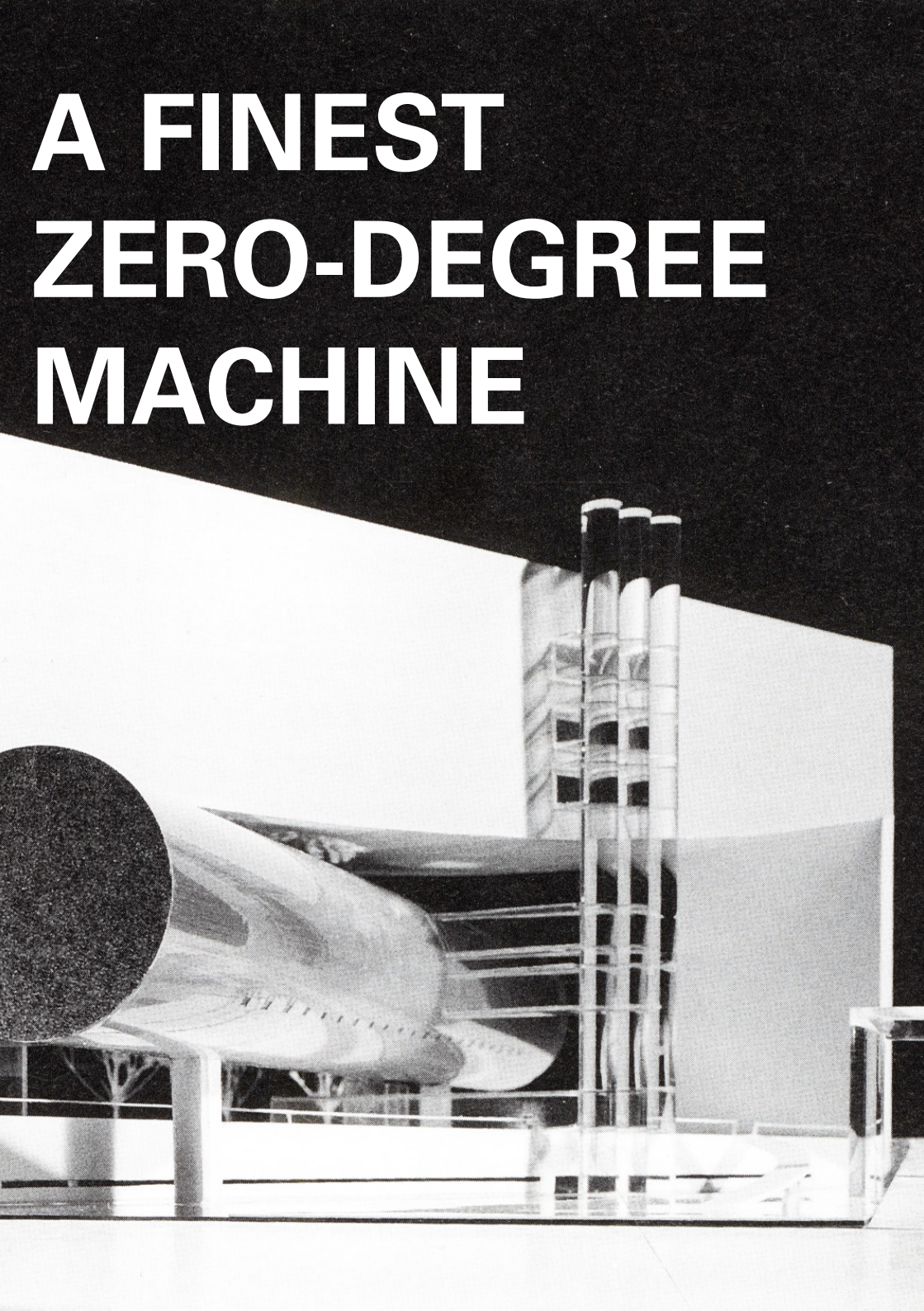
A FINEST ZERO-DEGREE MACHINE



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STEVEN HOLL'S 'CHIASMA'

FINNISH MUSEUM OF CONTEMPORARY ART KIASMA , 5TH FLOOR UNDER CONSTRUCTION (1997)

The Contemporary Art Museum in Helsinki was opened in May of 1998.

Its genesis goes back to 1939, when the lack of exhibition spaces for contemporary art in Finland and the high cost of organizing temporary exhibitions lead to the founding of the Contemporary Art Society.[1]

The founding members Alvar Aalto, Maire Gullichsen, Nils Gustav Hahl, Bertel Hintze and Antero Rafael Rinne were united by the ambition to promote knowledge of contemporary art in Finland and to increase interaction between the Finnish and international art life.

In the 1940s and 50s, the society played a prominent and pioneering role in Finnish art scene. As there was no state institution for exhibitions and exchange, international cultural relations were in the hands of private organizations. During the 1950s, the Contemporary Art Society held around twenty exhibitions in Finland, primarily showcasing French art.

The society also worked in collaboration with other art institutions. For instance, it organized the first ARS exhibition together with the Fine Arts Academy of Finland in 1961.

Building an art collection was among the goals of the Contemporary Art Society. For this, however, it did not have adequate funds. Instead, the society strongly supported the establishment of a museum of contemporary art.[2]

On 1 September 1990, the Museum of Contemporary Art commenced operations, with its temporary location situated on

1 "About Kiasma," Museum of Contemporary Art Kiasma, https://kiasma.fi/en/about-kiasma/ (accessed February 24, 2023).

2 "Activities for the visual arts," Villa Mairea, https://web.archive.org/web/20140924042713/http://www.villamairea.fi/maire-gullichsen/toiminta-kuvataiteen-hyvaksi (accessed February 20, 2023).

Kansakoulukatu until May 1991 when it moved to the renovated Ateneum building.

One year later in autumn of 1992 the competition for a new museum was launched.

In 1993, the jury nominated Steven Holl's 'Chiasma' as the winning proposal out of 516 entries. Shinohara's design called 'Stages' was elected second place.

Three years later, construction work started in the Töölönlahti area, where the museum was finalized and opened in May 1998.[3]

In retrospective one could say that a key motivation for the emergence of the museum was the will to connect more deeply with the ongoing practices of Central and Western Europe.

In his book 'Kunst der Gegenwart', Philip Ursprung describes the development as a common phenomenon of that time. With the ending of the Cold War in 1989 national differences started to diminish.[4] According to Michael Hardt and Antonio Negri, the world has entered a new era of globalization in which traditional notions of sovereignty and nation-states are no longer adequate for understanding the complexities of global power relations. Instead, they propose the concept of 'Empire' as a new global order that is characterized by decentralized power structures and a network of dominant institutions, including multinational corporations, international financial organizations, and global media conglomerates.[5]

Ursprung describes further that the art world is structured like a web, where everything is interwoven with each other, and it is precisely the edges that need to be observed closely. Consequently,

3 "About Kiasma" (see note 1).

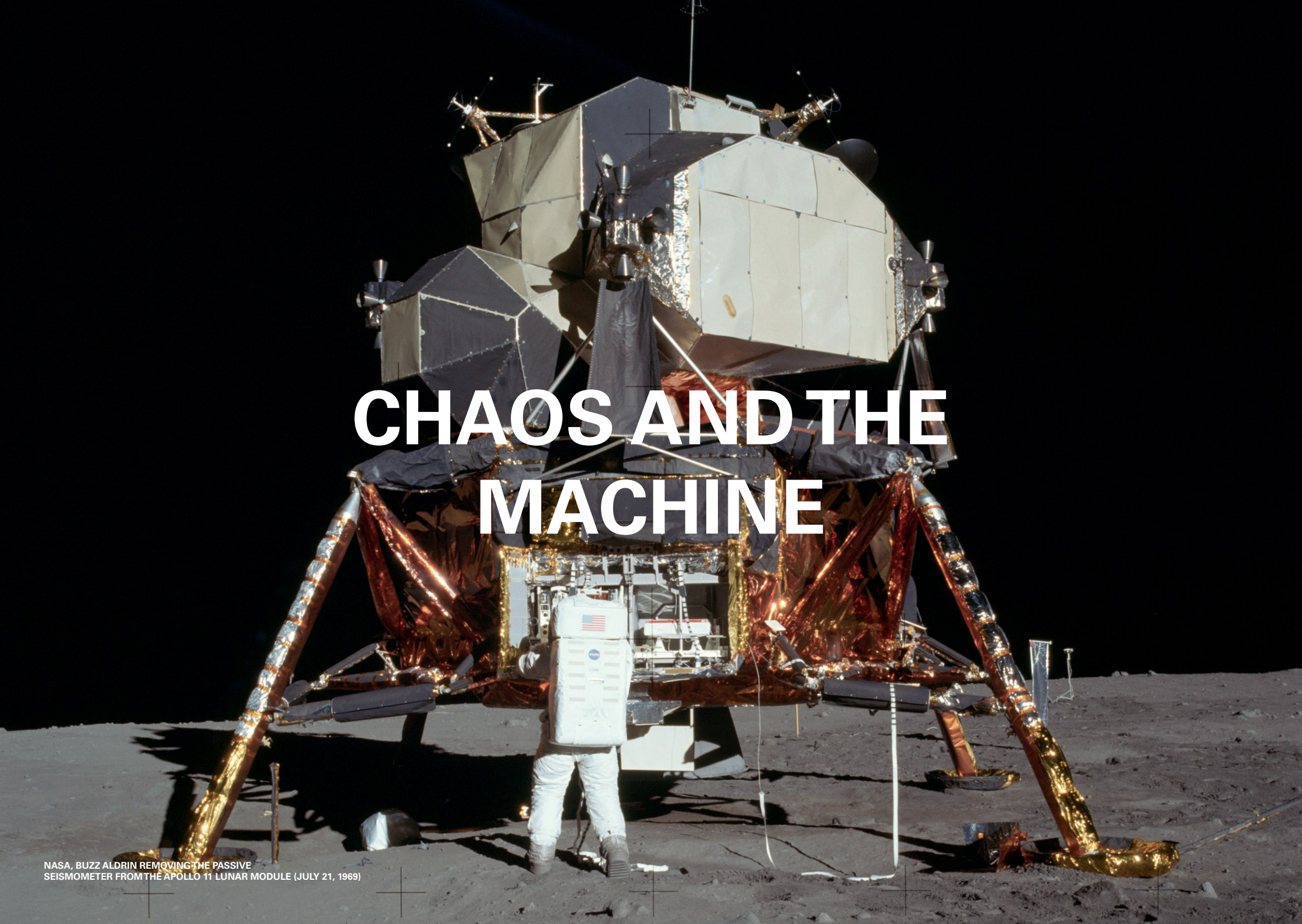
4 Philip Ursprung, *Kunst der Gegenwart: 1960 bis heute* (München: C.H.Beck, 2019).

5 Michael Hardt, and Antonio Negri, *Empire* (London: Harvard University Press, 2000).

lesser-regarded art scenes moved to the center of attention. Furthermore, the unbroken growth of the public has also changed the situation compared to the 1980s. Regular exhibitions such as Documenta, the biennials and triennials, etc. are no longer meeting places for specialists, but also destinations for the tourism industry. It is not surprising that the museum buildings of this time also take on a special role in this development. Around the turn of the millennium, it appeared that the stunning new museum structures had taken center stage in the art world. Frank Gehry's Guggenheim Museum in Bilbao is emblematic of this development. According to Ursprung, the project, although it depleted the museum budget of the entire Basque Country for a decade, its potential as a tourist attraction is expected to yield profits that far exceed the initial investment. The effect of the building as a landmark is more important than what is shown in the museum. Since then, authorities and sponsors from all over the world have been hoping to repeat the so-called 'Bilbao effect'.[6] It could be argued that ever since, the concept of a museum building has become inextricably intertwined with the flow of tourism.

6 Ursprung, *Kunst der Gegenwart* (see note 4).

IWAN BAAN, KIASMA (2019)



CHAOS AND THE MACHINE

NASA, BUZZ ALDRIN REMOVING THE PASSIVE SEISMOMETER FROM THE APOLLO 11 LUNAR MODULE (JULY 21, 1969)

"The richness of a city arises through exceeding the measure of any rational relationships among elements."[7]

THOMAS STRUTH, SHIBUYA CROSSING TOKYO (1991)

7 Kazuo Shinohara. "Modern Next," in Seng Kuan, ed., *Kazuo Shinohara Traversing the House and the City* (Zurich: Lars Muller Publishers, 2021), 221-231, here 225.

Based on Ursprung's elaborations, it's unsurprising that for the museum competition in Helsinki, in addition to the admitted, exclusively Baltic and Nordic participants, four renowned architects were invited to take part.[8] Kazuo Shinohara, who mainly built structures in Japan throughout his professional life, was among the four foreign architects who were invited to participate. Notably, it was during the later stages of his career that he began to develop an urban theory that was greatly impacted by his international experiences. As he gained global recognition and traveled, Shinohara was exposed to the European city, which he used as a 'counter-form' to develop a conceptually useful understanding of the apparently chaotic city of Tokyo.[9] Shinohara points out that, unlike those of spacious modern European cities with their great weight and mass of tradition, Tokyo has a mood and a quality of its own. There was no city in the world which demonstrates the variety of building types or the disorder of decorative surface colors and forms that Tokyo offers. He states: "Chaos is the only word to describe the total effect".[10]

Shinohara's background as a mathematician significantly influenced his perspectives on the concept of chaos. He looked at the urban structure as an extreme abstract system incorporating a set of mathematical functions tending towards infinity. For him it seemed clear that simple plastic modeling is incapable of denoting the structure of the contemporary city. He explains: "When we attempt to understand the city as a living entity, static equilibrium

8 Kazuo Shinohara, "The Museum of Contemporary Art, Design Competition (second prize) Helsinki, Finland Design: 1992-1993," Global Architecture Japan 39 (April 1994), 102-105, here: 102.

9 Alberto Dell' Antonio, and Joanelly Tibor, "Tradition Kubus Maschine Chaos," *werk*, *bauen+wohnen 12 (2015)*, 10-19.

10 Kazuo Shinohara, "Towards Architecture," *Japanese Architecture 293* (1981), 30-35, here: 32.

can never be its structure. The city must be dealt with as a kinetic mechanism capable of generating chaos in its wake."[11]

It is not only at the scale of the city that Shinohara takes reference to chaos and the machine but also at the scale of architecture. He expresses his fascination for the F-14 Tomcat fighter jet or the Apollo 11 Lunar Module and the way that their parts are put together. Instead of looking for an expression of visual unity the goal is to maximize the essential functionality of certain parts of the machine. The greatest performance of the whole machine is achieved through the *sachlich* (matter-of-fact) joining of said parts. Neither the parts nor the whole can express any meaning appealing to sentiment and it results something that Shinohara calls the 'Zero-degree machine', a system of incoherent form that embodies both randomness and chaos. However, the formal gaps between the parts or the parts and the whole endow the machine with dynamism which allows people to read new meanings into them.

This lack of a holistic unity which is shared with the chaos of the city became an essential part of Shinohara's works in the period of the fourth style. During this time, he experimented in the design process for several projects with "discreteness, gap, fragmentation, and *sachlich* matter-of-fact juncture".[12] The resulting works like House in Yokohama (1984) and Centennial Hall, regardless of their fundamental differences in scale and program, share simultaneous concepts and are strongly influenced by this thinking about architecture and the city. Shinohara's main ambition was to provoke a new meaning by joining three-dimensional spatial elements with primary geometrical shapes in *sachlich*-fashion.[13]

11 Shinohara, "ModernNext" (see note 7), 225.

12 Shinohara, "ModernNext" (see note 7), 229.

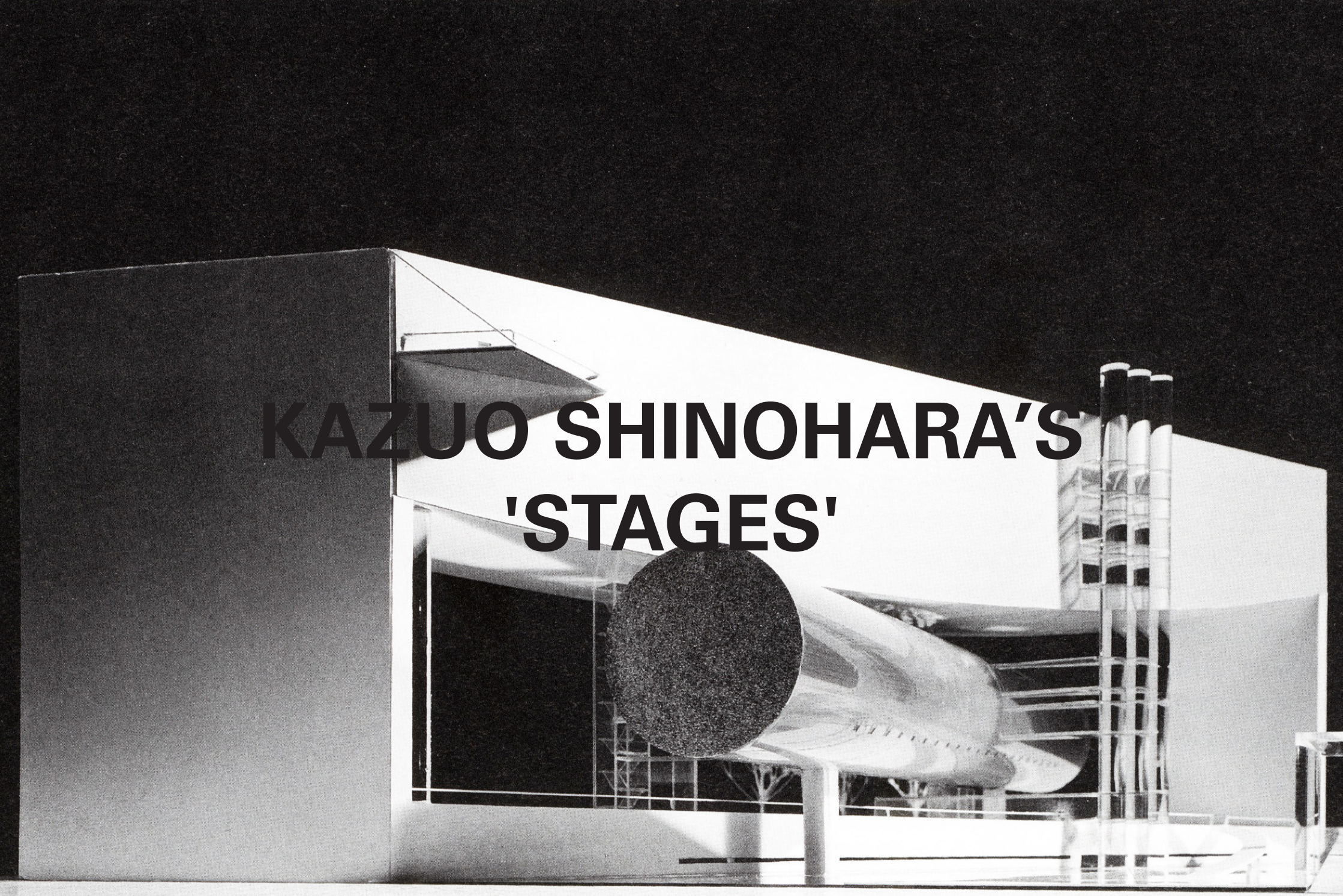
13 Shinohara, "ModernNext" (see note 7), 228.

”With reference to photographs showing [...] a head-on view of the US Navy Tomcat F-14 fighter plane, I examined the relationship between their terrifying capabilities and the visual idiosyncrasies of their respective containers. In certain parts of these machines, their essential functionality is maximally realized, and, through the *sachlich* (matter-of-fact) joining of their parts, the functionality of the whole machine is maximally achieved. Today’s machines are no longer expected to exhibit a visual unity...” [14]

14 Shinohara, ”ModernNext” (see note 7), 228.

GRUMMAN F-14 TOMCAT

KAZUO SHINOHARA'S 'STAGES'



KAZUO SHINOHARA, MODEL (1993)

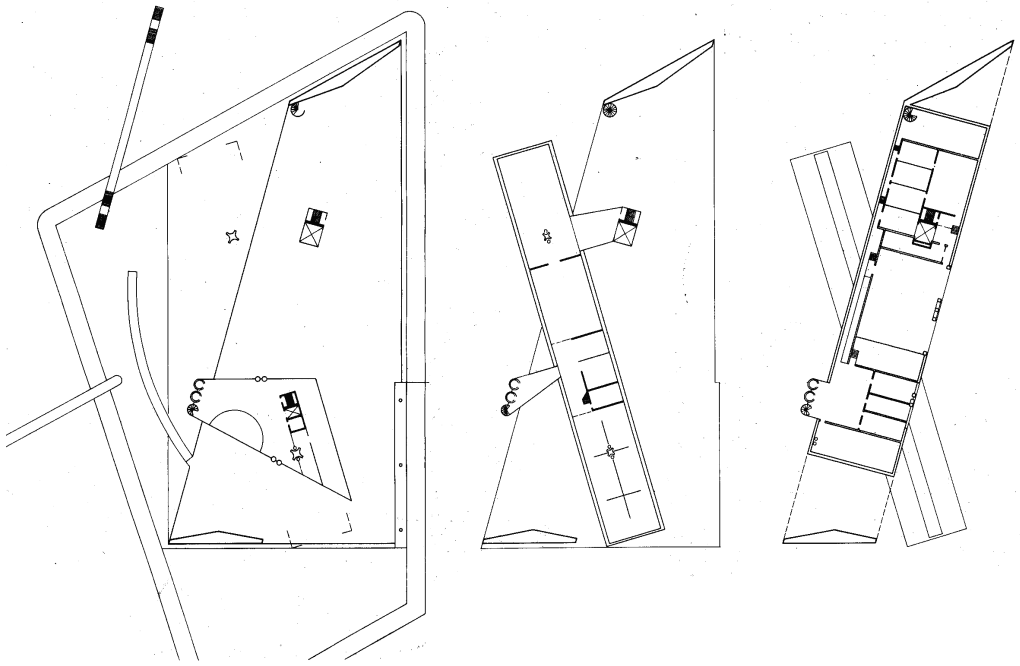
Kazuo Shinohara's proposal for Helsinki's competition for a museum of contemporary art can be associated with his above introduced fourth style.

The site for the museum is situated in close proximity to some of Finland's most important architectural monuments: the Parliament House by Johan Siegfried, Alvar Aalto's Finlandia Hall, Eliel Saarinen's Railway Station, all located off a scenic inlet in the Gulf of Finland.[15]

Shinohara and his team had the ambition to create an architectural form that would correspond positively to this site which according to him, combines a distinguished architectural setting and a beautiful natural environment.

Following his conceptual approach of joining three-dimensional spatial elements with primary geometrical shapes, the program of the museum is divided into different parts and organized in separate volumes. On the ground-level the complex management facilities are arranged in a trapezoid volume with a slightly inclined roof. On top of this volume lies a smaller trapezoid volume with the entrance space, the museum shop, and a cafe. Surrounding this smaller volume, the inclined roof offers a large terrace with an outside event and exhibition space slightly partitioned by a staircase tower. Suspended in midair above this level, we find a cylinder of 14 meters in diameter and 90 meters in length for the gallery for exhibiting the permanent collection. Over the cylinder the gallery space for the temporary exhibitions spans 110 meters in length and is hung off 40-meter-tall piers at both ends. The upper volume is further characterized by a gently curved underside and is oriented along a north-northeast axis.

15 Shinohara, "The Museum of Contemporary Art" (see note: 8), 102.

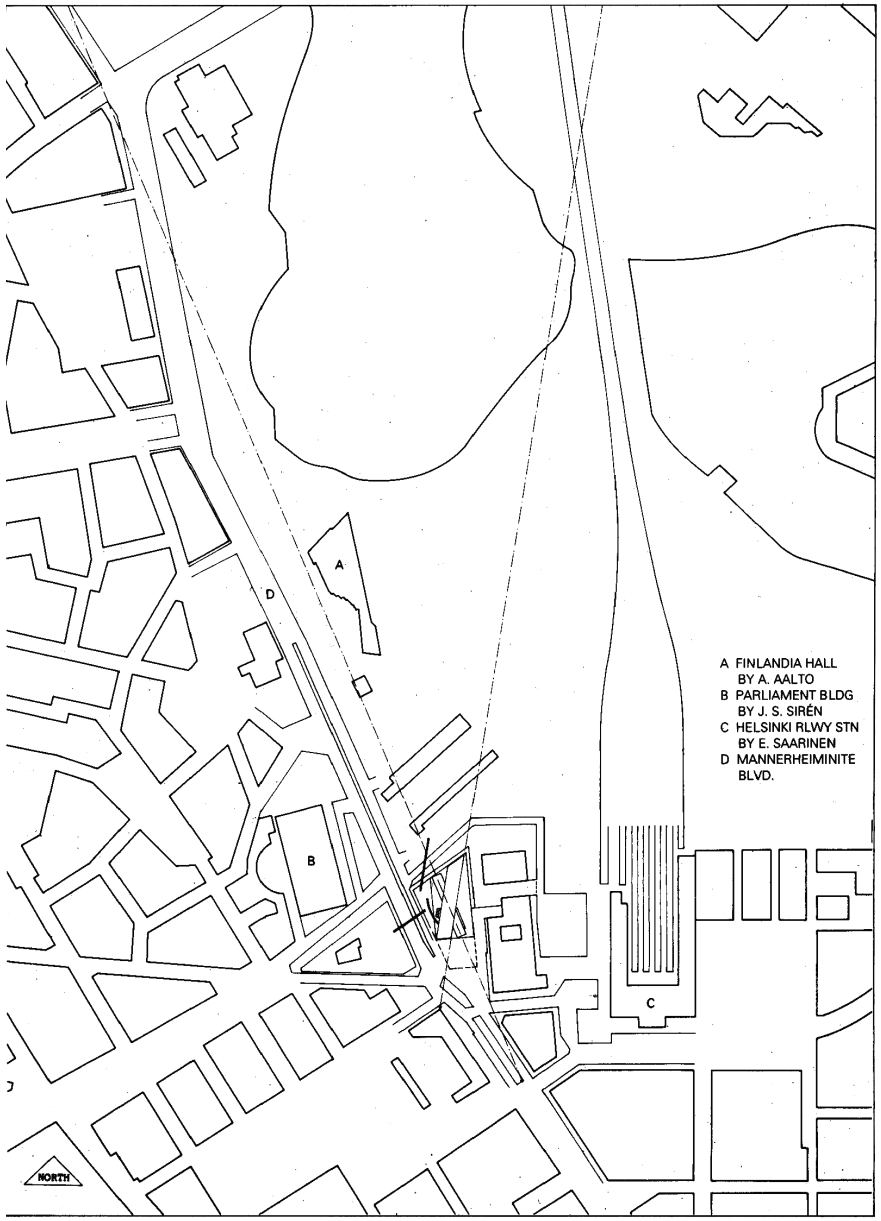


KAZUO SHINOHARA, HELSINKI FLOOR PLANS (1993)

The cylinder for the permanent exhibition is oriented in parallel to the main road along the plot and penetrates the gap created between the volume of the temporary exhibition and the trapezoid volume on the ground-level, overreaching its boarders on the northside.

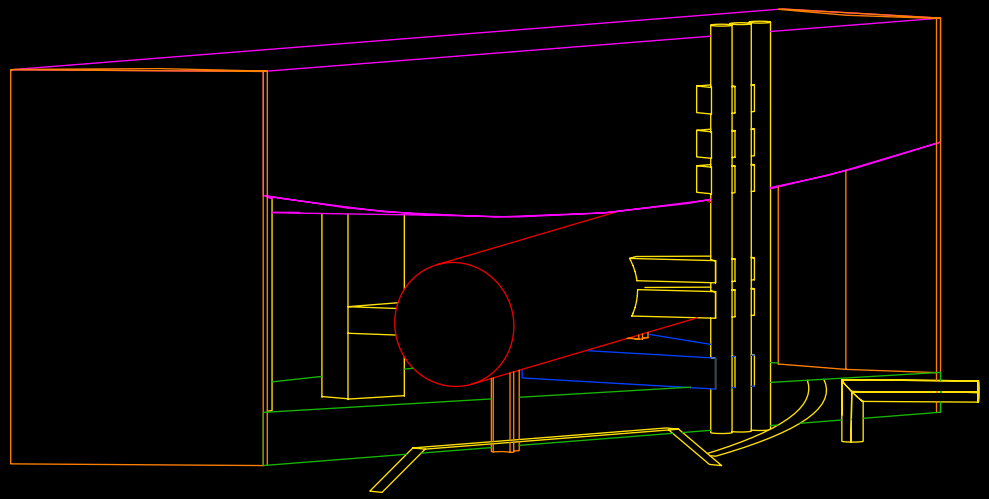
An essential role in Shinohara's composition play the transparent vertical access tubes.[16] In a way they keep the different elements with their unique profile together and can be read as the *sachlich* (matter-of-fact) junctures that hold this 'Zero-degree machine' together. Due to their transparency, not only the outside terrace and the two specific galleries serve as different stages to the artworks, but also the flow of the potential visitors is unveiled and thereby staged. It is as if Shinohara wanted to present this flow of humans as the fuel that keeps his proposed machine alive and working.

16 Shinohara, "The Museum of Contemporary Art" (see note: 8), 102.

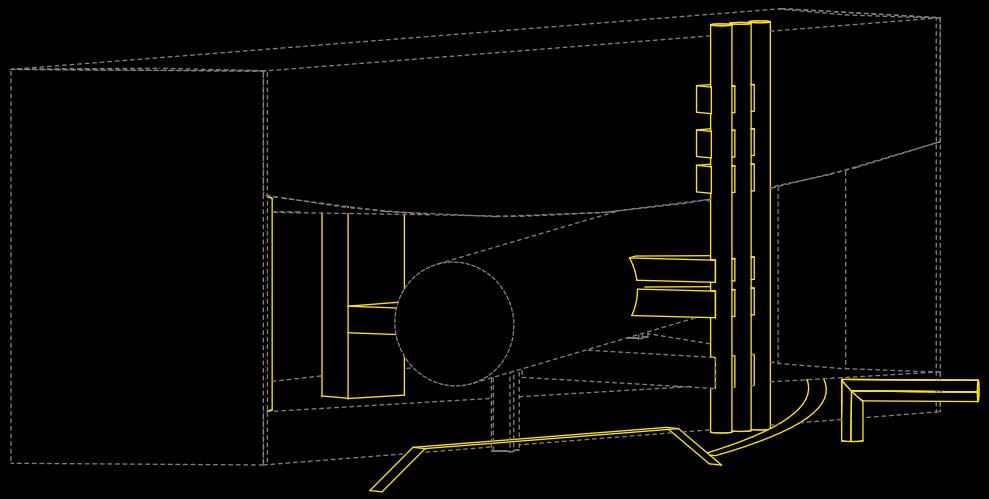


KAZUO SHINOHARA, HELSINKI SITE PLAN (1993)

”Objectively [in *sachlich* fashion], by joining these three-dimensional spatial elements with primary geometrical shapes, I hoped for the creation of some new meaning.“[17]



CIRCULATION
TEMPORARY EXHIBITION SPACE
PERMANENT EXHIBITION SPACE
LOAD-BEARING STRUCTURE
ENTRANCE SPACE
MANAGEMENT FACILITIES



SACHLICH (MATTER-OF-FACT) JUNCTURES

17 Shinohara, ”ModernNext” (see note 7), 230.

EXTENSION OF GLOBAL NETWORKS

GLOBAL RAIL NETWORK

Today, thirty years after the competition took place and 25 years after the realization of the winning proposal by Steven Holl, the Finnish Museum of Contemporary Art Kiasma is one of Finland's most relevant exhibition spaces. With its collection of over 8,500 works of art[18] the museum attracted a total of 378,509 visitors in 2019 making it the most visited Finnish museum of said year.[19] After being closed and renovated during the pandemic it reopened in 2022 with a sequel of the ARS-series. 'ARS22 - Living Encounters' was the 14th exhibition of the series and included works by 55 artists from 26 countries, including Iraq, the United Arab Emirates, Australia, and Mexico. According to the curator, "the idea behind ARS22 was to build an entity where multiple voices would coexist together. To create a museum as a platform for encounters, we curated an exhibition where many narratives, instead of one linear storyline, would exist."[20]

With its success and the continuously increasing number of visitors, 30% of which foreigners, one can say that the museum has contributed its part to connecting Helsinki and the Finnish art scene to the global network of art previously mentioned.[21]

Despite the course of events, and Helsinki's decision not to fund a new Guggenheim museum for the city after a successful competition in 2014[22], it is still possible that Shinohara's design may

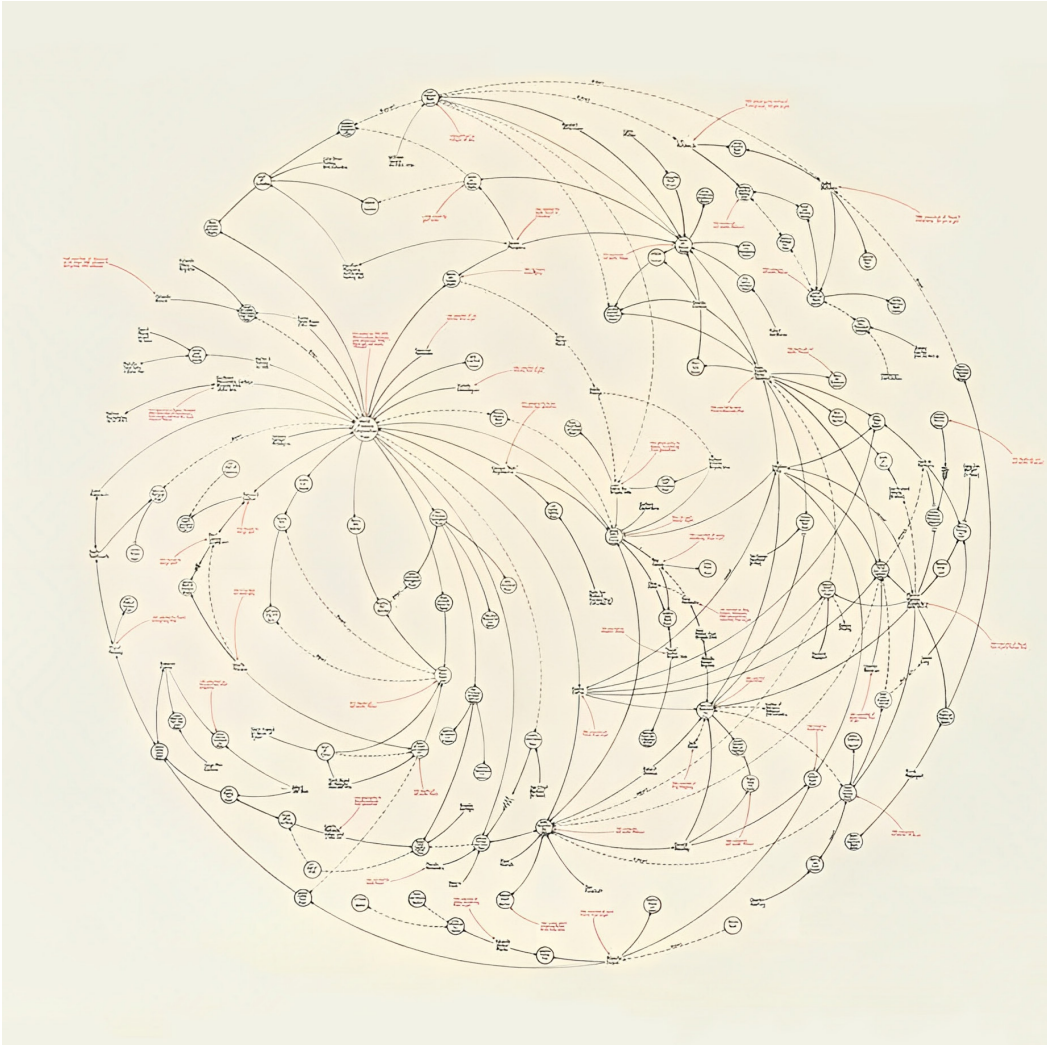
18 "About Kiasma" (see note 1).

19 "Finnish museums 2019: Facts and Figures," The Finnish Heritage Agency, https://www.museotilasto.fi/statpublications (accessed February 24, 2023).

20 Khaoula Ghanem, " Finland's Kiasma museum reopens with space dedicated to Middle Eastern art," *arabnews.com*, 21 April, 2022, https://www.arabnews.com/node/2067821/lifestyle (accessed March 2, 2023).

21 "Finnish museums 2019: Facts and Figures" (see note 19).

22 John Hill, "Guggenheim Helsinki Rejected," *world-architects.com*, 1 December, 2016, https://www.world-architects.com/en/architecture-news/headlines/guggenheim-helsinki-rejected (accessed March 1, 2023).



MARK LOMBARDI, TOPOGRAPHIES OF POWER (1999)

not be entirely obsolete today. A new reading of the context could potentially give Shinohara's ideas a second meaning.

Reflecting on the idea of Hardt and Negri's network of powerful institutions Mark Lombardi's Topographies of Power comes to mind. His map, rendering the usually invisible power relations between institutions, presents a possibility of reading networks, by making clear that they consist of points and lines connecting these points. The institutions are depicted as points in the diagram, which can be interpreted as the starting points for the converging lines that represent the relationships and eventual connections between them. Following this reading, the points are there first, and the lines are what follows.

Applying this reading to the development of the art world in the 1990s and the growing web described by Ursprung, it could be argued that the establishment of the Finnish Museum of Contemporary Art Kiasma, as a new central point on the map facilitated the emergence of new relationships and connections, effectively linking the Finnish art scene with the global market. This addition to the map created new opportunities for the Finnish art scene to engage with a broader audience, further promoting its cultural identity and artistic expression.

While one part of these connections never leaves the realm of abstract imaginary lines, others turn into tangible links changing and interfering with our environment.

The resulting flows of goods and people represent some of the more tangible connections that have emerged as a result of these institutions. However, in light of the growing awareness of climate change and global warming, these links have come under increased scrutiny and attention.

In search of ways of transport for the continuously growing number of people traveling from one place to another, the train is believed to offer a more sustainable alternative to the plane or the car. As part of the European Green Deal, the European Commission presented its sustainable and smart mobility strategy in December 2020. For the rail sector, the strategy calls for a doubling of investments for high-speed rails by 2030 in the EU.[23]

A key aspect of this development is the Rail Baltica initiative, which involves the creation of a new rail transport infrastructure aimed at integrating the Baltic States into the wider European rail network. The project is supposed to connect large cities in five EU countries - Poland, Lithuania, Latvia, Estonia and indirectly Finland for passenger and freight transports.[24]

The evolution of this project gave lead to another ambitious project in the Baltic region. Instead of ending the development of the Rail Baltica network in Tallinn and changing the mean of transport to ferries to cross the Baltic Sea towards Finland, the FinEst Link project proposes to further extend the European rail network by an underground tunnel connecting Tallinn and Helsinki. The ambitious idea was studied in an in-depth feasibility analysis including possible routes for the tunnel respecting the bedrock strata, technical concepts, cost estimations, and a cost-benefit analysis.

A major concern and an important argument for the implementation of the tunnel is the limited capacity of the ferry connection which causes a bottleneck between Helsinki and Tallinn in the existing cargo network. With an expected increase in cargo and passenger volumes this problem is likely to become more acute.

23 "Building the single European railway area," Council of the European Union, 1 March , 2022, https://www.consilium.europa.eu/en/policies/single-eu-railway-area/ (accessed March 1, 2023).

24 "Rail Baltica - Project of the Century," RB Rail AS, https://www.railbaltica.org/about-rail-baltica/ (accessed March 1, 2023).


HELSINKI
30 min
TALLINN
FINEST METROPOLITAN REGION

Regarding the passenger flows there is another important aspect speaking for the realization of the project which could completely change the relation between Helsinki and Tallin. Today it takes approximately two hours to cross the Baltic Sea from one of the cities to the other. With the new tunnel in place the travel time could be reduced to only thirty minutes and thus make daily commuting plausible.[25] For comparison, the M1 Metro in Paris takes 25 minutes to cross the city in a west-east direction from 'Neuilly - Porte Maillot' to 'Porte de Vincennes'.[26] Clearly such a reduction in travel time drastically influences the dynamic of the two cities, bringing them closer together and resulting in a new metropolitan region across the Baltic Sea with an expected growth in jobs and population by 40% until 2050.[27]

Concerning the expected increase in cargo volumes Olli-Pekka Hilmola, Professor at LUT University, conducted a study on the different means of freight transport, stating that due to the 2015 Sulphur oxide regulation, future CO_2 emission requirements and dearer oil, the region's short sea shipping methods and use is expected to change tremendously. Given the high fuel costs in shipping and road transport, which account for a significant proportion of overall expenses, it is becoming increasingly apparent that the most competitive transportation chains in the future will prioritize minimizing emissions and addressing environmental concerns. This is not solely due to the interest of companies in promoting environmentally sustainable practices, but also because these issues have a significant impact on competitiveness and profitability. The detailed calculations made during the study proclaim that the CO_2 emissions could be reduced by approximately 45% comparing today's most used mean of transport and the alternative with the proposed tunnel.[28]

25 Helsinki-Uusimaa Regional Council C84, ed., *Helsinki-Tallinn Transport Link Feasibility Study - Final Report* (Helsinki, 2018).

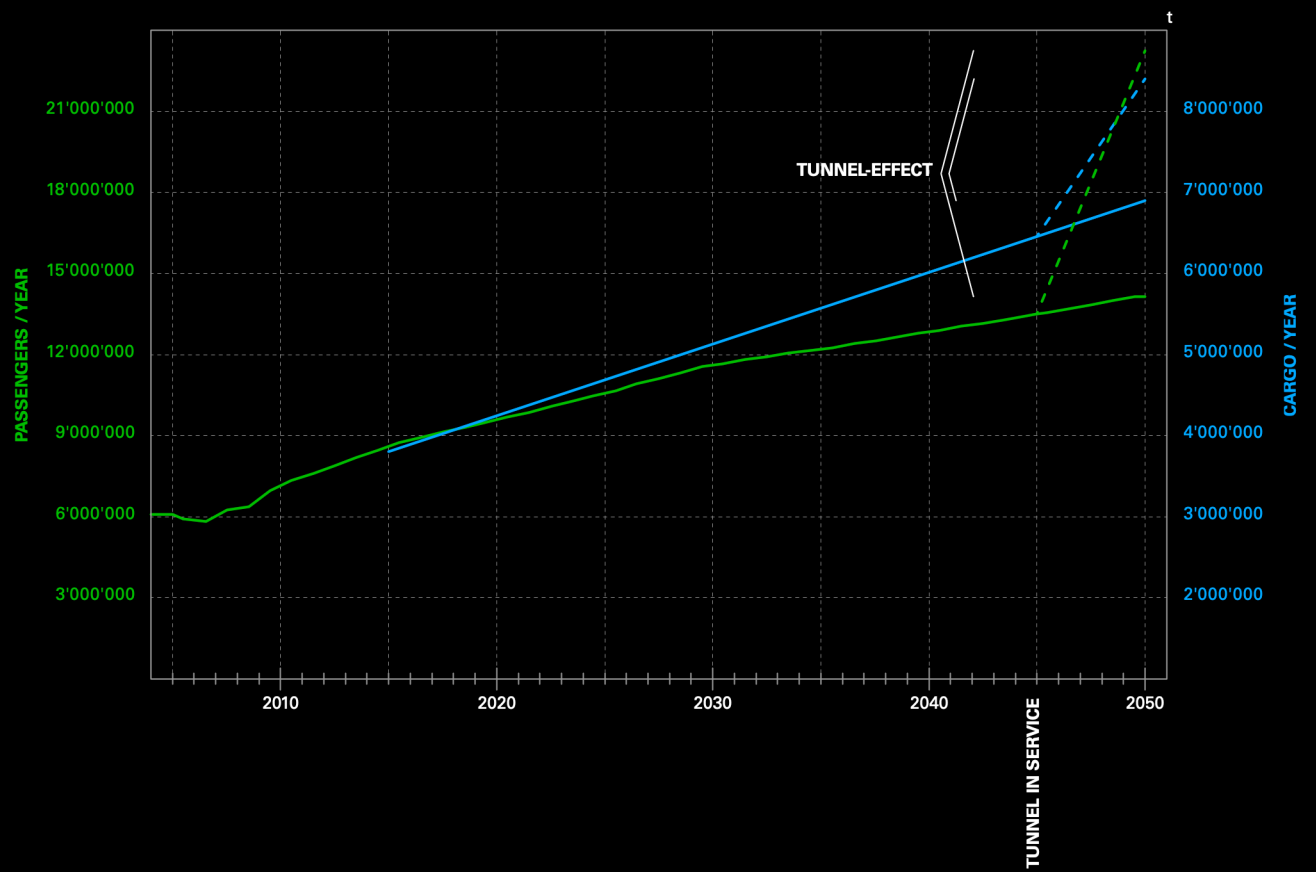
26 Google, [Google Maps directions from Neuilly - 'Porte Maillot' to 'Porte de Vincennes'], https://goo.gl/maps/BCv7928koTuPZa1n9 (accessed March 3, 2023).

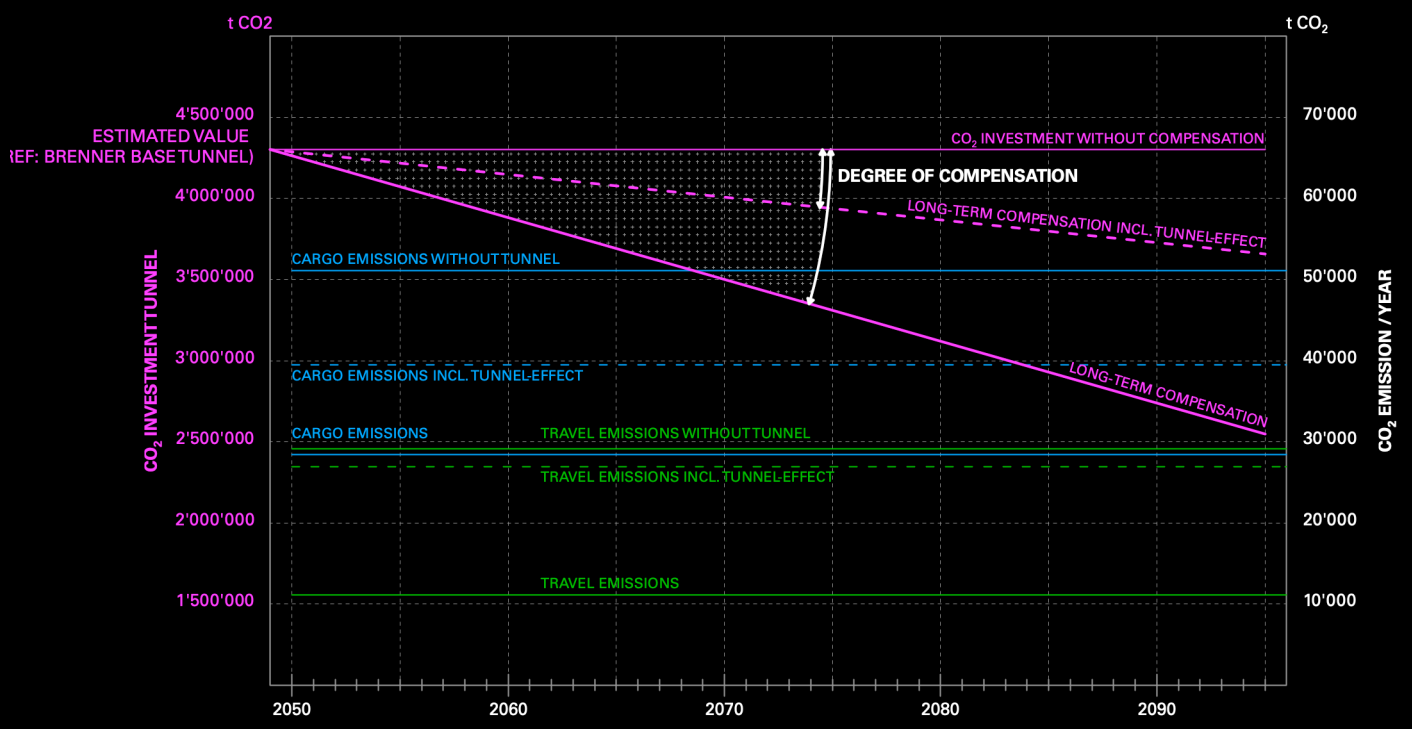
27 Helsinki-Uusimaa Regional Council C84, *Helsinki-Tallinn Transport Link* (see note 25), 36.

While Hilmola's study assumes the flow of goods between Helsinki and Tallinn, the feasibility study for the tunnel focuses on its connection to the Rail Baltica network, indicating that at least 30% of the anticipated cargo volumes by 2050 will be transported through this network. This implies that there will be a transition from the Roll-on/Roll-off transportation, which is commonly used, to container shipment. As a result, there will be a decrease in the amount of unnecessary load during transportation and a reduction of CO2 emissions by 40% when comparing the two methods.

28 Olli-Pekka Hilmola, *CO2 Analysis of Helsinki-Tallinn Transportation Chains* (Lappeenranta: Lappeenranta University of Technology, 2012).

TRANSPORTATION VOLUMES





CO2 BALANCE

The relevance of the FinEst Link tunnel project for the involved parties seems evident, and rather than asking whether or not it will be realised, the only question is when. From an engineering standpoint, the project is extremely ambitious and requires the newest technology. On the economical side it is clear that the project is only feasible in connection with the ongoing Rail Baltica project.
Ecologically, the construction of a 100 km long tunnel system means a huge CO_2 investment whose effects and possible long-term compensation can hardly be grasped due to its complexity and large scale.[29]
Nevertheless, it might be worth to analyze the project and its possible impacts from an additional standpoint. The forecasted increase in passenger numbers between Helsinki and Tallinn up to an expected 23 million per year, result in a daily average of 63,000 travelers. This is a significant amount of people stressing the existing infrastructure connected to the potential tunnel at both ends.
Looking at the challenges the Eurotunnel faced and still deals with, it becomes clear that a smart integration into the existing urban fabric is vital for the positive evolvement of such large-scale projects. Whereas the redevelopment of St. Pancras Station led to a successful linking of the international and national rail network in London, the French counterpart in Gare du Nord still lacks a proper integration leading to an overcrowded station and poor connections to mainland Europe's network.[30]
When considering Helsinki and Tallinn, it is intriguing to contemplate the potential future development of the FinEst Link tunnel

29 Helsinki-Uusimaa Regional Council C84, *Helsinki-Tallinn Transport Link* (see note 25), 10.

30 Joe Minihane, "How the Channel Tunnel changed Europe forever," *CNN*, 4 May, 2019, https://edition.cnn.com/travel/article/channel-tunnel-anniversary/index.html (accessed March 3, 2023).

and the opportunities that a well-integrated infrastructure could bring. A key challenge lies in identifying and implementing the necessary structures at both ends of the tunnel in a way that optimizes its functionality and integration into the surrounding urban environments.

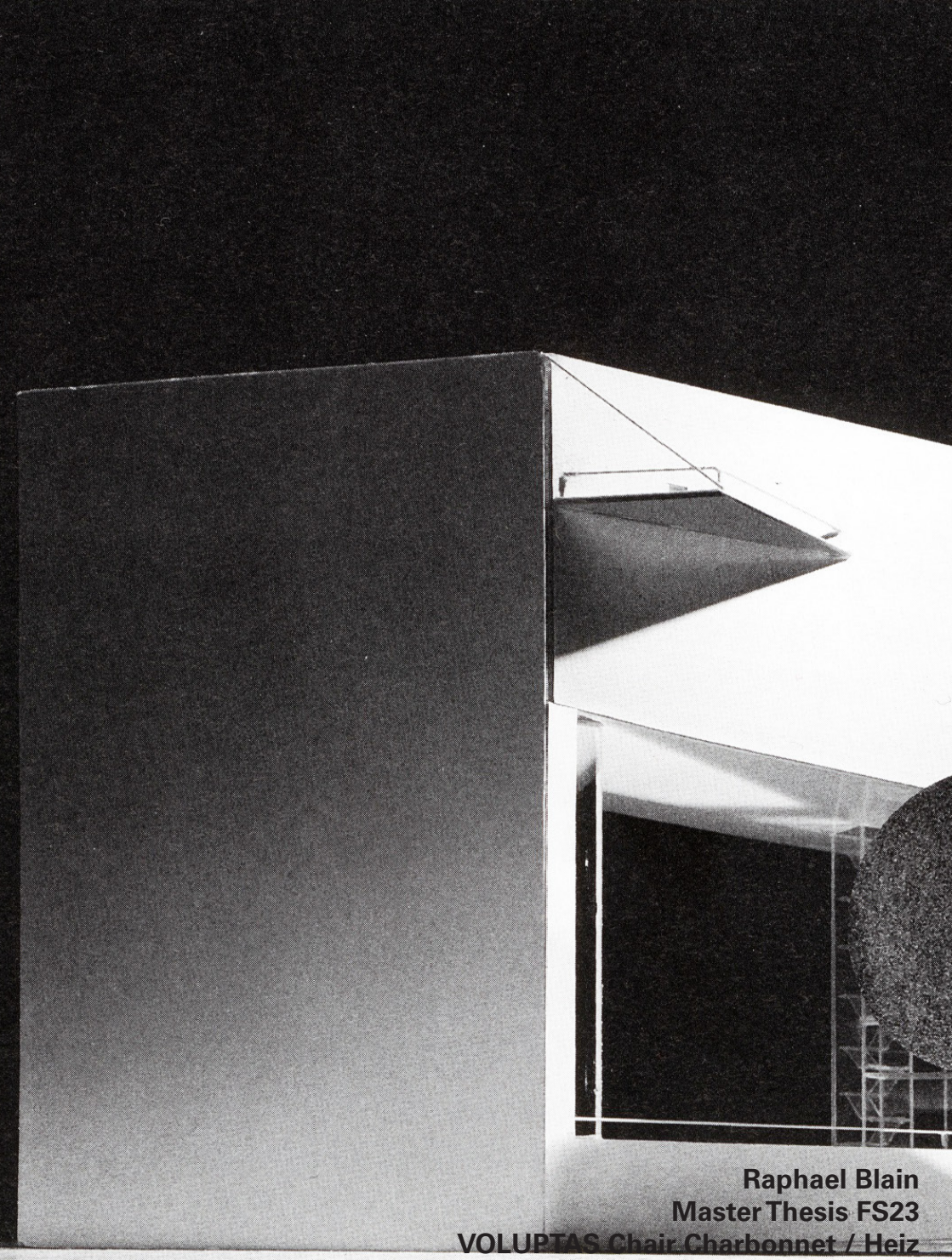
KAZUO SHINOHARA'S FINEST LINK

GOTTHARD TUNNEL (2016)

Starting with Shinohara's contribution to the Finnish Contemporary Museum of Art, it may not immediately seem relevant to connect it to the potential development of a train tunnel linking Helsinki and Tallinn. However, considering the historical context and the shared ambitions of expanding institutional networks at the time, it opens the possibility of a less direct but more inclusive translation into today's context. These tendencies and ambitions contribute to the challenges we face today, such as the massive amounts of people and goods traveling the globe, which projects like the FinEst Link tunnel aim to address.

What is shared between these two projects is the belief in their potential to positively impact Finland's relations with mainland Europe, increasing the exchange of knowledge, culture, and goods. The potential of Shinohara's approach in this case lies in his conception of new architecture and the city. Grasping both as machines with no need for a visual unity, Shinohara offers a possible approach to deal with the scale of an infrastructural megaproject such as the FinEst Link tunnel. Starting with the necessities of the program for the tunnel to work, respective volumes based on primary geometric shapes are to be defined. The main ambition is to maximally realize their essential functionality. Each part is to be positioned with respect to the different plots' surroundings. Furthermore, the focus will be laid on the *sachlich* (matter-of-fact) joining of the different parts by formulating precise links between them. Following this approach, a new machine in the sense of Shinohara's theory should result, leading to its maximum functionality and thereby guaranteeing that the huge investment has been worthwhile. The formal gap between the parts and the whole ideally endow the machine with dynamism, and thus offer the potential to read new meanings into it.

KAZUO SHINOHARA, MODEL OF PERMANENT GALLERY SPACE (1993)



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