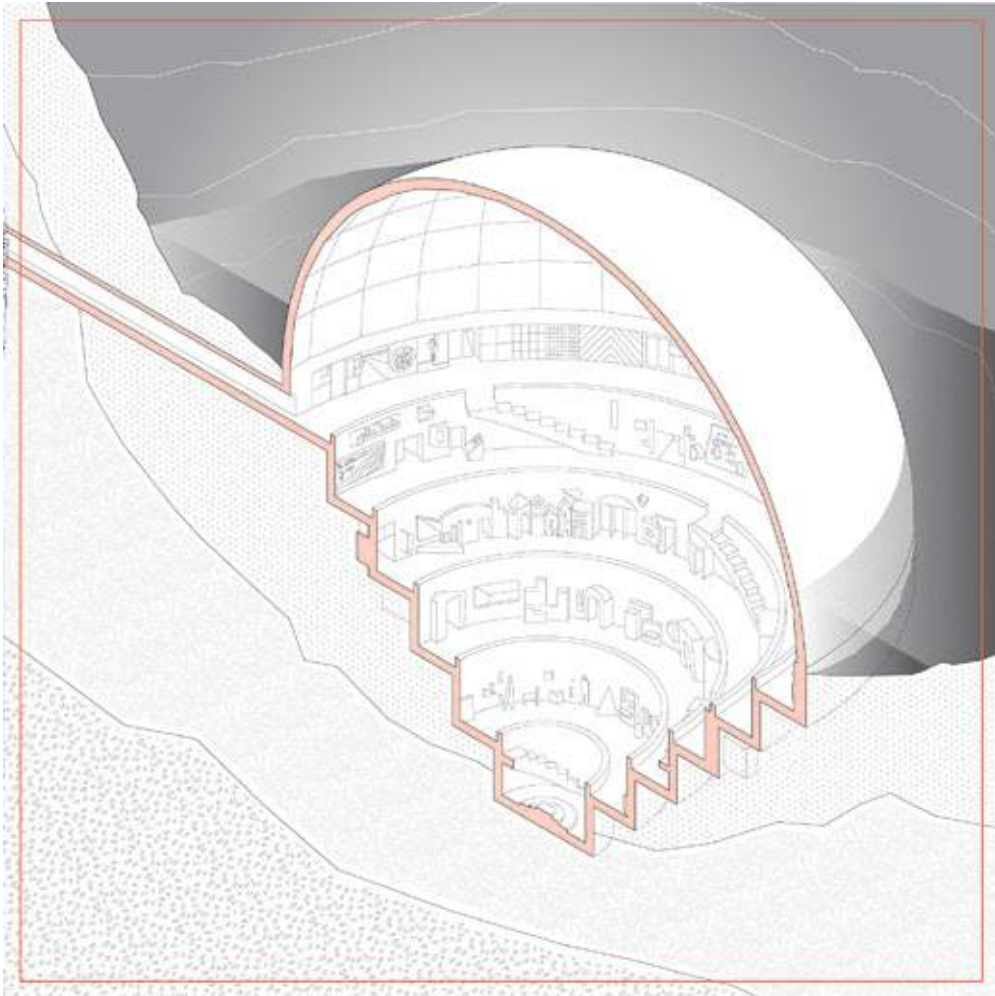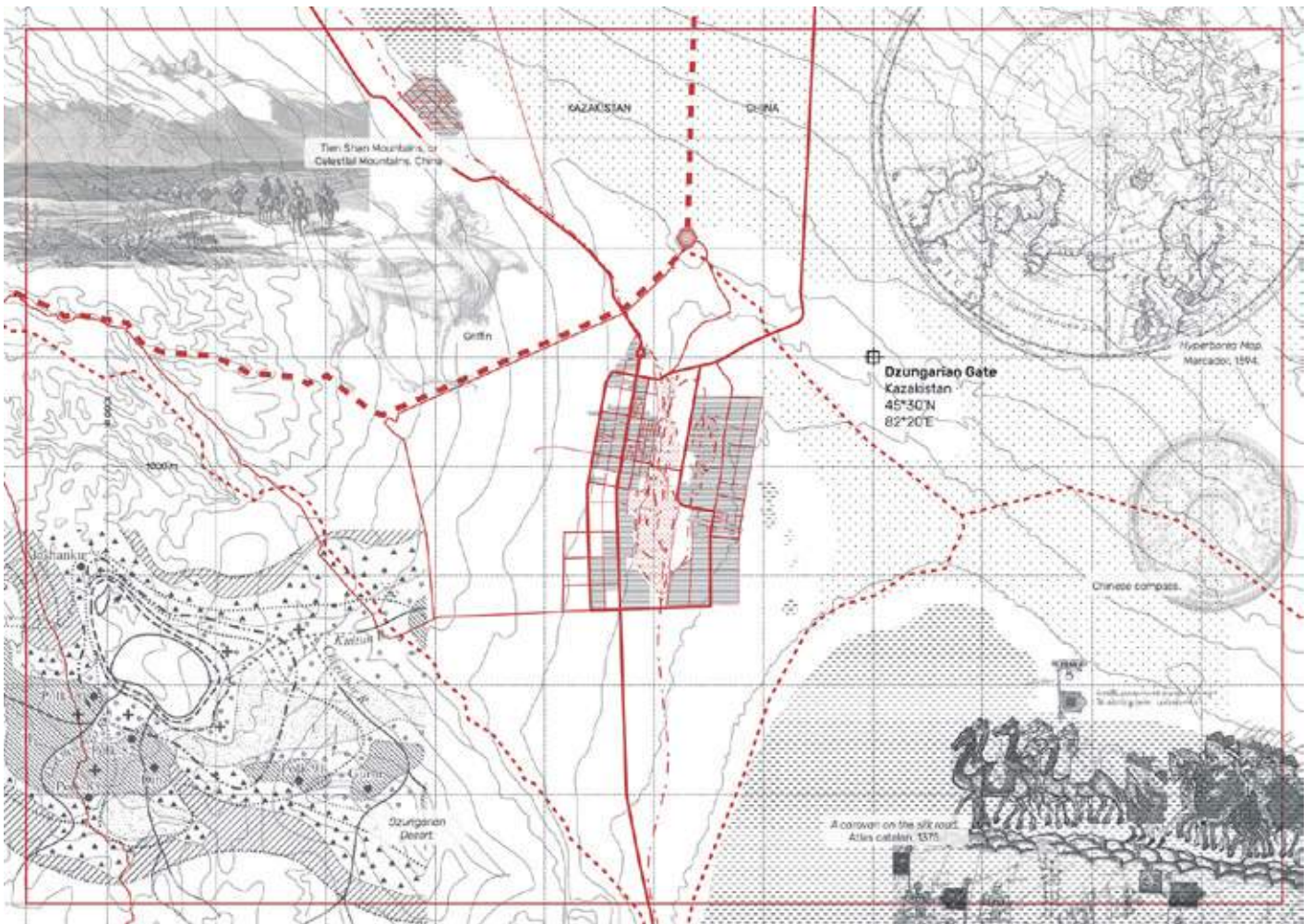
Hyporborea's gate,
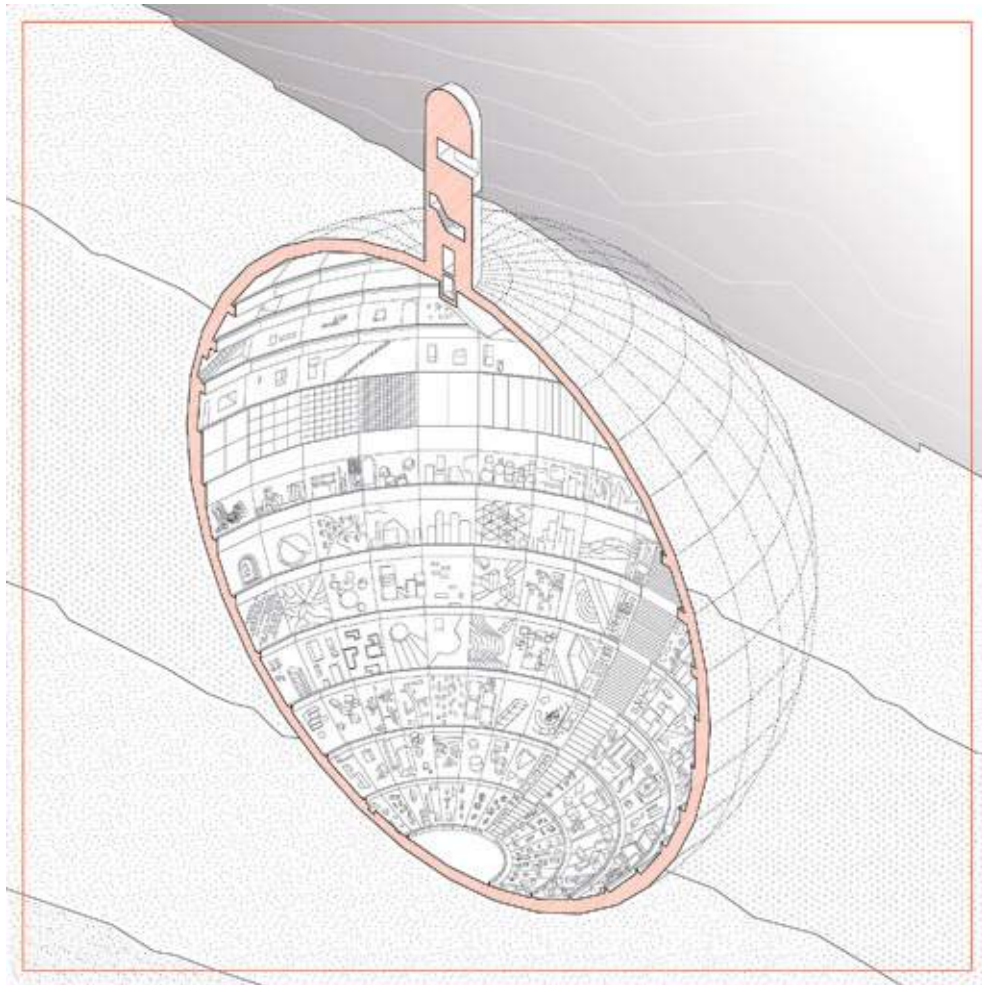China-Kazakhstan
border.

Death in Venice,
Venice.

Savage Hades
Cujubim.

Sacred Toxicity
Yucca Mountain

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Focusing on the expiring architectures concretizing and materialized within the transitional time-space fragments opened up by traumatic events, the literature review results from the intertwining of distinct transdisciplinary grounds and results inscribed within the contemporary field of investigation operating at the crossroad of different disciplines to reformulate an architectural language which can interact and reason on the contemporary disillusion relation between design and future.

The general framework, represented in miniature here, and expanded at the end of this work, embodies four main strands/apparatuses focused respectively on: the relation between architecture and time, the theoretical basis for the definition and formulation of ephemeral and temporary dwellings, the relation between architecture and trauma (involving precisely the psychological consequences that the traumatic event triggers on the human mind), and finally that of architecture and artificial disaster.

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"Incubated cities are destined to self-destruct
Ruins are the style of our future cities
Future cities are themselves ruins
Our contemporary cities, for this reason,
are destined to live only a fleeting moment,
Give up their energy and return to inert material
All of our proposals and efforts will be buried,
And once again the incubation mechanism is reconstituted
That will be the future."(1962)
*Future City
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