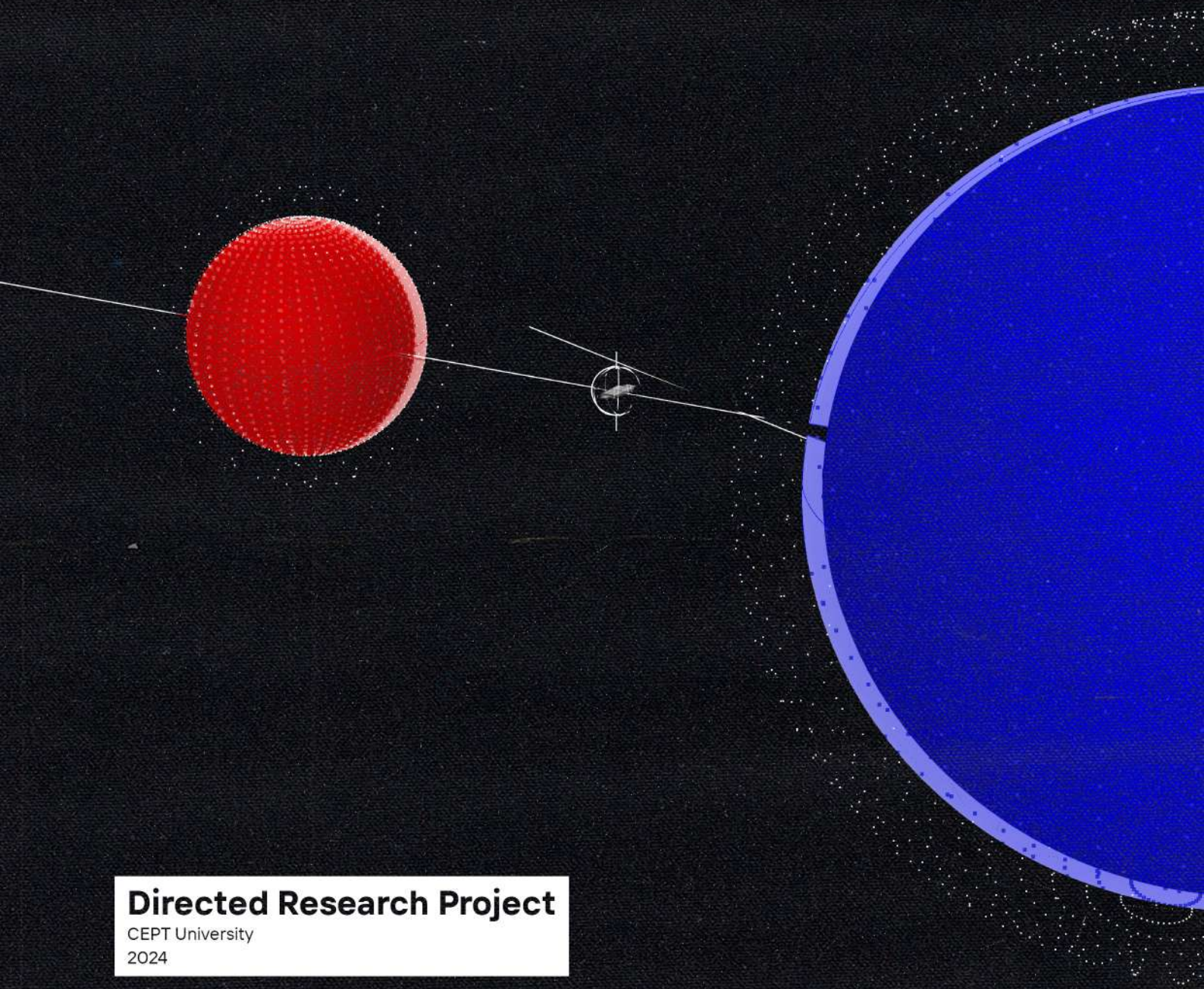
Cosmic Imaginations

*Tracing **Cosmic attributes** within **Zaha Hadid's** Abstractions*



Directed Research Project

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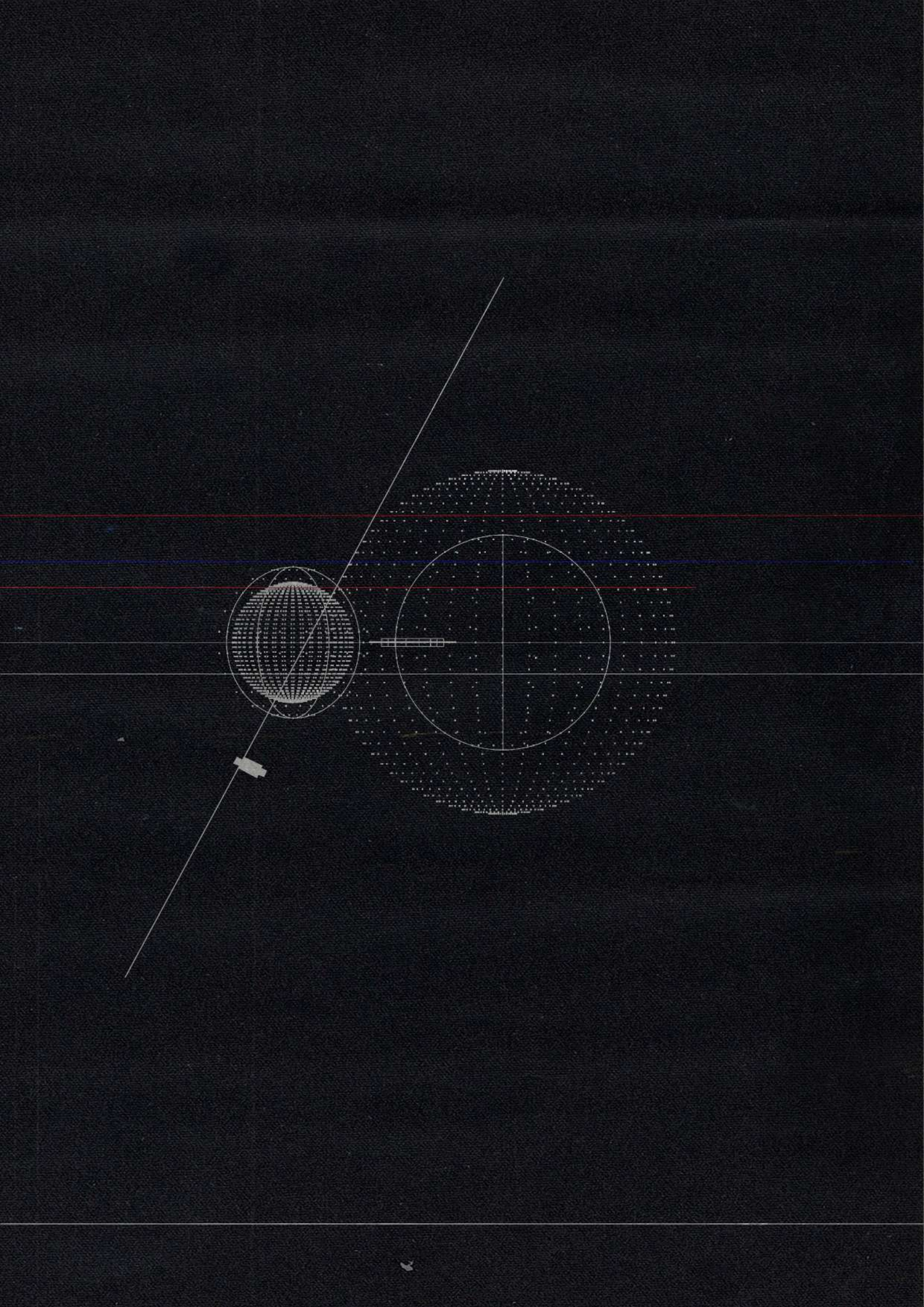
2024

By

Kaushil Madireddy

Guided by

Prof. Percy Pithawala [The Red Studio]



Student Name

Madireddy Kaushil
[UG190694]

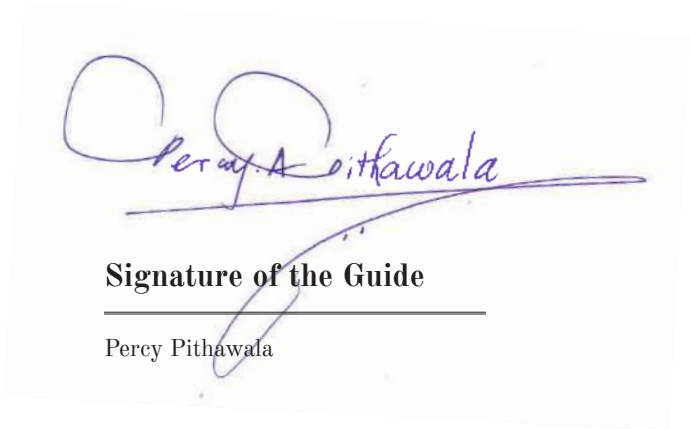
Thesis Title

Cosmic Imaginations
Tracing Russian Avant-Garde Influences on Zaha Hadid's early Abstractions

Approval

The following study is hereby approved as a creditable work on the approved subject carried out and presented in the manner, sufficiently satisfactory to warrant its acceptance as a pre-requisite to the degree of Bachelor of Architecture for which it has been submitted.

It is to be understood that by this approval, the undersigned does not endorse or approve the statements made, opinions expressed or conclusion drawn therein, but approves the study only for the purpose for which it has been submitted and satisfies him/her to the requirements laid down in the academic programme.



Signature of the Guide

Percy Pithawala

Dean, Faculty of Architecture

Date: 25th April 2024

Declaration

This work contains no material which has been accepted for the award of any other degree or diploma in any University or other institutions and to the best of my knowledge does not contain any material previously published or written by another person except where due reference has been made in the text.

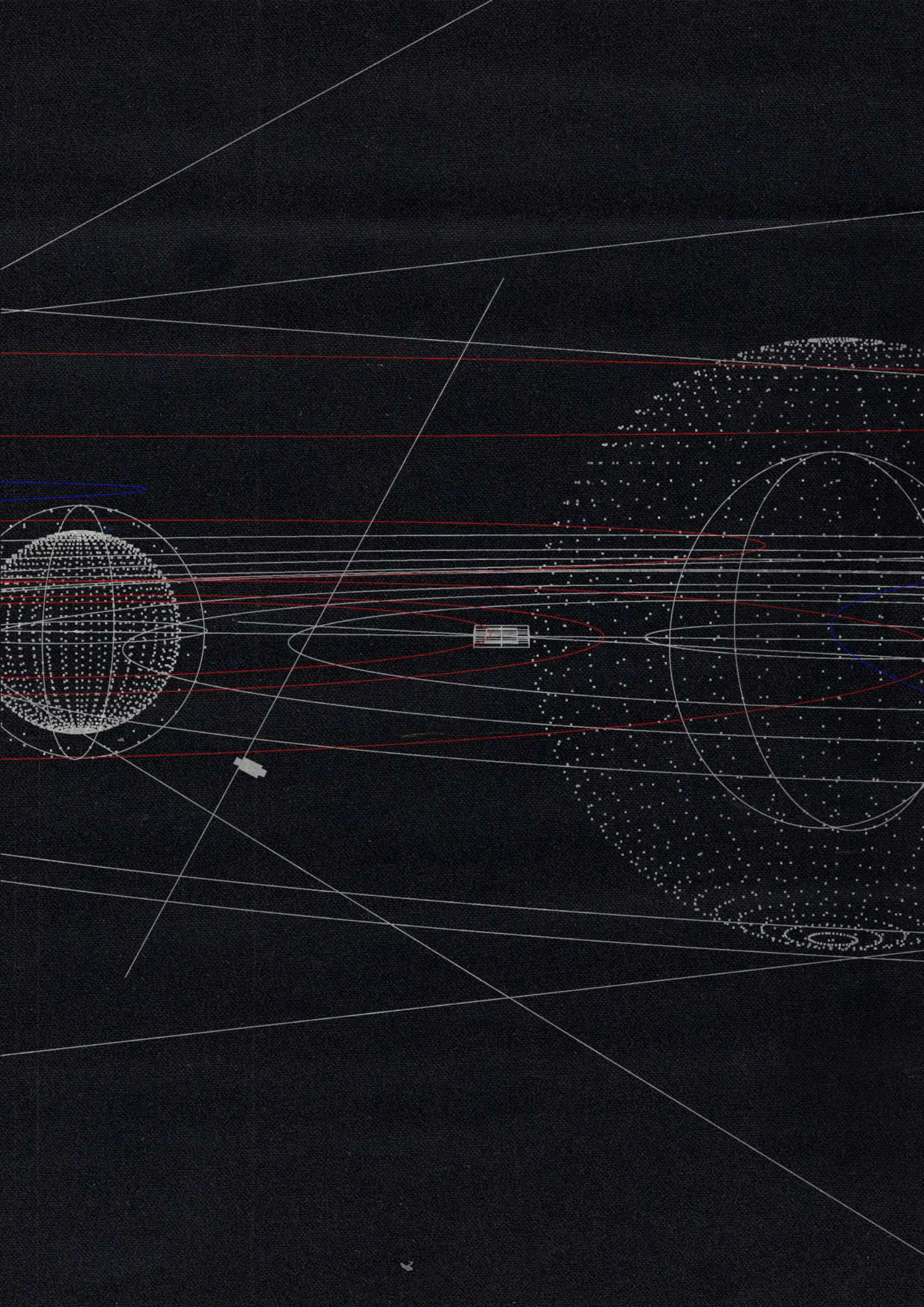
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25th April 2024



Signature



Abstract

Zaha Hadid (1950-2016) was an inventive architect who redefined the process of architectural space-making with her unique paintings. These paintings can be categorized as a set of abstractions due to their manipulative qualities and skilful transformation of visual concepts to create concrete architectural solutions. All the abstract paintings illustrated by Zaha Hadid had foundational influences from the works of Russian Suprematism and Constructivism which laid a visual groundwork for her painting techniques. However, Zaha Hadid began to execute a similar dynamic character like that of the Russian avant-garde which dictated her built environment. But, this dynamism which is characterized within Zaha Hadid and the works of Russian avant-garde has a cryptic underlying layer of cosmism which was well-known for its influential role played within Soviet society. This rise of space-fad and cosmic enthusiasm tapped a major vein within the Russian art movement leading towards the creation of Kazimir Malevich's Suprematism.

This study aims to **trace the cosmic attributes of Russian Avant-garde in the early architectural paintings of Zaha Hadid by analyzing three different projects during the early period of her career between 1983 and 1992.** Firstly, this investigation has extracted a set of visual attributes from the works of Suprematist and Constructivist artists which have closer connections towards cosmic character to prepare a framework of cosmic attributes. Based on these attributes, Chosen paintings of the Vitra fire station, The Peak and The Great Utopia projects were dissected into foreground and background layers forming cosmic connections and highlighting its influence within Zaha Hadid's visual abstraction. Zaha Hadid's paintings and her visual manipulation of Russian avant-garde concepts ultimately tend to dictate the built environments. The underlying layer of cosmism indirectly embeds itself into the built environment shedding a light on the power of abstraction which helps in transforming intangible concepts into unique architectural space.

Thus, This inquiry of cosmic character would open up new perspectives on the influence of underlying concepts which could be concealed within a larger abstraction dictating the practical world.

Acknowledgements

I have always found digital and analog drawing experimentation as a fascinating process towards building unique architectural experiences. This study lines up with one of such ideas of non-linear thinking in the field of architecture which made me enthusiastic to take up and explore this part of the field. Without the guidance of Mr. Percy Pithawala, I would not have been opened up to this explorative side of research. I am grateful for his continued support since my fourth semester which built my confidence in experimenting my way in academics. The level of freedom and open-ended encouragement in generating ideas which he offers through his teaching feels like a necessity for students to practice innovative design thinking.

I would like to extend my gratitude towards Prof. Vishwanath Kashikar and Prof. Riyaz Tayyibji with their intriguing mandatory courses on architectural theory and India's modernity which sprinkled new thoughts and ideas throughout the course of this academic year.

I would also like to thank Philadelphia based artist, Mr.Steven Baris for his insightful discussion on my Mid-semester presentation and his valuable suggestions on my usage of formalistic words to defend my research standpoint.

Special thanks to Prof. Vladimir Belogolovsky, for his intriguing discussion on my research process and his thoughts on the study.

I sincerely thank my fellow batchmate Shravya.M for her contribution towards physical model documentation.

Finally, I would like to thank my family and friends for their constant support and critique throughout this semester which brought a balance in my academic and personal life.

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01

Aim

To **deconstruct the underlying cosmic influence of Russian Avant-Garde in Zaha Hadid's early abstract paintings** as a process towards architectural making.

Scope

This study prioritizes the examination of Zaha Hadid's paintings between (1983 - 1992) through the lens of cosmic imagery of Russian avant-garde, specifically exploring themes of floatation and movement

Limitations

The focus does not go beyond the formalistic attributes of the paintings and does not consider any underlying social, political, or cultural background of the artist's application within abstractions.

This study also does not engage with specific formal attributes like color and texture of the chosen paintings.

Method of Analysis

The paintings will be introduced with the conceptual idea with all the foreground elements separated, laid and labelled part by part for further examination of each element.

Then, specific paintings within each project will be sequentially dissected into various formal layers unfolding one by one and describing what they show based on the concept.

Supporting two and three dimensional diagrams are made to give a full-fledged understanding of the concept

02
Introduction

Generation of Architectural structures follow varied design processes across the field. These design processes tend to use tools to transform abstract architectural thoughts into built environments**. Zaha Hadid, an Iraqi-born British architect is well known for her architectural experimentation through abstract painting as a tool.** Hadid applies narrative rhythms and geometrical elements to erect her architectural thoughts onto the site, boldly exploring the form and energies of abstraction. However, Zaha Hadid was known to discover her processes when she tapped into the lost historical vein of the Russian avant-garde. This allowed her to rebuild unique architectural systems and use abstract painting as a tool to adapt certain attributes of Russian art character. (Gad, Gryczkowska, Woody Yao, & Serpentine Sackler Gallery, 2016).

Although enough evidence suggests that the establishment of certain "isms" within Russian avant-garde had significant influences from futuristic ideologies of spaceflight and Cosmic enthusiasm. These cosmic attributes seem to be an indirect underlying influence in Zaha's early architectural abstraction based on her attempt to explore Kazimir Malevich's Suprematism and specific traces of Russian avant-garde. This indicates the need to understand the nature of this indirect cosmic influence and its quality of manifestation in Zaha Hadid's early abstract works and its translations into the built environment.

As discussed above, **This study aims to trace the development of Cosmic attributes of Russian avant-garde within Zaha Hadid's selected abstractions** (Thumbnail sketches and Paintings) and provides an overview of its architectural translations.

By employing two and three-dimensional diagrammatic modes of analysis, this study attempts to dissect Zaha Hadid's paintings based on an established set of cosmic attributes extracted from the Russian avant-garde system. The importance and originality of this study lie in the method of sequential dissection of layers within each abstract painting giving a full-fledged analysis providing an opportunity to form connections between Hadid's work and the Cosmic aspects of Russian avant-garde.



Figure 1: Collage - Zaha Hadid, Kazimir Malevich, Vladimir Tatlin, El Lissitzky and Aleksandr Rodchenko

Source: Author's Image

03
Running into Russian Avant-garde in Architectural

As an undergraduate student in AA between the years 1976 - 1978, Hadid's mentors Rem Koolhaas and Elias Zenghelis gave shape and energy into Zaha's design process in addition to AA's peak period of influential architectural experimentation methods. Elias Zenghelis, a Greek-born British architect had a gripping effect on Zaha hadid in her first year of undergraduate studies around 1972/73. His talk about Russian constructivism set a foundation for her later graduate projects "Malevich's Tektonik" and "Museum of the Nineteenth Century" (Gad, Gryczkowska, Woody Yao, & Serpentine Sackler Gallery, 2016).

Zaha Hadid established her abstraction process beginning with Malevich's Tektonik (Figure 4) of 1976-77 which is her fourth year project from the Architectural Association, London. This project was a transformation of Malevich's architekton form into a hotel hovering over the Thames river in London. This led to her beginnings with experimentations of suprematist and constructivist attributes in her transformations from abstraction to architectural space. "Museum of the Nineteenth Century" (Figure 3) from 1977-78 was her final year project which dealt with the new establishment of principles in contextual architecture within cities. The idea of the bridge from the project diagram displays a transition of the Thames river from the 20th century to 21st century where the building blocks are shown as train carriages trailing into water. These rail cars are disrupted geometrically across the landscape throwing a sensation of rail cars falling off the bridge. The idea of juxtapositions, superimpositions and distortions in this project had its derivations from her growing interest in the Russian avant-garde.

Zaha Hadid's fascination with Russian avant-garde kept on pacing forward after her joining in Office Of Metropolitan Architecture with her tutors Elia Zenghelis and Rem Koolhaas. She called Russian avant-garde thinking "inventive" because of their painterly investigations and futuristic architectural thoughts (Gad, Gryczkowska, Woody Yao, & Serpentine Sackler Gallery, 2016).

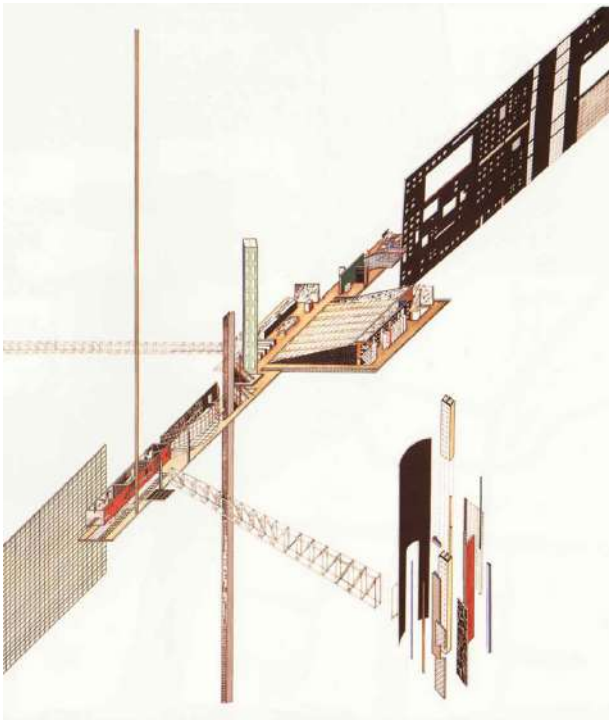
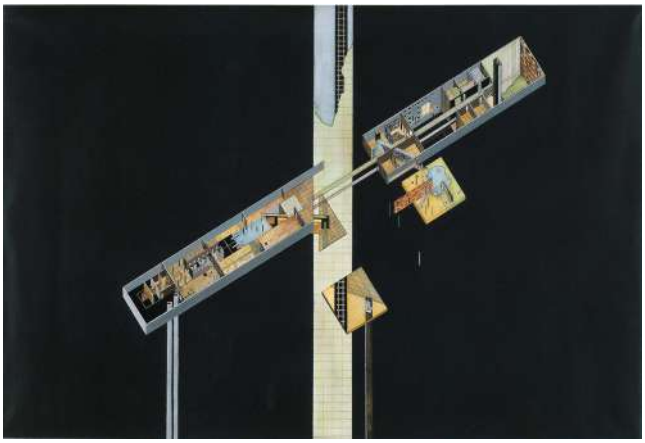


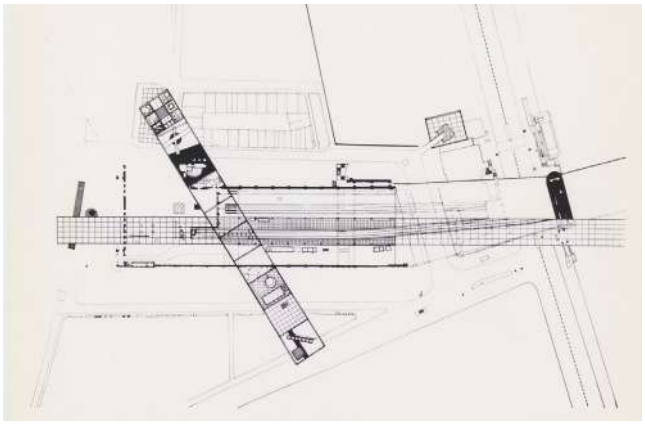
Figure 2: "The Ambulatory and its Connections" by Zaha Hadid

Source: (Fabrizi, 2013)

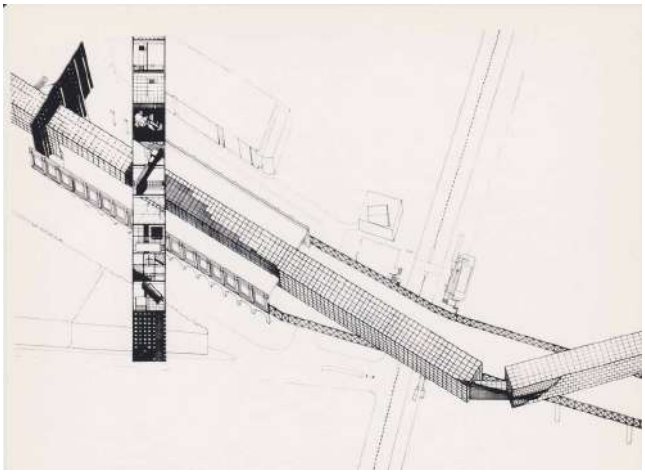


(a) Exploded Axonometric Drawing, 1977–78.

Source: Fenton, 2022



(b) Plan drawing of various functions: Station and musuem along with the hotel



(c) Terrace Functions of the Hotel (Plan cutting the cuboids underneath)

Figure 3 (a) (b) and (c): Museum of the Nineteenth Century by Zaha Hadid

Source: Macdonald, 2019

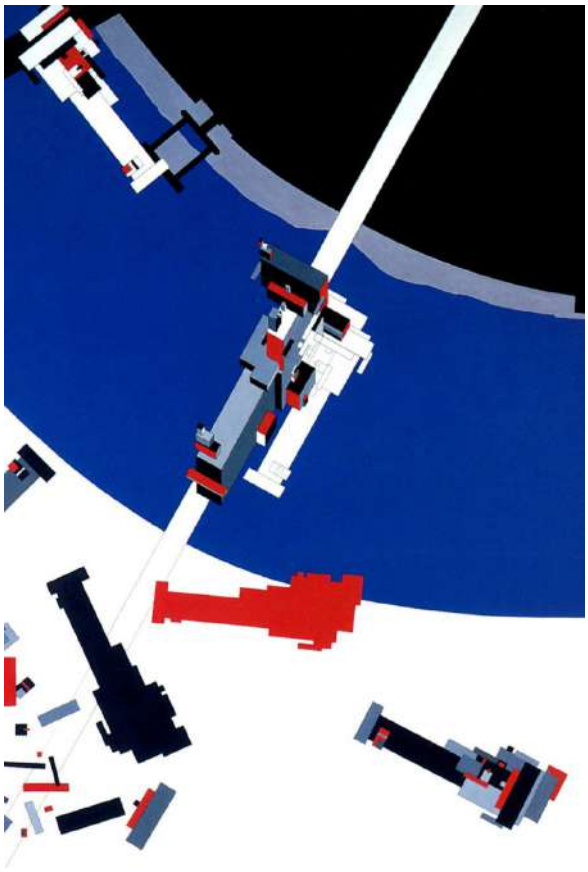


Figure 4: Malevich's Tektonik

Source: Malevich's Tektonik – Zaha Hadid Architects, 2019

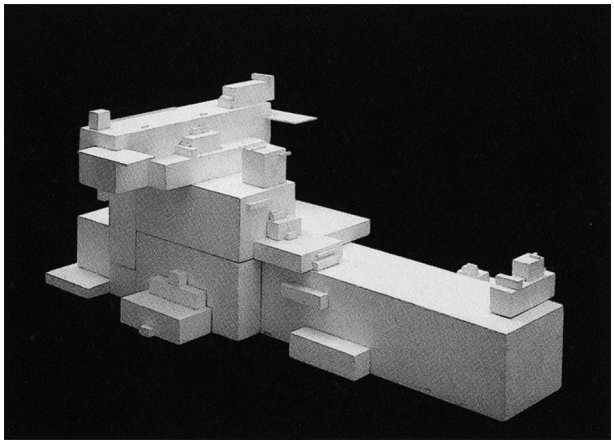
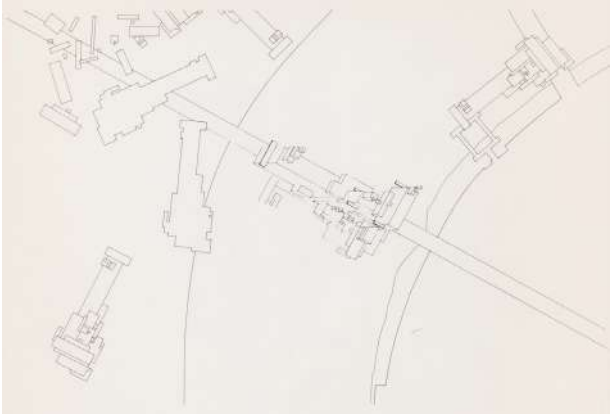
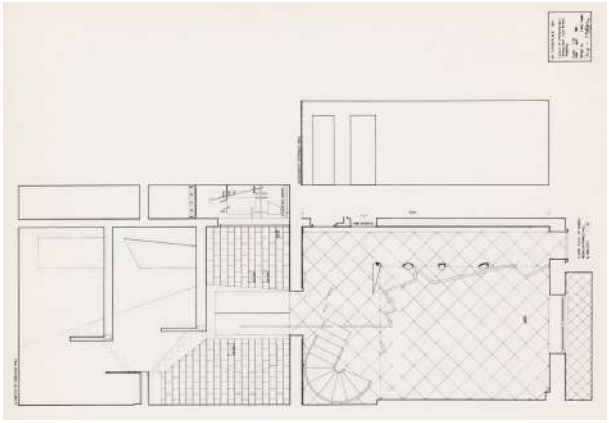


Figure 5: Kazimir Malevich's *arkhitektons*

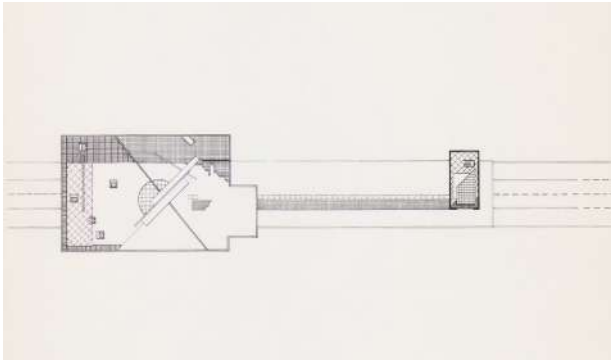
Source: Rhicshan, 2014



Malevich's Tektonik juxtaposed over the River Thames



Tektonik manipulated into a functional Hotel



Functions as a night club - pool, beach, bar and restaurant

Figure 6: Drawings - Malevich's Tektonik

Sourc: Macdonald, 2019

04

Influential 'isms' of Russian Avant-Garde on Zaha Hadid's abstractions

Suprematism: Non-objective Sensations

Looking back at 1913, Russian futurism had a significant event which is an opera called Victory over the Sun (Russian: "Победа над Солнцем, Pobeda nad Solntsem''). This was a play conducted in 1913 with contributions from Alexei Kruchenykh for Language, Mikhail Matyushin for Writing, Velimir Khlebnikov for Prologue, and finally Kazimir Malevich for Stage and Costume Design. The opera was about the time traveller protagonist gaining power over the set day and night timing rhythms conquering the sun's dominance. This was set in the world where one gains power over the sun, by denying the solar concept of time (Milner & Kazimir Severinovich Malevich, 1996).

However, Kazimir Malevich was a contributor to the play in the works of set and costume design. Specifically in scene 3 of the opera (Figure 7), the first appearance of the black square was seen which acted as a key moment in the rediscovery of non-objectivity in later times. This was a decorative element for the curtain of the opera act which symbolizes that the square covers the sun (Milner & Kazimir Severinovich Malevich, 1996).

Later in 1915, Malevich revived the Black Square (Figure 9) after deciding to set up a movement of non-objectivity. On June 8, he materialized this by painting a black plane over an existing geometrical element on the canvas. He called this reduction of form to zero (null) a visual phenomenon of pure feeling in art. This was named "Suprematism" adapted from Malevich's native language, Polish which in turn had its Latin origins as the word "Supremacia" meaning superiority. This was meant to be the establishment of the supremacy of color in painting. In the book, The Non-objective World: the Manifesto of Suprematism, Malevich claims that the black square was meant to overtake the idea of objectivity and the world of familiar art into a desert which has nothing but pure understanding of feeling art.

This was argued to be "true objectivity" liberating the world from idealistic images of reality. As per the excerpts from the book, Malevich states:

"Hence, to the Suprematist, the appropriate means of representation is always the one which gives fullest possible expression to feeling as such and which ignores the familiar appearance of objects. Objectivity, in itself, is meaningless to him; the concepts of the conscious mind are worthless. The feeling is the determining factor . . . and thus art arrives at non-objective representation — at Suprematism". (Kazimir Severinovich Malevich, 2003)

Moving forward, progress was made by opening up possibilities of non-objectivity through the rejection of practical utilitarian thinking. According to Malevich, all artworks were stuck on imitating practical utility and true art was said to originate from feeling rather than claims of practical life. So, Malevich continued to discover sensations/feelings of practical objects to be the key to representing true art. He claimed that the one who can grasp the true sensation of forms rather than their practical utility in real life can truly get the essence of non-objectivity instead of utopian.

"Suprematism has opened up new possibilities to creative art, since by virtue of the abandonment of so-called "practical considerations", a plastic feeling rendered on canvas can be carried over into space. The artist (the painter) is no longer bound to the canvas (the picture plane) and can transfer his compositions from canvas to space."(Kazimir Severinovich Malevich, 2003)

In 1915's "Last Futurist Exhibition of Paintings 0,10", Malevich along with fellow collaborators like Puni and Tatlin launched his painted works which displayed his whole new attitude towards art. Malevich's suprematist art displays included thirty-nine works out of which twenty-one were caught in the photograph as highlighted in Figure 10 and Figure 11 (Milner & Kazimir Severinovich Malevich, 1996). As per the catalog, the list of works includes paintings such as:

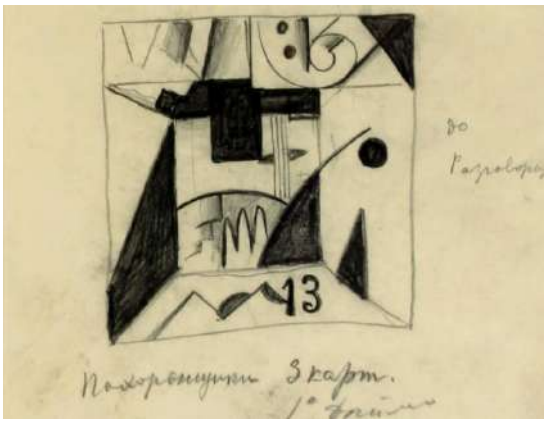


Figure 7: Sketch, Act 1 Scene 3 "Victory Over the sun". 1913, Pencil on paper

Source: Drutt & Kazimir Severinovich Malevich, 2003

The art of the past which stood, at least ostensibly, in the service of religion and the state, will take on new life in the pure (unapplied) art of *Suprematism*, which will build up a new world — the world of feeling. . . .

When, in the year 1913, in my desperate attempt to free art from the ballast of objectivity, I took refuge in the square form and exhibited a picture which consisted of nothing more than a black square on a white field, the critics and, along with them, the public sighed, "Everything which we loved is lost. We are in a desert. . . . Before us is nothing but a black square on a white background!"

Figure 8: Screen Capture of Malevich's quote from the book "The non-objective world : the manifesto of suprematism".

Source: Kazimir Severinovich Malevich, 2003



Figure 9: Black Square, summer 1915.
Oil on canvas

Source: Souter, 2012



Figure 10: 0,10 Exhibition: A section of Suprematist works by Kazimir Malevich exhibited for the first time, 1915, Petrograd

Source - Wikipedia Contributors, 2019

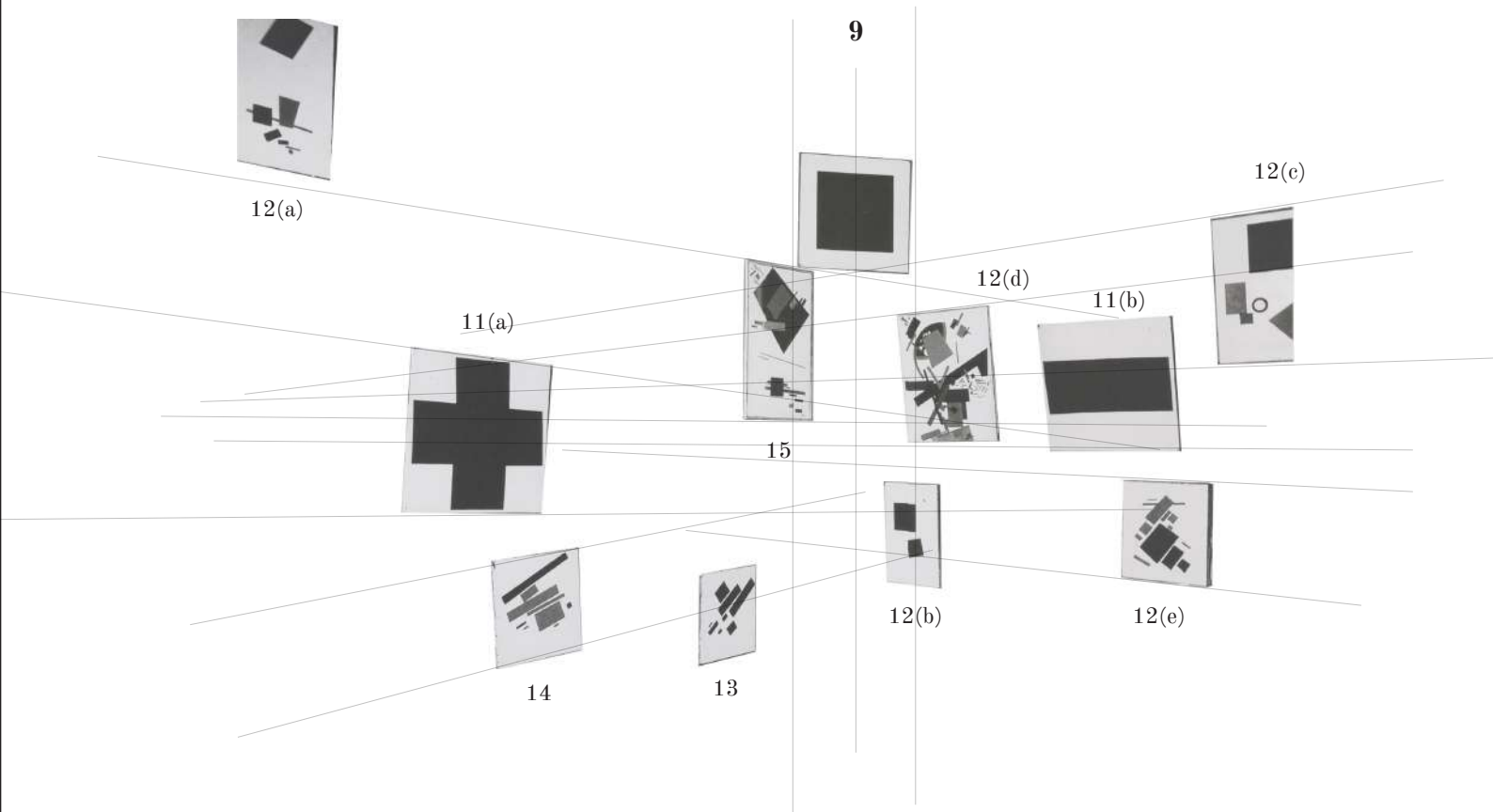


Figure 11: Diagram of all the paintings listed in the upcoming page

Source - Wikipedia Contributors, 2019

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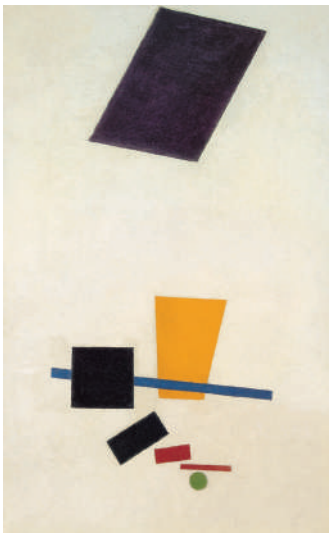
(a)



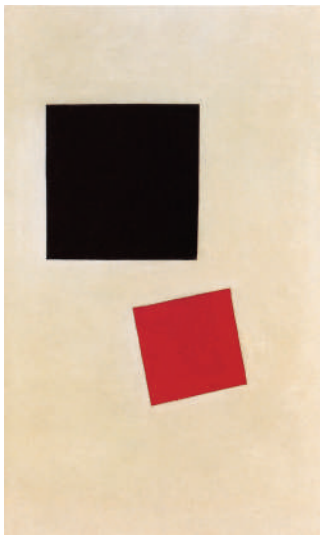
(b)

Figure 12: (a) Two Suprematist Planes in Orthogonal Relations, known as Black Cross, 1915.
(b) Extension of a Plane, 1915. Oil on canvas

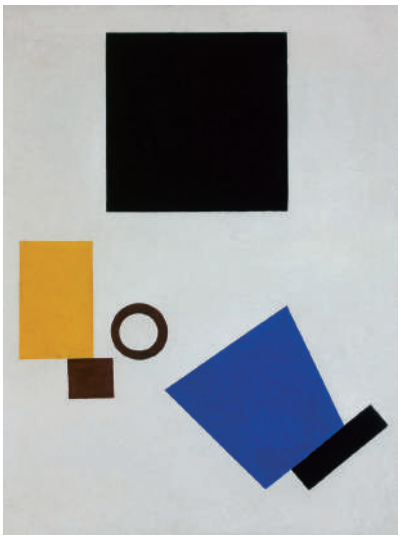
Source - Souter, 2012



(a) Painterly Realism of a Football Player, summer-autumn 1915. Oil on canvas,



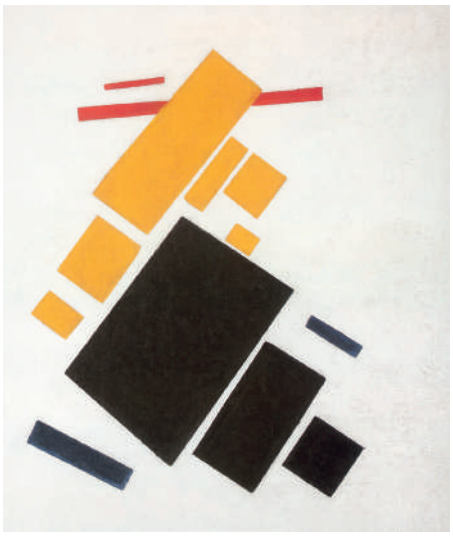
(b) Painterly Realism. Boy with Knapsack – Colour Masses n the Fourth Dimension, 1915. Oil on canvas



(c) Self-Portrait in Two Dimensions, summer-autumn 1915. Oil on canvas



(d) Woman, 1915. Oil on canvas



(e) Suprematist Composition: Airplane Flying, 1915 (dated on reverse 1914). Oil on canvas

Figure 13: (a) to (e) Suprematist Compositions

Source - Souter, 2012



Figure 14: Eight Red Rectangles, 1915
Oil on canvas

Source: R, Schirn Kunsthalle Frankfurt, & Amsterdam, 1992



Figure 15: Pictorial Masses in Movement, 1915/1920. Oil on canvas

Source: Railing, 2019

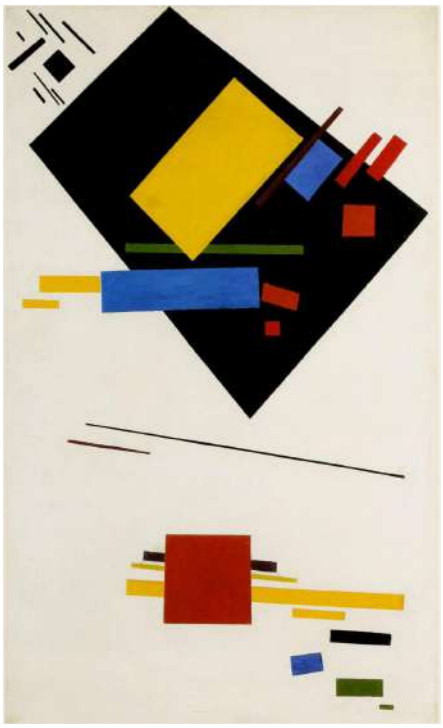


Figure 16: Suprematist Painting, 1915, Oil on canvas

Source: Drutt & Kazimir Severinovich Malevich, 2003

1. Quadrilateral
2. Painterly Realism of a Footballer.
Colour Masses in Four Dimensions.
3. Painterly Realism of a Boy with a Knapsack.
Colour Masses in Four Dimensions.
4. Movement of Painterly Masses in Four Dimensions.
5. Painterly Realism of a Peasant Woman
in Two Dimensions.
6, Self-Portrait in Two Dimensions.
7. Automobiles and Women.
Colour Masses in Four Dimensions.
8. Woman.
Colour Masses in Four and Two Dimensions.
9. Painterly Realism of Colour Masses
in Two Dimensions.
10. Painterly Masses in Movement.
11. Painterly Masses in a State of Rest.

Another significant aspect of this exhibition was the intriguing installation of Malevich's Quadrilateral "The Black Square" which was placed high across the corner of the two walls signifying that the work was of utmost importance (Milner & Kazimir Severinovich Malevich, 1996).

In 1915, Malevich began experimenting with three-dimensional assemblages called "Arkhitektons"(Figure 19-20), to establish external expressions with space from pictorial suprematist forms. Malevich attempted to transform his suprematist compositions from canvas to real space testing possibilities of creative art (Kazimir Severinovich Malevich, 2003). These assemblages are plaster models with rectangular blocks shaped into horizontal or vertical masses. Here, the forms have no placement of function due to its concept of plastic feeling which removes the notion of practical considerations (Fabrizi, 2015).

Hence, the new art of Suprematism emerged as a relationship of forms across and beyond the canvas (space) breaking the bounds of practical considerations. This was meant to attain a pure and non-objective feeling (Kazimir Severinovich Malevich, 2003).

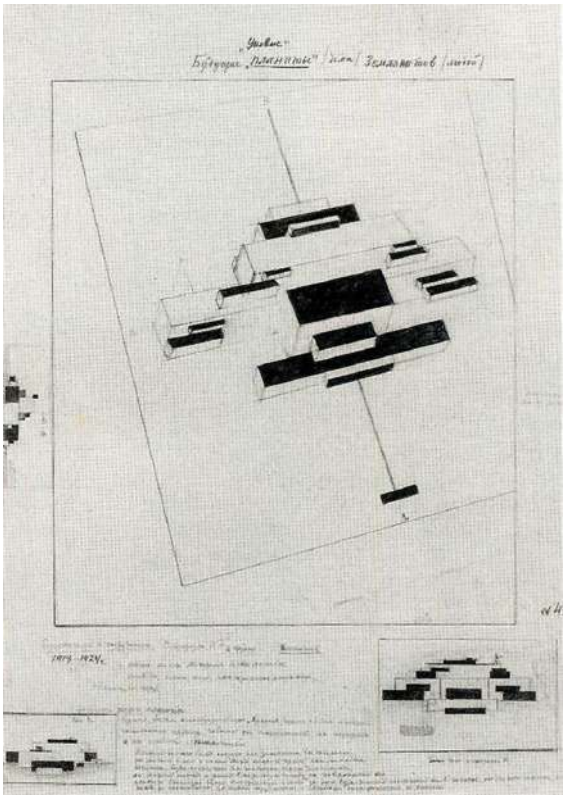


Figure 17: Planits (Houses) for Earth Dwellers, 1923 -24, Pencil on paper

Source: "Suprematism in Architecture: Kazimir Malevich and the Arkhitektons," 2014

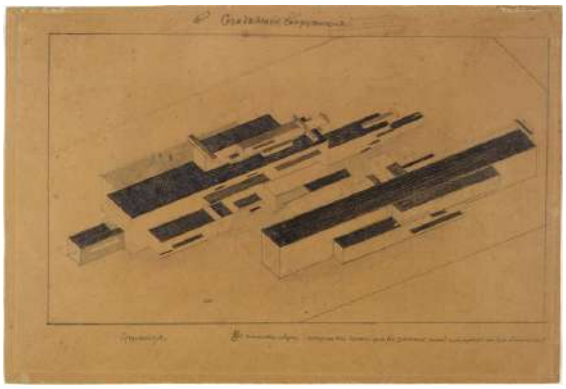


Figure 18: Modern buildings, 1923-24, pencil on paper

Source: "Suprematism in Architecture: Kazimir Malevich and the Arkhitektons," 2014

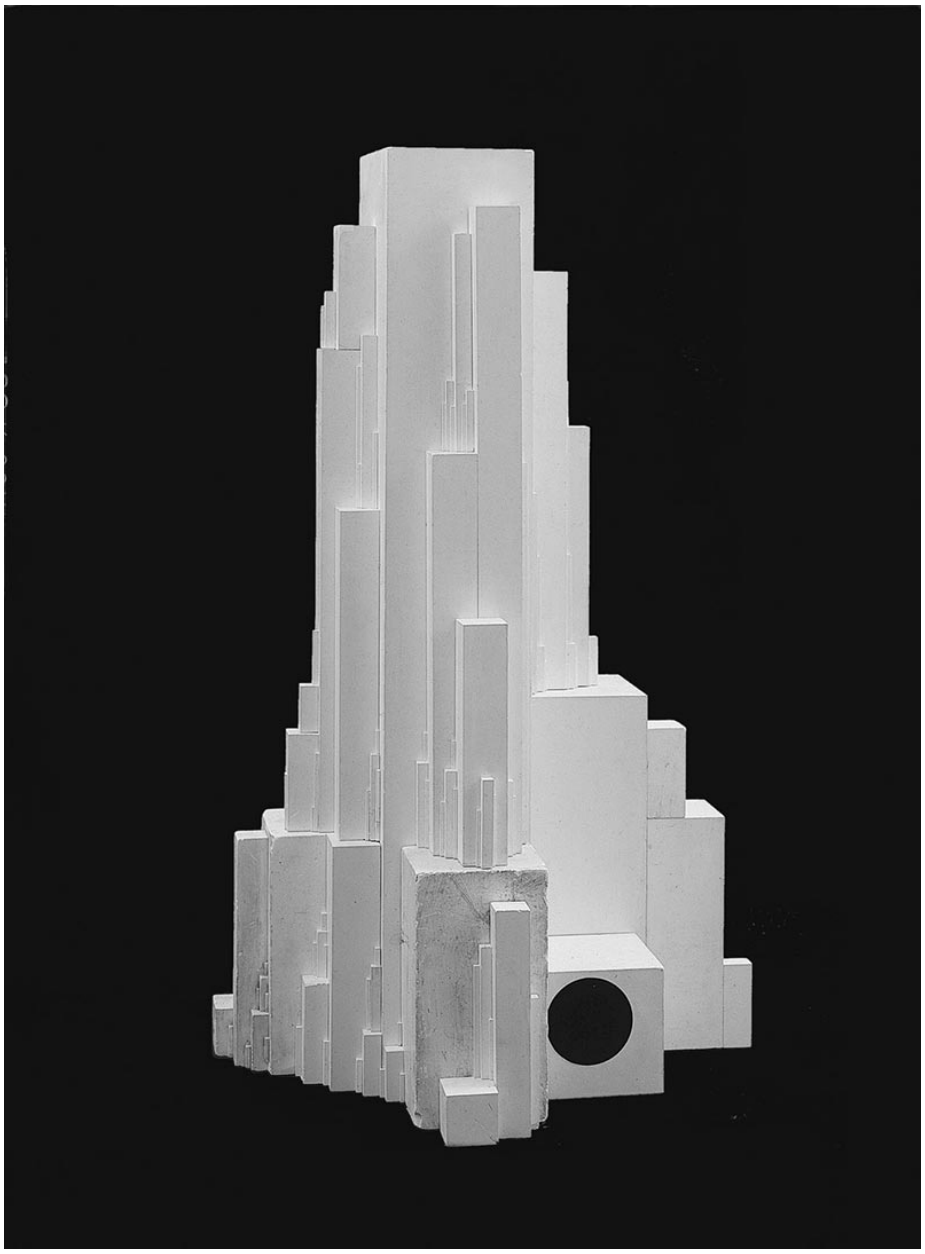
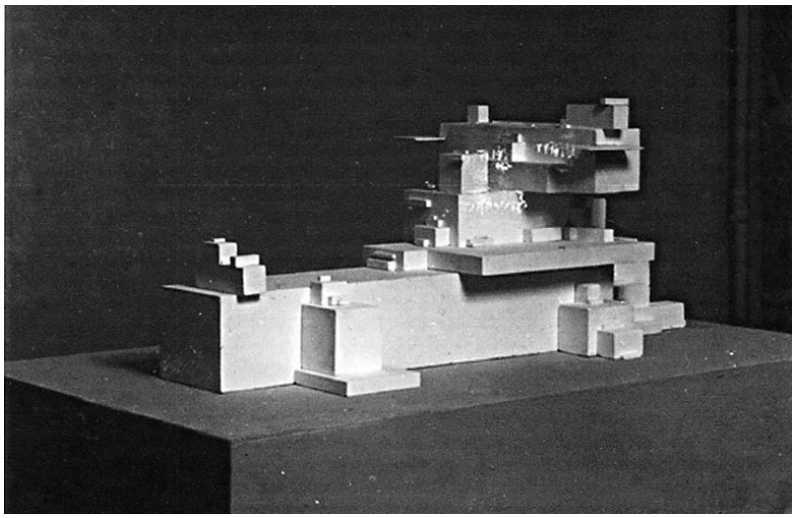
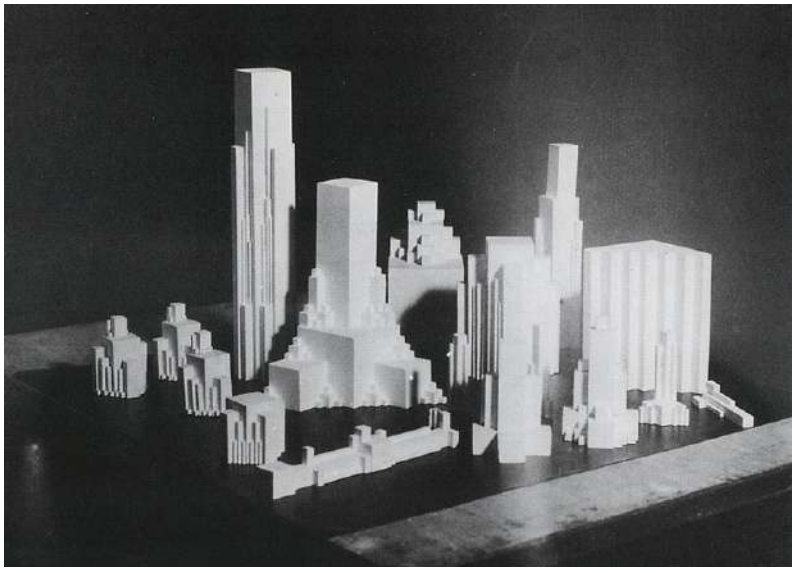


Figure 19: Gota, 1923, Reconstructed in 1989, Plaster

Source: "Suprematism in Architecture: Kazimir Malevich and the Arkhitektons," 2014



(a)



(b)

Figure 20: (a) Alpha Arkhitekton, 1920 (1925-26), Plaster
(b) Suprematist Ornaments, 1927, Reconstructed by Paul Pederson in 1978 Plaster

Source: "Suprematism in Architecture: Kazimir Malevich and the Arkhitektons," 2014

Proun: Lissiztky's adaptation of Non-objectivity

Prouns were a result of Suprematist explorations carried out by El Lissitky, an architect-painter who was appointed as a professor of architecture and graphic arts in the Vitebsk School of Art. He painted his first Proun in 1919 after cultivating inspiration from Malevich's compositions displayed in the "Tenth State Exhibition" (Birnholz A. C,1974).

Proun was meant to be "for the new art" which are dynamic concepts developed with the aspect of three-dimensionality, influential from the ideas of architecture. Lissitzky experimented with three-dimensional ideas in his objects to involve the reader with the geometry and the space surrounding them. He inculcated depth into Malevich's flat geometries to give a three-dimensional reading of space-time. Under several influences such as Rodchenko's cosmic elements and airborne camera's perspective views from that period, Lissitzky ideated with the canvas space by implementing linear perspective principles to bend geometry and space interaction aiming towards the reader of the painting (Birnholz A. C,1974).

Lissitzky attempted to employ dynamism in his Prouns by breaking the canvas frame and allowing readers to actively interact with the compositions' geometry and space through three-dimensional reading. However, Lissitzky's changing associations between art schools between 1919 and 1921 created a rustic path for the development of the Proun concept. According to his study, Birnholz A.(1974) claims that Lissitzky always desired to set up independent philosophies for the Proun concepts, but it continued to friction between flat planes of suprematism and material and utilitarian qualities of constructivism (Birnholz A. C,1974).

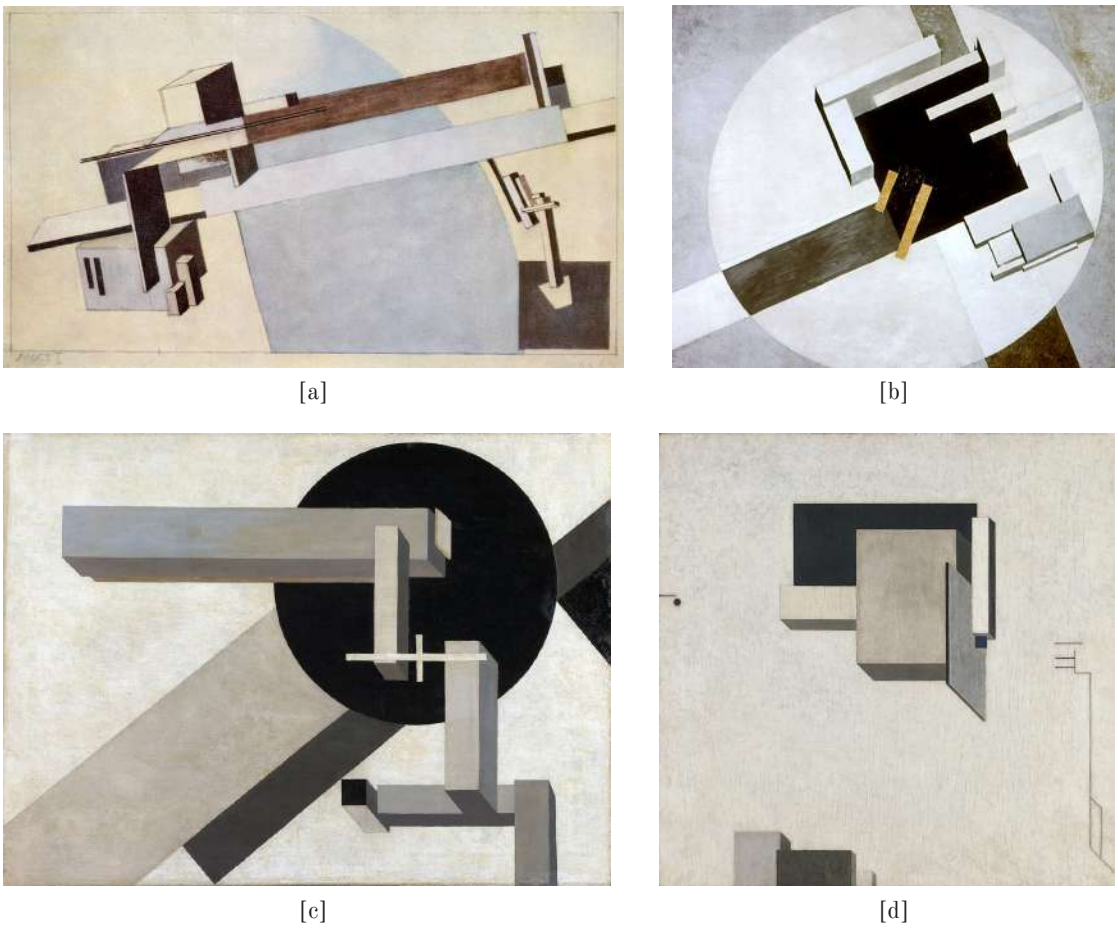
Figure 21(a) of Proun 1A "The Bridge" clearly illustrates a mix of suprematist forms with constructivist qualities. In this Proun, Lissitzky employs Malevich's form with depth along with the idea of pivot movement of the linear elements working with the utilitarian aspects of constructivism.

Moving onto Figure 21(b) of Proun 1E, "The City", a symbolic idea of the suprematist square can be observed through an intriguing aerial vantage point along with different textural qualities resonating with aspects of constructivism.

Proun 1D from Figure 21(c) also contains a provoking configuration of forms within the picture plane enhancing the dynamic qualities of the composition. Here, the geometrical forms are represented with a muted color constitution but are resonated with an active inter-relationship between forms. Intriguing aspects like perspective projection can also be seen in Proun 1C from Figure 21(d). The geometric forms within this composition signify the dynamism through the manipulation of perspective which makes the form appear to be projecting towards the viewer (Birnholz A. C,1974).

In 1923, Lissitzky conceptualized the idea of a room where viewers were meant to become active participants called a "Proun room" (Figure 22). Lissitzky attempted to create walls with a dynamic nature guiding the viewer to encounter various forms and their active relationships. Viewers were made to encounter forms which directed them towards the next surface creating a dynamic situation within the space ultimately generating an active participation (Birnholz A. C,1974).

"The Constructor", A Photographic Self Portrait (Figure 23) by Lissitzky can be interpreted as an encapsulation of his work blending architecture and art. This photomontage with objects like compass and rulers suggests an idea of engineer-artist which signifies his work positioning itself between Non-objective forms of Suprematism and Utilitarian materials of Constructivism (Birnholz A. C,1974)



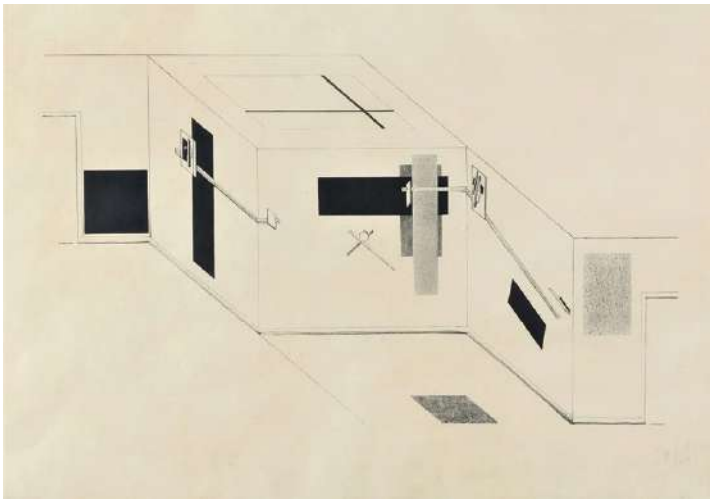
[a] [b]

[c] [d]

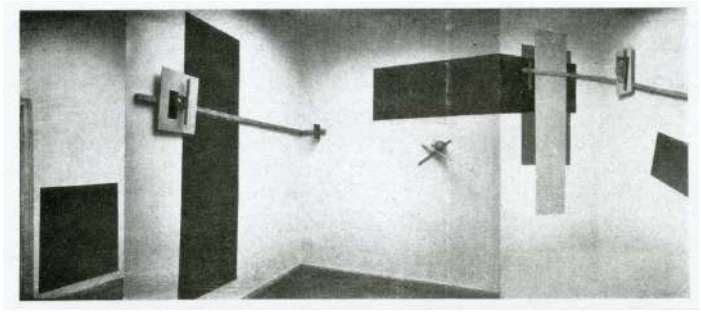
Figure 21: [a] Proun 1A “The Bridge”, [b] Proun 1E “The City” [c] Proun 1D [d] Proun 1C

Source : [a],[b] and [d] “El Lissitzky - Monoskop,” 2012. [c] “Proun 1D by El Lissitzky,” n.d.

.



[a]



[b]



[c]

Figure 22: (a) Der Prounenraum, 1923, Lithograph in black
(b) Prounenraum [Proun Room], Great Berlin Art Exhibition, 1923
(c) Proun Room, 1923 (reconstructed 1971)

Source: (a) El Lissitzky, 2018 (b) El Lissitzky - Monoskop," 2012 (c) Dixon, 2011

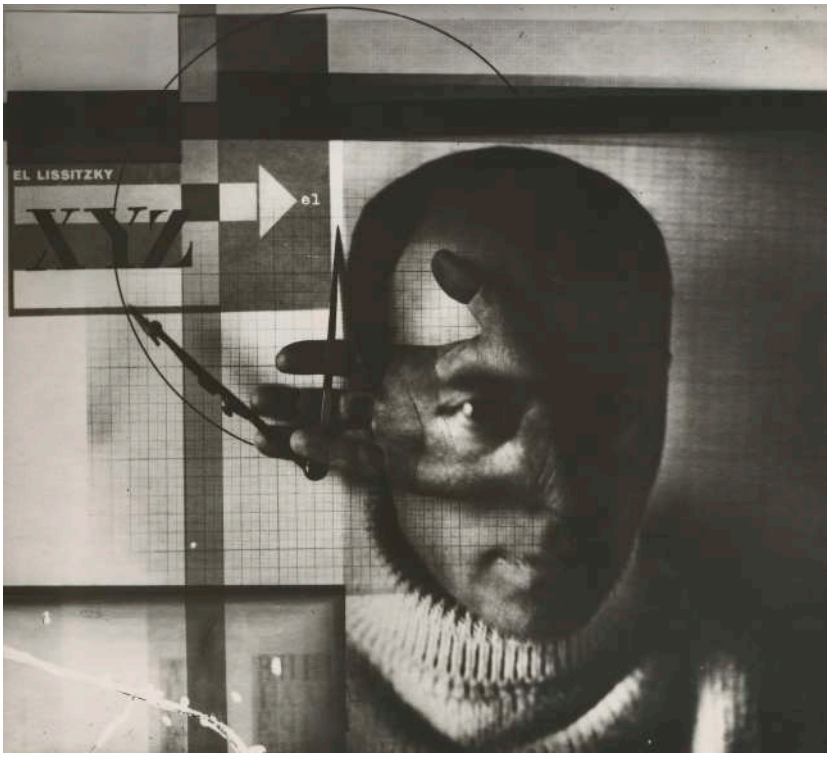


Figure 23: The Constructor
1924, printed 1970, Gelatin silver print

Source: "The Constructor | Yale University Art Gallery," 2009

Constructivism: Laboratory Phase of Non-utilitarian Constructions till 1917

In contrast to suprematism, utilitarian aims were considered as highest priorities within constructivist movements. But, the experimental origins of constructivism in 1913 began with non-utilitarian positions. Later on "Laboratory work" was used to label this formal investigation period which included two and three-dimensional artistic compositions through elements like form, material, colour, space and construction (Lodder, 1998).

Vladimir Tatlin's Reliefs

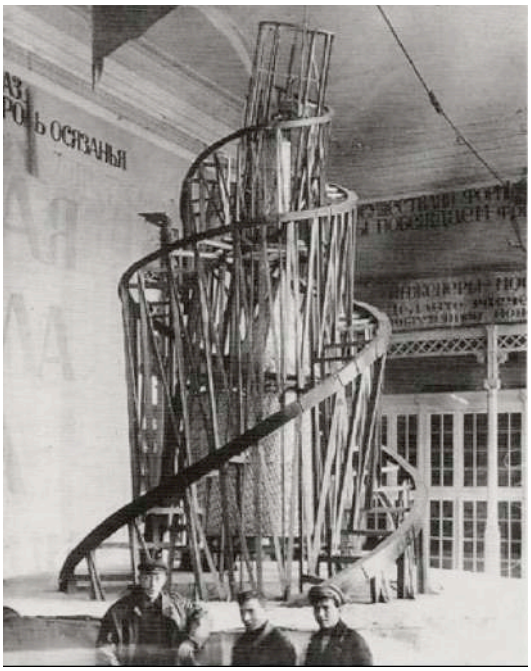
The development of constructivism began in 1913 when Vladimir Tatlin introduced the idea of spatial cubist painting with his early constructivist compositions called "The Bottle" (Figure 25) . Vladimir Tatlin, who later became a major position in the constructivism movement, was inspired by Picasso's artistic process, which immediately took him towards cubist sensations and three-dimensional constructions. Tatlin took the idea of material selection from Picasso's practice to form an individualistic work of construction through a combination of materials based on artistic sensation (Казимир Северинович Малевич, 1969). He called these three-dimensional compositions "Reliefs'. Reliefs usually deal with the resonance of materials and contrast in surface textures and colours. These reliefs utilise the properties and inter-relationships of materials used with some minimal alteration done by the artist to fix the compositions. Reliefs had a gradual progression from being "painterly" to "intense" and counter-active. This happened to come about from Tatlin's The Bottle, 1913 where the form relationships were based on narrative whereas Tatlin's Selection of Materials: Iron, Stucco, Glass, Asphalt, 1914 (Figure 26) had materials with pure and intense interdependent compositions and inherent properties. Moving down to Corner Counter-relief of 1914-15 and Counter-relief of 1916, Tatlin abandoned the selection of base frames and added jutting-out properties to materials to develop a more active relationship with the surrounding space.

The manifestations of material in these reliefs had consequences of sensations like movements, tension and explosion of planes in space which were fully dissociated from the utilitarian aspect (Lodder, 1998).

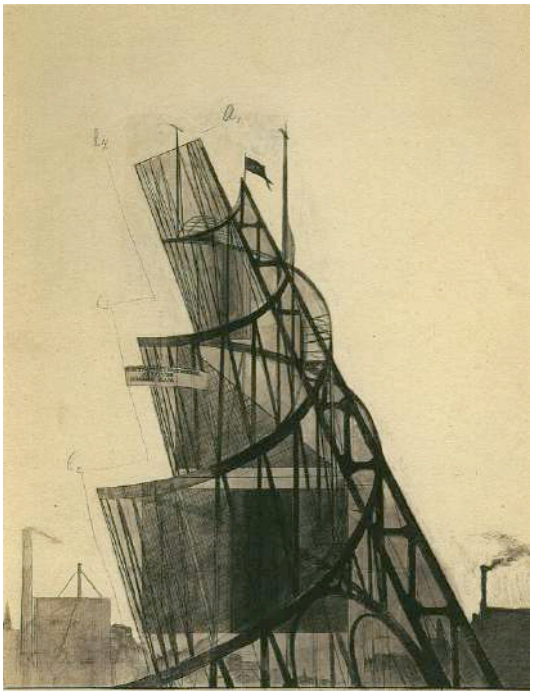
Monument to the Third International

As the movement to constructivism began to attain characteristics of dynamism, the experimentation continued further towards three-dimensional constructions with emerging natures of utility. To attain visual symbols of the new economic order within Russia merged with the nature of emerging constructivism, Tatlin was commissioned to create the tower "Monument to the Third International" (Figure 24) which was meant to act as a symbol of technological and utopian growth in Russia This symbolic utilitarian construction was established as an act of dynamism and a strong aesthetic principle of the constructivist movement (Lodder, 1998).

The construction consists of a spiralling framework supported by a leaning girder executed in iron. This tower's body exerts its dynamism through its systems of revolution where geometric forms mechanically revolve in an upward direction. The geometric forms were assigned functional spaces which move up along the asymmetrical axis of the tower symbolising the kinetic quality of the utopian world (Gray, 1986).



[a]



[b]

Figure 24: [a] Vladimir Tatlin with other artists in front of Monument construction, 1919 - 1920
[b] Drawing of the Monument to the Third International, published in Nikolai Punin,

Source: VLADIMIR TATLIN | Emmanuelle et Laurent Beaudouin - Architectes, 2015



Figure 25: The Bottle, A Painterly Relief, 1913,
wallpaper, wood, metal and glass (Lodder, 1998).

Source: VLADIMIR TATLIN | Emmanuelle et Laurent Beaudouin - Architectes, 2015

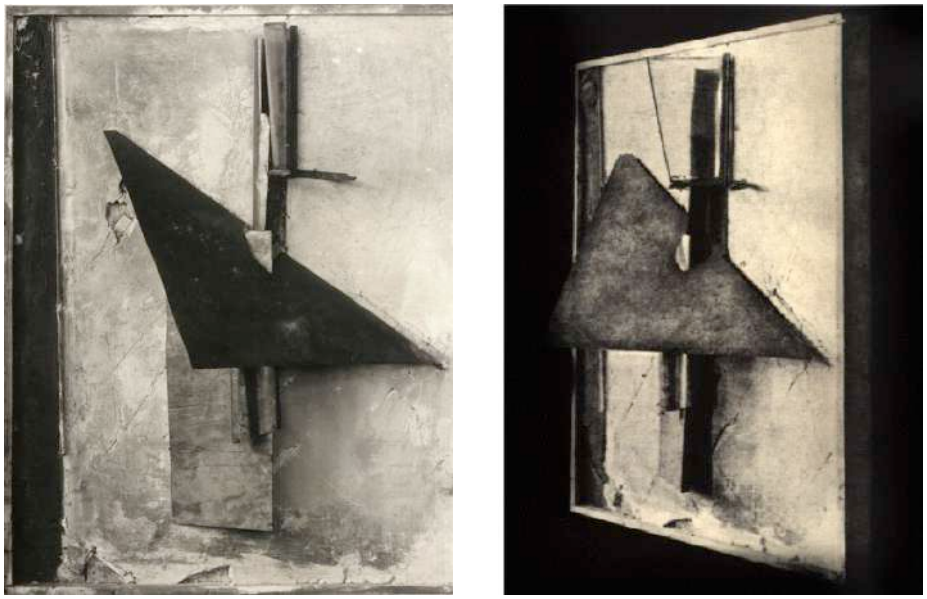


Figure 26: Selection of Materials: Iron, Stucco, Glass and Asphalt, 1914
wallpaper, wood, metal and glass (Lodder, 1998).

Source: VLADIMIR TATLIN | Emmanuelle et Laurent Beaudouin - Architectes, 2015

Parallel Experiments

When Vladimir Tatlin's Non-utilitarian constructions became widespread in the field of constructivism after the counter-reliefs were exhibited in Petrograd at 0.10 in 1915, it greatly impacted fellow artists and their creative explorations. This opened doors to several parallel experiments in constructivism dealing with Tatlin's idea of formal, three-dimensional compositions. Out of several artists, the most important contributors to constructivism work were Alexandr Rodchenko with his spatial line constructions and Lyubov Popova to a certain extent with her two-dimensional painterly architectonics (Lodder, 1998).

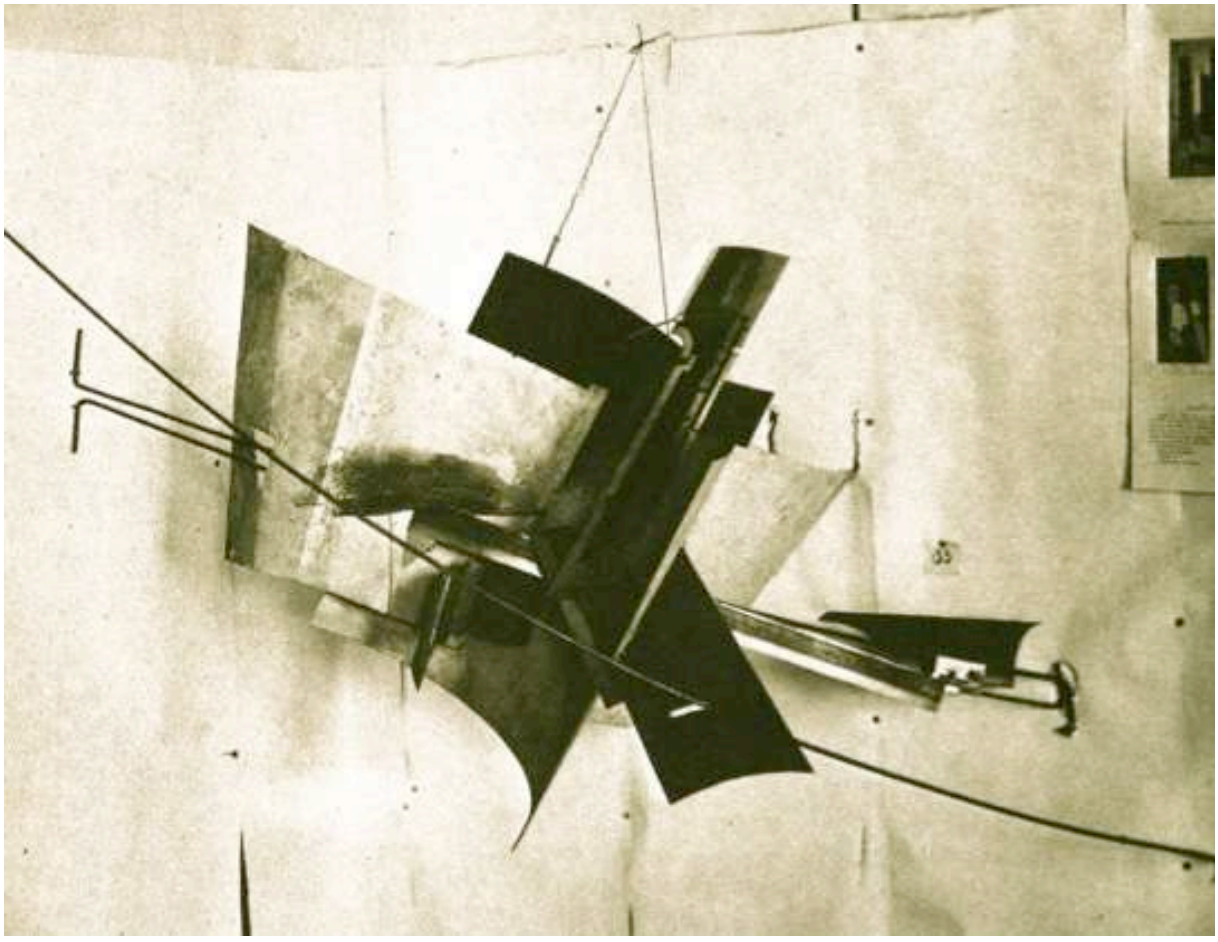


Figure 27: Corner Counter-Relief, 1914-15

Source: VLADIMIR TATLIN | Emmanuelle et Laurent Beaudouin - Architectes, 2015

Aleksandr Rodchenko's Lines and Photography

Being Tatlin's immediate constructivist follower in later years, Alexandr Rodchenko also produced three-dimensional constructions of materials beginning in 1918 in attempting to detach from the flat plane. Rodchenko introduced his concepts to the constructions later on in 1918 - 20 with "White Non-Objective Sculpture" of 1918, "Black on Black" of 1918, "Line Constructions" of 1918 (Figure 28) and "Spatial Constructions" of 1919 and 1920. As observed in "White Non-Objective Sculpture" and "Line Constructions", Rodchenko seemed focused on the varied geometrical elements and their expressional quality in composed constructions. One of these major elements chosen and worked upon by Rodchenko was "The Line". Essentially, He introduced lines into planes as an element to investigate its essence on canvas leading towards further linear elemental studies such as "Black on Black" and later on towards three-dimensional constructions called "Spatial Objects" (Figure 29 and 30w) (Lodder, 1998).

His experimental work dealing with the "line" as an element established a dynamic energy within the composition. The composition from Figure 6 suggests the existence of a significant point through the structure of lines emerging from from left to right. Here, the structure seems to strike a balance between all the elements. Such rigidity within the elements was often explored with various line constructions by Rodchenko, which was also called "Linearism". It can be said that Rodchenko commenced a dynamic interplay between linear elements within the visual space through primitive instruments like a ruler and compass.

Moving onto the three-dimensional explorations, Spatial Object was a series of constructions produced by Rodchenko to investigate the modular nature of rectangular wooden sections as standard elements for construction. Proceeding further, a set of Spatial Constructions was also exhibited, essentially three-dimensional constructions suspended with a wire.

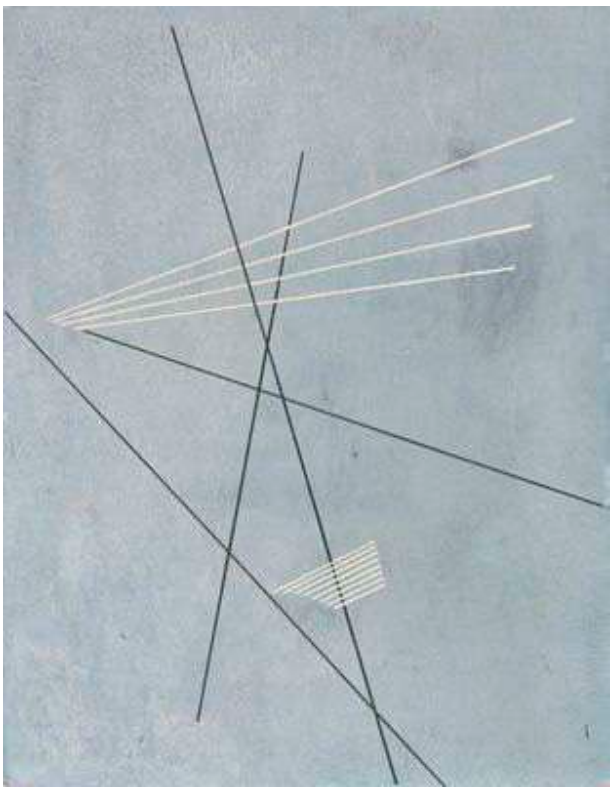


Figure 28: Line Construction, 1918, Oil on board

Source: Alexander Rodchenko, Constructivism, Linear Art,"n.d.-b

This set includes different geometrical versions of plywood constructions where concentric shapes are arrayed and rotated, forming a three-dimensional spatial construction (Figure 31 and 32). These explorations pushed the essence of line in spatial constructions to a further extent attaining a sense of dynamism with free movement. This Spatial construction set was also proved to have potential in terms of mass production and ease of materialisation. In the later stages of the parallel experimentation period of constructivism, few artists took forward the idea of line constructions from Rodchenko but did not implement it actively outside the two-dimensional realm. This includes Lyubov Popova with her painterly architecture as her significant contribution to later constructivist works (Lodder, 1998).

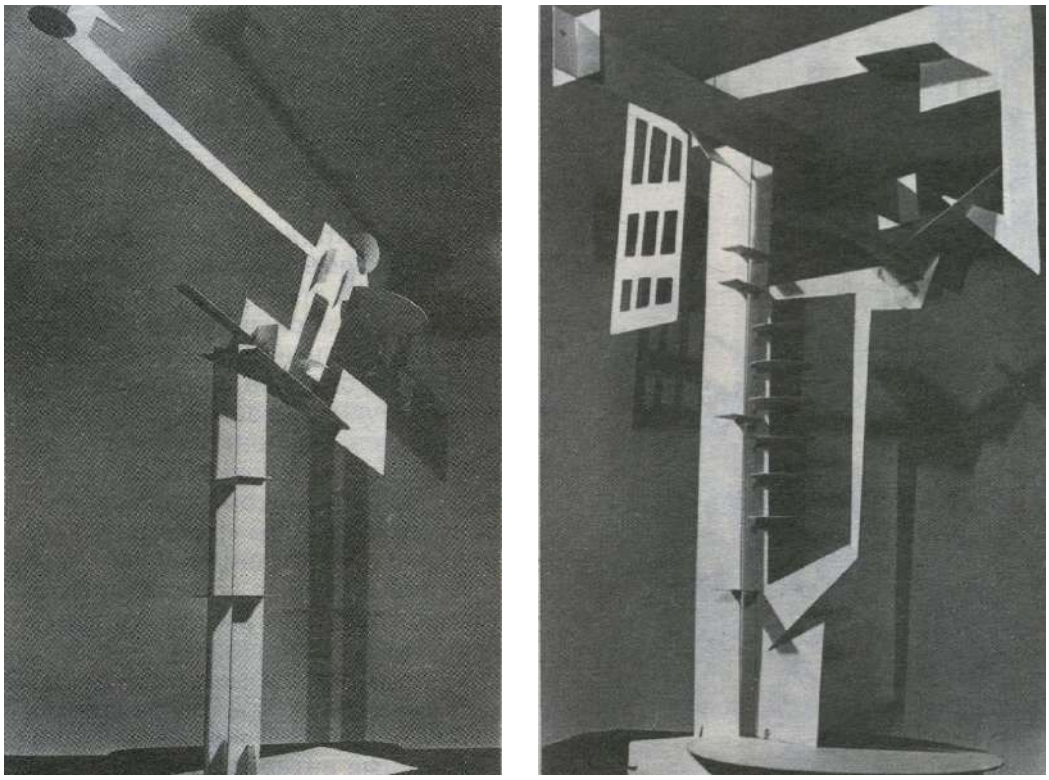


Figure 29: Spatial Construction No. 5 and No.6 , 1918. Costakis (photograph)

Source: Dusan, 2015

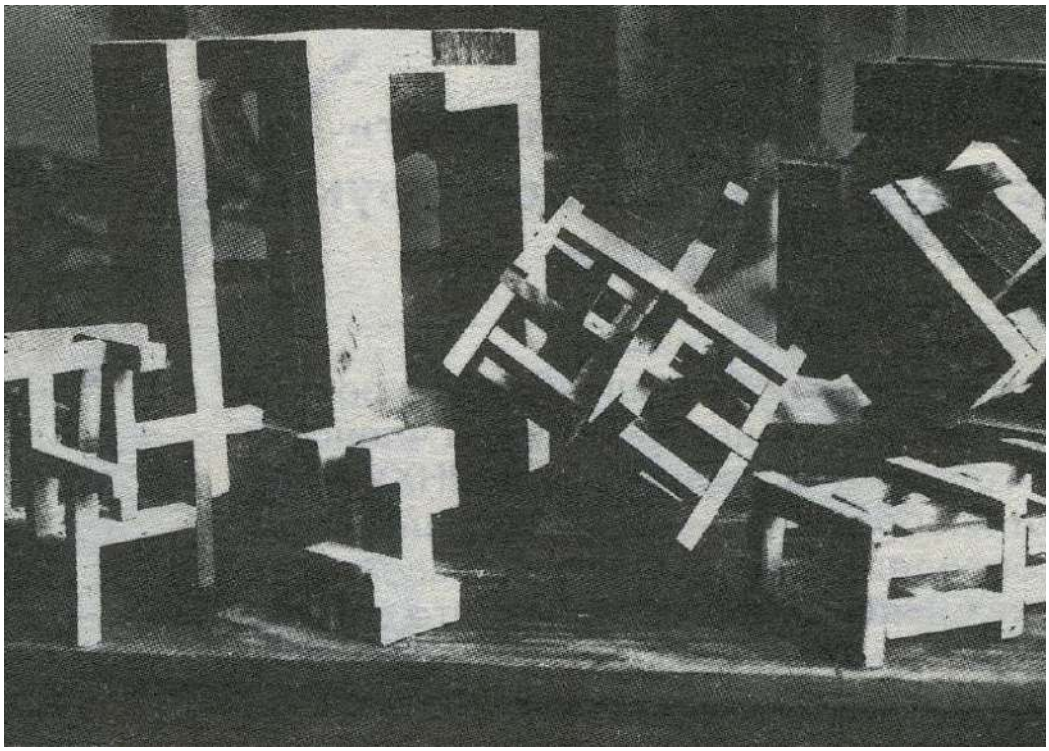


Figure 30: Spatial Constructions series 3 b, 1921

Source: Dusan, 2015

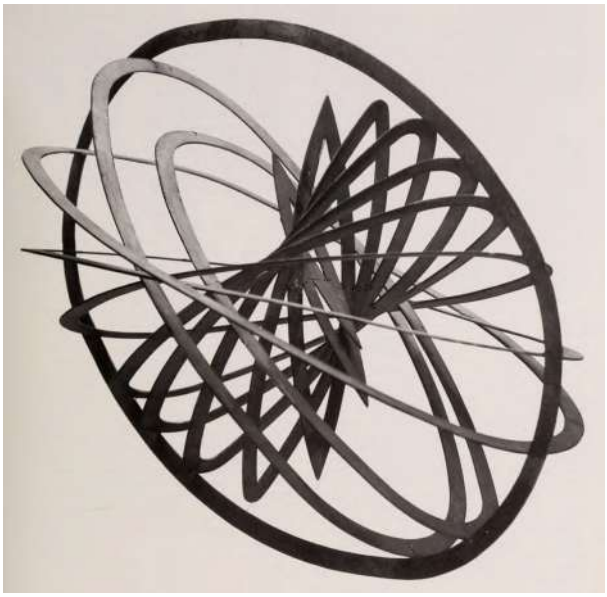


Figure 31: Oval Hanging Construction Number 12, 1920, Plywood, open construction partially painted with aluminium paint and wire

Source: R, Schirn Kunsthalle Frankfurt, & Amsterdam, 1992

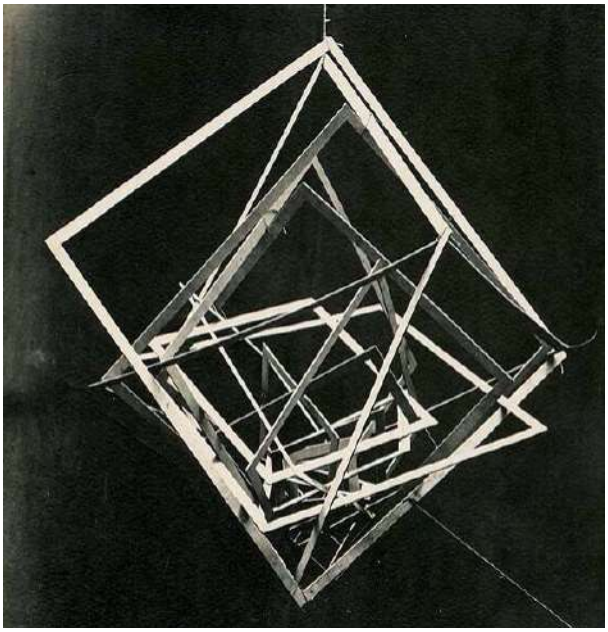


Figure 32: Spatial Construction [square], 1920. Reproduced in Kino-Fot 2, 1922

Source: Dusan, 2015

Aleksandr Rodchenko's work also extended within the field of photography in the early 1920s establishing a distinct vocabulary through his continuous experiments with technique and expressions. His major investigation covered the concepts of distinct camera angles through perspective foreshortening which stimulated bold character and movement (Rodčenko, 1979).

Commenting on the potential of photographic compositions, Rodchenko states:

"The numerous planes of images with finely traced outlines surpass the effects of photomontage. There are transitions from the complete whole to the finest tiny veins. The contrasts of perspective. Light contrasts. Contrasts of forms. View-points inaccessible to drawing or painting. Foreshortening with strong distortion of the photographed object and the rough texture of the material. Perfectly new, unprecedented representation of movement by man, animal, machine, etc. Moments we didn't know of or, if we did, couldn't see, like the flight of a bullet, for example. Compositions whose boldness surpasses the imagination of the painter; a formal wealth that leaves Rubens' works far behind. (Lavrentiev, 1996)"

Regarding photographic composition, Rodchenko was intrigued by capturing day-to-day things from a foreshortened perspective to incorporate visual energy into his pictures. He was interested in seizing frames with his camera when looking from different vantage points as seen in photographs "Balconies" 1925 (Figure 33) and "Stairs" (Figure 34) (Lavrentiev, 1996).



Figure 33: Balconies, 1925
ferrotyped photograph

Source: Past Auction, 2024



Figure 34: The Stairs,
Original photography / Gelatin silver print

Source: The Stairs - Aleksandr Rodchenko - Google Arts & Culture, 2016

Thus far, the chapters of Suprematism and Constructivism mostly concerned with investigations which dealt with the idea of statics and dynamics in form compositions. Diagrams from Malevich's Suprematism: 34 Drawings suggest that the whole explorations of suprematism grew on the idea of the fourth dimension - Sensations of Time and Movement in Infinite Space. Formal Experiments from constructivism such as Tatlin's Counter-relief or Rodchenko's Spatial constructions highlight the gradual progression towards three-dimensional geometrical compositions in space achieving a stable establishment of intra-relationships within elements and inter-relationship with space (Lodder, 1998).

Special soviet interests in spaceflight played a major influence on Russian avant-garde which was noticeable within Malevich's Suprematist creations. Malevich was believed to have adopted the Russian philosopher's literary enthusiasm for space flight and the ideas of technological progression in Cosmism to establish a link between art, cosmic and spirituality. This can be seen in the development of Suprematist works till the late 1920s and its subsequent movements in Constructivism (Siddiqi, 2008).

These experimental compositions within the Russian avant-garde identify themselves on "Space" as a dimension composed on the canvas. The reason behind this conceptual background of space and movement can be speculated to have cosmic influences which was an emerging theme during the space-fad period of Russia. So far, this chapter has classified the influential isms of Russian Avant-garde but takes less notice of the cosmic nature of these "isms. Therefore, the following section provides an account of Russian cosmism and its influential role in Russian Avant-Garde.

05

Cosmic influence in Russian Avant-Garde

Russian Cosmism

The idea of cosmism had its origins from various thinkers before tapping into Russian art due to the running space fad. Explorations with space can be considered a societal interest during the Soviet times of the 1920s. Still, it is claimed that it had a gigantic drive from various philosophical and technological thinkers to drift the Soviet Union towards a modern and progressive path. This cosmic enthusiasm and interest in space flight had its technological and philosophical foundations laid by major Russian thinkers - **Konstantin Tsiolkovskii and Nikolai Federov** (Siddiqi, 2008).

The following sections within this chapter attempt to present the historical emergence of space fad and cosmism within Russian society. With this chapter, This investigation begins to establish connections of cosmism with the abstract paintings of Zaha Hadid.

The painting on the left (Figure 35) signifies a dramatic cosmic event set during the Russian Revolution of 1917



Figure 35
New Planet
Konstantin Yuon, 1921

Source: "New Planet - Konstantin Yuon",n.d

In a major study, “Imagining the Cosmos: Utopians, Mystics, and the Popular Culture of Space Flight in Revolutionary Russia”, Siddiqi uncovers the underlying historical layers of Russia’s space travel and its hidden thoughts and fascinations. Siddiqi (2008) traces Tsiolkovskii and Federov’s intellectual contribution towards space fad which had two unique strands of thought. Tsiolkovskii’s visions of space travel were more inclined towards the technological and utopian advancement of Russia whereas Federov’s ideological thoughts had more to do with the spiritual fantasy of resurrection where space voyage was claimed to be a part of the human resurrection process (Siddiqi, 2008).

Nikolai Federov (1829-1903) was a prominent cosmic philosopher who believed in space travel being an essential part of humanity’s bodily resurrection as per his well-known textual piece “Philosophy of the common task”. However, Konstantin Tsiolkovsky’s (1857-1935) fundamental scientific foundations to achieve space travel had a huge impact on Russia’s cosmonautics. His work on visualizing space suits. Rockets and satellites laid a strong groundwork for Russia’s space age. Figure 38 shows a page from Tsiolkovsky’s Album of Cosmic Journeys depicting the drawn imaginations of human relationships with space (Cosmonauts - Google Arts & Culture, 2019).

Although, the two thinkers posed contradictory views on space travel, their ambitious desire to push Russia’s space explorations established a solid foundation which led them to their monumental launch of the World’s first artificial satellite “Sputnik” in the later years as shown in figure 39 (Siddiqi, 2008).

Different levels of Soviet enthusiasm for space travel also tapped into the realm of Art and Literature which reflected the influence of cosmism as a strong belief during the 1920s. Several links between Federov’s philosophical systems and Kazimir Malevich’s artistic principles on visual weightlessness were hypothesized showcasing a cosmic phenomenon within the Russian avant-garde (Kovtun, 2012).

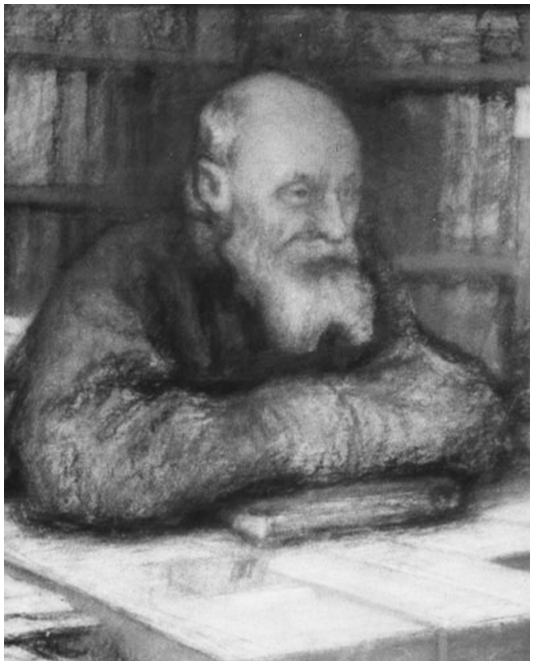


Figure 36: Portrait of Nikolai Fyodorovich Fyodorov

Source: Wikipedia Contributors, 2006

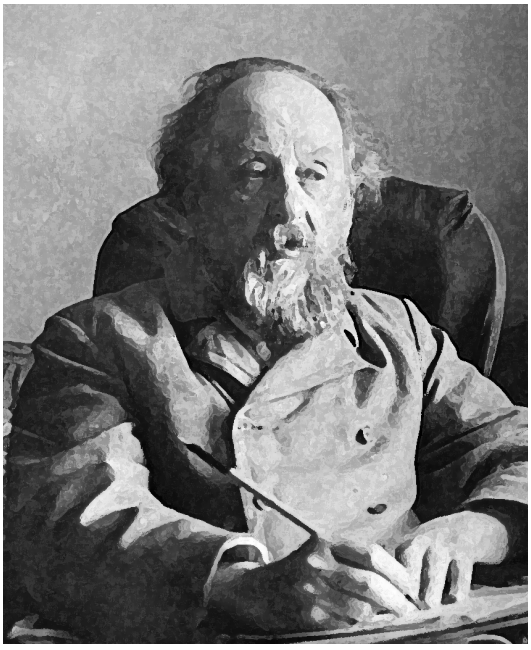


Figure 37: Konstantin Tsiolkovsky, at home at work, Kaluga, 1930

Source: USSR Pictures, 2023

Publications like "Suprematism, 34 drawings" by Malevich also suggest strong cosmic connections with visual structure on weightlessness and inter-relationships between forms. Malevich's writings which are in association with the 34 drawings, stated that each form itself is a satellite moving along its path between the interplanetary bodies, the Earth and the moon (Казимир Северинович Малевич, 1969). Malevich highlights the concept of interrelationships of these bodies in an infinite space achieving a system of world-building.

Commenting on the energy of suprematist forms, Malevich writes:

"In its historical development Suprematism has gone through three stages: black, coloured and white. All the periods passed under the conditional signs of planes, seeming to express the plans for future voluminous bodies; and, in fact, at the present time Suprematism is growing, as a new architectural construction in space and time. Thus, Suprematism is established in a link with earth, but, as a result of its economic constructions, changes the whole architecture of earthly things, in a broad sense, joining with the space of the monolithic masses moving in the planet system." (Казимир Северинович Малевич, 1969).

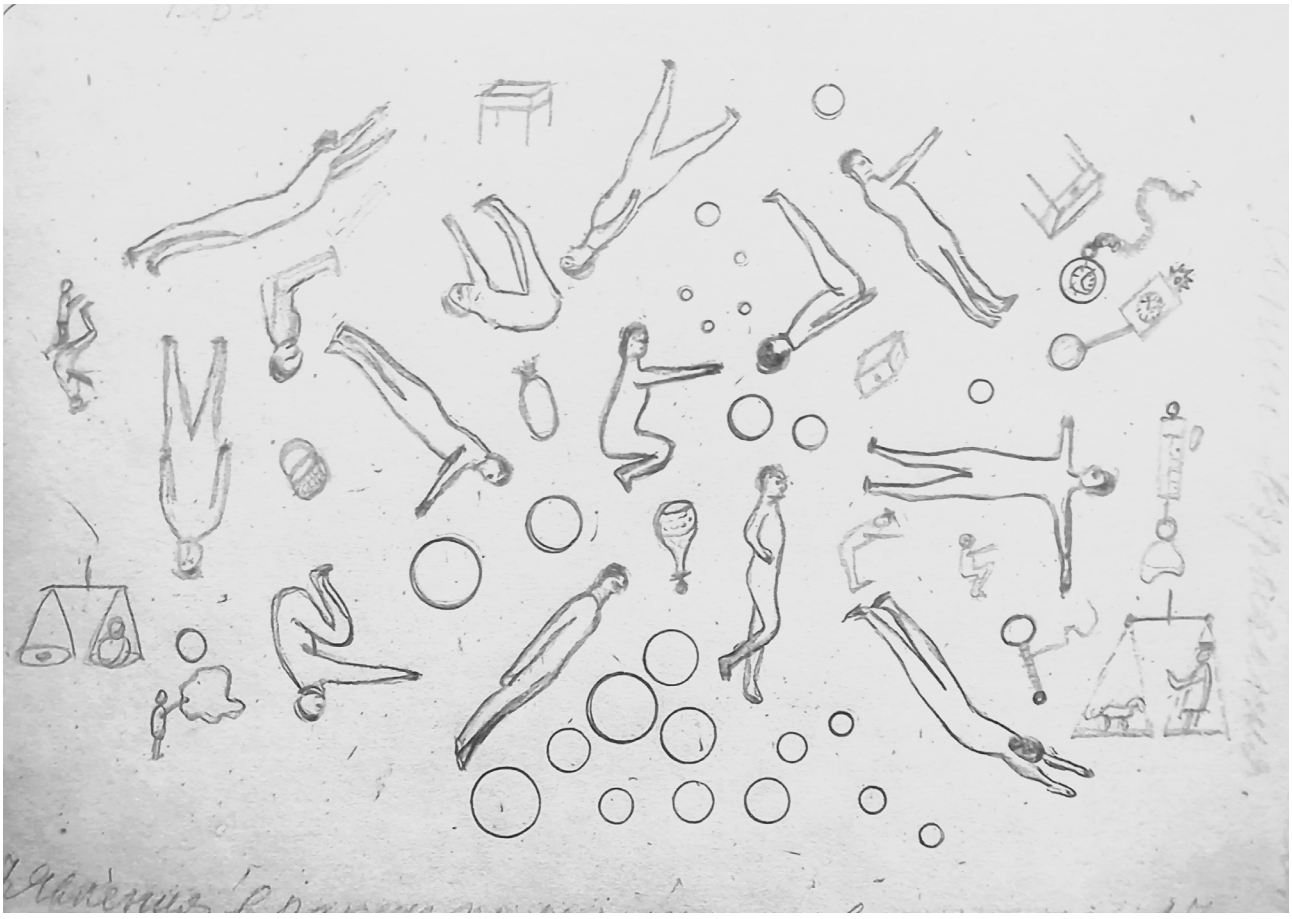


Figure 38: Drawing of people and objects floating around weightless by Konstantin E. Tsiolkovsky, 1933.

Source: Author's collection

1922



(a) Project for a Construction for the Fifth Anniversary of the October Revolution

Overall, the cosmic movement in Russia, both technologically and spiritually driven advancement, seems likely to be a strong influence in Malevich's Suprematism establishing a dynamic language within the spectrum of Russian avant-garde. Having discussed the cosmic associations with Suprematism, The following sections explore the formal attributes of Suprematism and Constructivism that convey statics and dynamics cosmic character by establishing a framework of attributes.

1957



(b) Sputnik I
Earth's First
Artificial
Satellite

Figure 39: Modified image depicting the Gustav Klutsis's Project for a Construction for the " Fifth Anniversary of the October Revolution" 1922 and the Russian First ever Satellite "Sputnik I".

Source: Author's Collage

06

Recurring theme of

Statics and Dynamics
within Cosmism

The idea of statics and dynamics as a symobolic representation of advancements was a common character observed within the thoughts of the Russian societies. However, this investigation deals with the idea of cosmic attributes underlying within Zaha Hadid's paintings. So, the idea of statics and dynamics can be a potential framework hidden within the Russian works and Hadid's abstractions which this investigation set out to discover through the analysis.

Thus, the following sections within this ionvestigation majorly shifts its focus on specific cosmic attributes falling under the theme of statics and dynamics within the chosen artworks .

07

Statics and Dynamics

Visual Diagramming
Effects of Motion Blur

This investigation primarily deals with studying Russian avant-garde's cosmic characteristics within the paintings of Zaha Hadid. To establish a framework of cosmic attributes from Russian avant-garde artworks, this investigation attempts to interpret the paintings of Russian artists Kazimir Malevich, El Lissitzky, Vladimir Tatlin and Aleksandr Rodchenko through the technique of diagramming. However, these cosmic interpretations consistently express dynamic characteristics like motion which was analyzed throughout this investigation

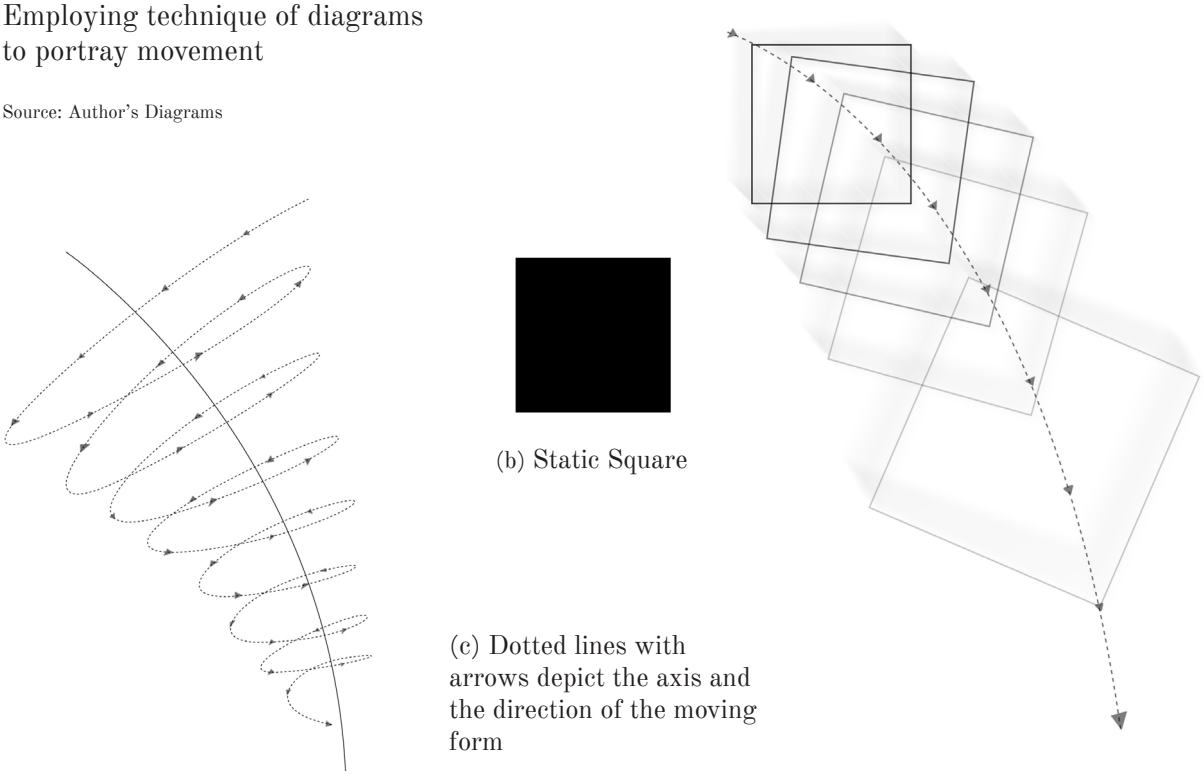
By employing methods of **visual diagramming** (Figure 41), this study sets out to analyze selected paintings to extract attributes of a dynamic cosmic nature. Within this method of diagramming, the style of **motion blur** was attempted **to portray the dynamic nature of objects** within the compositions. Here, motion blur effects through the software "**Adobe Photoshop**" were explored to showcase the changing position of objects. Sequential frames of the objects with decreased opacities suggest a sensation of movement within the object. This photographic technique has its applications through the history of cinema which was essentially used to craft a story.

Figure 41 (a)-(e):

Visual Diagramming

Employing technique of diagrams to portray movement

Source: Author's Diagrams



(a) Dynamic square moving along an axis

(b) Static Square

(c) Dotted lines with arrows depict the axis and the direction of the moving form

(d) Moving away from the reader

Effect of Motion Blur

Conveying movement and dynamism through visual diagramming

Sequence of frames showing movement of an object from Point A to Point B

(e) Moving towards the reader

08

Statics and Dynamics in Space

Cosmic Attributes
of Russian Avant-Garde

So far the previous chapters have focussed on “isms” of Russian avant-garde, but this chapter highlights the potential cosmic influence of Russian avant-garde which played an indirect underlying role in Zaha Hadid’s work. Russian Futurism was always claimed to have peak cosmic spaceflight interests from the beginning of Nikolai Fedorov’s astronomical philosophies but it was largely impactful in art when Malevich attempted to manifest cosmic consciousness within Suprematism after 1917. When Malevich exhibited the set of Suprematist drawings, a pattern of geometrical juxtaposition and colour usage was seen displaying the essence of infinite space. This was naturally conveyed as “spaciousness” but Malevich called it a “Non-objective world”. Having discussed the cosmic influences on the Russian avant-garde, the following sub-sections attempt to extract specific cosmic attributes from significant Russian avant-garde works to establish a framework which will be used to study Zaha Hadid’s early works.

Here, Figure 42 shows Russian artist Chashnik’s work which was interpreted to be frame of a cosmic situation between two dynamic entities.

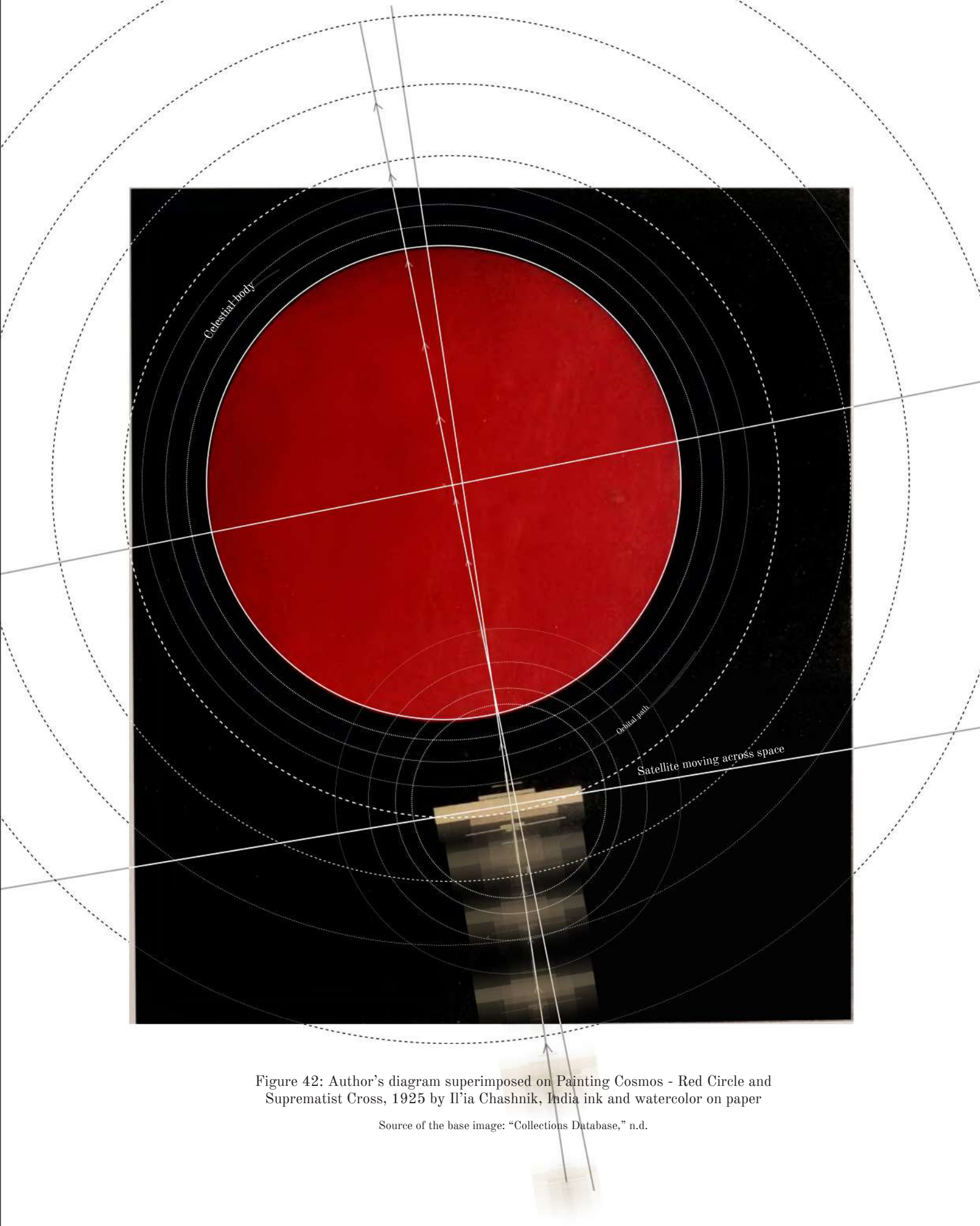


Figure 42: Author's diagram superimposed on Painting Cosmos - Red Circle and Suprematist Cross, 1925 by Il'ia Chashnik, India ink and watercolor on paper

Source of the base image: "Collections Database," n.d.

Flight and Movement: Malevich Compositions

Kazimir Malevich had a strong fascination with flight, a theme considered a prime example of futuristic ambitions. Malevich slowly began to incorporate flight as an artistic sensation across his works, one of which was "Aeroplane Flying" (Souter, 2012).

1918's "White on White" painting (Figure 43)by Malevich also had an intriguing composition where the colour aspects of the composition were static. Still, the arrangement of form brought a sense of dynamism and movement within the painting. In the book "Non-objective World", Malevich established that dynamic nature is an "additional element" which distorts the established norm and dynamic suprematism can be "Aeronautical"(Kazimir Severinovich Malevich, 2003).

In Figure 44 of the composition "Aeroplane Flying", rectangular forms are represented to hover along a diagonal axis across the canvas. Here, five black rectangles suggest the presence of an aircraft's main body attached to the wings which are represented by Six rectangles. This set of forms overlaps over a red line working as a horizon line. However, this composition was one of the beginning steps towards the application of movement through inter-relationships between forms where dynamics and floatation become recurring elements (Souter, 2012).

Malevich's series of 34 drawings depict the evident character of dynamic suprematism where constructions are based on the principles of statics and dynamics of planes in space. This character of movement was invoked by using magnetic interrelations of forms with natural forces converting the whole canvas into a metaphorical infinite space (Казимир Северинович Малевич, 1969). In a series of suprematist works shown in Figure 45, forms are composed invoking a feeling of motion/dynamic activity establishing a sense of cosmic imagination throughout the series of drawings.

His Suprematist Painting of 1916-1917 (Figure 46) suggests a strong sensation of movement and inter-relationship of forms. Diagram from Figure 47 attempts to interpret the painting assuming the form's potential trajectory within the composition highlighting the key features like statics and dynamics.

Hence, the **Floatation/flight of objects can be revealed to be a strong cosmic connection within the works of the Russian avant-garde**. Here, flight/floatation of objects in space can be categorized as a contributing parameter towards the investigative process of Zaha Hadid's paintings.

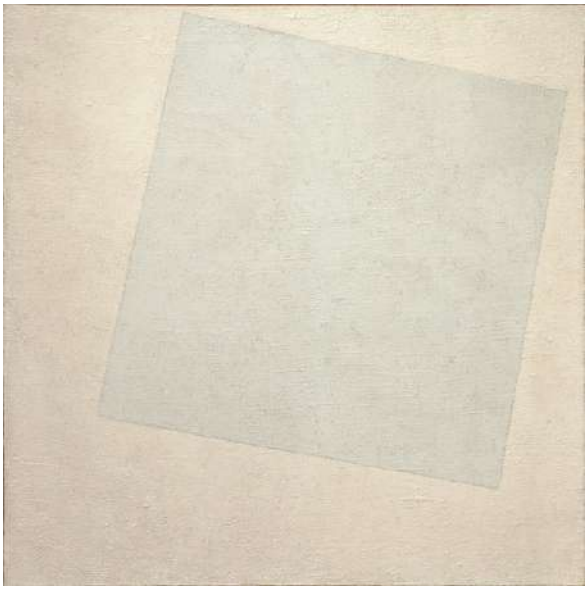


Figure 43: Suprematist Composition: White on White. 1918 by Kazimir Malevich, Oil on canvas

Source: Tupitsyn, 2019

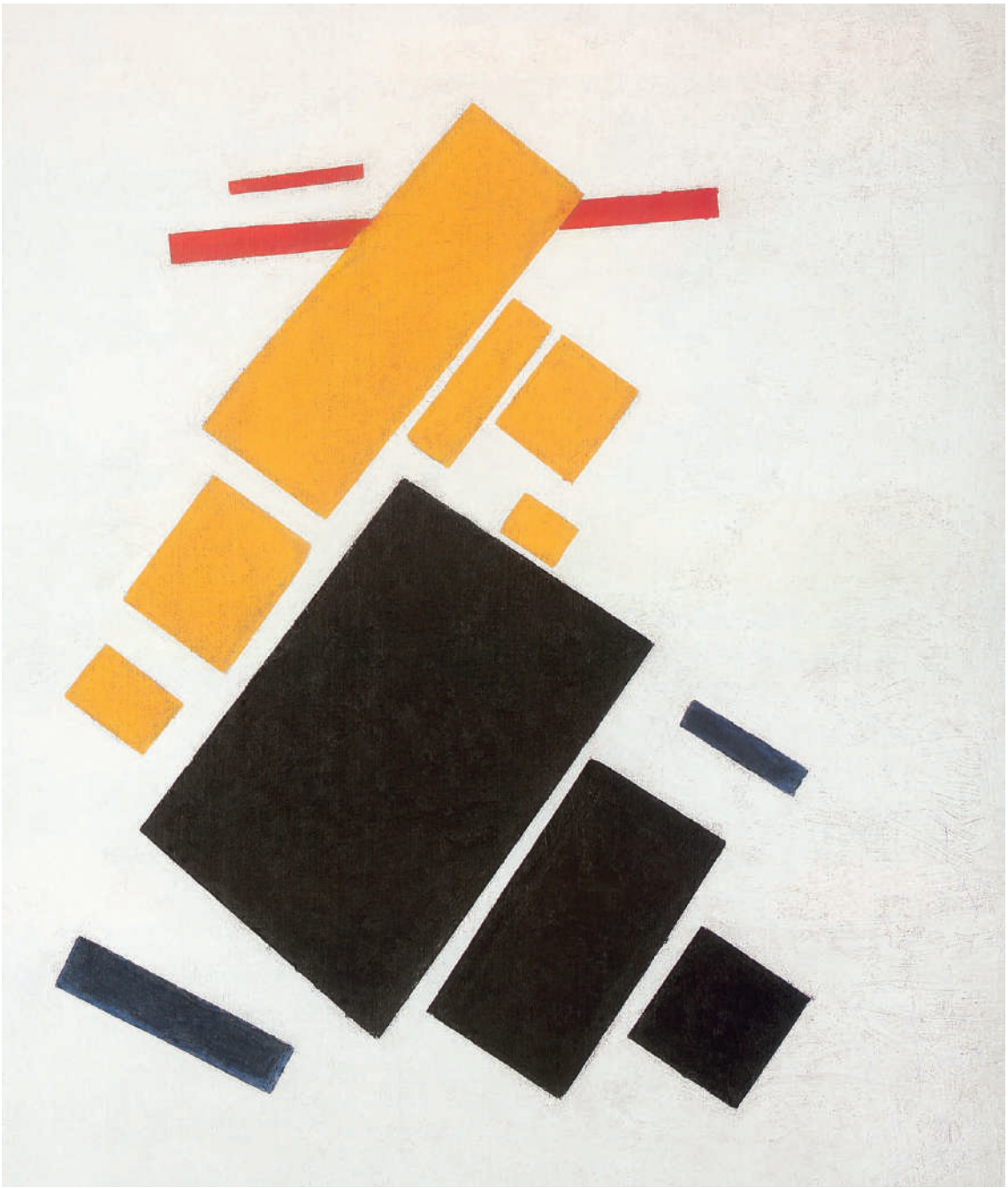
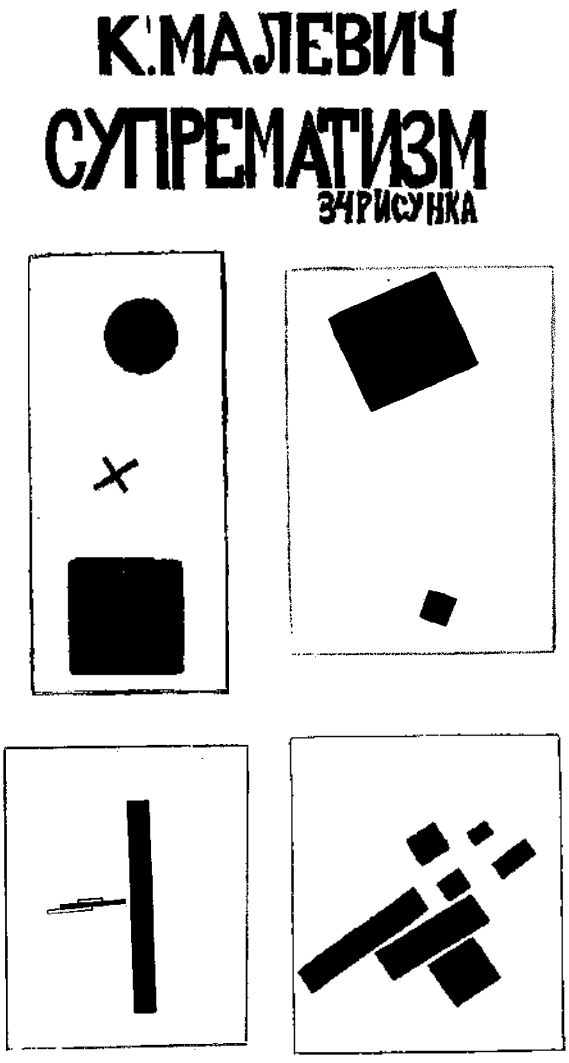


Figure 44: Airplane Flying, 1915, Oil on canvas

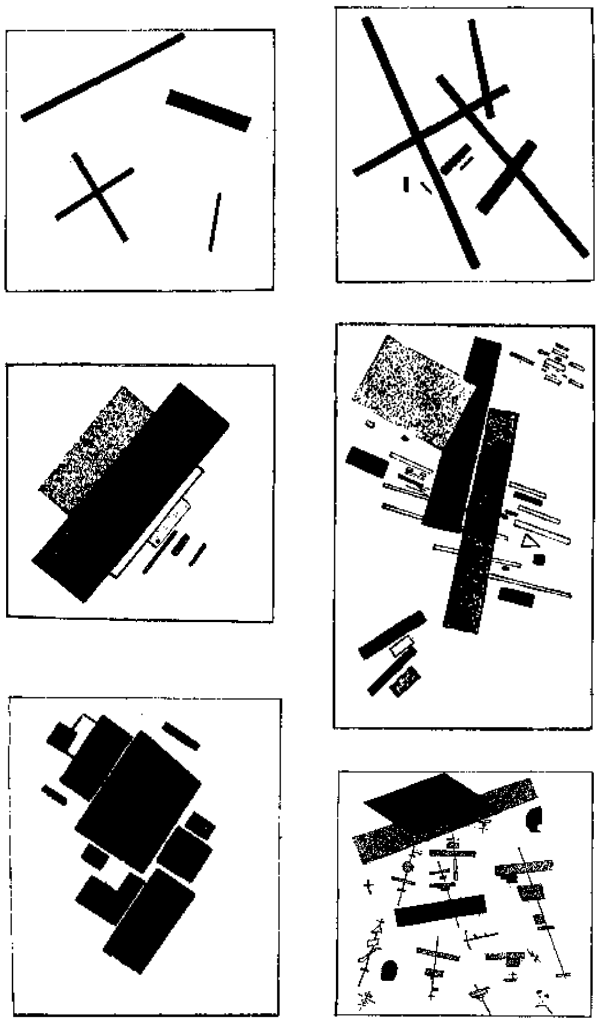
Source - Souter, 2012



Set (a)

Figure 45 (a) and (b): Kazimir Malevich - 34 Drawings

Source: Казимир Северинович Малевич, 1969



Set (b)

Figure 45 (a) and (b): Kazimir Malevich - 34 Drawings

Source: Казимир Северинович Малевич, 1969



(b)

Figure 46: Suprematist Painting, 1916-17, Oil on Canvas

Source: "Kazimir Malevich. Suprematist Painting. 1916-17 | MoMA," n.d.

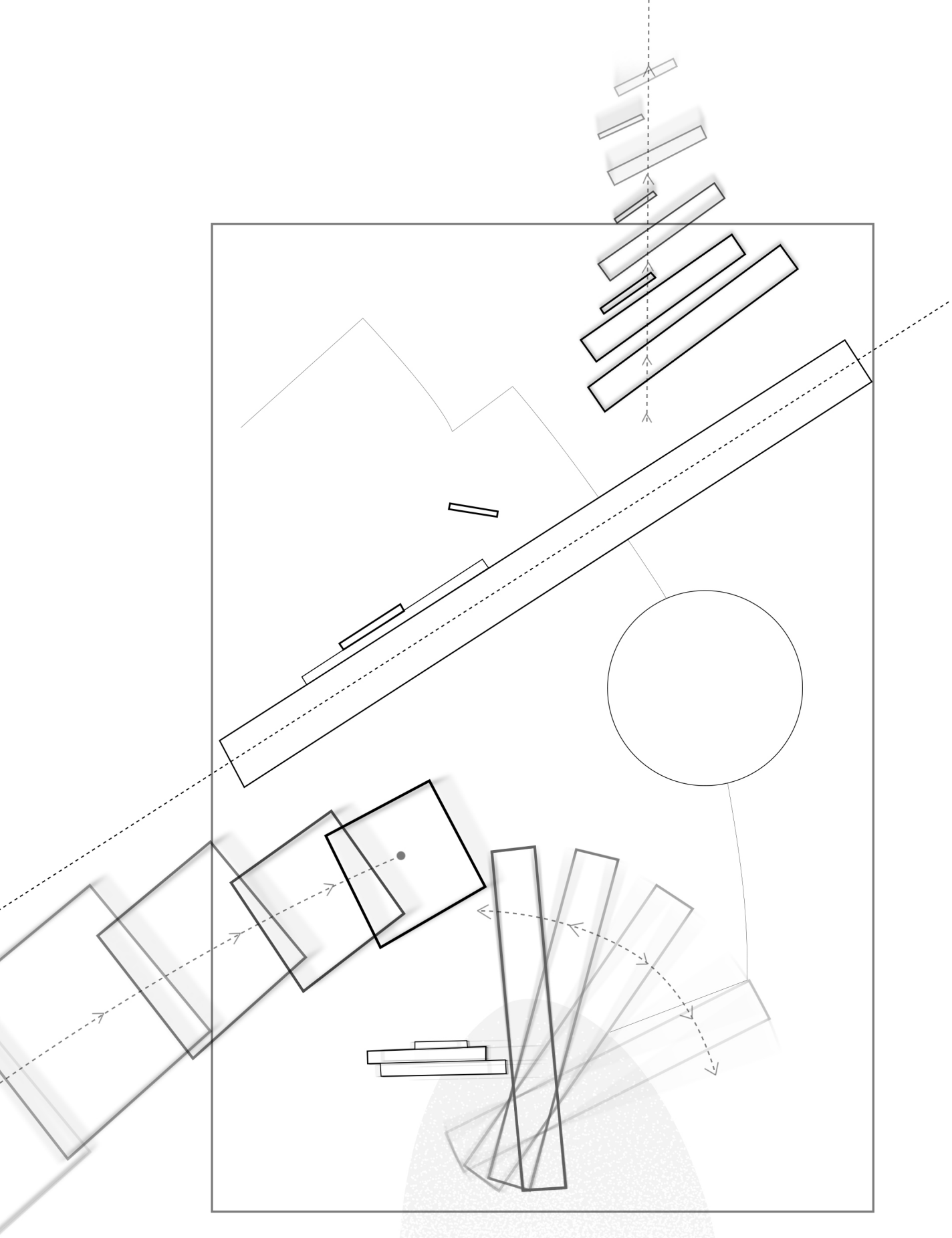


Figure 47: Diagram depicting statics and dynamic forms of the figure 44

Source: Author's diagram

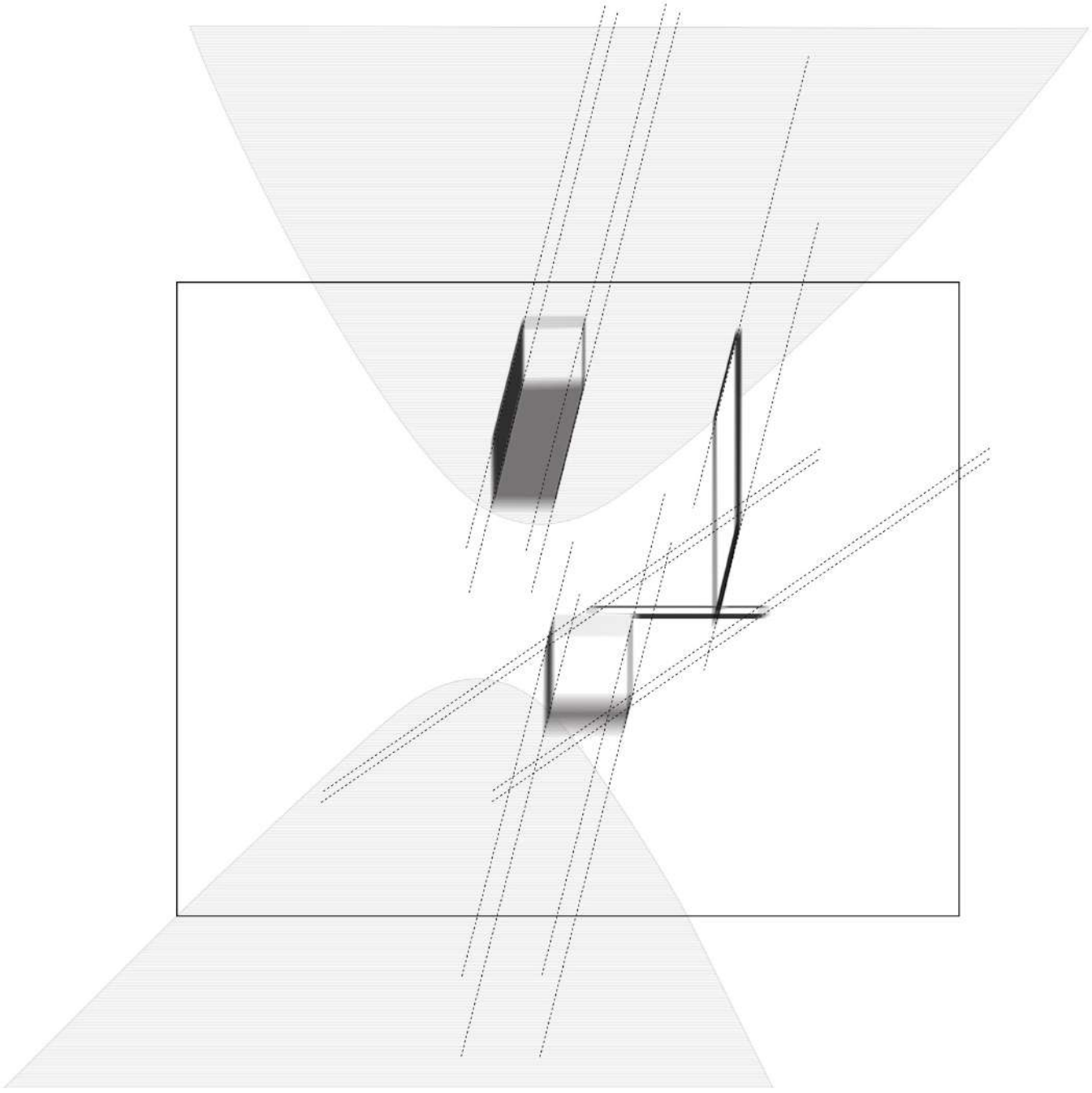
Projective Geometries and Three-Dimensional Reading: Lissitzky's Prouns

Suprematism also went in different trajectories of exploration by various artists, including El Lissitzky. El Lissitzky experimented with the existing fabric of suprematism through the blend of architecture and painting when he was offered a studio in Vitebsk in 1919. Lissitzky adopted suprematist forms and gave a three-dimensional depth to offer a unique spatial perception through the canvas. All the forms were given expressions of three dimensions and can be looked at from all sides. He employed a technique of perspective where the geometries projected do not have a foreshortened nature and have no vanishing point end which makes the lines parallel. Lissitzky employed this process to suggest the nature of infinity within cosmic three-dimensional space through a lack of perspective ends (Lissitzky-Küppers, 1968). In Figure 48 Proun 23 Composition, the three foreground forms within the canvas are shown to have no perspective foreshortening and give a three-dimensional reading of the canvas. The drawn line extending out of the canvas are projections lines which ceases to converge like a regular perspective view showcasing the infinite nature of the surrounding space of the objects like highlighted in Figure



(a)

One of Lissitzky's books catered to children, "Pro Dva Kvadrata," About Two Squares (Figure 49) showcases an exciting tale of two squares around a cosmic space using a suprematist type of composition (Lissitzky-Küppers, 1968). This suprematist tale of two squares is a visual performance of red and black squares as protagonists set in a neutral background of space. The story unfolds sequentially depicting the inter-relationships between these two forms and the surrounding space within the composition. The contrasting colours of the forms are composed in an evocative manner to present the conflicting nature of static and dynamic forms. This had an evident concept of cosmic imagination through its dynamic nature of objects hovering in an infinite space (Birnholz A. C,1974).



(b)

Figure 48: (a) El Lissitzky, Proun P23 no. 6, 1919, Tempera on canvas
(b) Diagram depicting perspective concept of the proun composition

Source: (a) "Launch of the Lissitzky Foundation - Announcements - E-Flux," 2015
(b) Author's diagram


ABOUT
2

(a)


TO ALL
CHILDREN

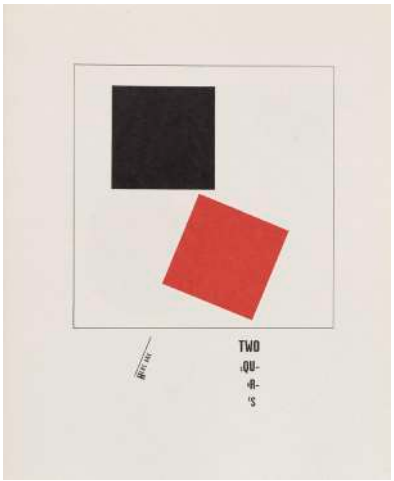
(b)


TALE
TWO
SQUARES

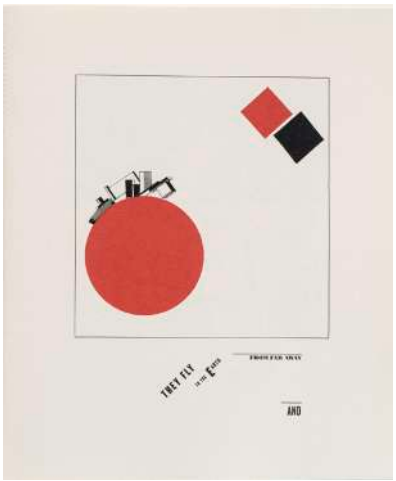
(c)


DO NOT READ
TAKE
PAPER
COLUMNS
BLOCKS
FOLD
COLOUR
BUILD

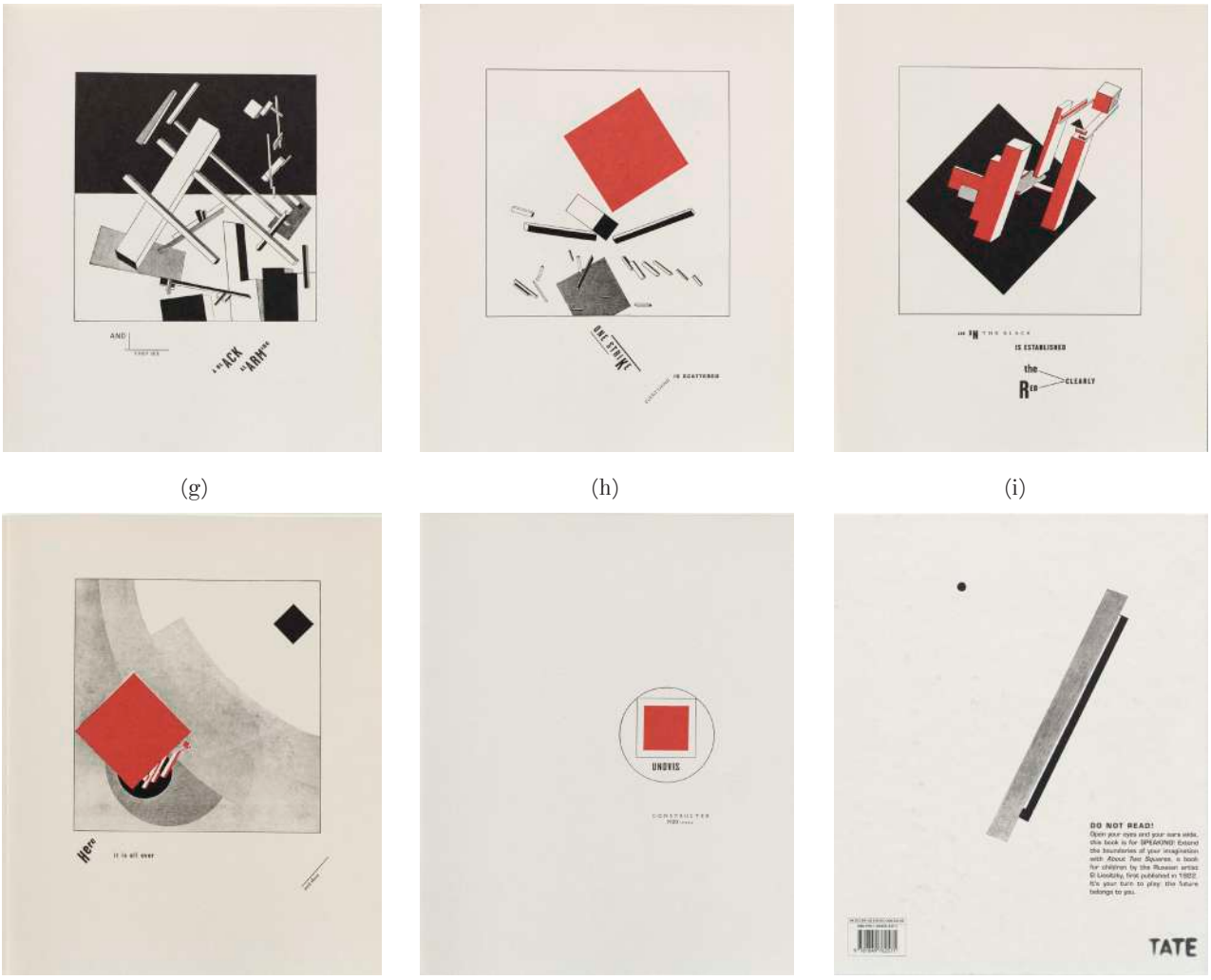
(d)


TWO
QU-
R-
'S

(e)


AND

(f)



(g) (h) (i)

(j) (k) (l)

Figure 49 (a) - (l) El Lissitzky, About Two Squares: Suprematist tale for Children

Source: Letterform Archive, 2020

This story can be illustrated with a specific plate in Figure 49(f) from the set of compositions to view the concepts of inter-relationships and the nature of space. Figure 49(f), "They Fly to the Earth from Far Away" is a construction presenting squares from the top right corner heading towards the Earth which is represented by a red circular disk. The interpretation of squares (Figure 50) advancing towards the earth can be confirmed by the text orientation coinciding with the square's orientation. The three-dimensional representation of forms similar to Lissitzky's Prouns are tangentially drawn to the flat disk showcasing a spatial relationship with the earth's surface (Birnholz A. C,1974).

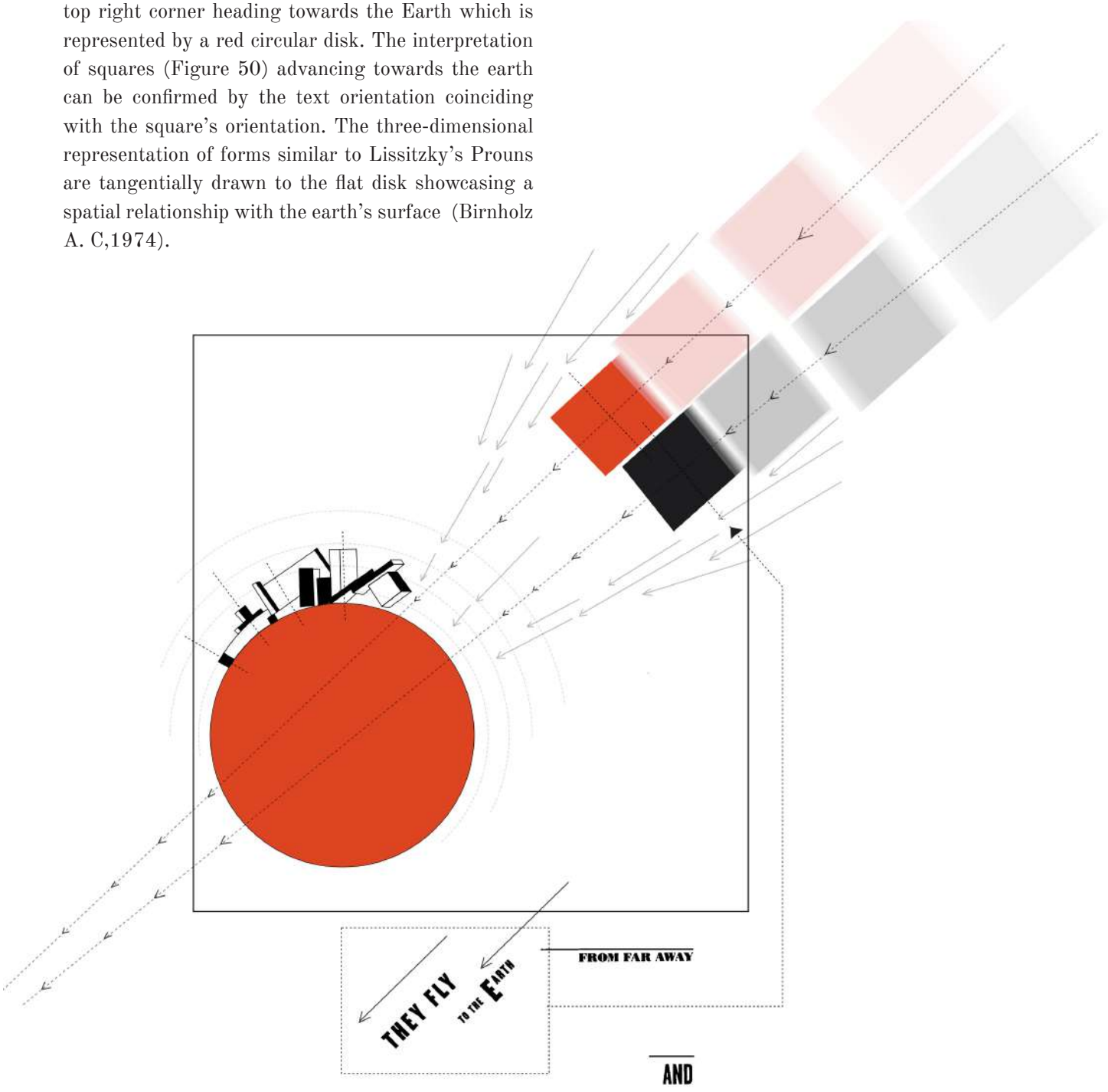


Figure 50: Analytical Diagram of figure 45(h) showcasing the fragmented forms breaking the frame of the canvas which signifies an infinite cosmic space as a background

Figure 49(h) is a particular piece "One blow, and everything is scattered", where the contrasting colours of the forms are composed in an evocative manner to present the conflicting nature of static and dynamic forms. The scene is presented with the red square aggressively thrusting towards the bottom signifying a fall. This can be considered as a blow which leads to the vigorous scattering of fragments breaking the boundaries of the space (Birnholz A. C,1974). Refer to the interpreted diagram in Figure 51.

It is now understood that cosmism was also experimented with the idea of Cavaliere's perspective where lines cease to meet at a vanishing endpoint (Birnholz A. C,1974). This aspect of three-dimensional reading through perspective experimentation can be seen as a significant attribute of cosmic representation within Lissitzky's work. In order to investigate the presence of cosmic attributes within Zaha Hadid's paintings, formal qualities like perspective projections and three-dimensional reading will be taken into account within the framework of attributes

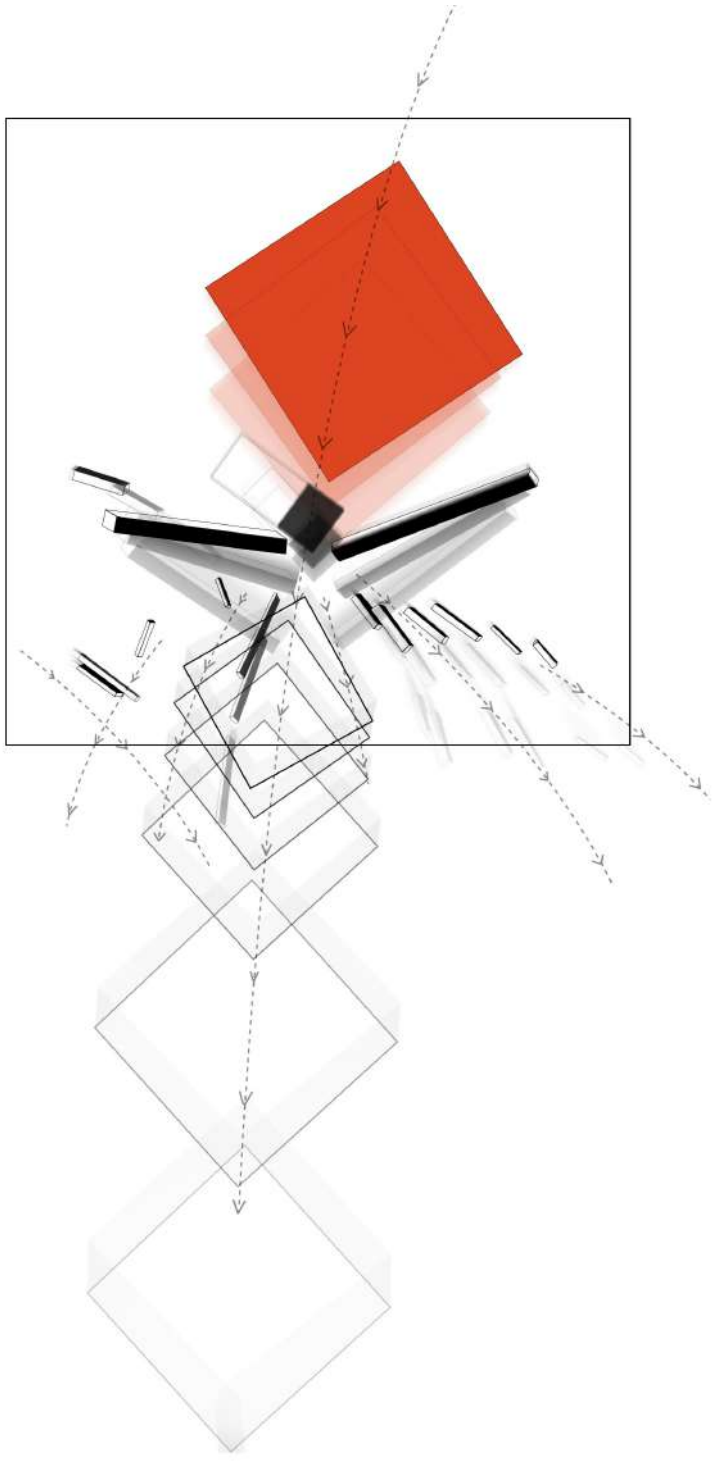


Figure 51: Analytical Diagram of figure 45(f) depicting the movement of square forms approaching towards the red circular disc which is acting as a larger cosmic body.

Source: Author's Diagram

Line as a dynamic element: Rodchenko's constructions

Aleksandr Rodchenko was one of the artists who carried out constructivist experimentations through lines as an element within his compositions. This started when he began working with a compass and ruler as a drawing aid to construct his early work called "The Dancer". Furthermore, abstract works were explored by Rodchenko using geometric curved segments which made his work more fluid and conceptual (Gray,1986). In early 1915, Rodchenko prioritised line as a purely functional element for construction. When he introduced Linearism during the 1920s, Rodchenko expressed the lines as "Skeleton", "Base" and "Framework" supporting its significance as a construction element within compositions (Rowell & Angelica Zander Rudenstine, 1986).

Rodchenko proceeded to make Spatial hanging constructions like (Spatial objects) seen in Figure 52. Here, lines also tend to work as concentric two-dimensional geometric elements arranged together forming a three-dimensional spatial object (Lodder, 1998). He strongly believed that Lines can be an expression to capture movement through their kinetic quality and their depiction of trajectory. He stated that the line has the potential to be a representation of non-objectivity within constructions (Railing, 1998).

It can be understood that the line itself was moving towards a structure or a skeleton for the construction of planes. Lines as a structure were also exerting their non-objective quality through movement/force nature (Rowell & Angelica Zander Rudenstine, 1986). Considering the Non-Objective Painting (Line) 1919 (Figure 53)by Rodchenko, the overlapping lines suggest the formation of a pattern which can be speculated as a skeleton for a plane. Here, the interplay of linear elements within the painting can contribute to the sense of sharpness (also known as cuts) within the visual space (Taylor, 2022).

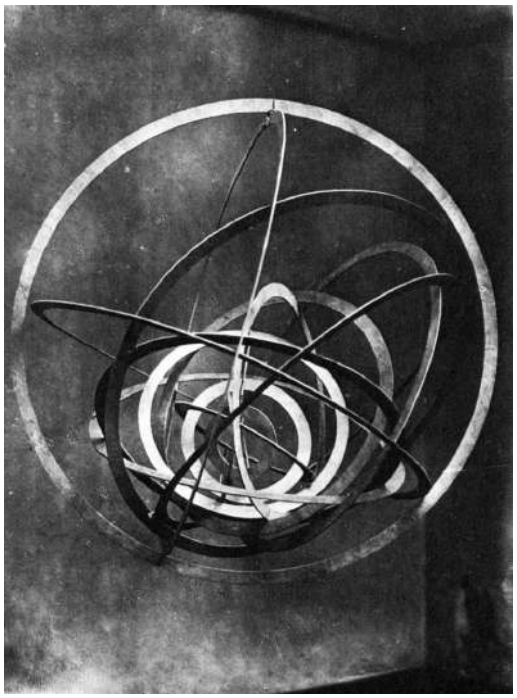


Figure 52: Spatial Constructions Series 2 Circle, 1920-21

Source: Dusan, 2015

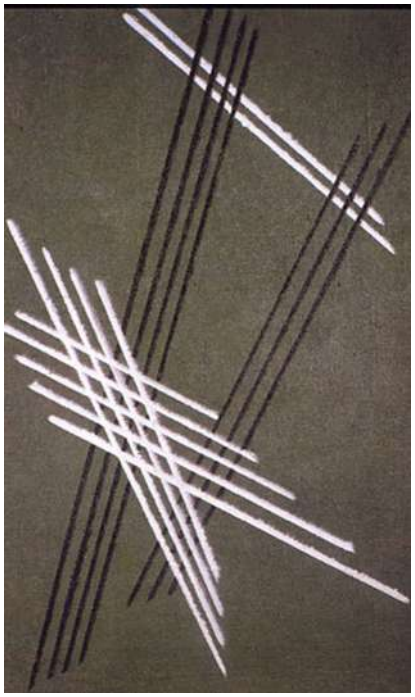


Figure 53: 1919 Line no. 92 on Green

Source: Dusan, 2012

Elements like circles and lines within Rodchenko's constructions were primarily constructed using primitive tools like compasses and rulers. Few constructions like in Figures 54, 56 and 58 explore the idea of open or closed circular segments as dominant elements within the compositional space. Here, lines act as anchors holding circular elements together within the space creating a static and dynamic effect of the composition (Rodčenko, 1979). Diagrammatic interpretations 55, 57 and 59 attempt to deconstruct the interplay between various elements within the composition revealing the statics and dynamics working together (Rodčenko, 1979).

Like Rodchenko's interpretation of lines as a directional element, Malevich has also employed lines to evoke dynamism within the suprematist works. This suggests that line as an element itself has a broader connection towards movement and non-objectivity working beyond the consciousness of space and time (Railing, 1998).

Thus, "Lines" as an attribute can be revealed to have a contributing nature towards cosmic energy which is employed within the framework of attributes for this study which is to investigate the cosmic nature of Zaha Hadid's paintings



Figure 54: Linearism, 1920. Oil on canvas

Source: Dusan, 2012

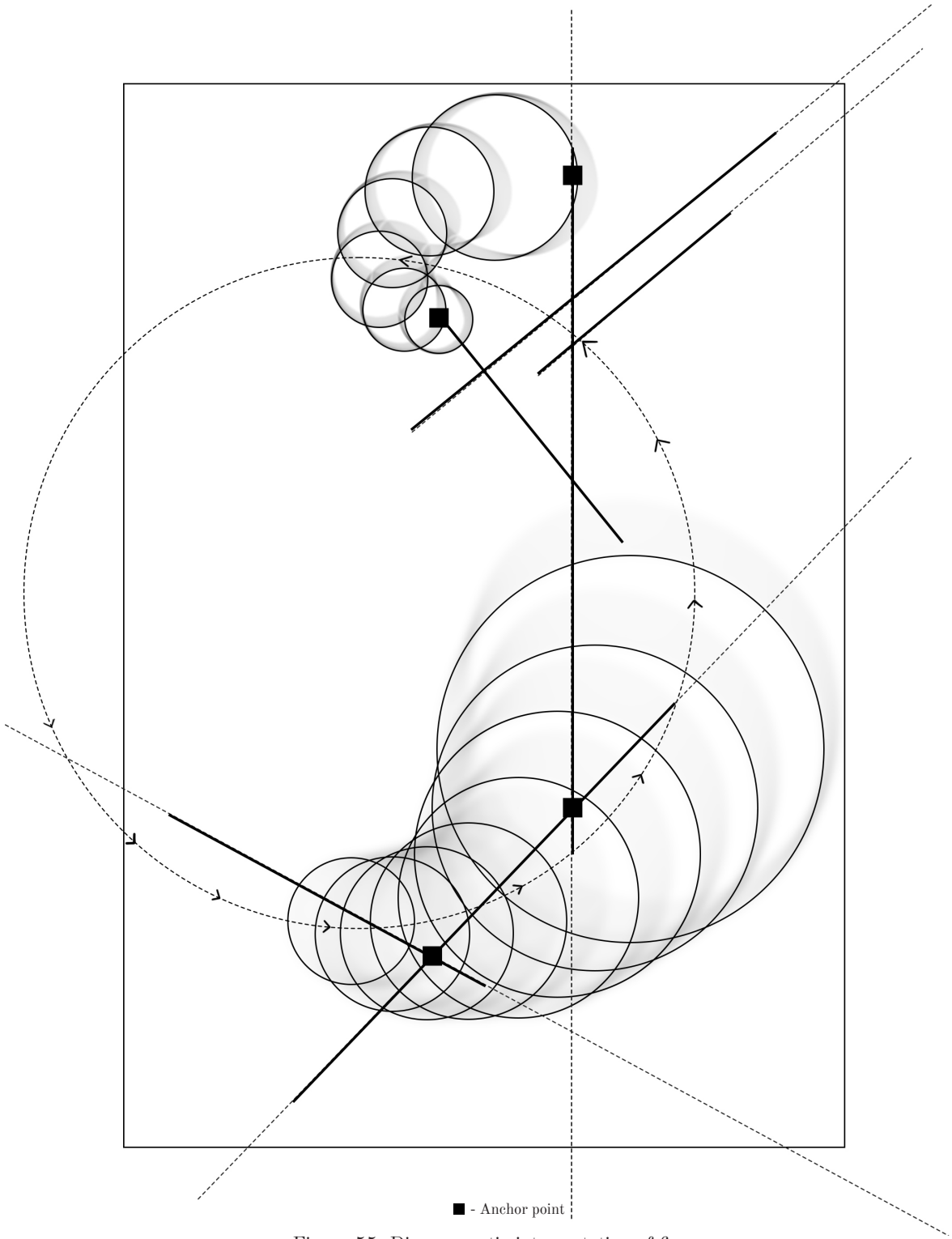


Figure 55: Diagrammatic interpretation of figure 54 on the concepts of linear elements and its dynamic interplay with circular elements

Source: Author's diagram

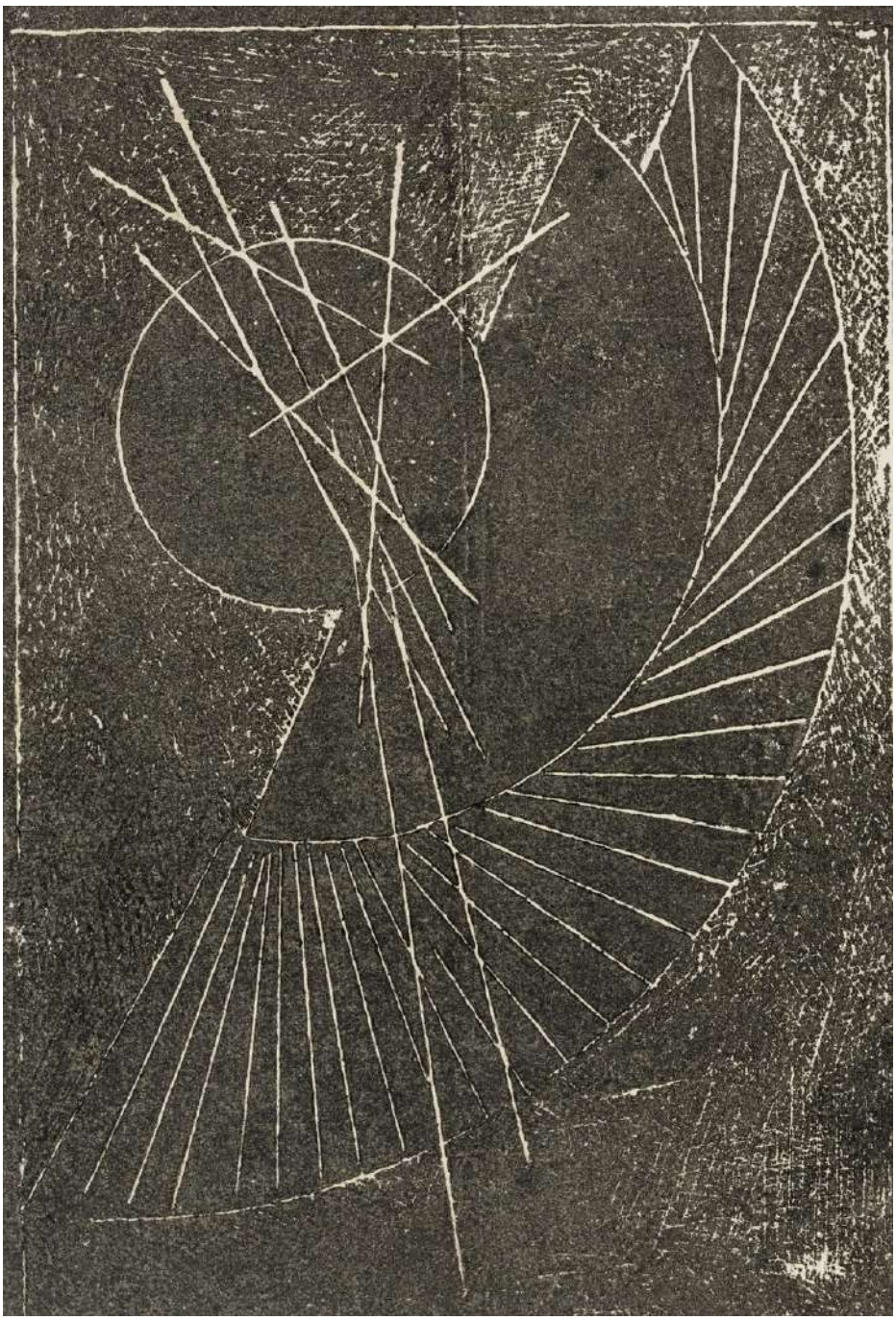


Figure 56: Untitled, 1919, Linoleum cut

Source: Aleksandr Rodchenko. Untitled. 1919, 2024

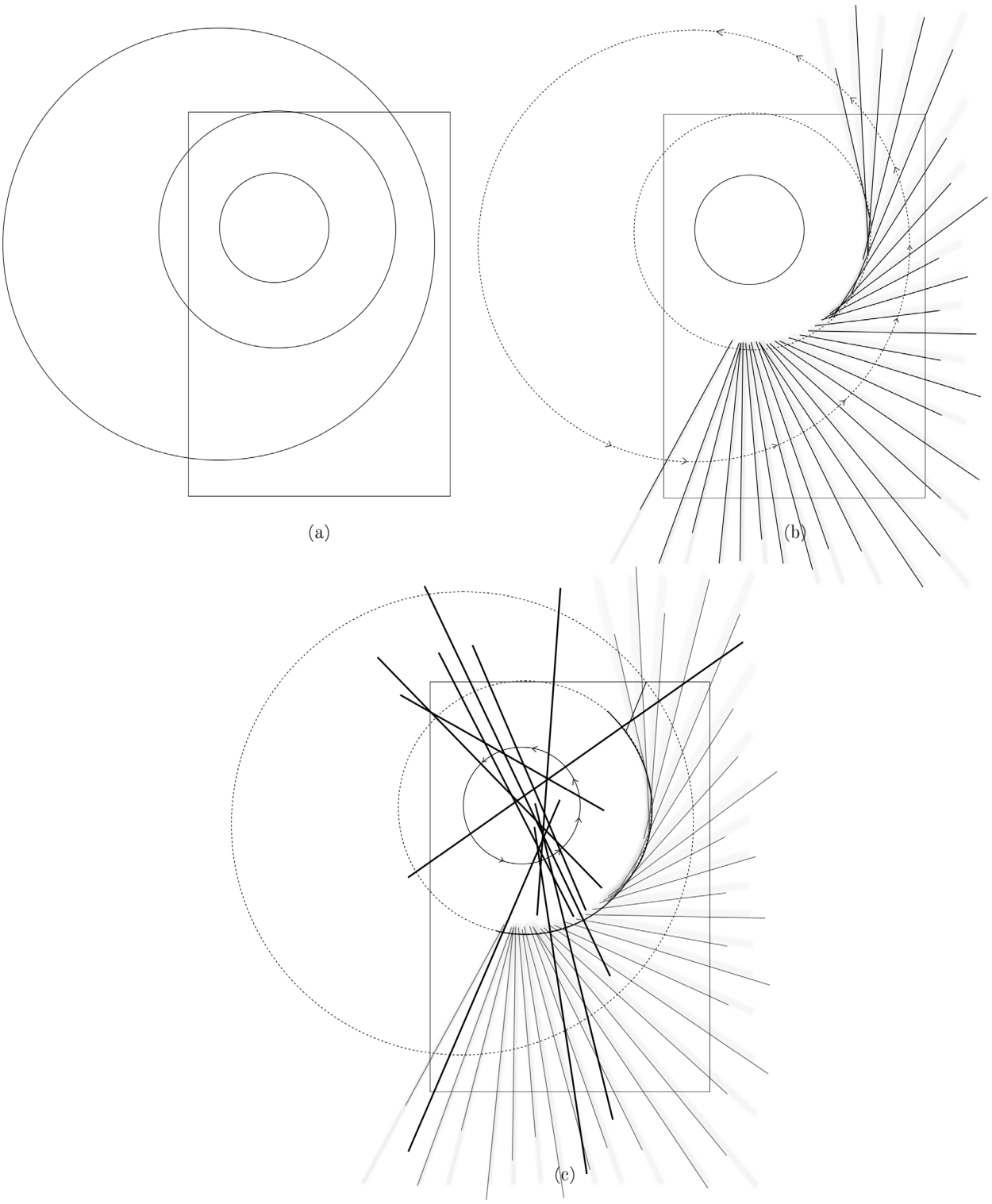


Figure 57: Diagrammatic interpretation of figure 52 analysing the interplay of ciruclar and linear elements. Frame (a) begins with establishing circular paths within the composition. Frame (b) has an establishment of force lines along the curved path bringing in dynamism. Frame (c) brings in linear elements which signify the centre's of the circular orbits.

Source : Author's diagram

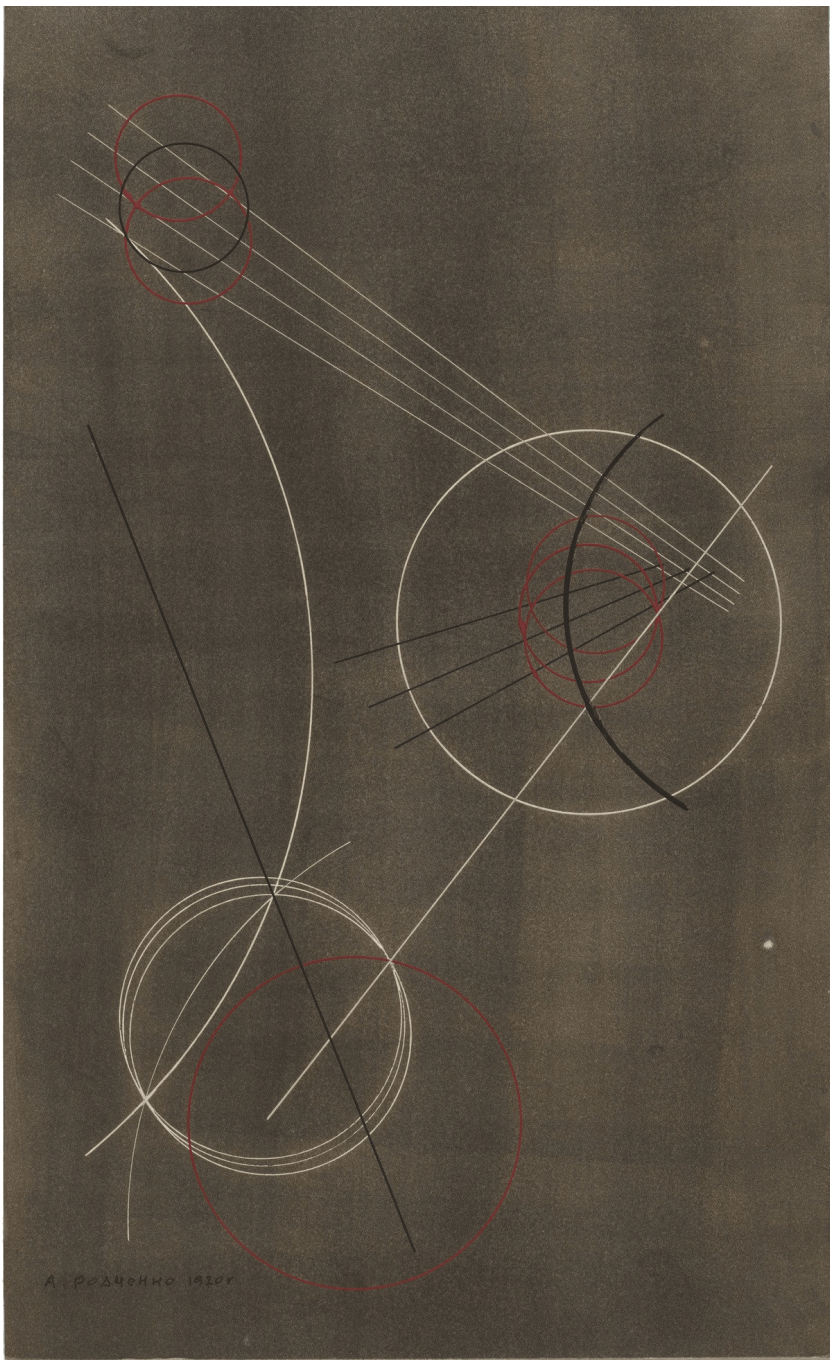


Figure 58: Line Construction, 1920, Ink and gouache on paper

Source: Aleksandr Rodchenko. Line Construction. 2024

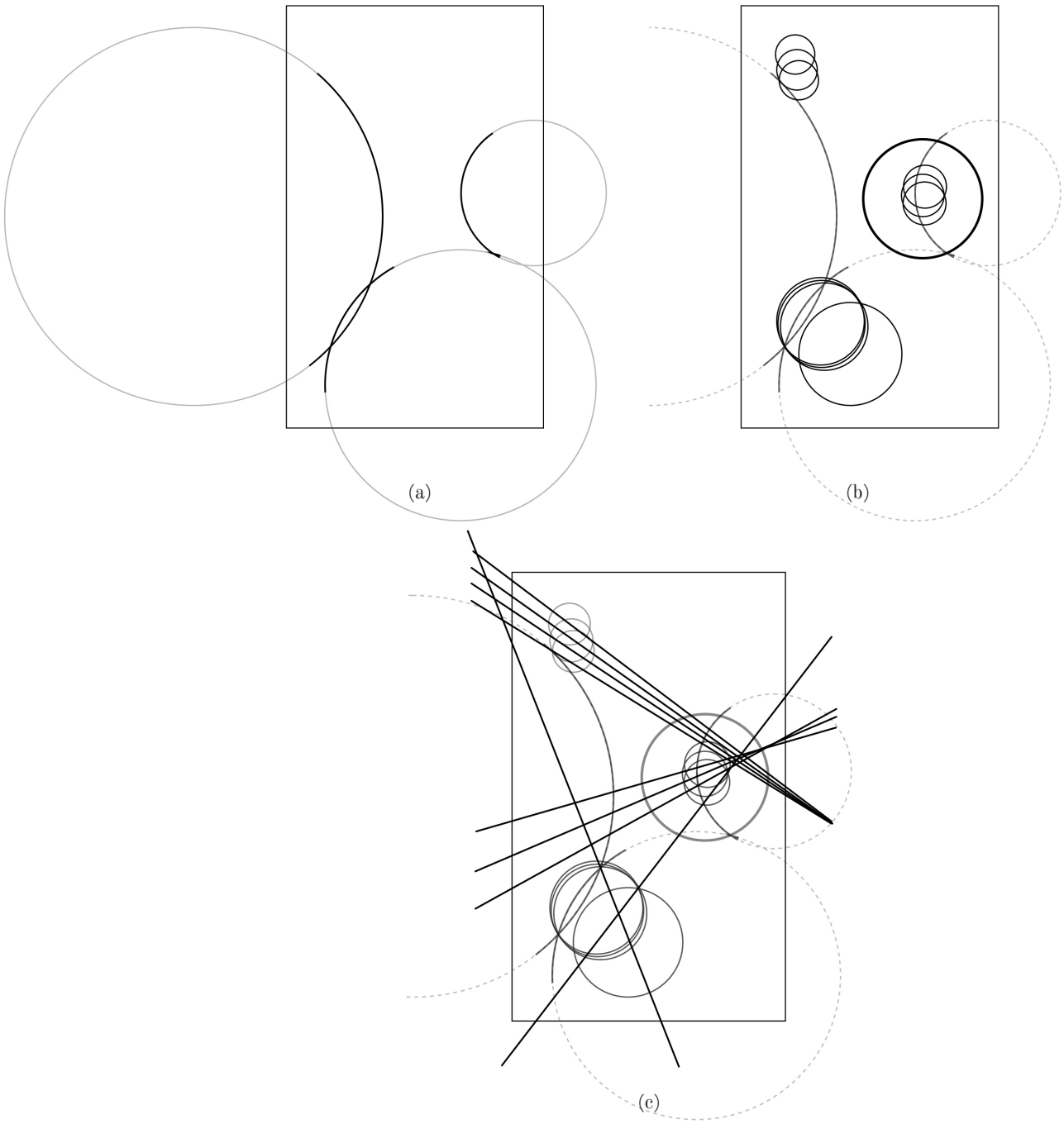


Figure 59: Diagrammatic interpretation of figure 54 where frame (a) has an establishment of circular elements which convey a sense of anchoring effect in frame (b) holding all the secondary ciruclar elements. Frame (c) introduces lines bringing in a balance and synthesizing the coompostion together

Source : Author's diagram

Intersecting planes and active spatial response: Tatlin's Reliefs

After getting introduced to the material assemblages of Picasso in late 1913, Tatlin explored the idea of creating form constructions through various materials producing a series of works called "Reliefs". These are three-dimensional constructions which exert dynamic character through their inter-relationships between different sculptural masses (Gray, 1986).

In 1915-1916 Corner constructions. Tatlin began to break the frame/boundaries of space through his constructions. He employed material assemblages with the expressions of levitation using wires as supportive elements. Tatlin worked with elements to create an active spatial form through the rhythmic arrangement of planes. These elements were also made to intersect, cleave, block and skew with each other resonating a sense of movement and dynamism within the space (Gray, 1986).

Another example of Tatlin's work in dynamism and cosmic character was the Monument to the Third International. This work was supposedly a culmination of painting, sculpture and architecture marking its pathway towards utopian concepts. The Monument comprises several components which pulsate the concepts of emerging movements within Moscow. The design features a spiral framework supported diagonally by a structural member consisting of geometric forms such as a cylinder, cube, and cone. In this structure, geometric forms are functioning spaces which are meant to revolve around the spiral as per the proposed concept (Gray, 1986).

Although its practical application was near to impossible, the concept of the monument can be interpreted to have cosmic attributes which were applied to showcase utopian ambitions. In the journal Vladimir Tatlin: Form/Faktura, Rowell points out various interpretations of the monument's form and its symbolism. One such interpretation states that the spiralling form of the monument and the act of revolution coincided with the cosmic movements of planetary bodies.

The leaning aspect was also translated as an expression of an uncertain and dynamic nature. Another interpretation also established relationships between new age dynamic spirit and fascination as a hidden symbolism behind the double spiral framework soaring in an upward direction (Rowell, 1978).

Based on recurring activities of intersecting planes and breaking spatial boundaries, one can infer that Tatlin's developments had powerful affiliations with cosmic space and its relationships with objects. Thus, attributes like active planar intersections and extensions into three dimensions can be potentially featured within the framework of attributes to carry out further cosmic investigations in this study.

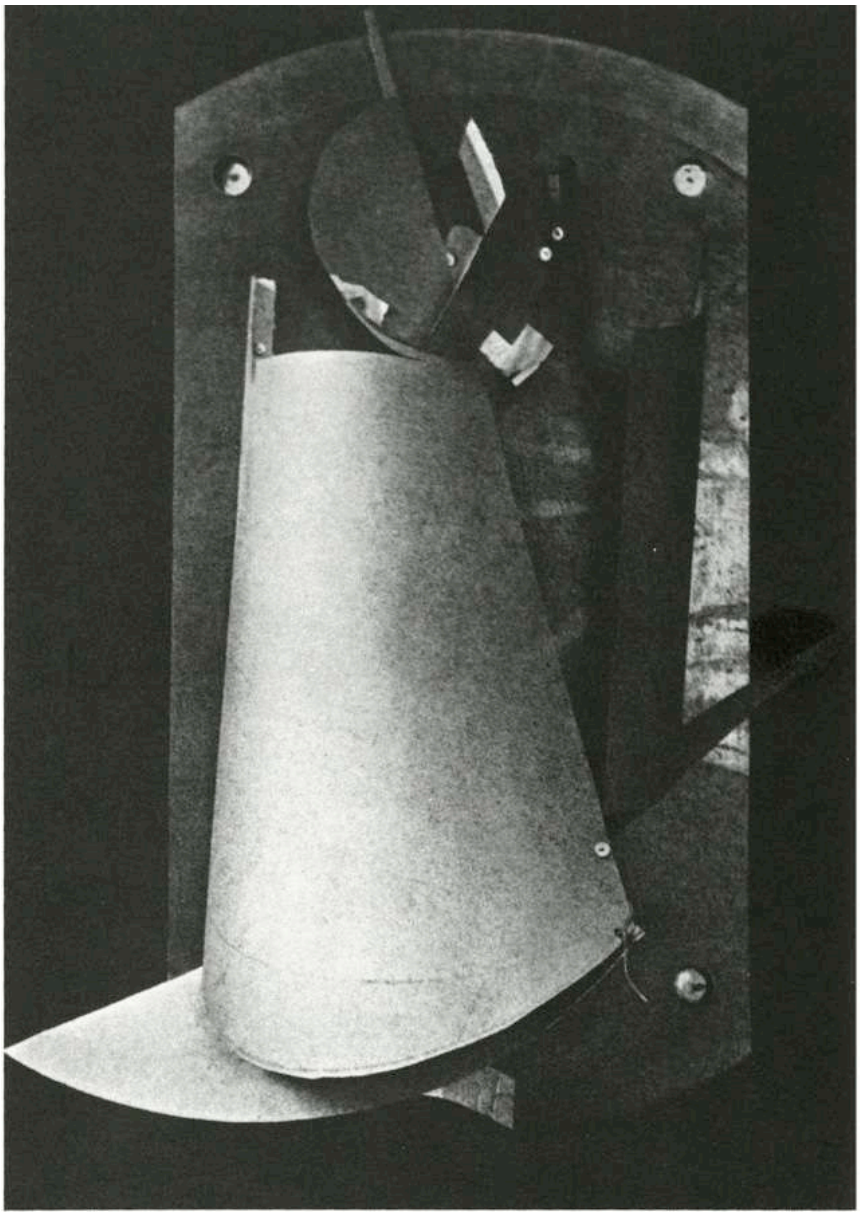


Figure 60: Selection of Materials: Counter-Relief, 1916, Galvanised iron on wood. (Lodder, 1998)

Source: VLADIMIR TATLIN | Emmanuelle et Laurent Beaudouin - Architectes, 2015

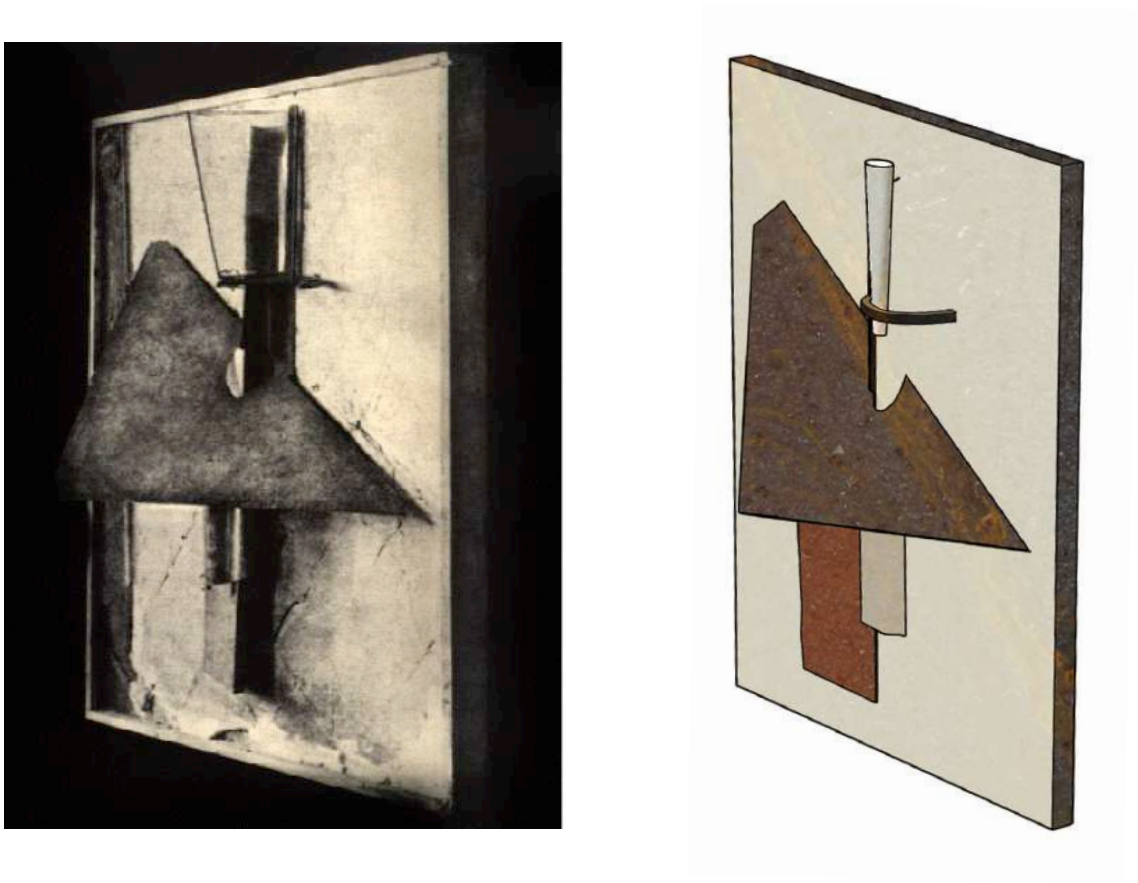


Figure 61: Selection of Materials: Iron, Stucco, Glass and Asphalt, 1914
wallpaper, wood, metal and glass (Lodder, 1998).

Source: VLADIMIR TATLIN | Emmanuelle et Laurent Beaudouin - Architectes, 2015

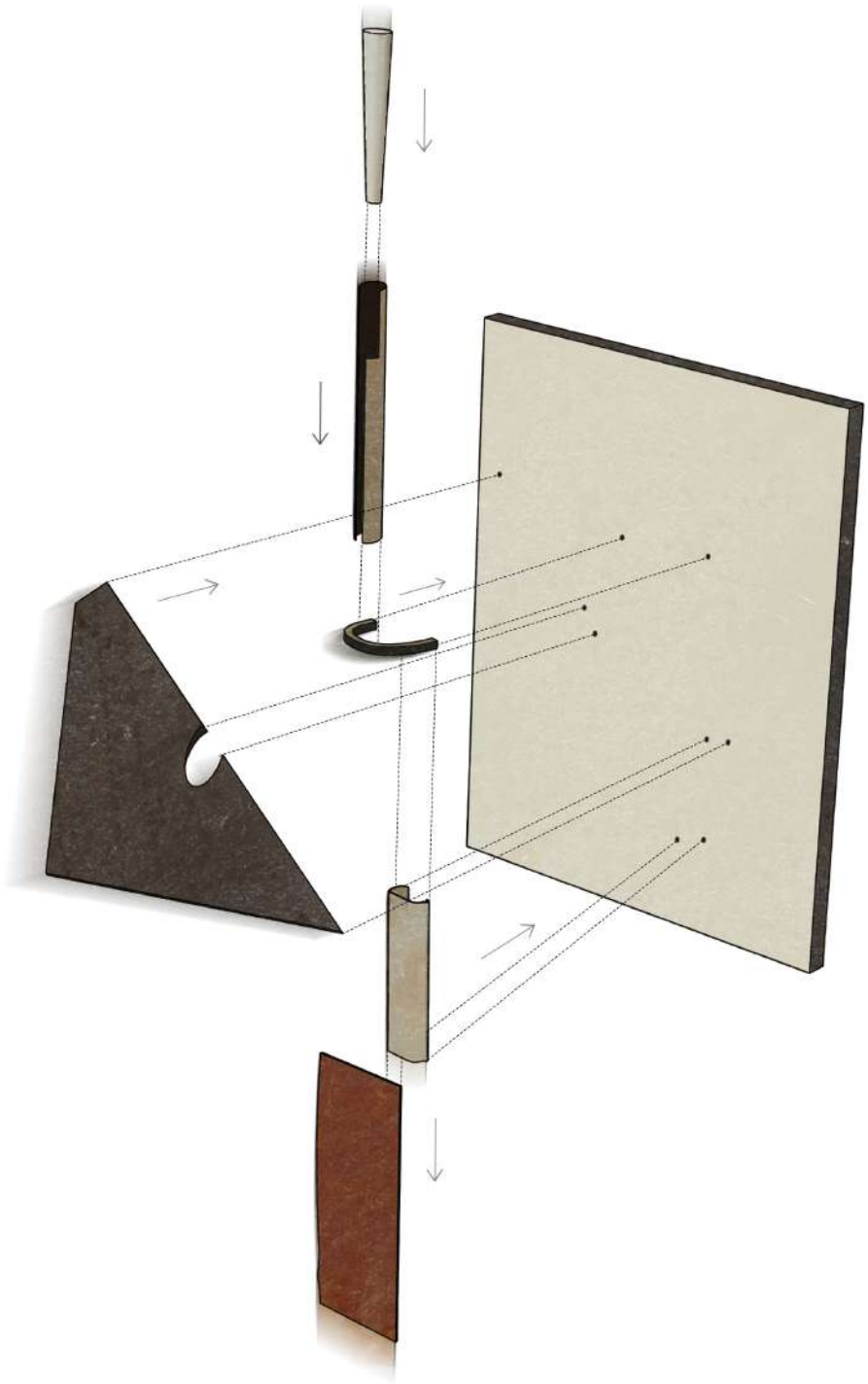


Figure 62: Diagrammatic interpretation of figure 57 deconstructing the intersected materials which suggests a conflicting nature of textural qualities and dissonance with surrounding space

Source: Author's diagram

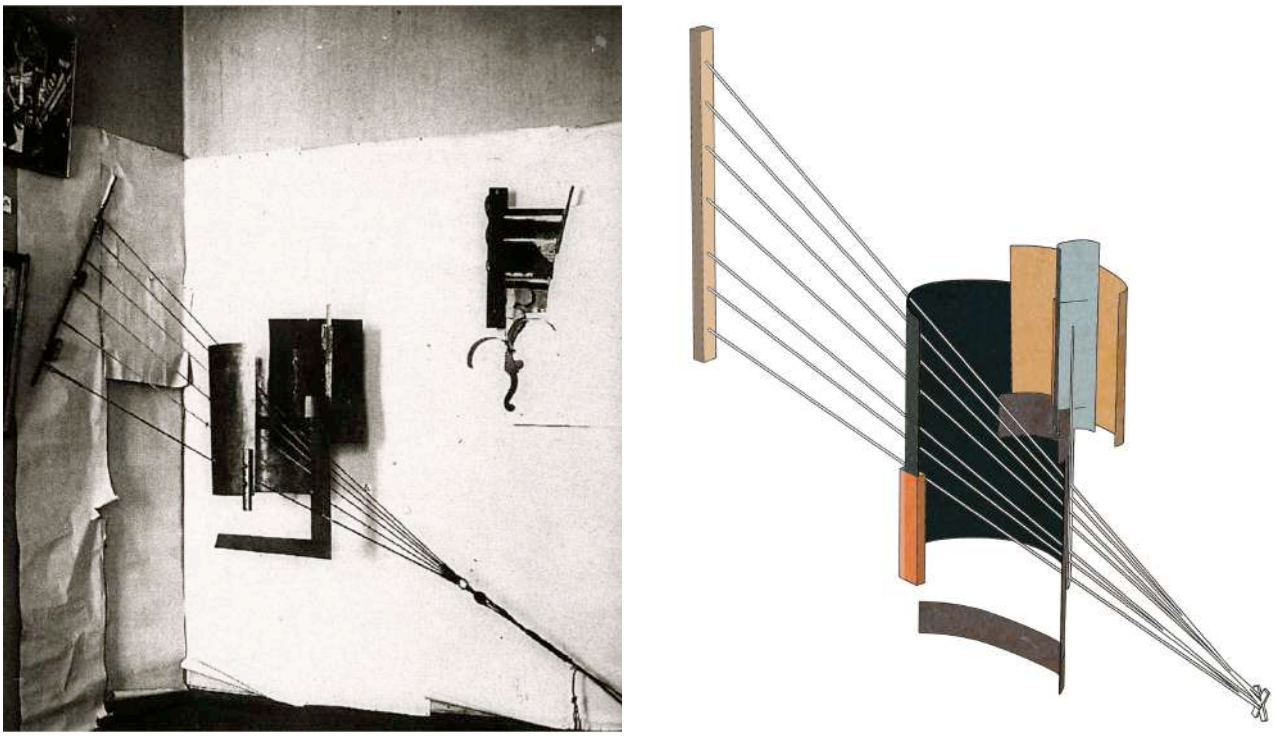


Figure 63: Counter-Relief, 1914-15. Iron, copper, wood and rope (R, Schirn Kunsthalle Frankfurt, & Amsterdam, 1992)

Source: VLADIMIR TATLIN | Emmanuelle et Laurent Beaudouin - Architectes, 2015

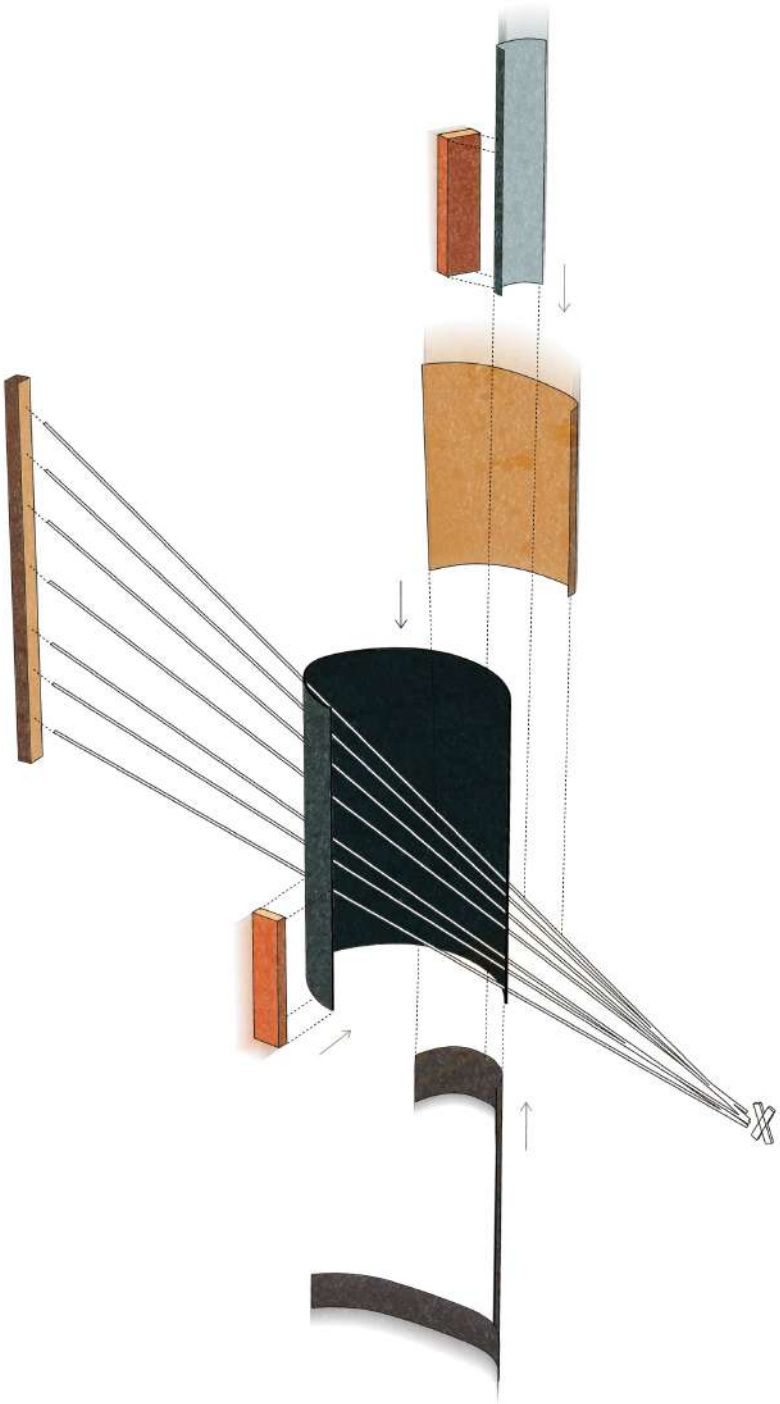
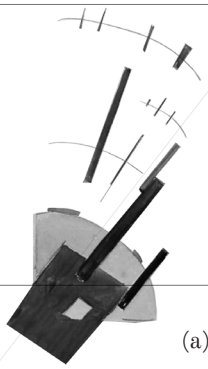
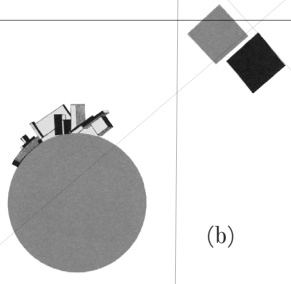
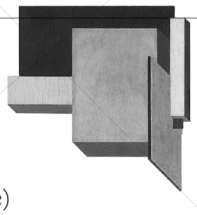
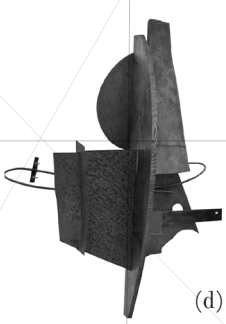
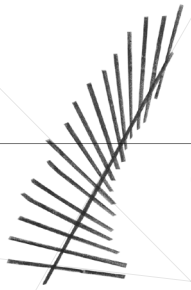


Figure 64: Diagrammatic interpretation of figure 59 which showcases the deconstuction of intersected elements. This composition exerts a strong material dissonance through its varied type of textural and geometrical qualities

Source: Author's diagram

Framework of Cosmic Attributes

Russian Avant-Garde Movements	Artists	Typical Formalistic Attributes	Figurative Diagrams with attributes Figure 65 (a) - (e)
Suprematism	Kazimir Malevich	Floatation of objects	 (a) Dynamic rectangles composed with static field which is situated in the bottom left corner shows the sensation of movement within objects through its composition.
	El Lissitzky	Beyond the picture plane	 (b) Two squares as cosmic entities heading towards a larger cosmic body which has objects tangentially drawn to the surface  (c) Forms constructed with perspective lines allowing a three-dimensioan reading for the viewer. Projection lines of these forms cease to converge at a single point which suggests an aspect of persepctive manipulation
Constructivism	Vladimir Tatlin	Fields and Entities	 (d) Composition of varied material planes reveals a quality of resonance through its intersections. These intersections can be also interpreted as three-dimensiona inter-relationships with the spatial surroundings diminishing the idea of a bounded two dimensional picture plane
	Aleksandr Rodchenko		 (e) Establishment of force lines spreading from top to bottom suggests an idea of a circular path similar to that of orbits in cosmic space. A single line cutting through the force lines can be interpreted as an anchor holding the composition together. This composition reveals to be dynamic in nature through its linear elements and their arrangement.

Extracted Attributes	Cosmic Interpretation	Cosmic Attributes
Kinesthetics and Movement Movement of objects within canvas as infinite space	Object Compositions in flux create an idea of inter-relationships depicting the static objects with reference to which dynamic objects move across the canvas. This resonates the concept of flight and movement within the dynamic objects	**Space flight**
Presence of Heavenly Masses compositions with respect to ethereal entities	Perspective geometry is the way of representing forms across the canvas. Here, distortion of perspective geometry suggests a process of manipulating the perception of the bounded canvas into an infinite three-dimensional space	**Infinite space**
Perspective Distortion Geometrical manipulation of Three-Dimensional elements	Intersection offers sense of dynamism with its planar resonance and dissonance responding actively with its surroundings. This suggests a similarity of the interactive environment observed within	**Celestial interaction**
Intersection of elements active spatial resonance through planar intersections	Use of linear and circular lines signify force within the composition. Varied arrangements of lines and circles can be interpreted as movement patterns enforcing dynamism in the construction. This can be interpreted into oribtal systems within the cosmic space where objects are in motion.	**Orbital systems**
Line as a dynamic element Lines as forces to present relative movement within objects		

09

Dissecting paintings

A key to read
the analysis

In this chapter, a **guide** is illustrated which allows readers to have an understanding of the following case study analysis. By taking an **example** of Zaha Hadid's "59 Eaton Place" abstract painting (Figure 66) from 1981 -82, this chapter provides a key towards understanding the analysis through illustrative figures of 67, 68 and 69

This study uses an analytical diagramming approach to dissect the chosen Zaha Hadid paintings into different layers. These abstract paintings are sequentially unfolded into layers of foreground and background elements through diagramming. Page 1 and 2 of a chosen case study includes the actual painting with a descriptive analysis of the concept, foreground and background elements. Additionally, all the foreground elements were separated from the paintings and arranged for closer reference with the supportive text.

Page 3 consists of the actual dissection of the paintings into different layers. Here, layers of foreground and background are drawn out with overlaps of abstract concepts. In Figure 3, page 3 has three layers in which layer 1 highlights foreground objects and its underlying grid structure showcases the conceptual idea of the foreground. Page 4 or more also extends the analysis with specific concepts employed within the paintings.



Figure 66: Painting, 59 Eaton place
London, 1981 - 1982

Source: "59 Eaton Place – Zaha Hadid Architects," n.d.

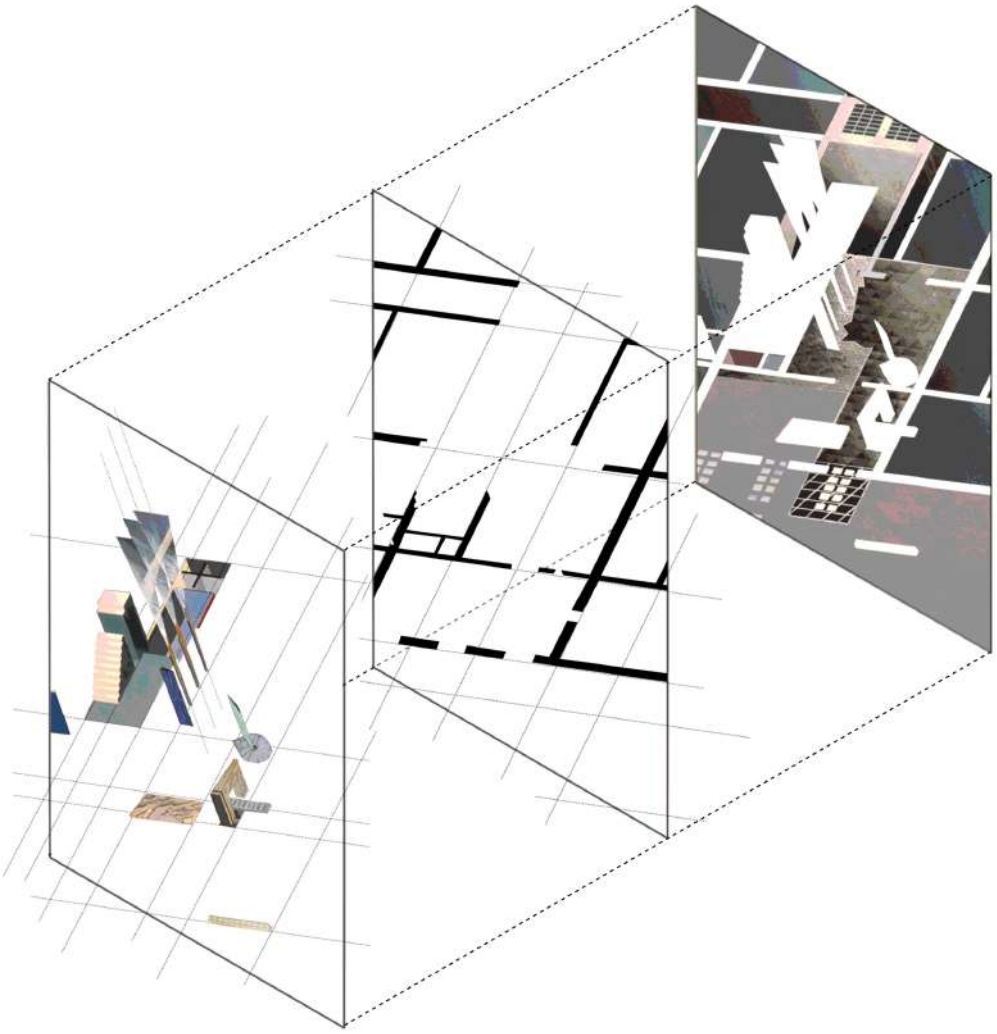


Figure 67: Diagram showing the process of dissection carried out within the upcoming chapters of the investigation. Taking 59 Eaton place as an example, dissection is done based on layers of foreground and background

Source: Author's diagram

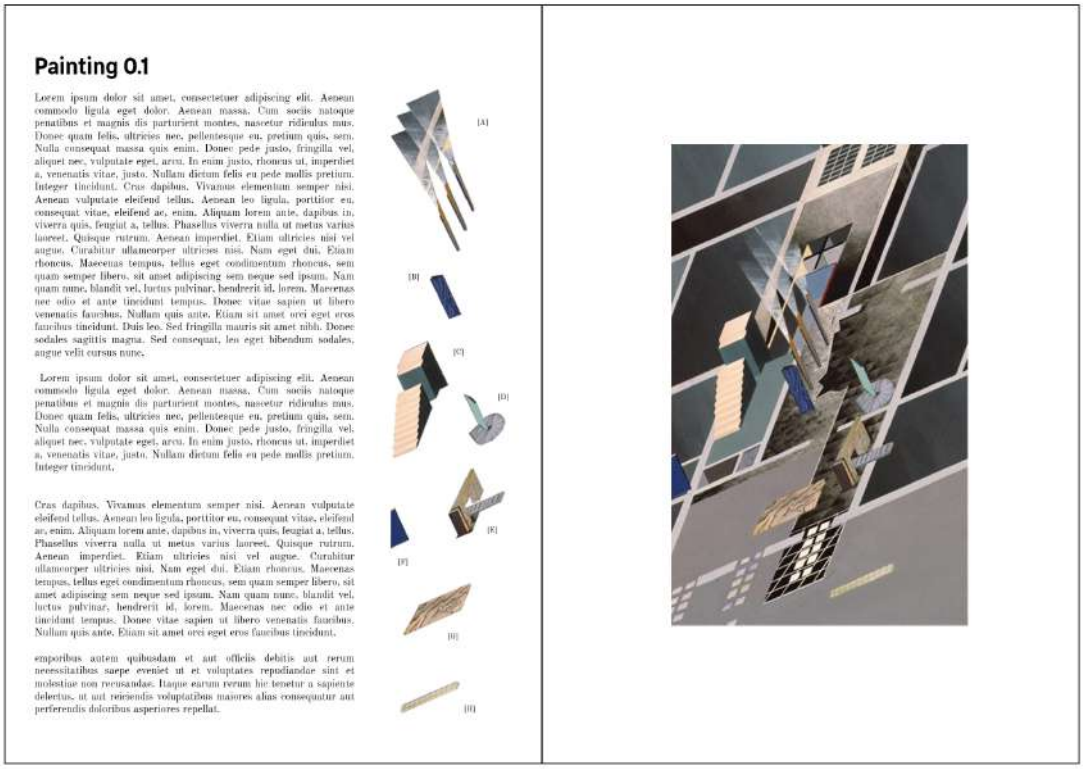


Figure 68: Diagram depciting the page 1-2 layout of A4 pages with the analysis of the painting. This depicts page 1 with the descriptive analysis and the seperate foreground components. Page 2 has the actual painting chosen for the study

Source: Author's diagram

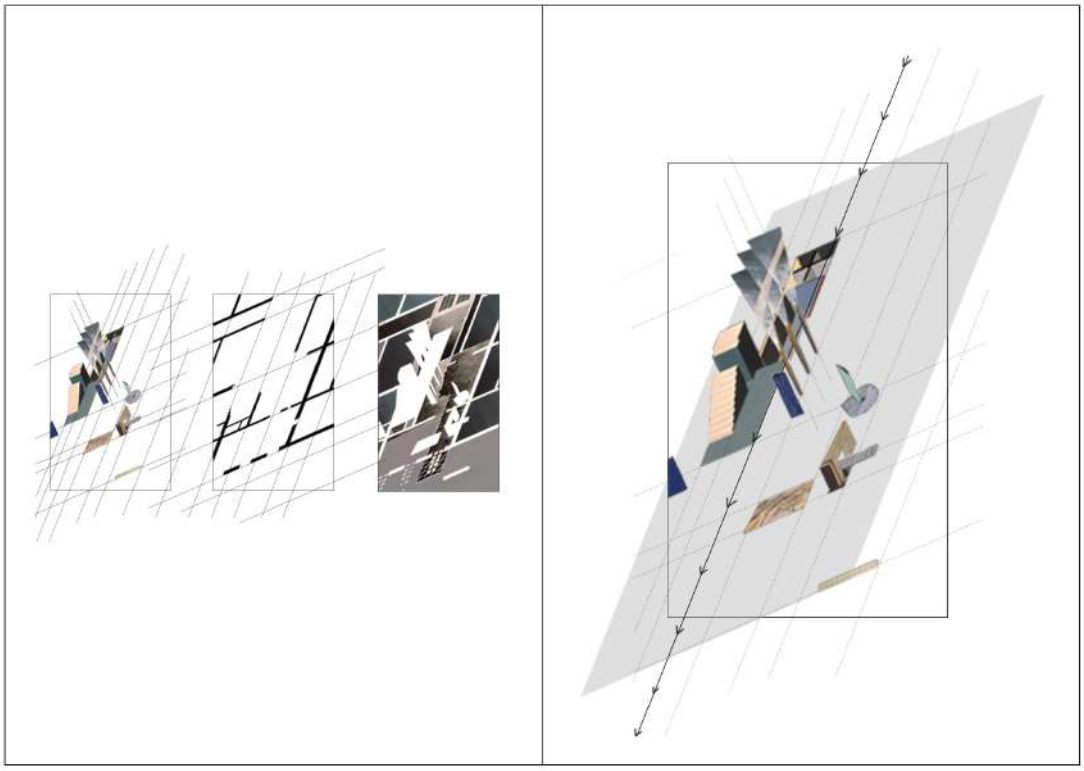


Figure 69: Diagram depciting the page 3-4 layout of A4 sized page with the dissected layers of the paintings into various layers of foreground and background. Page 4 can also have analytical diagram supporting the investigation

Source: Author's diagram

10

In search for cosmic traces

Analysis
of Zaha Hadid's Abstractions

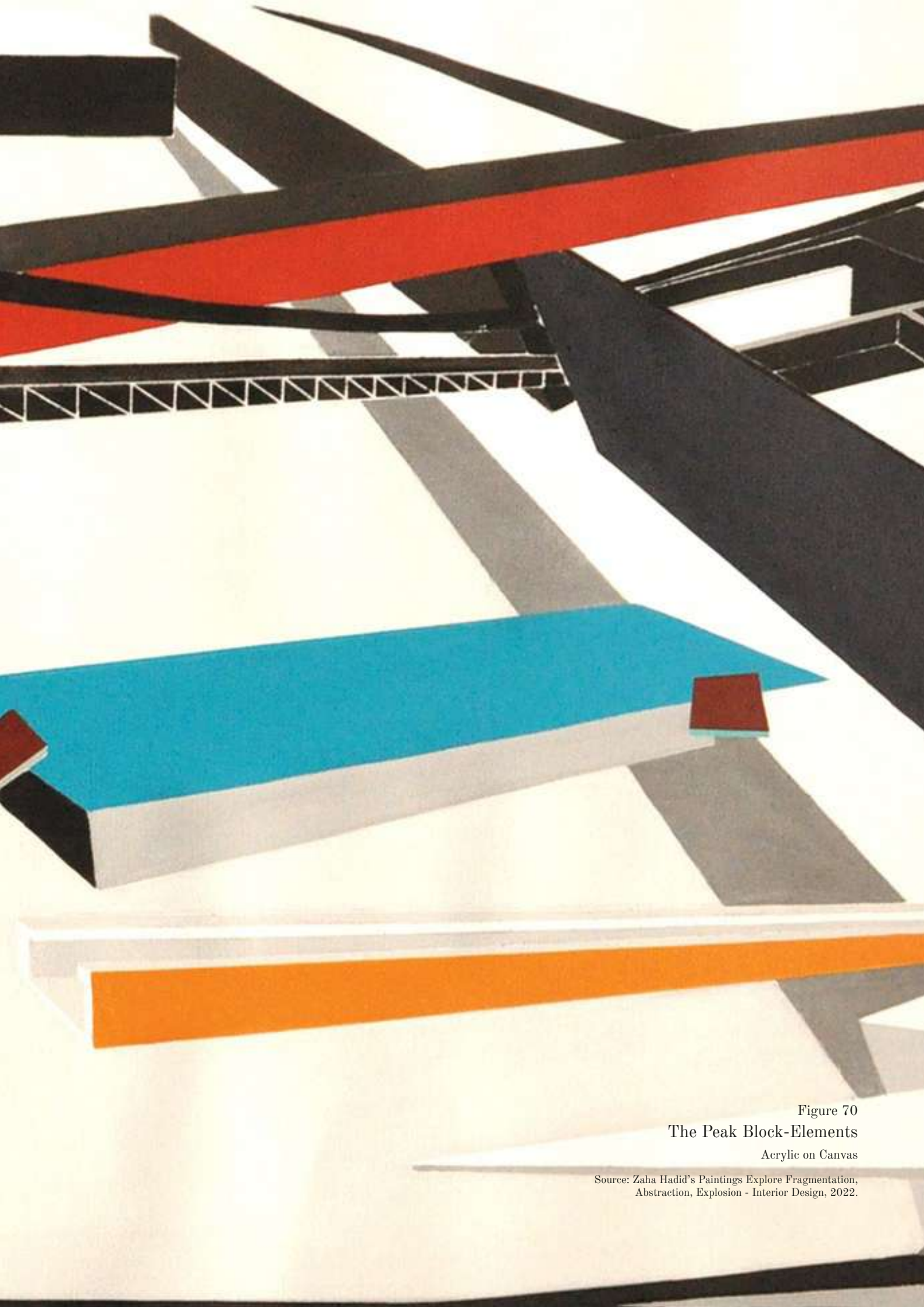


Figure 70

The Peak Block-Elements

Acrylic on Canvas

Source: Zaha Hadid's Paintings Explore Fragmentation, Abstraction, Explosion - Interior Design, 2022.

01

Vitra

Fire Station
Weil arn Rhein, Alemania
1990 - 1991

1.1. Preliminary Study Painting
1.2. Artificial Corridor Study Painting
1.3. Final Painting



Figure 71
Photograph, Vitra Fire Station
Weil am Rhein, Germany
Source: Fire Station | Official Vitra Online Shop GB, 2016)

Architectural Introduction

Situated in the Vitra Furniture factory estate, this fire station sprawls itself across a narrow street from the main gate of the chair museum to the end of a factory site. This building's key architectural features lie in its linear arrangement of walls showcasing a dynamic pattern which are often described as lines of energy. These walls are made to distort, intersect, pierce and incline leading towards the creation of functional spaces (Hadid, 2000).

These walls are compositional elements of the programme, stretching into long and narrow extensions functioning as a screening device. This whole architectural piece was meant to show movement in a frozen condition giving a notion of explosiveness and tension. This shows the dynamism of a fire engine jumping into action (Unwin, 2015). This project is of exposed reinforced in-situ concrete along with its sharp edges and pristine abstract quality resonating the idea of frozen movement (Hadid, 2000).

Paintings

These abstract works bring the concept of movement and dynamism into the practical world. As of this particular study, Two specific preliminary study paintings (1.1 and 1.2) along with a full-fledged conceptual painting (1.3) will be investigated (Figure 73 showcase snippets of the upcoming paintings). Figure 72 and 74 showcase a series of preliminary calligrapic sketches which depicts a development from abstract strokes into a built form. These sketches are rapid and fluid in nature inhibiting dynamic usage of pulsating curves. Paintings can be revealed to be an adoption from this calligraphic sketches through the similarities of its lines and interseccions.

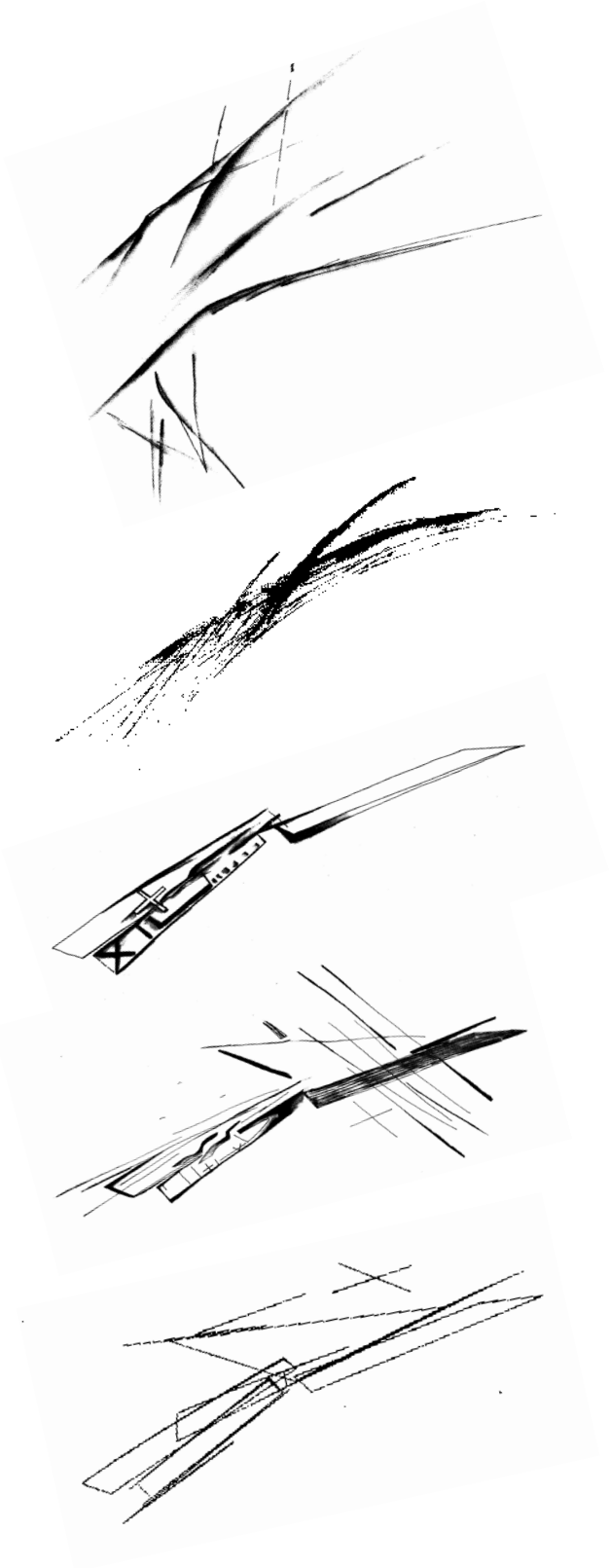
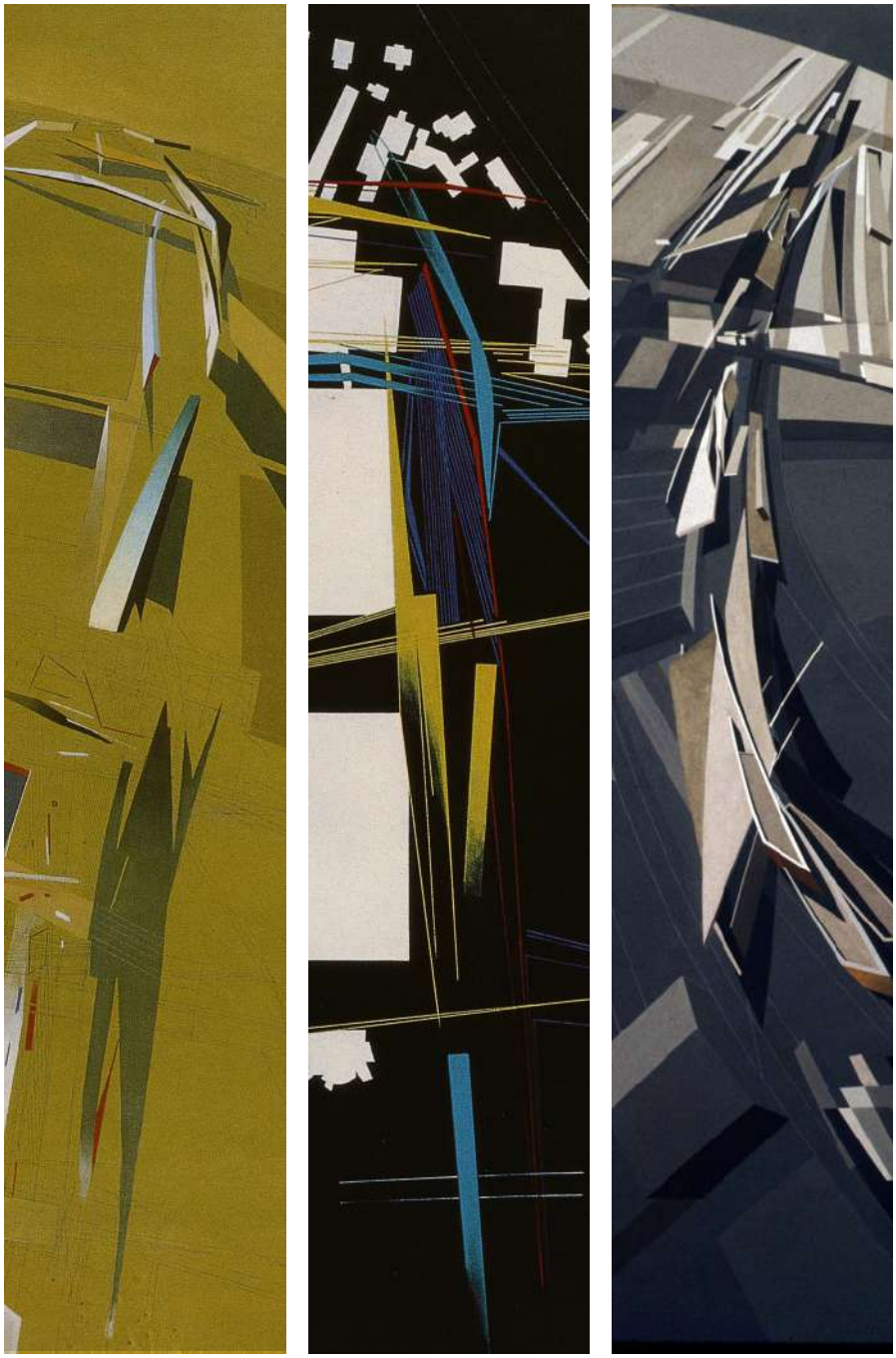


Figure 72: Preliminary sketches - Vitra Fire Station

Source: Zaha Hadid & Betsky, 2009



[1.1] [1.2] [1.3]

Figure 73: Snippets of Paintings 1.1, 1.2 and 1.3 which are studied in this chapter

Source: Hadid, 2000





Figure 74: Conceptual sketches

Source: Hadid, 2000

Painting [1.1]

Concept

This preliminary study painting captures the beginning energy and transformations of calligraphic sketches where smooth abstract dynamic lines were given a direction and a sense of space to fulfil the programmatic agenda (Hadid, 2004). Here, the calligraphic sketches work like an abstract idea which is then applied onto the canvas with an appropriate creation of the contextual space.

In this painting, all the foreground objects [A] to [I] were imagined to be floating across the narrow street space stretched along an axis squeezed between the background contextual buildings. As highlighted in Figure 76 (a), Objects within this painting consist of a combination of planes and lines warped across a spherical body originating from a single vanishing point and exploding towards infinity.

Foreground

Coming to the aspect of foreground, Specific objects within this painting are labelled as [B], [D], [E]. [F] and [H] are sharp-edged and rigid planes moving across the streetscape. Planes [E] and [G] were constructed to give a sense of pulsating movement towards the bottom end of the canvas whereas planes [A] and [C] were made to pierce from the left to the right to compliment the intended movement originating from a vanishing point (Refer Figure 76 (a))

Planes like [F] and [G] seem to have a thickness showcasing a three-dimensional thought process similar to the painting of El Lissitzky's proun paintings like (Figure 48 (a)). All the planes which are drawn within the foreground elements of this painting evoke a sense of levitation instead of settlement on a typical ground surface. This is because the planes seem to cast a shadow on the warped ground plane which was painted with a darker tone of colour just beneath the elements [A], [B], [C], [E] and [F]. Thus, these planes evoke a floating sensation very similar to Malevich's Suprematist compositions.

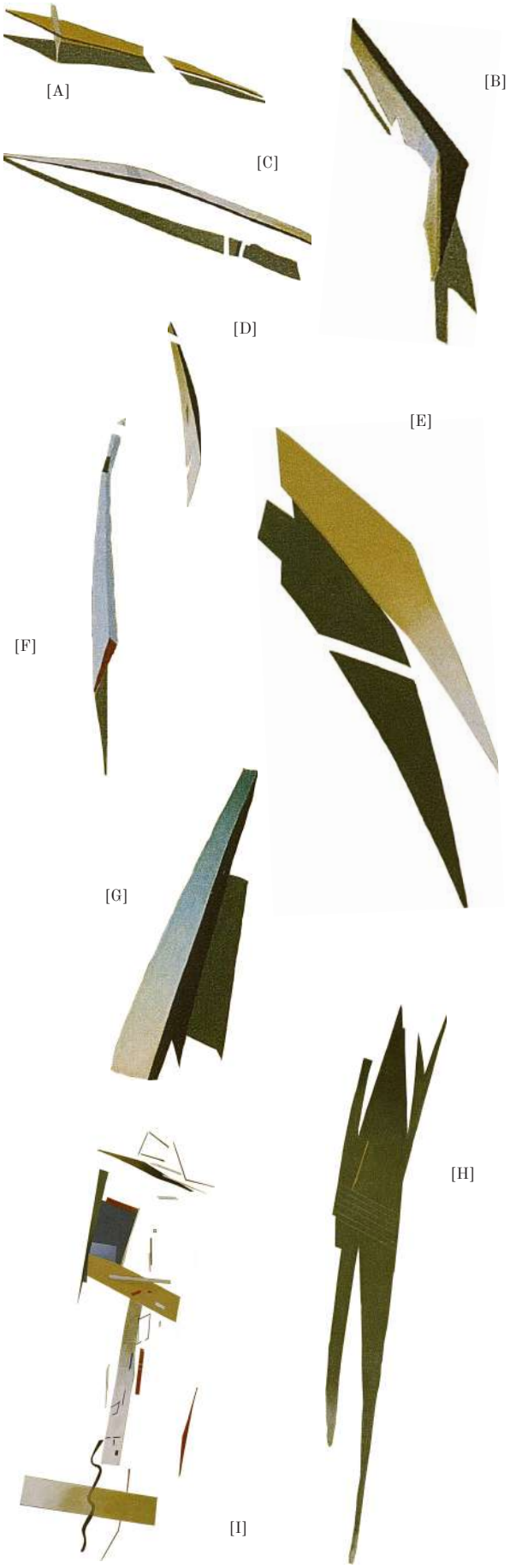




Figure 75: Preliminary Study Painting [1.1]

Source: Hadid, 2000

Upon coming closer to the bottom end of the canvas, composition [I] was represented along with other objects within the foreground part of the painting. However, the logic behind the internal arrangement of elements seems to be unknown but the warp and directions at which the smaller elements point reveal that it follows the same configuration as the rest of the foreground objects.

On closer inspection of this composition [I], the elemental arrangement also closely resembles the arrangement of suprematist elements within Malevich compositions such as Figure 13 compositions. As highlighted in Figure 76(c), This composition along with other elements of the painting seems to have a faint underneath layer of lines which might have been used as a constructive process to create the whole composition. When examined more closely, these elements can be comparable to Rochenko's line construction which itself was an adaptation after Tatlin's planar work within the Russian constructivism period.

Background

Turning now to the background elements of the painting (Figure 76 (b)), the arc-like light indefinite stroke across the top part of the canvas stretching from left to right evokes a sight of a distant horizon. Thus, this horizon line can be considered as a reference to the earth's surface as a celestial spherical body taken to warp the objects for the pure purpose of showcasing movement (Figure 77(a) and (b)). In addition, the existence of vanishing point also supports this interpretation since this acts as an origin point for the dynamic movement to begin from a distant surface. This background characteristic and the existence of a spherical body also suggests the presence of cosmic attributes which can be seen as a recurring theme throughout the idea of Russian avant-garde.

Looking at the background space, contextual buildings were also attempted to be drawn to give an understanding of the programmatic agendas to have a stretch of spaces across the street. However, to maintain focus on the dynamic planes, context can be assumed to be of muted value with its use of dim colour and lack of three-dimensional depth, unlike its foreground objects.

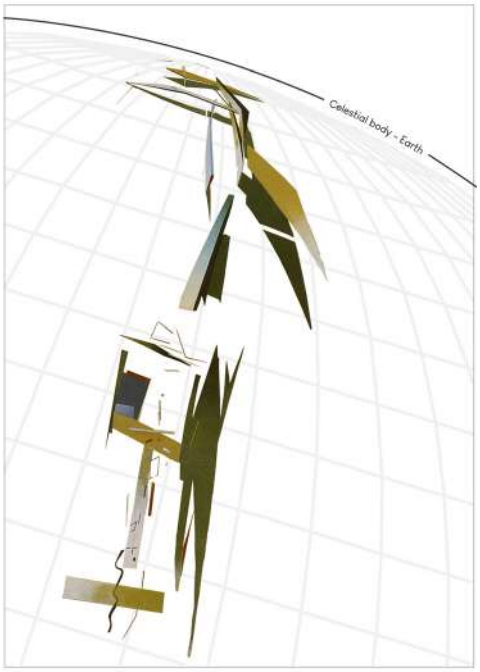


Figure 76(a): Layer 1 - Planes as foreground elements levitating over a spherical body represented with a horizon line

Source: Author's Diagram

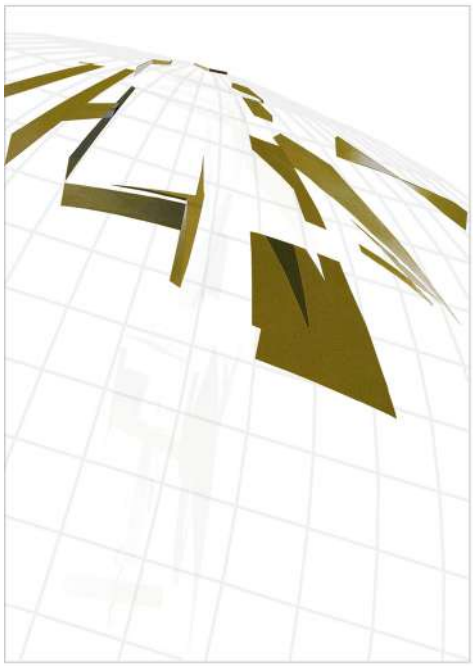


Figure 76(b) : Layer 2 - Site planes as contextual background following the same distortion under the framework of a curvilinear grid

Source: Author's Diagram

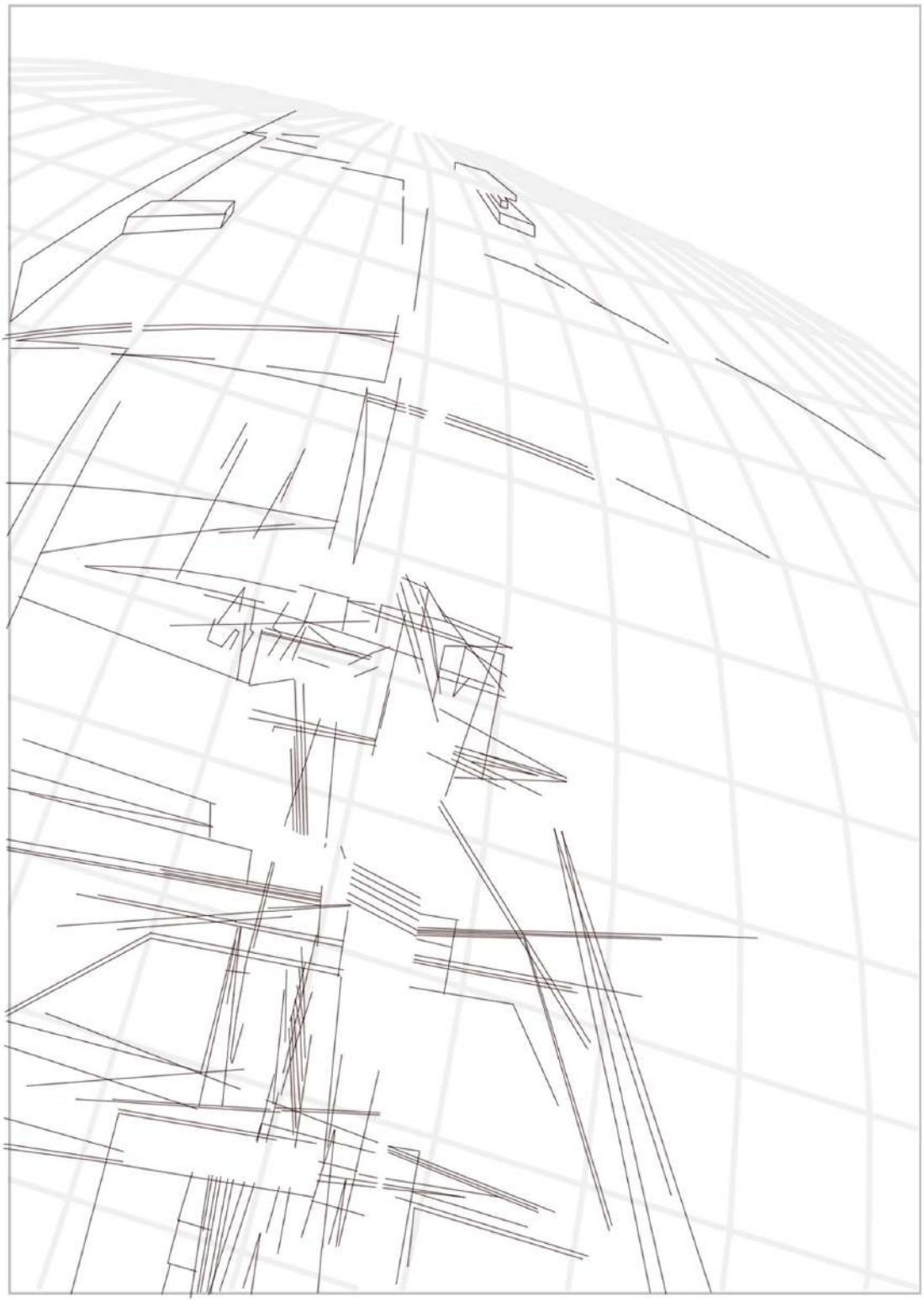


Figure 76 (c): Layer 3 - Underlying layer of construction lines within background showing the real skeleton of planar elements. These can be interpreted as force lines due to dynamic arrangement and sharp quality

Source: Author's Diagram

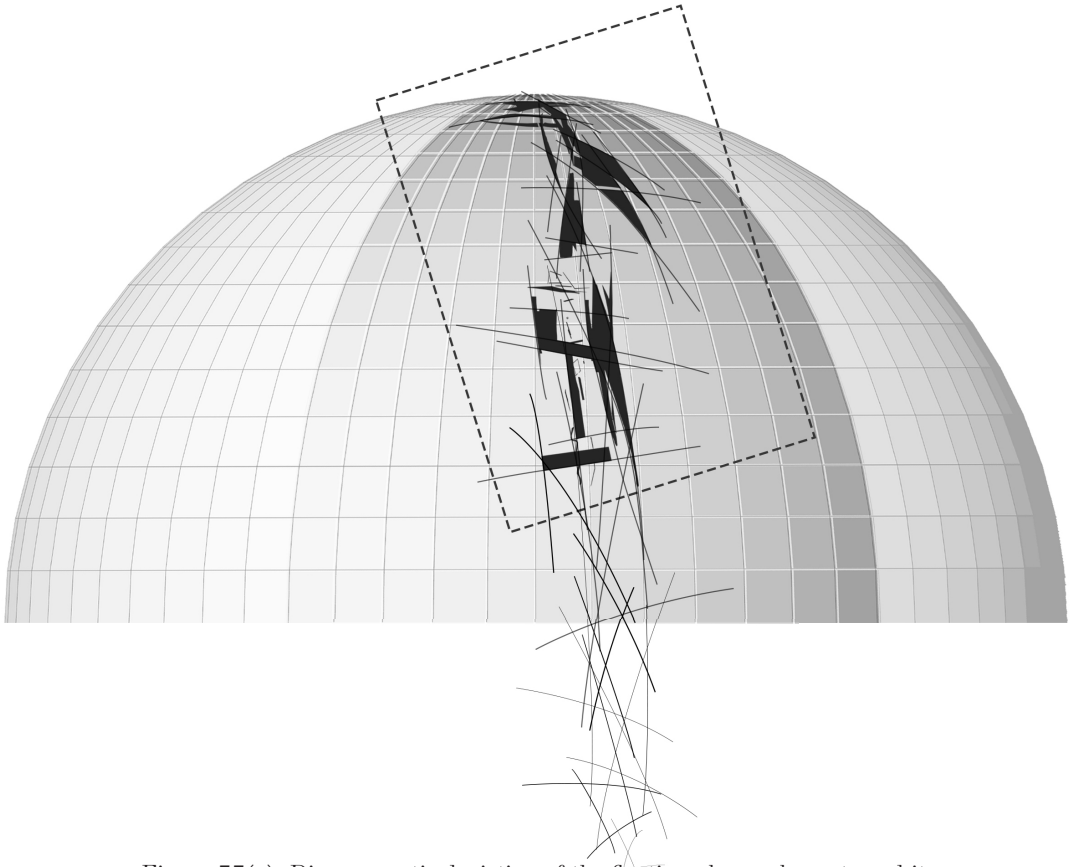


Figure 77(a): Diagrammatic depiction of the floating planar elements and its interpretation on the type of arrangement acorss the spherical grid framework

Source: Author's Diagram

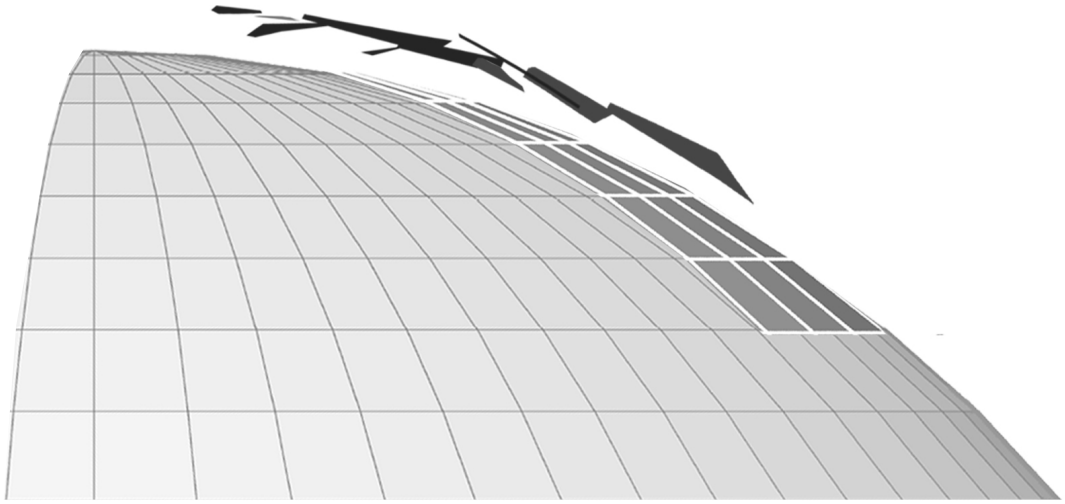


Figure 77(b): Side elevation of figure 77(a) which depicts on the positioning and the concept of floatation across the spherical segment.

Source: Author's Diagram

Painting [1.2]

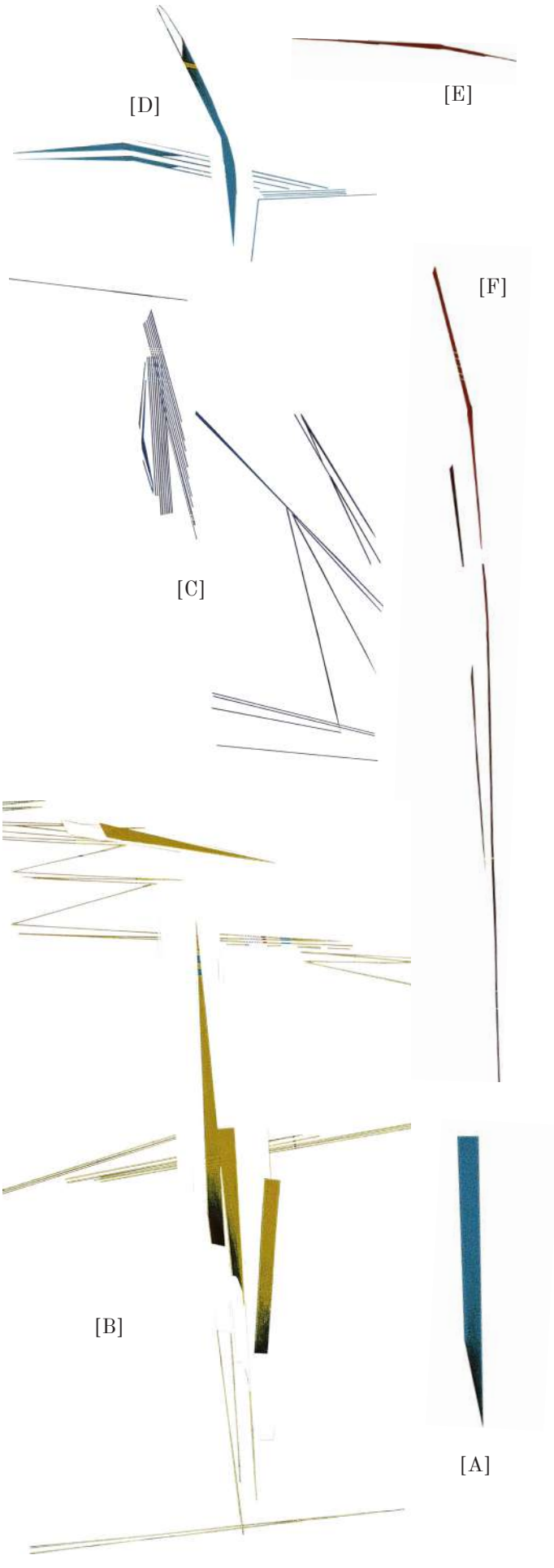
Concept

This painting illustrates the abstraction of lines and planes in a contextual background through its straightforward usage of a plan drawing with surrounding built entities. Here, it is evident that the programmatic agenda was taking shape in arranging planes to create spaces across the street signalling a clear attempt to translate the preliminary concept of movement into an architectural project.

Foreground

Moving on to the foreground elements of the painting, all the lines and planes are represented with specific colours which makes it convenient for this research analysis to separate the elements for the reader with reference labels. The specific group of Yellow Planes [B] stretching vertically from the centre of the painting are represented with characteristics of sharp edges pointing towards the bottom end of the canvas suggesting its similarity with painting 1.1 in terms of movement path and direction. These yellow planes also have aspects of gradient which invoke an idea of fading away or the concept of motion indirectly referring to movement. This use of gradient at the bottom end of each stroke leaves a sort of sharp and pointy edge in the direction towards the other side of the contextual streetscape which is at the bottom end of the painting.

Another Yellow plane [B] which is situated at the top end of the painting is composed as if it's piercing the tail end of the blue plane [D] showcasing a resemblance with painting 1.1, Upon closer look, the blue stroke [A] was also illustrated similarly with painting 1.1's plane [G]. This can be similarly seen in the case of two blue strokes horizontally intersecting with the plane as seen in the [D]. In addition to this, the blue plane also closely resembles in form with plane [B] of painting 1.1 suggesting that the painting is a probable continuation with the same
composition of elements.



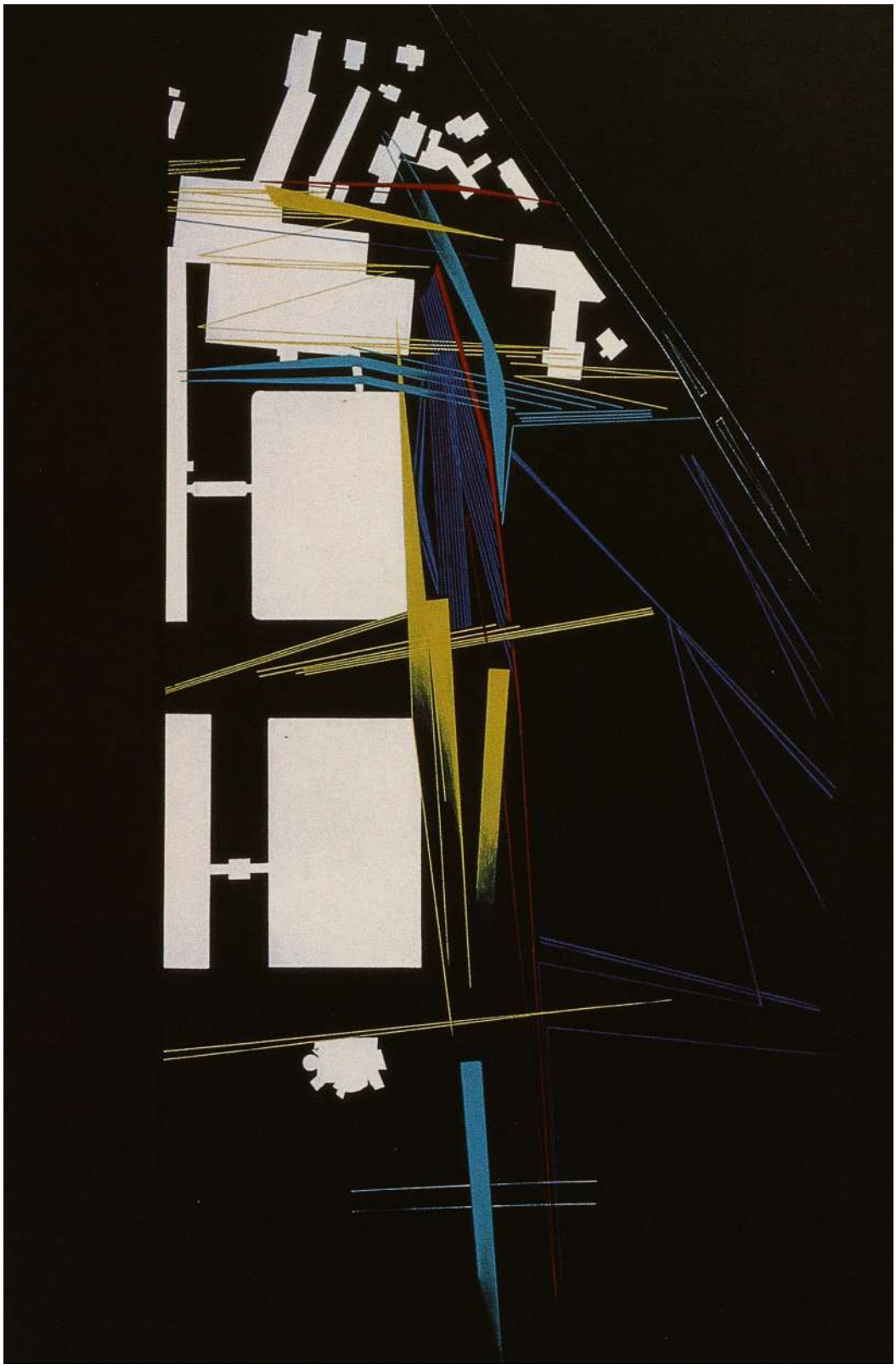
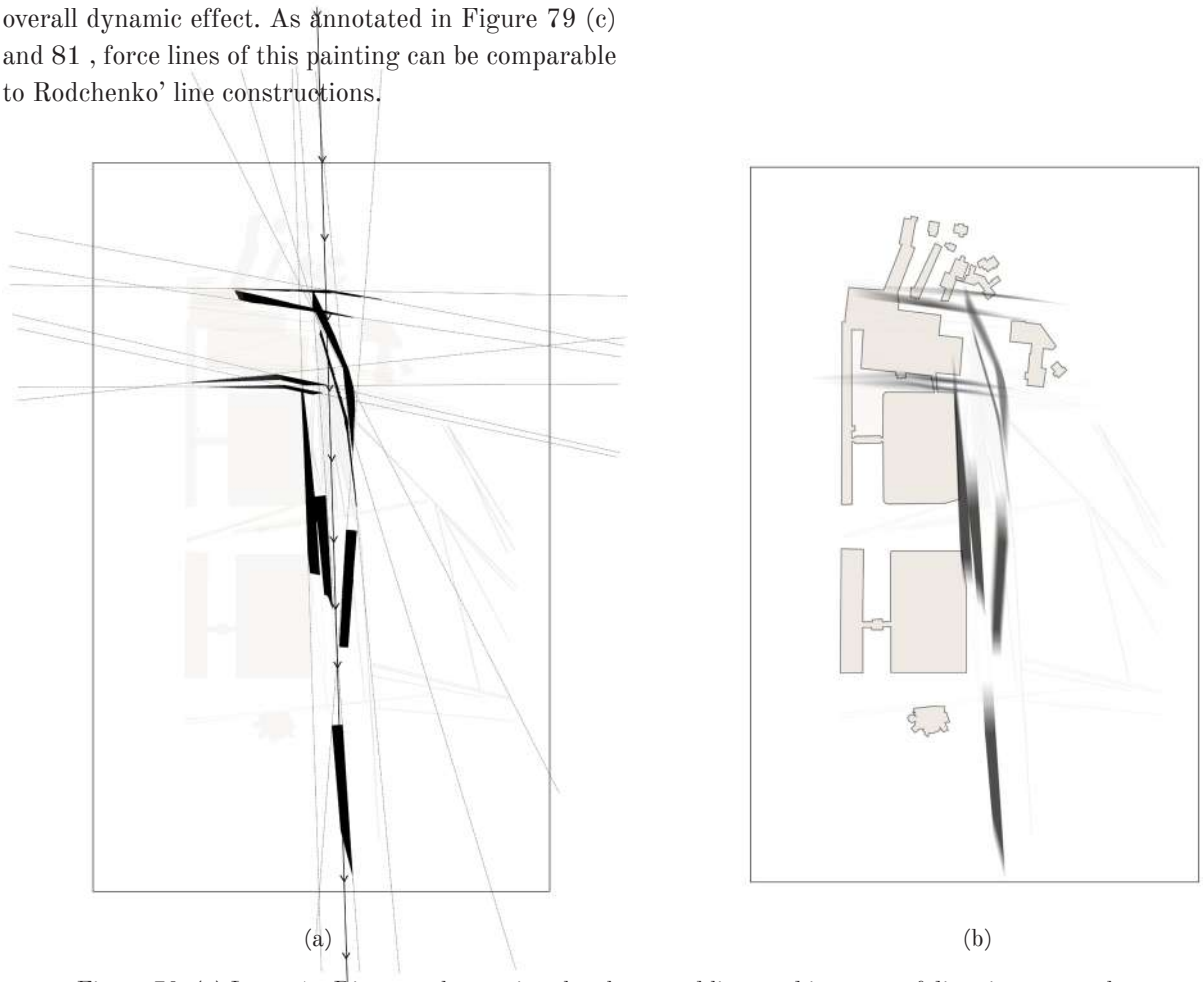


Figure 78: Painting of the plan along with the context [1.2]

Source: Hadid, 2000

Another element within the foreground part of the painting is the blue plane [A] advancing towards the lower part of the painting drawn with the same gradient characters and sharp edge. On closer inspection, one can observe that this stroke is referenced from continued projection lines from the yellow plane [E]. The significance of this blue plane can be suggested because it potentially seem to merge itself with the main form of the built project.

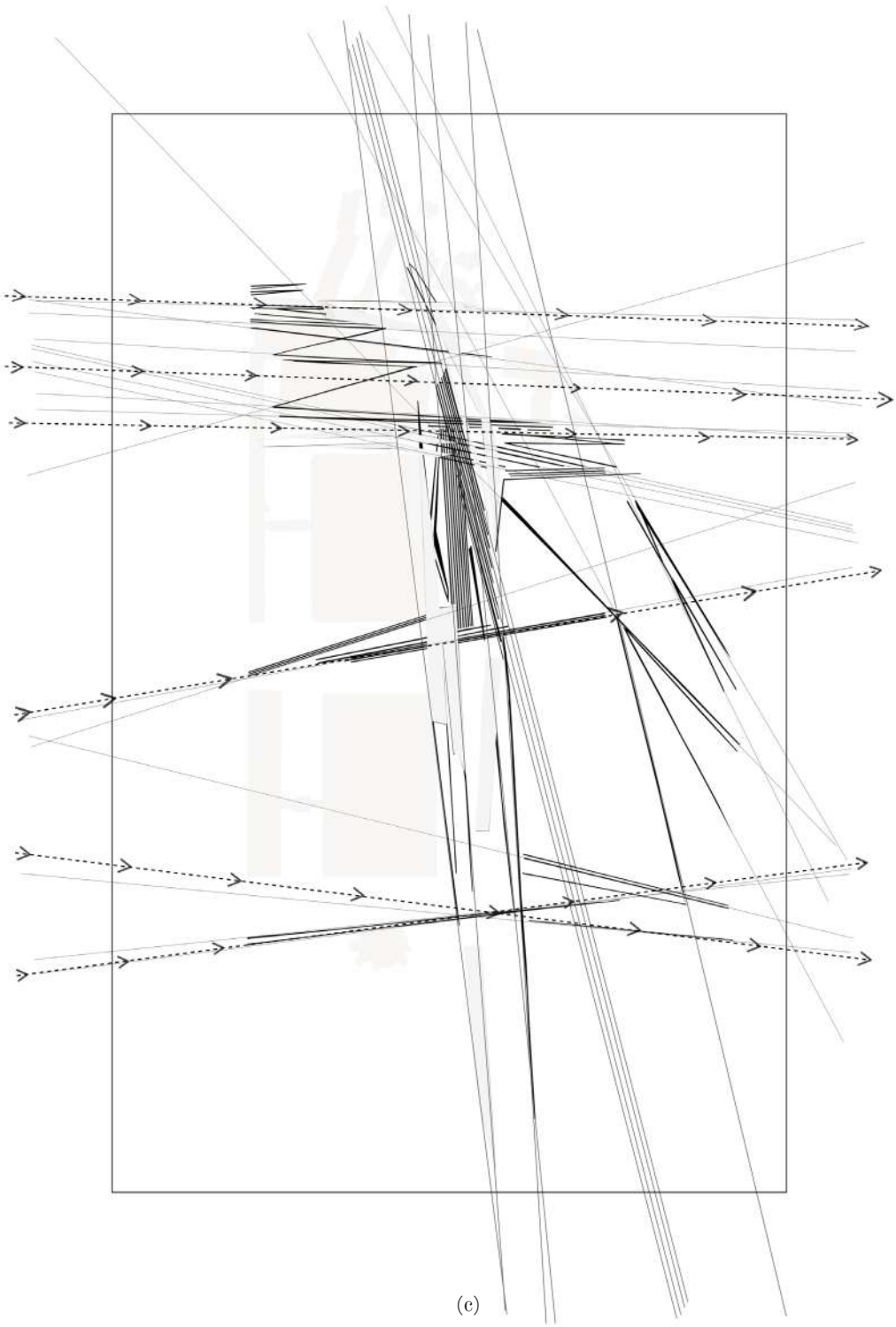
In addition to the planar elements, lines also play a crucial role in enhancing the sense of dynamic motion within this painting. Here, a group of vertical lines (Like seen in elements [B],[C] and [D]) overlapped with planes that stretch from top to bottom bringing out dynamism can be claimed as forces of action or energy lines. Another set of lines beginning from the right side invokes a fierce sense of movement by its attempt to pierce through the planar elements giving an overall dynamic effect. As annotated in Figure 79 (c) and 81 , force lines of this painting can be comparable to Rodchenko' line constructions.



(a) (b)

Figure 79: (a) Layer 1 - Diagram showcasing the planes and lines and its sense of direction across the canvas.
(b) Layer 2 - Diagram depicting the motion of planes across the context

Source: Author's Diagram



(c)

(c) Layer 3 - This diagram shows how counter-force lines originating from left to right enhance the dynamism within the composition.

Source: Author's Diagram

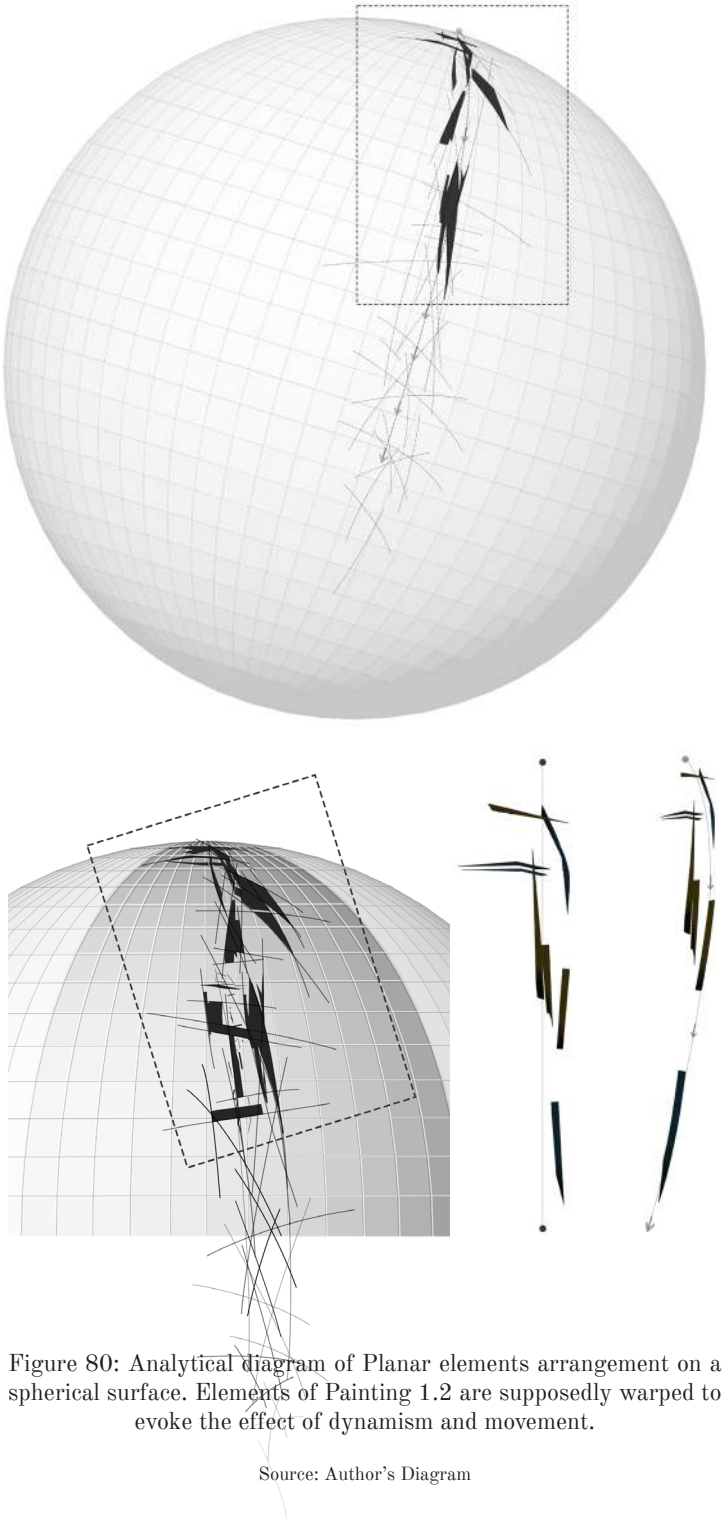


Figure 80: Analytical diagram of Planar elements arrangement on a spherical surface. Elements of Painting 1.2 are supposedly warped to evoke the effect of dynamism and movement.

Source: Author's Diagram



Figure 81: Analytical diagram of how force lines work within the composition. This illustrates a creation of a pattern/skeleton through overlaps between lines which is comparable to Rodchenko's constructions from figure 49.

Source: Author's Diagram

Painting [1.3]

Concept

This final painting 1.3 of Vitra Fire Station shows the culmination of all the abstract ideas from paintings 1.1 and 1.2. The conceptual idea of pulsating planes moving in space is enhanced with the construction of force lines along a curvilinear framework. This is a version of dynamic expansion that is supposedly generated through the collision of various force lines along a foreshortened fabric of a curvilinear grid which is similarly represented in painting 1.1.

Foreground

Considering the foreground aspects of the painting, several hovering planes (Planes A) seem to originate from a vanishing point situated on the top of this warped composition. This field of planes continues to evoke a sense of rapid motion sprawling till the bottom end of the painting along the vertical curvilinear axis as analysed in Figure 83 and 84. In between these clusters of planes, the intersection of specific planes in the bottom half of the composition can be observed creating a mass of forms. This intriguing collision of active elements can be interpreted as the built form due to its resemblance with the actual project which is highlighted in the analytical figure 85 and 86. Due to the foreshortened perspective, the form is represented as Here, the continuous arrangement of force lines and planes leads to the collisions and piercing of form. This suggests the architectural agenda to create a building which is frozen in motion.

Other foreground elements include the abstracted built forms following the horizontal curvilinear path stretching from left to right. Here, these elements are represented as perspective elevations of the form without any planes supporting its formation, unlike the observations in the previous paragraph. Out of such three built views as highlighted in the Figure 85, forms [B] and [F] are in focus. Form [E] is situated in the point intersection of two curvilinear lines which is smaller in size signifying the core. Form [F] is represented along the horizontal curvilinear line stretched from left to right showcasing the warped nature of the composition.

Background

Having focussed on the foreground of painting 1.3, this section dissects the background parts revealing the concepts of space and distortion applied in the composition in generating the sensation of movement. Here, it appears that the structure of the composition begins from the faint horizon line at the top of the canvas. This curvature line which is similarly seen in the case of painting 1.1 strongly evokes the same sense of spherical (celestial body) with a base framework of curvilinear grid on which the foreground elements are seen to hover across a set path. This can be a strong speculation based on Lissitzky's painting "About Two Squares" where objects are tangentially drawn on the earth's surface (Please refer figure 49). Moving on to the context, the built environment is represented with simple plan silhouettes being planes but following the curvilinear warped framework like other foreground elements.

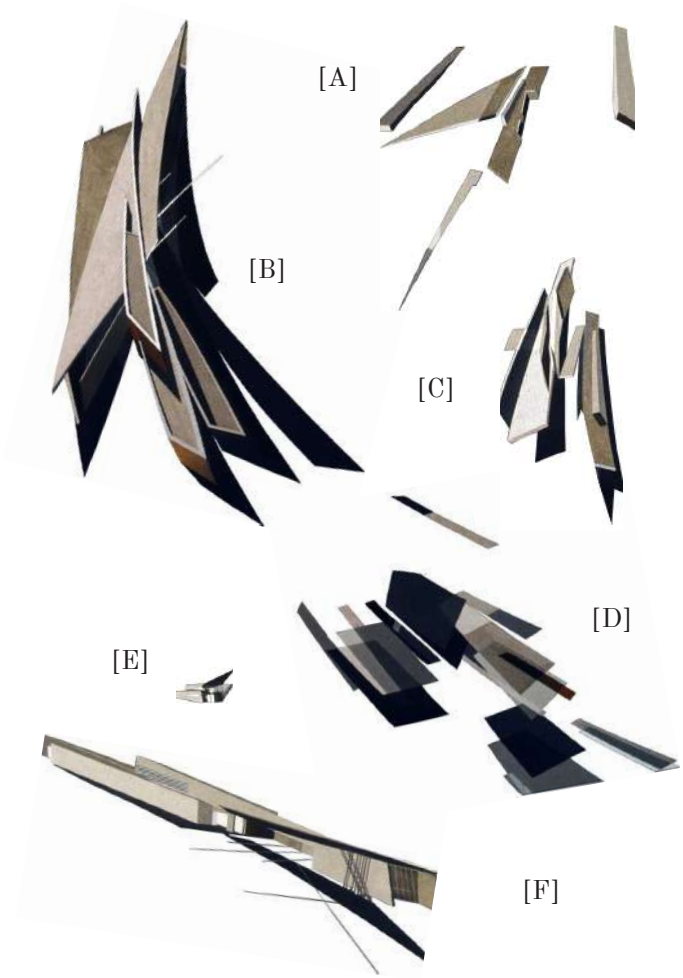




Figure 82: Painting 1.3 - Built project with context

Source: Hadid, 2000

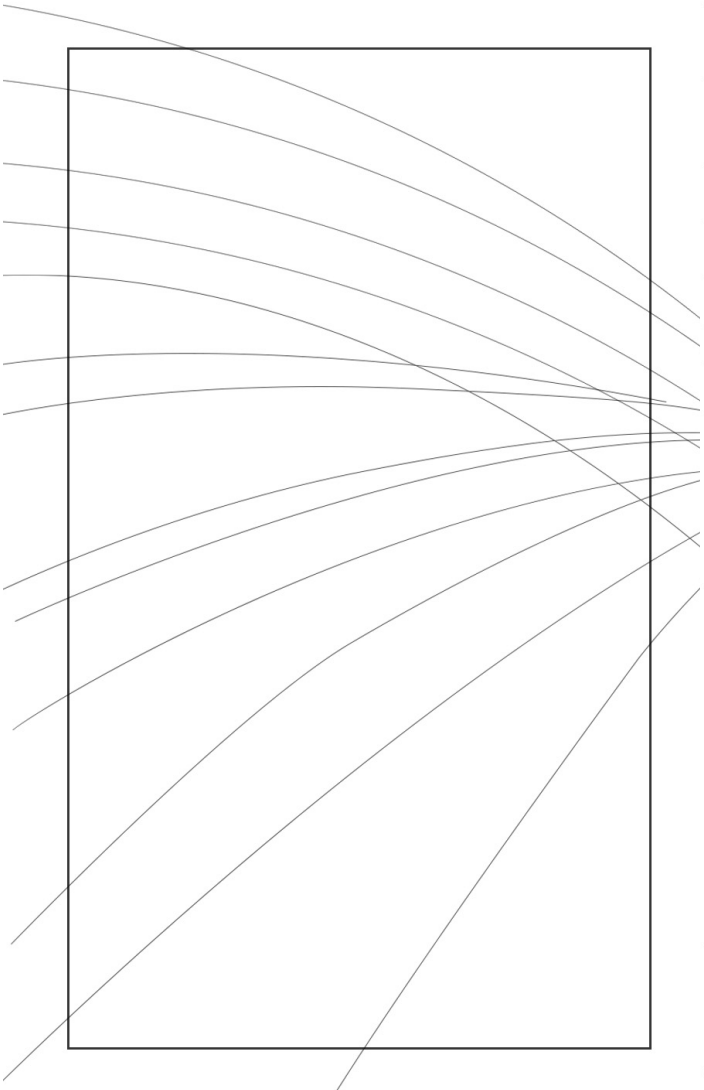


Figure 83 (a): Layer 1 -
Horizontal Curvilinear lines of the Warped Grid.

Source: Author's Diagram

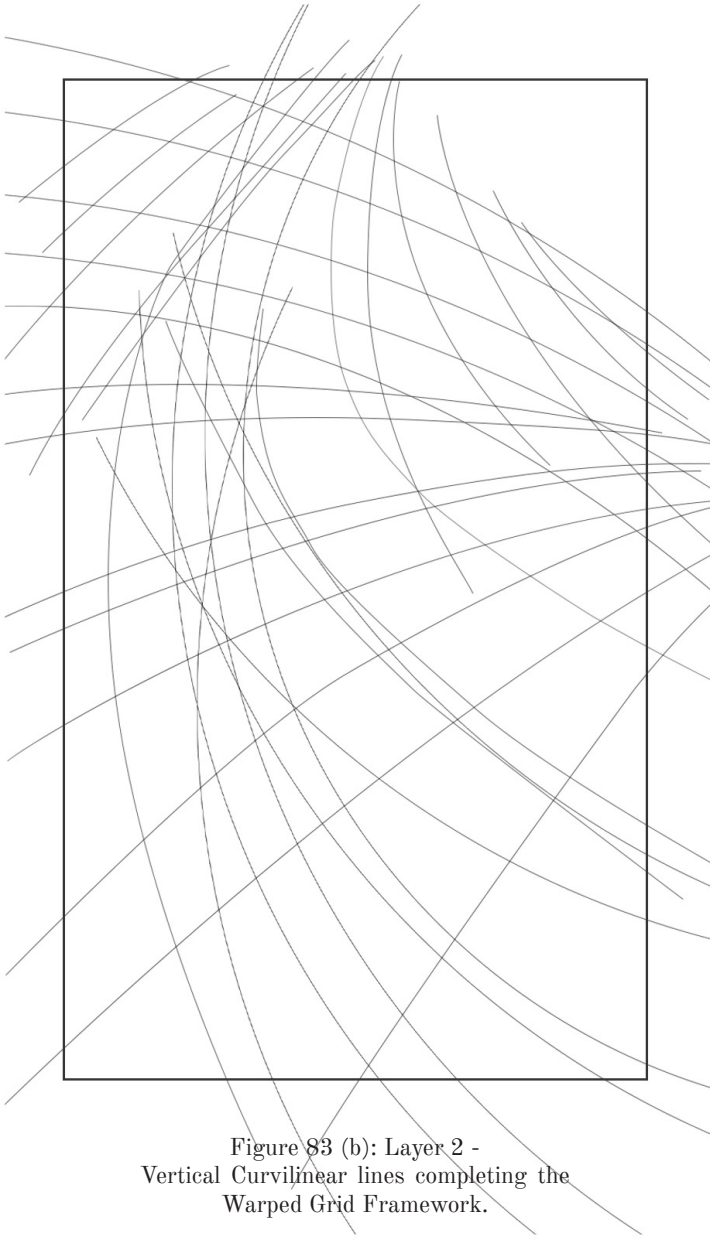


Figure 83 (b): Layer 2 -
Vertical Curvilinear lines completing the Warped Grid Framework.

Source: Author's Diagram

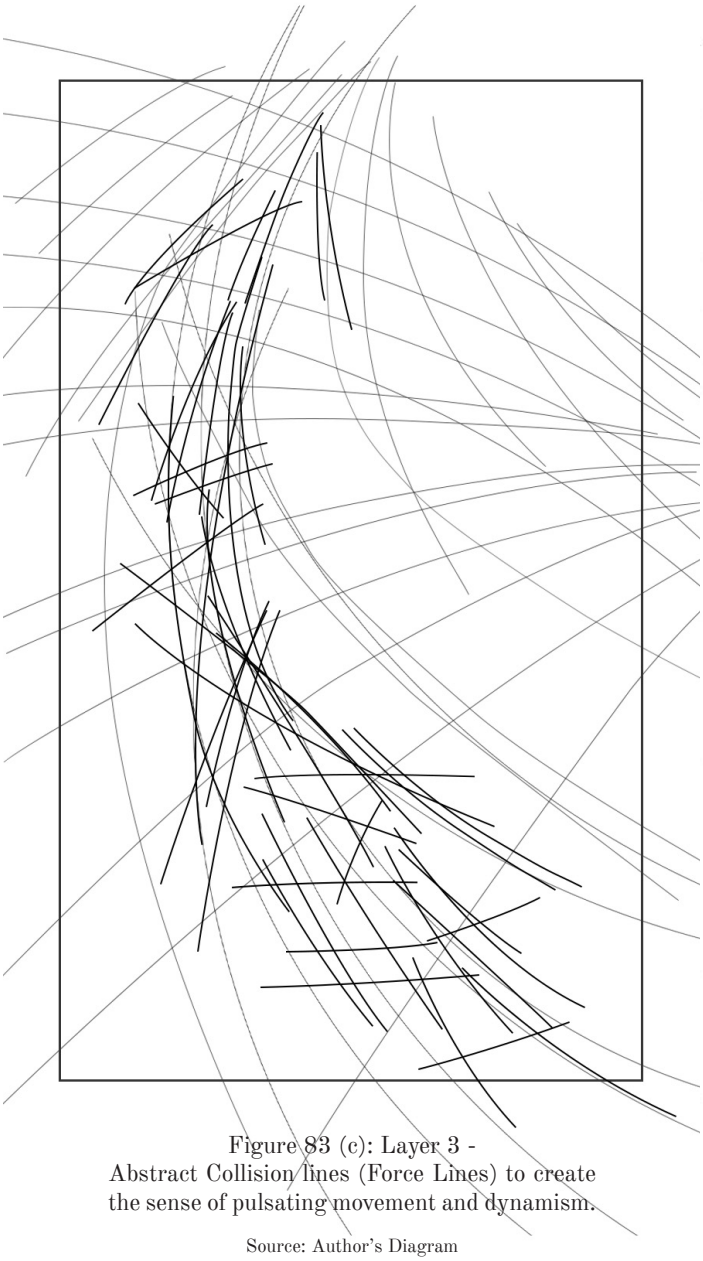


Figure 83 (c): Layer 3 -
Abstract Collision lines (Force Lines) to create the sense of pulsating movement and dynamism.

Source: Author's Diagram

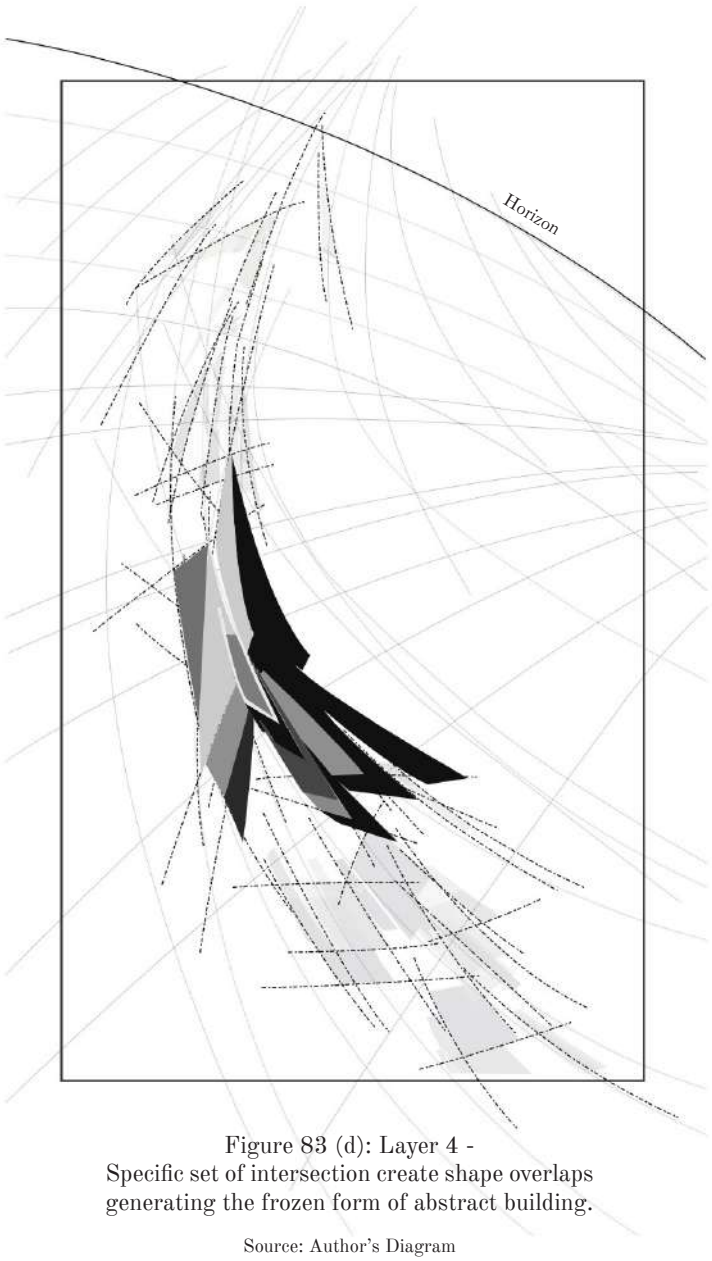


Figure 83 (d): Layer 4 -
Specific set of intersection create shape overlaps generating the frozen form of abstract building.

Source: Author's Diagram

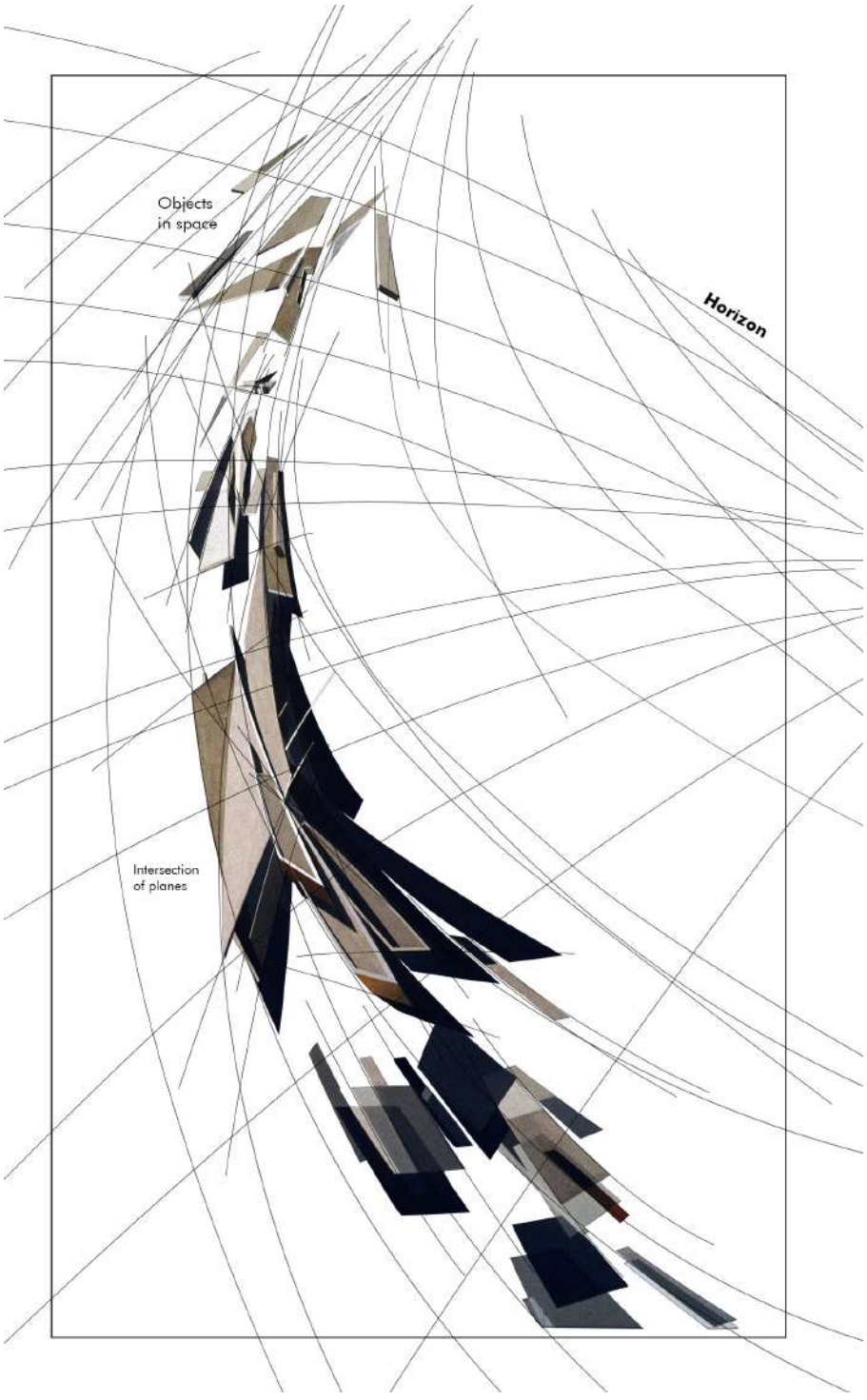


Figure 84: Analytical diagram showcasing the act of intersecting force lines lead to floating planar elements warped along a curvilinear axis. This composition leads to the construction of motion as a sensation

Source: Author's Diagram

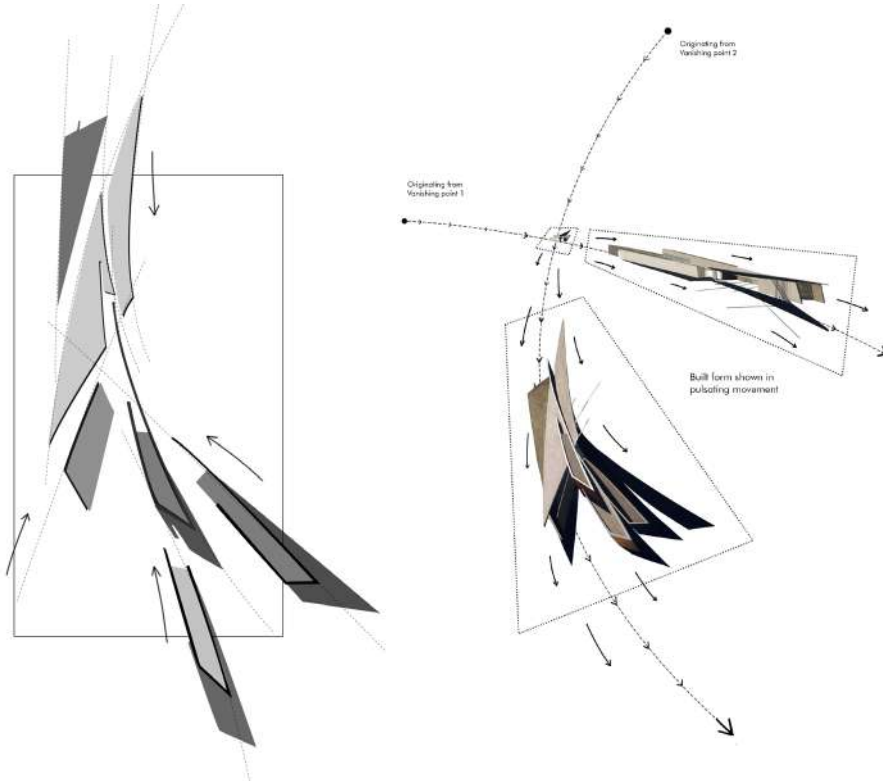


Figure 85: Diagrams showing the intersecting nature of planes leading towards the creating of dynamic built form

Source: Author's Diagram

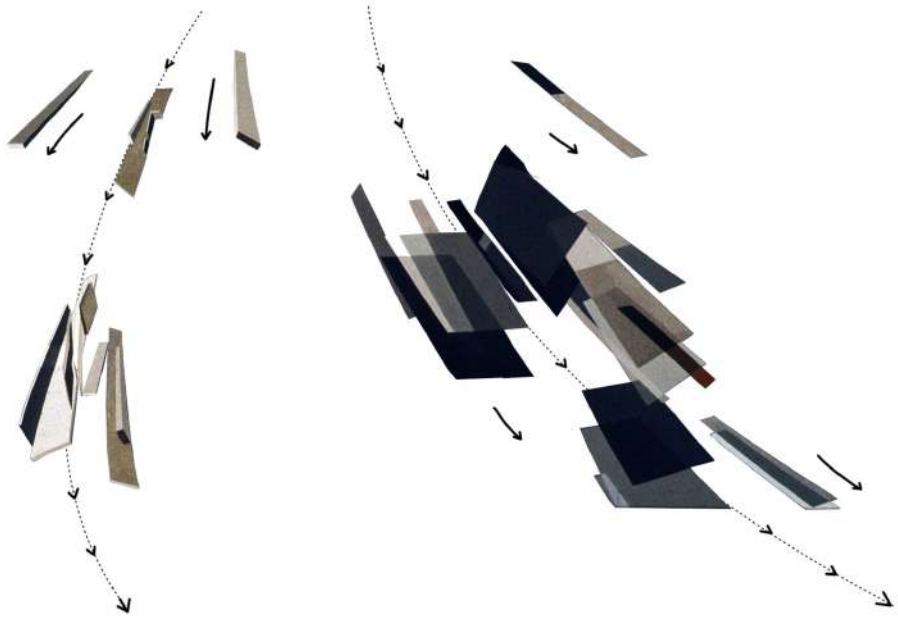


Figure 86: Analytical diagram depciting the technique of warping surrounding planes to compliment the dynamics of the composition

Source: Author's Diagram

Tracing In Three-Dimension - Physical Model

Force Lines

2mm thick white acrylic sheets, 3mm thick transparent acrylic sheet and 1mm thick red acrylic pieces.

This physical model depicts the concept of form generation through a linear arrangment of force lines along a curvilinear grid. In this model, the concept of layer 3 from the figure 3 is explored in three-dimension by abstracting the positioning of the lines based on the analytical diagrams.

Making

In this model, 2mm acrylic sheets were used to create the curvilinear surface imitating the celestial sphere surface with an etching of the grid. On this surface, 1mm thick red acrylic linear elements are arranged from top right corner to the bottom left corner of the box showing its single point origins. The force lines of 1mm slowly begin to create planar elements coming together to generate the built form.

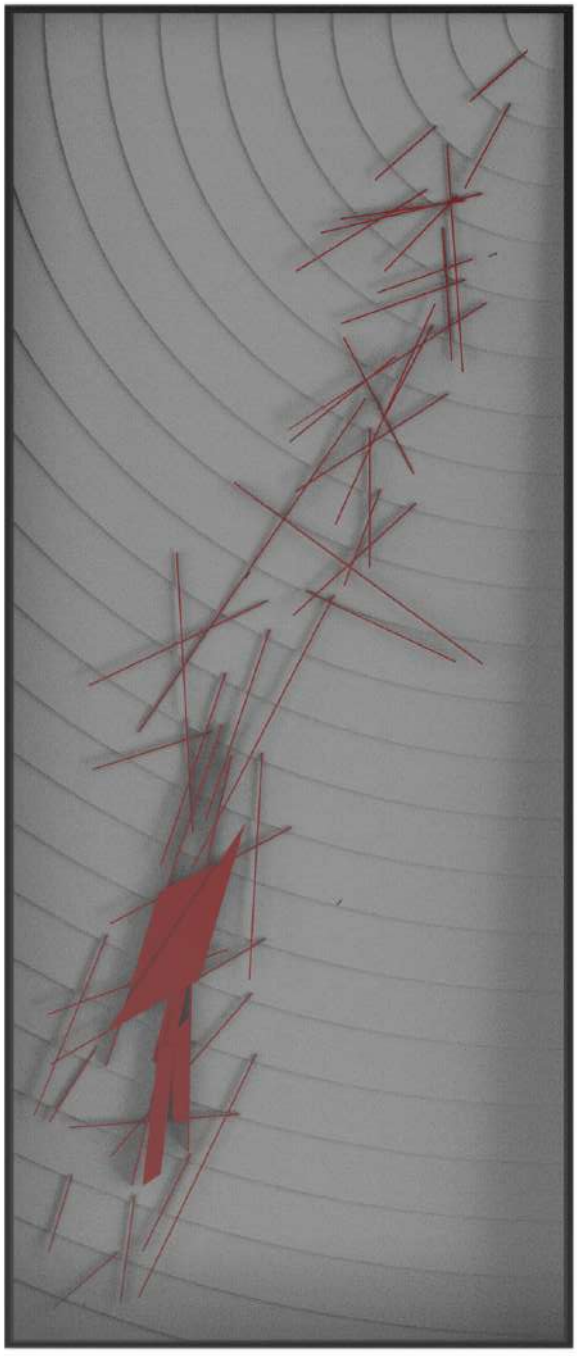


Figure 87(a): Top view - Force lines to the built form

Source: Author's Diagram

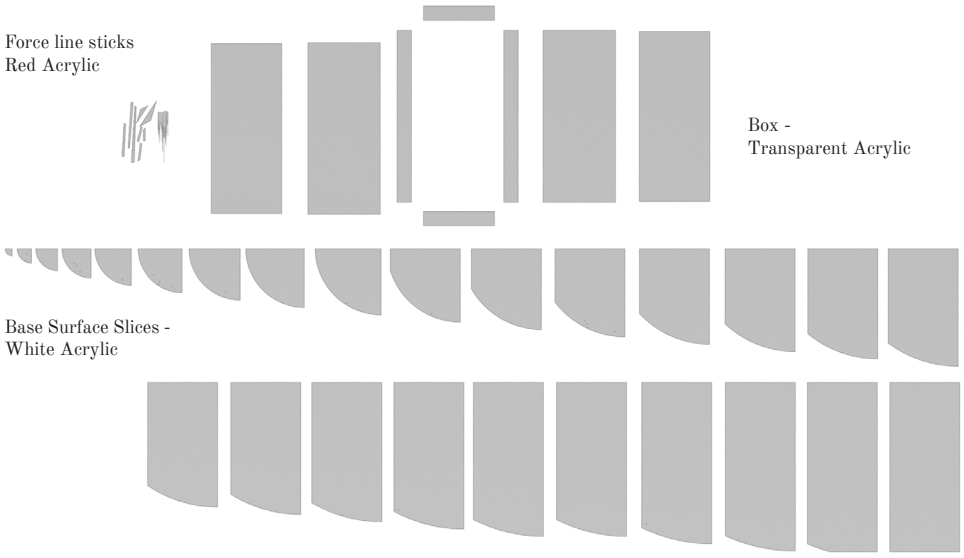


Figure 87(b): Kit of parts - Physical model preparation

Source: Author's Diagram

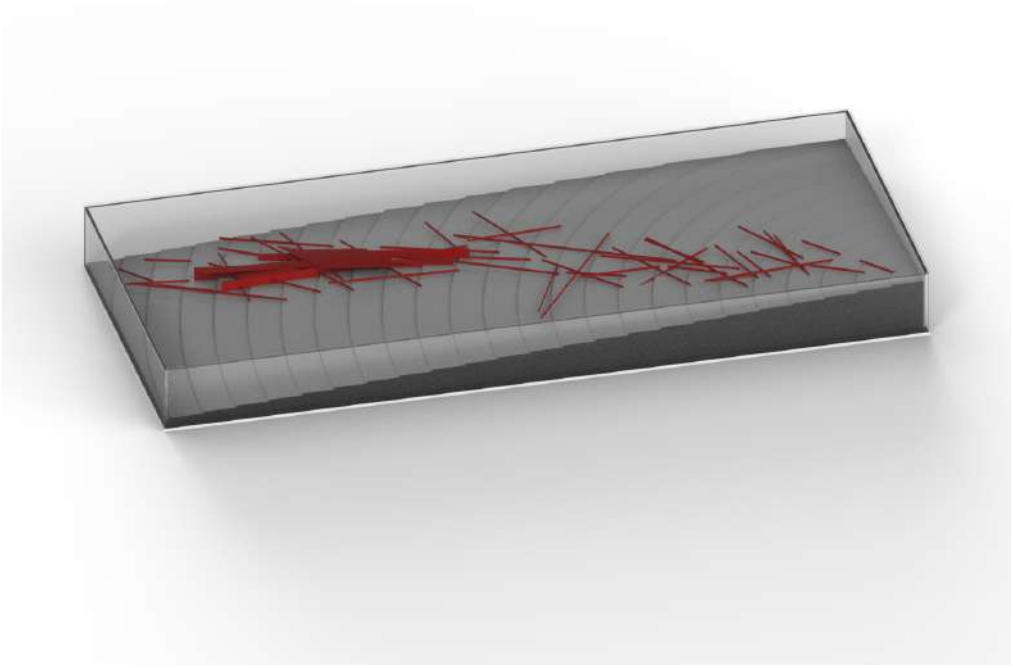


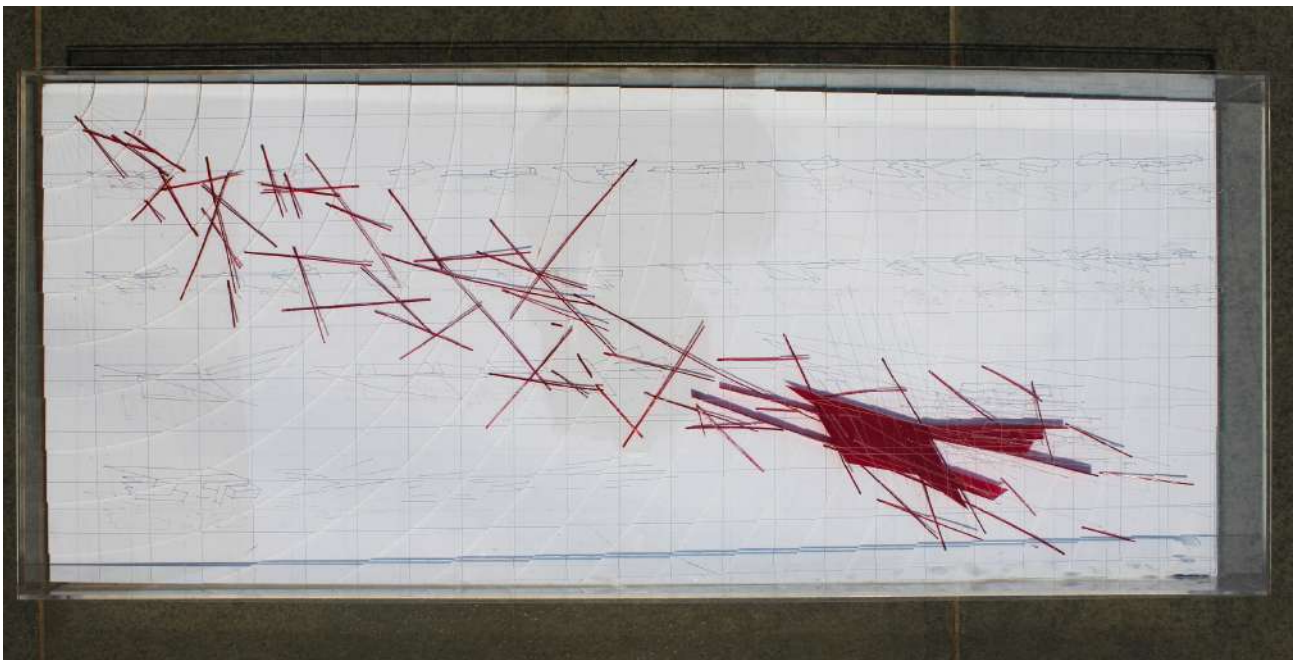
Figure 87(c): Visualized model - Perspective view

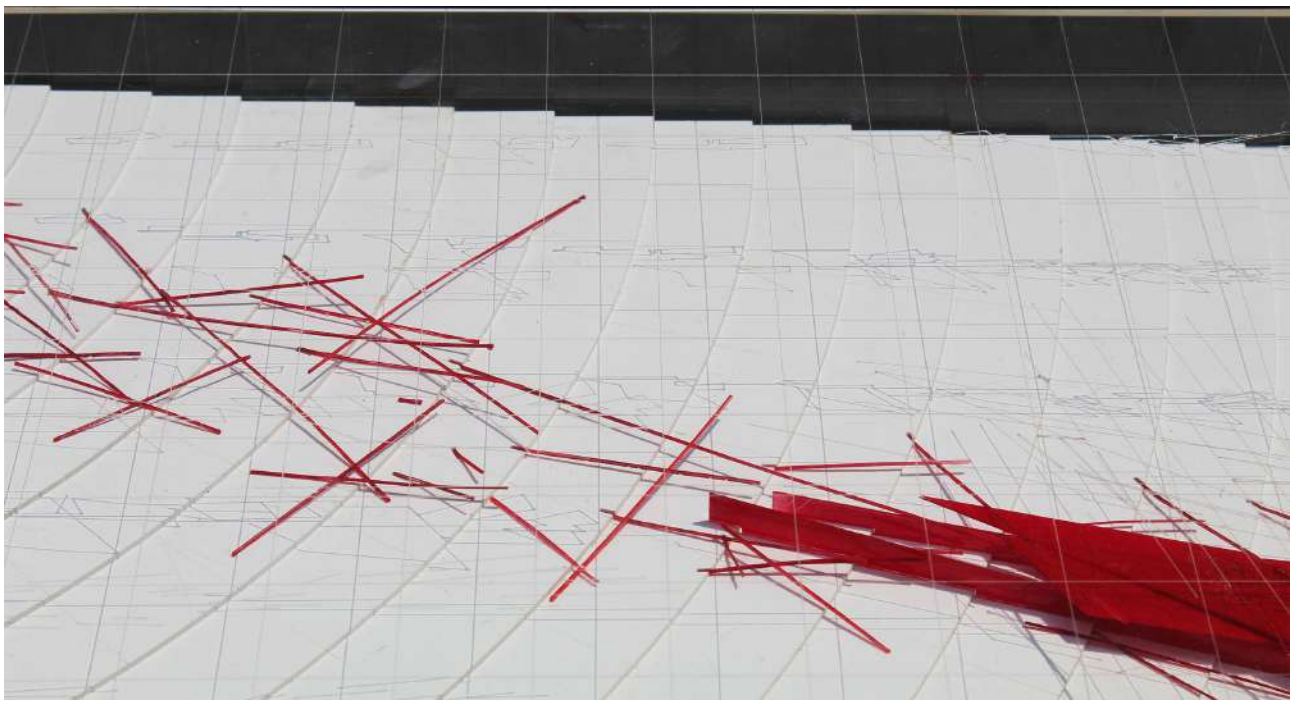
Source: Author's Diagram

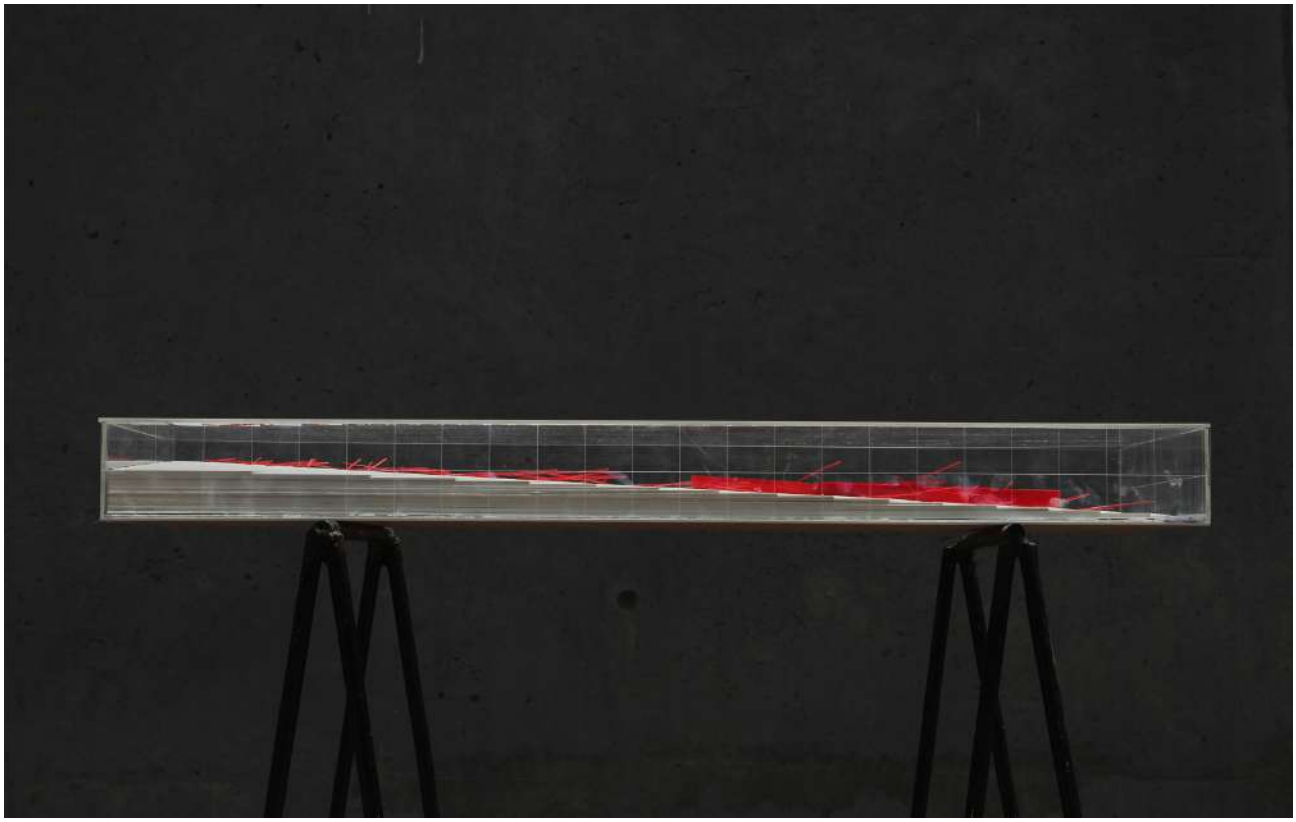
Figure 88: Physical Model Photographs - *Force Lines*

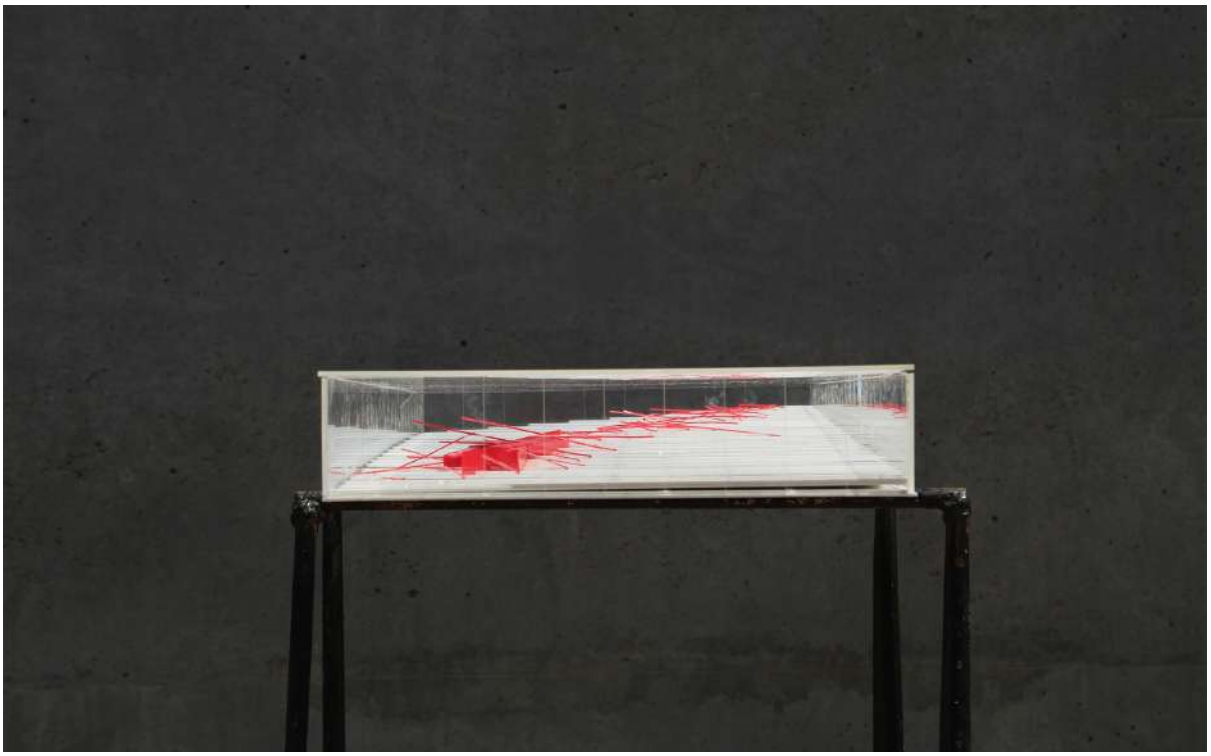
Source: Manjunath.S, 2024

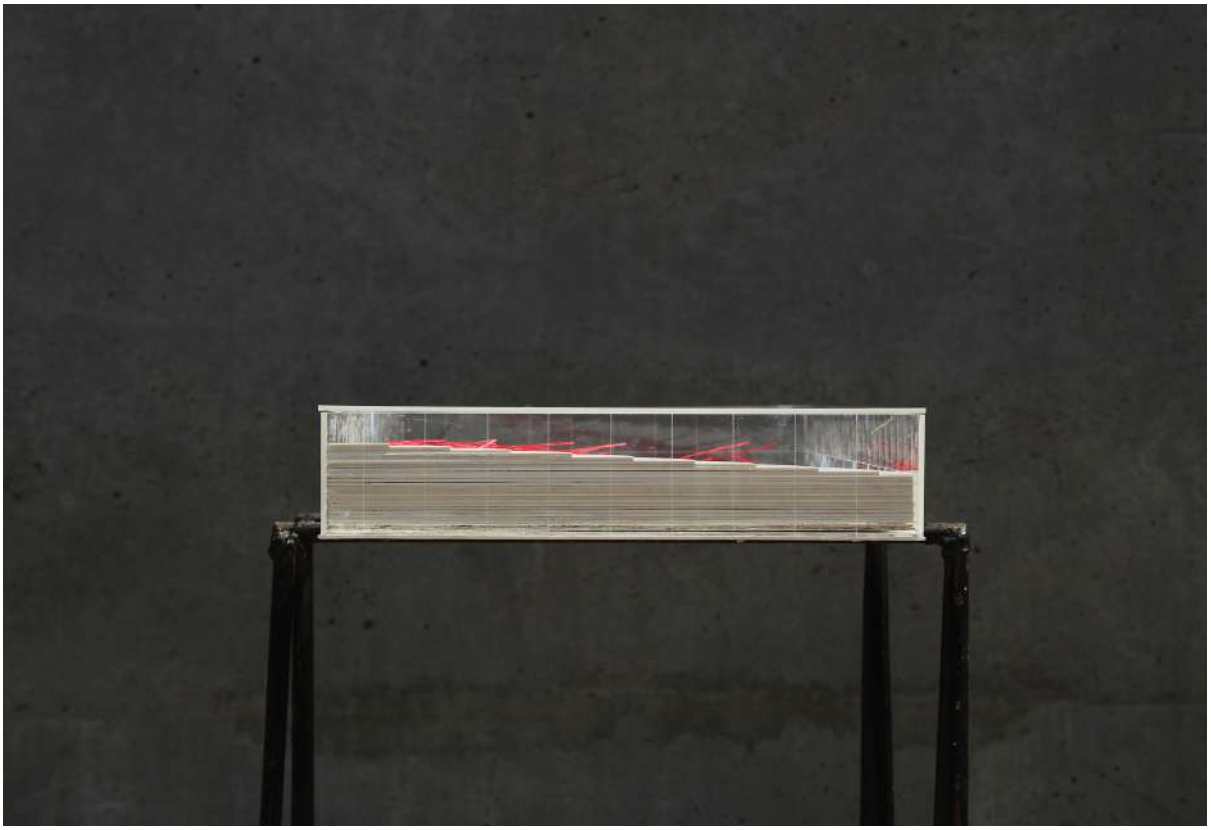












Project Painting

02

The Peak

Leisure
Kowloon, Hong Kong
1982 - 1983

2.1. Blue Slabs
2.2 Confetti

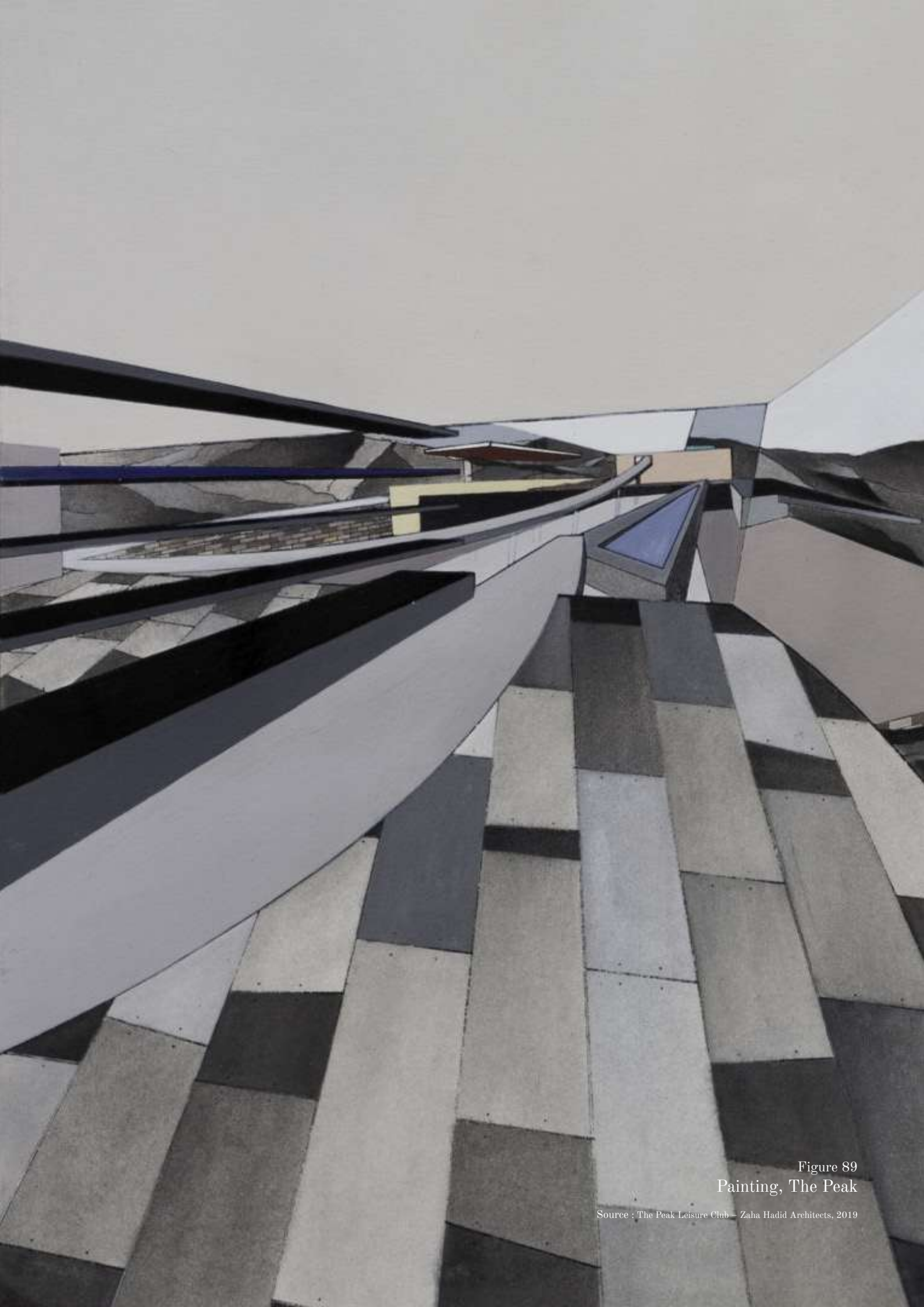


Figure 89
Painting, The Peak

Source : The Peak Leisure Club – Zaha Hadid Architects, 2019

Architectural Introduction

In the case of the peak, the built project is a series of layered planes intersecting with each other creating architectural spaces fulfilling the programmatic agenda of a leisure club. These layers cut through the mountainside of Kowloon, Hong Kong with its exciting visual qualities and natural setting of the peak signifying a sense of relief from the congestion within the city (Hadid, 2000).

Each of the suspended planes on the highest point of the peak acts as a specific programmatic layer at varied levels. These open-air programmed planes are meant to rest on the mountain creating a scope for built architectural landscape. Interior spaces are also created between the gaps of suspended planes at varying heights. Functional planes house spaces like exercise facilities, swimming pool deck, snack bar, library, lobbies and parking (Hadid, 2000).

The concept of this project begins with the abstraction of suprematist ideas which deals with the floatation of objects within space. This will be further analysed through paintings in the following chapters enclosed with this project.

Paintings

Abstract works from the peak project like The Blue Slabs, Confetti Suprematist Snowstorm and a set of project sequential drawings are selected for analysis in further chapters. These works are supported by Zaha Hadid's series of calligraphic sketches acting as a conceptual base for her canvas explorations as seen in figure 90. Regarding the Peak abstractions, Suprematist ideologies of object relationships and aspects of space can be considered to be a significant attribute within Zaha Hadid's painting attempts. All three abstract works have the qualities of fragmentation, anamorphic projections and other qualities of geometric order which show that objects are in flux. They also have a common idea of crossing beyond the canvas's confined boundaries, showcasing the concept of infinite space.

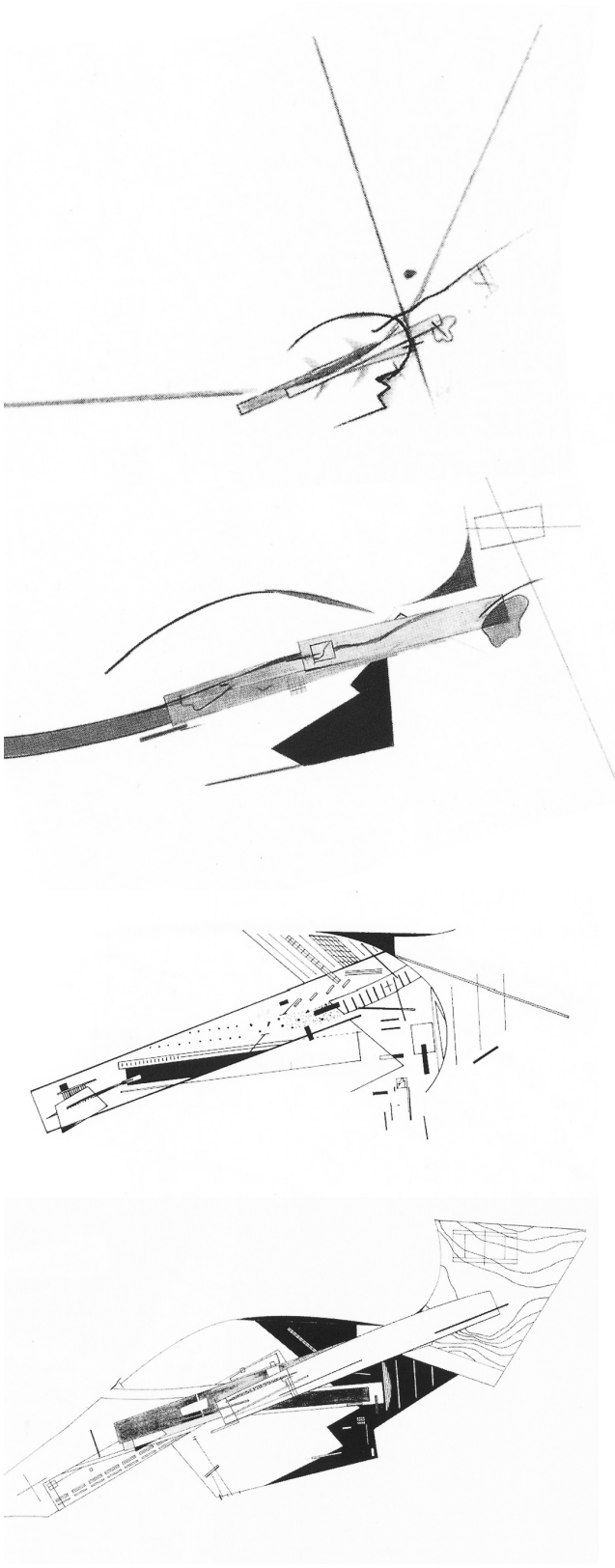


Figure 90: The Peak - Conceptual Diagrams

Source: (Hadid, 2000)



Figure 91: Snippets of Paintings “Blue Slabs” [2.1] and the “Confetti” [2.2] which are studied in this chapter

Source: The Peak Leisure Club – Zaha Hadid Architects, 2019

Painting [2.1]

Concept

This painting "Blue Slabs" (Figure 92) works on the idea of converting high-rise terraces within the congested city of Hong Kong into pure geometrical planes inculcating the suprematist ideologies of floatation. Picking up terraces as simple planes to form an abstract idea was to bring out the high-life leisure activities happening within the tall buildings settling onto the mountainside with vibrant views.

Foreground

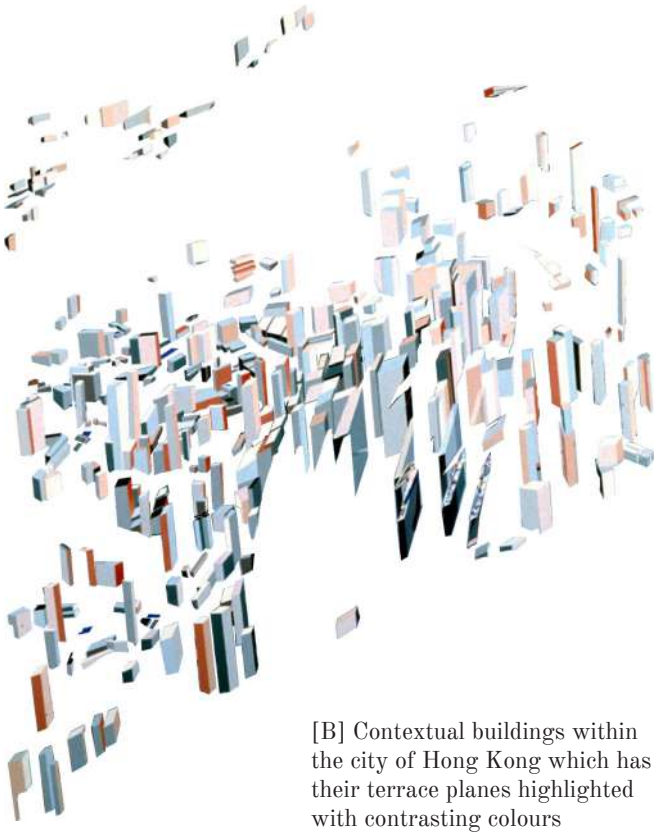
Moving onto the composition of the painting, foreground elements [B] comprise all the varied coloured roofing planes of built structures sprawled across the city till the peak of the mountain. All these elements were defined by stark colours and gave the closest sense of parallelogrammatic planar fragments. The whole composition also works on perspective technique where vanishing points exist at two ends of the diagonal stretching from the top-right corner to the bottom-left end of the painting as depicted in dissected sequence

As per the concept of abstraction, the focus ideally remains within a specific set of buildings [C] which are taken forward by Zaha Hadid in figuring out her programmatic idea. As shown in [C], This set of buildings is represented as flat plane extrusions where terraces seem to be illustrated with higher detail compared to the surrounding built environment. To implement the high life club program on the peak, it can be suggested that the terraces of high life detailed within the specific set are considered to be the planes which Hadid attempted to hover towards the mountain for architectural formation.

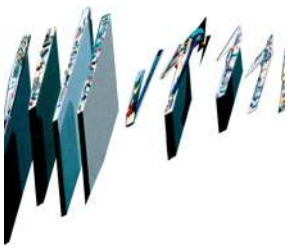
Here, these foreground elements reveal to be the first stage within the sequence of floatation where all the planes are set to fly away to the top towards the mountainside. As depicted in Figure 93(f) and 93(g), all the parallelogrammatic planar fragments in the built surroundings are set to float to the top showcasing the dynamic energy to establish a program on the mountainside. This is further justified in the upcoming analysis of the painting "Confetti" where all the planes are represented with rapid floatation bringing in the cosmic character of the Russian avant-garde.



[A] The final built form situated on the Victoria peak, Hong Kong



[B] Contextual buildings within the city of Hong Kong which has their terrace planes highlighted with contrasting colours



[C] Six built forms acting as cenrtral subject of the painting through its detail illustrated for terrace planes



Figure 92: Paintings 2.1 - “Blue Slabs”

Source: The Peak Leisure Club – Zaha Hadid Architects, 2019

Background

Turning now to the background elements, a mountain side which is the peak of Hong Kong is illustrated starting from the top end of the canvas which ends with a blend into the congested cityscape of Hong Kong. at the bottom end of the composition. On close inspection, it can be seen that the set of specific high-rise structures mentioned in the previous paragraph are represented to have shadows cast on the waterbody emphasizing the importance of the considered terraces for the program.

Almost subtle but intriguing detail is also the embedded rough abstraction of the built form (Element [A]) as seen which shows Zaha Hadid's initial thoughts on the arrangement of planes and its settlement on the peak. (Refer to the dissected analysis showcased in figure 93)

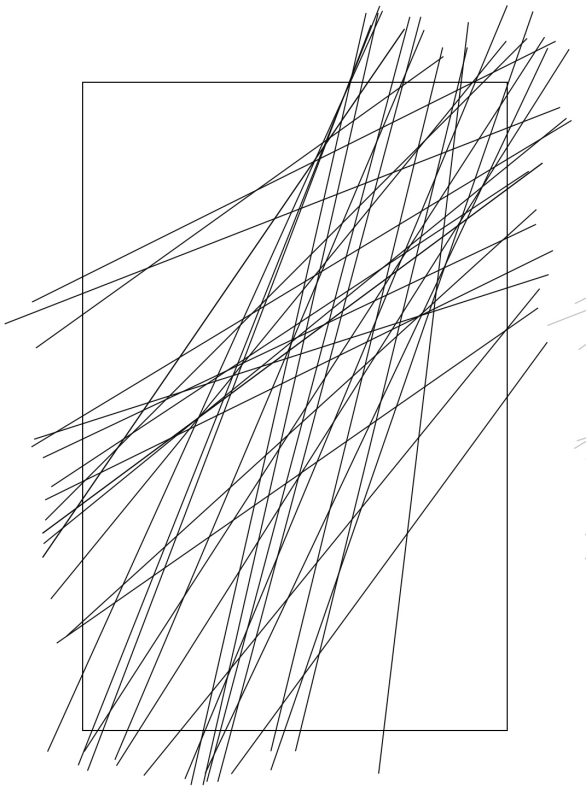


Figure 93(a): Layer 1

Indefinite abstract lines for perspective projections from a distant vanishing point for the creation of dynamic composition

Source: Author's Diagram

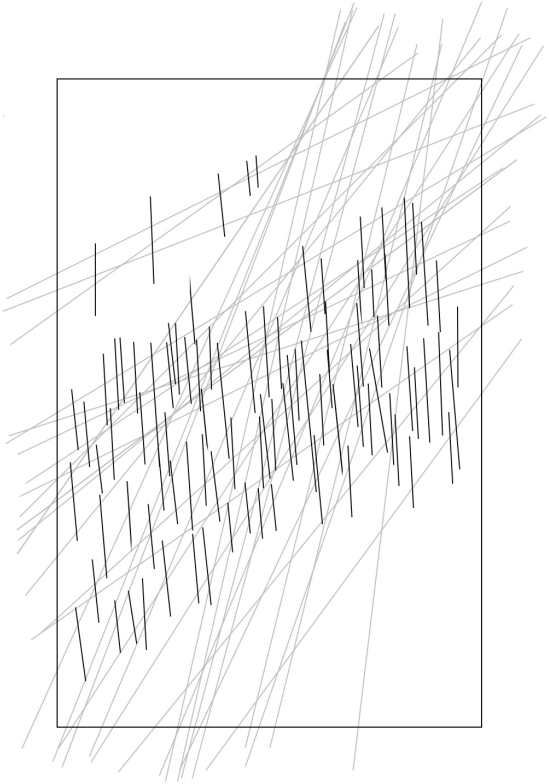


Figure 93(b): Layer 2

Vertical lines as constructive elements for the built elements

Source: Author's Diagram

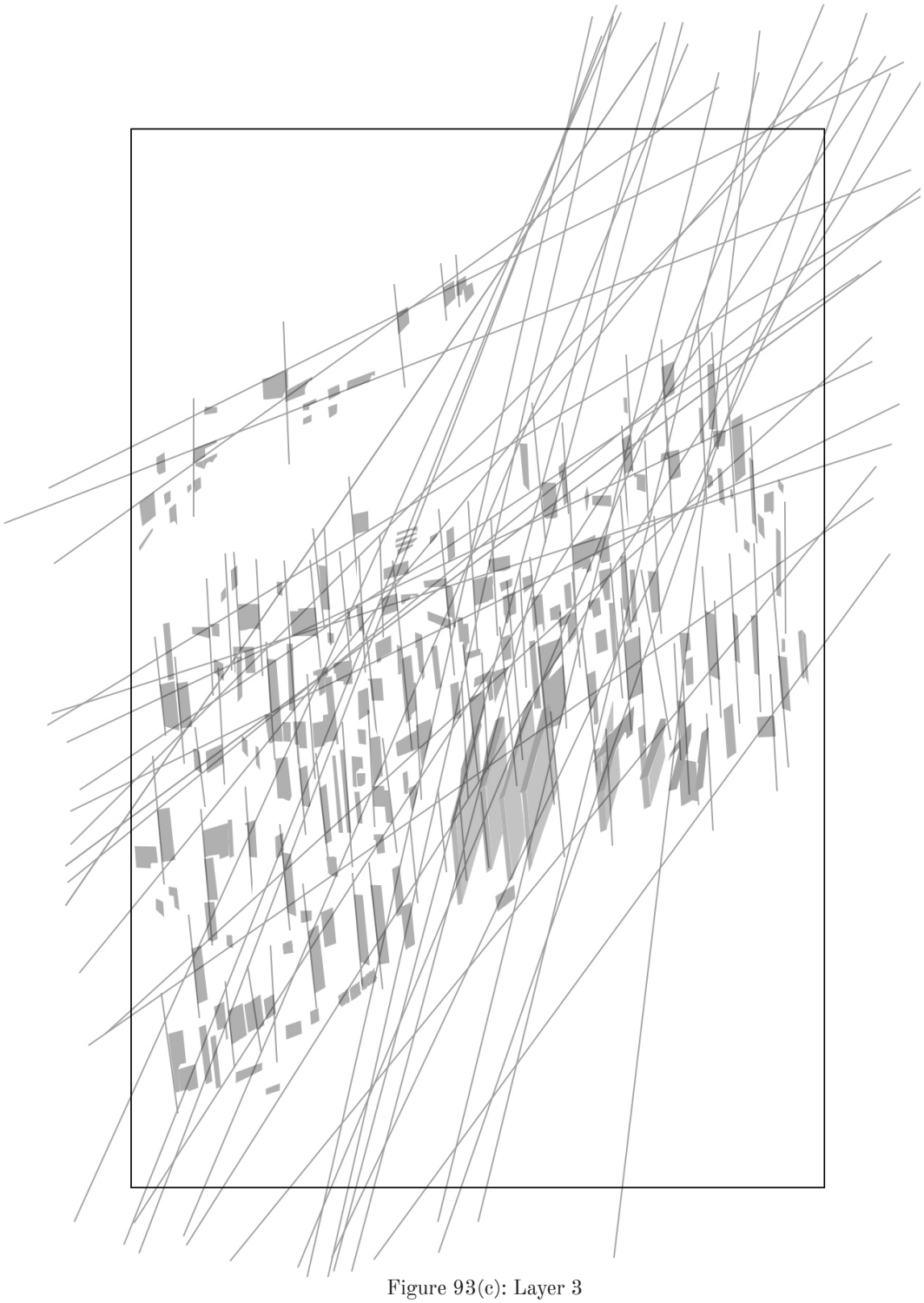


Figure 93(c): Layer 3

Construction of Built environment within the composition

Source: Author's Diagram

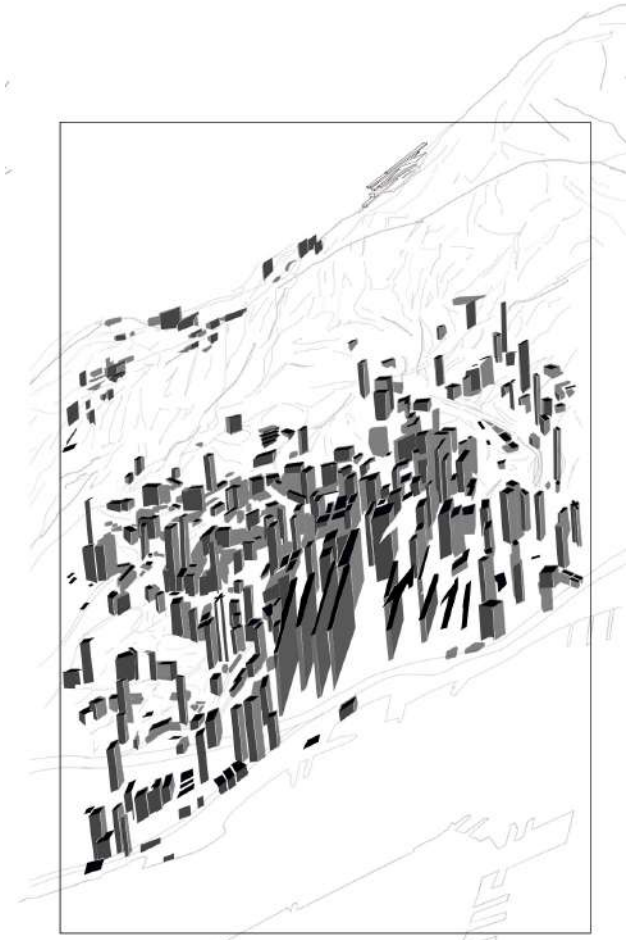


Figure 93(d): Layer 4

Setting of foreground buildings with the background of the mountainside “The Peak”

Source: Author’s Diagram

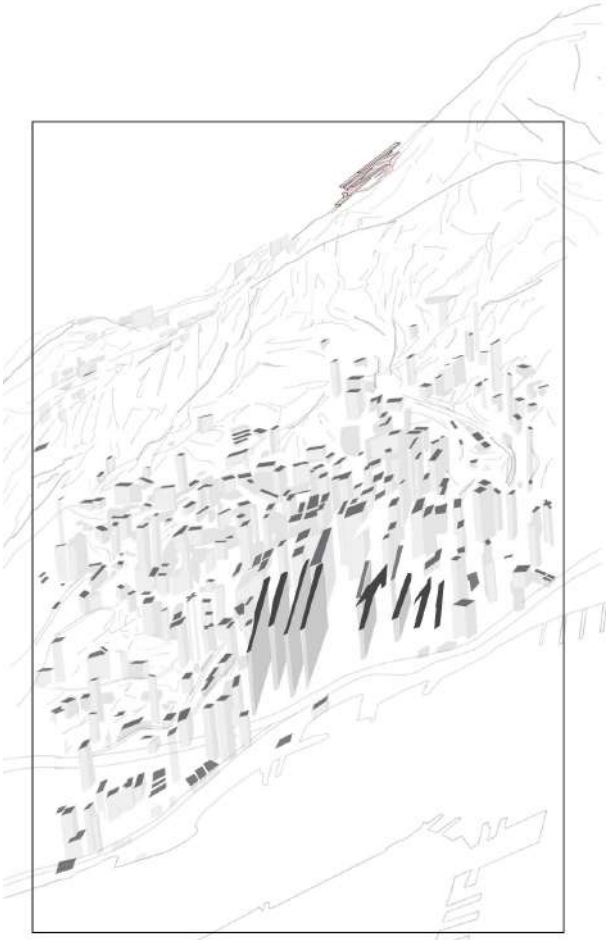


Figure 93(e): Layer 5

Focussing on the roofing elements which are parallelogrammatic planes

Source: Author’s Diagram

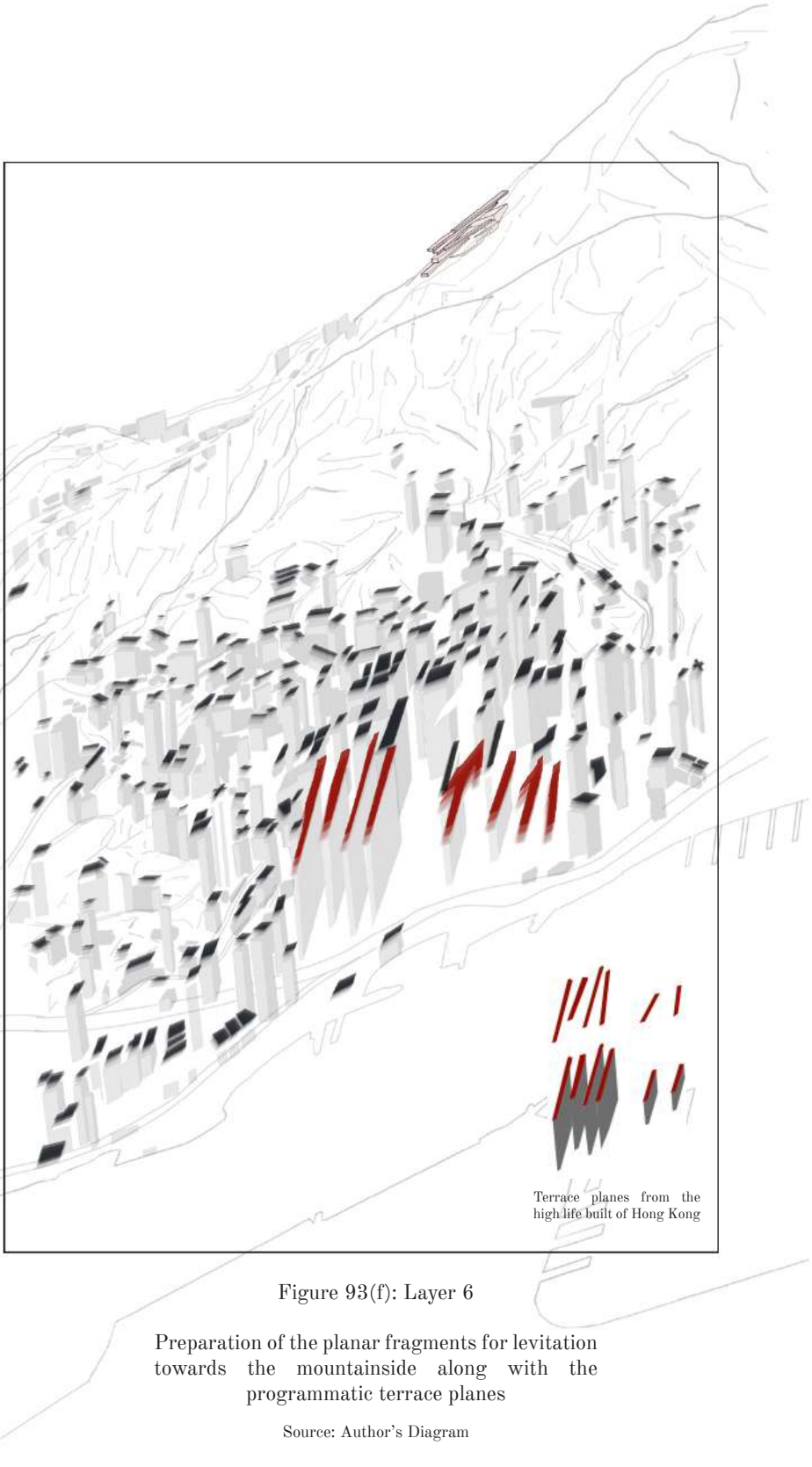


Figure 93(f): Layer 6

Preparation of the planar fragments for levitation towards the mountainside along with the programmatic terrace planes

Source: Author's Diagram



Figure 93(g): Layer 7

The programmatic terrace planes proceed towards the mountainside through the act of floatation and re-arrange itself to form the building piercing the mountain

Source: Author's Diagram

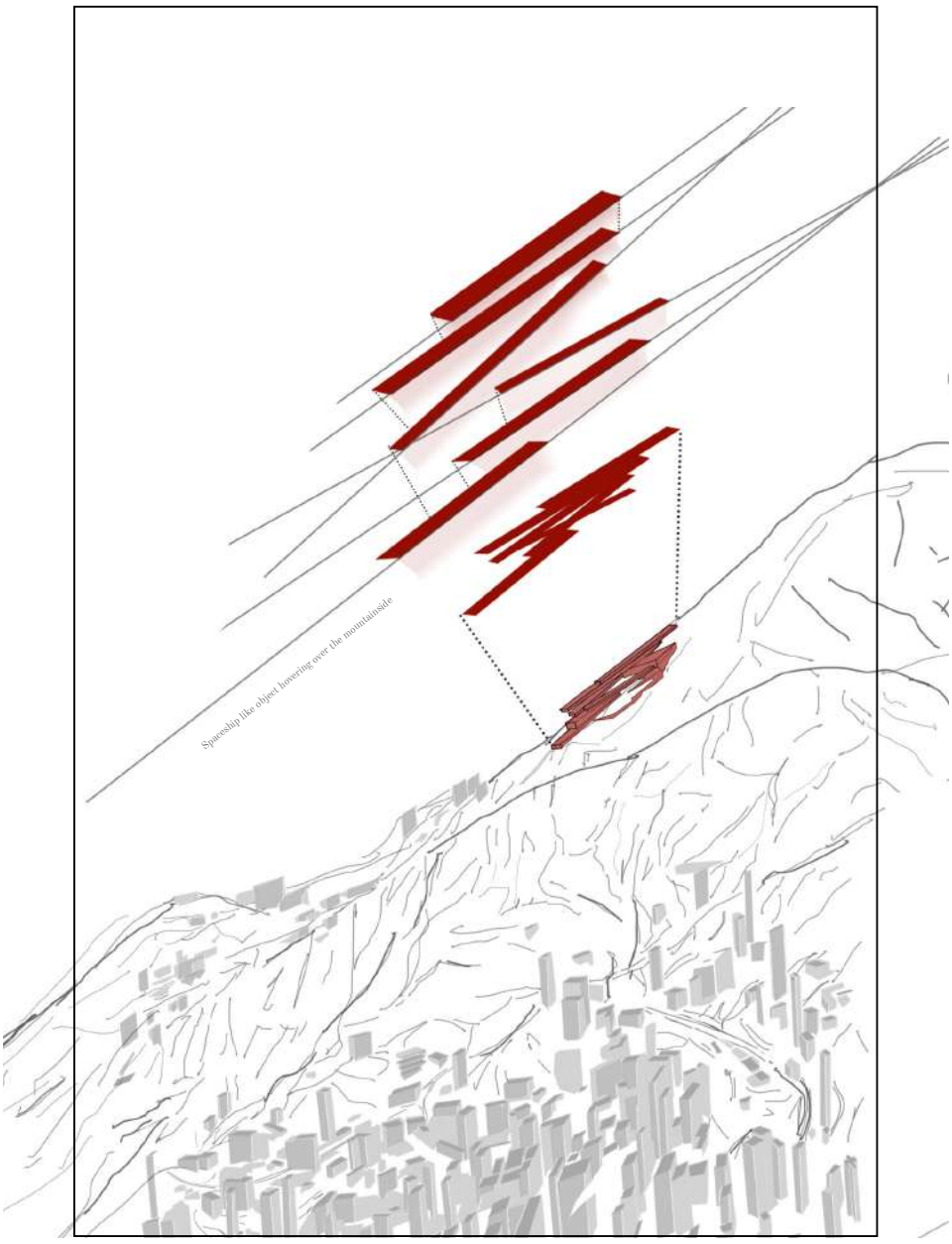


Figure 93(h): Layer 8

Final stage on the process of floatation carried out by the planes across the environment. Thrusting planes rearrange itself in space and intersect each other at the peak to form the building. The next painting "Confetti" deals with one of such transition stages

Source: Author's Diagram

Painting [2.2]

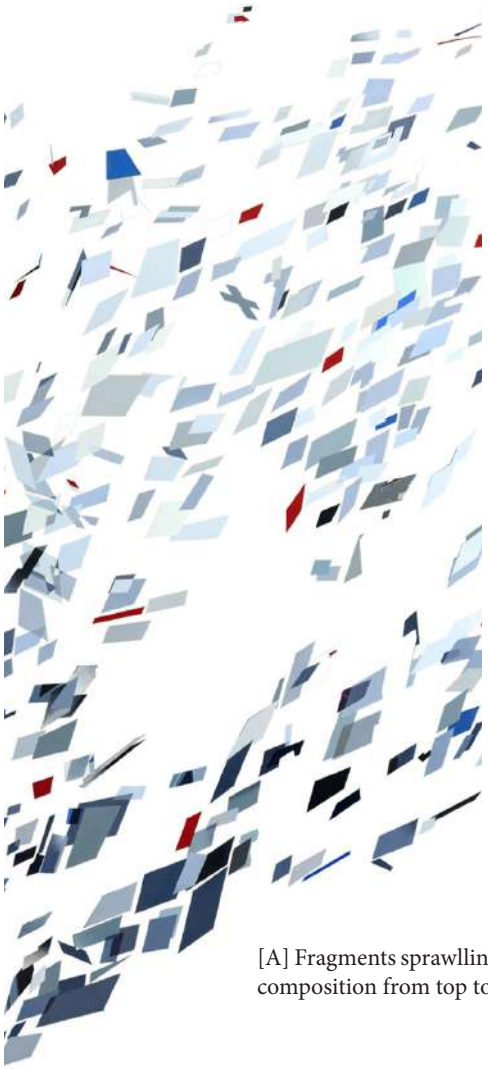
Concept

With respect to the previous painting “Blue Slabs”, “Confetti” as a painting acts as a striking transition through its dynamic action of fragmentation and its nature of inter-relationships between planar fragments. In this painting, the arrangement of elements suggests that all the planar fragments of roofings are in motion towards the top along with six major terrace planes which are of higher detail and prepared to act as programmatic spaces.

Foreground

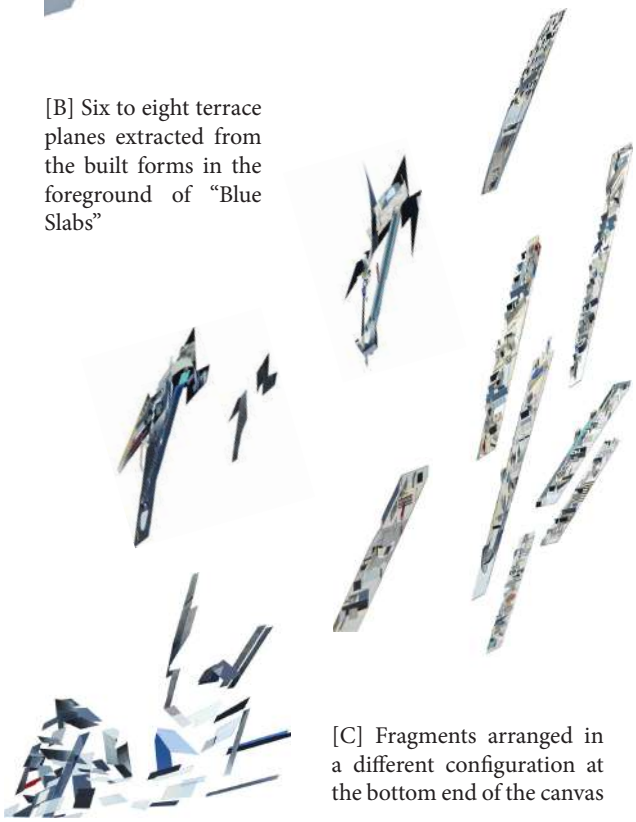
In Confetti’s foreground arrangement, the terrace planes [B] which were seen in the previous painting are portrayed in much larger sizes to show a level of abstraction within its interior elements. Here, all these planes were beginning to take a programmatic shape through their internal detailing and differentiation in forms which are actual spatial elements. These smaller detailed elements within each plane define a certain program. For eg. a plane has a blue strip through the length of the plane which resembles the proposal drawings of swimming pool space bringing in the program for each plane. Planes also consists of black and white tiled strips represented at a few parts of the plane revealing it to be for a specific program as per other proposal drawings.

Within the composition, the arrangement of these six detailed planes in the foreground seems to be energetically dashing towards the bottom of the canvas space, creating a sensation of motion. This sense of motion is also enhanced by the distribution of smaller fragments at the bottom of the canvas [C]. Here, it’s plausible that the six planes were meant to actively dash to the bottom creating a responsive reaction of fragments flying away at different momentum following different paths as investigated in figure 95. On this basis, one can speculate that the “Confetti” painting is an act of active motion/transition towards setting up a program in the mountainside.



[A] Fragments sprawlling across the composition from top to bottom

[B] Six to eight terrace planes extracted from the built forms in the foreground of “Blue Slabs”



[C] Fragments arranged in a different configuration at the bottom end of the canvas



Figure 94: Painting 2.2 - “Confetti”

Source: Author’s Diagram

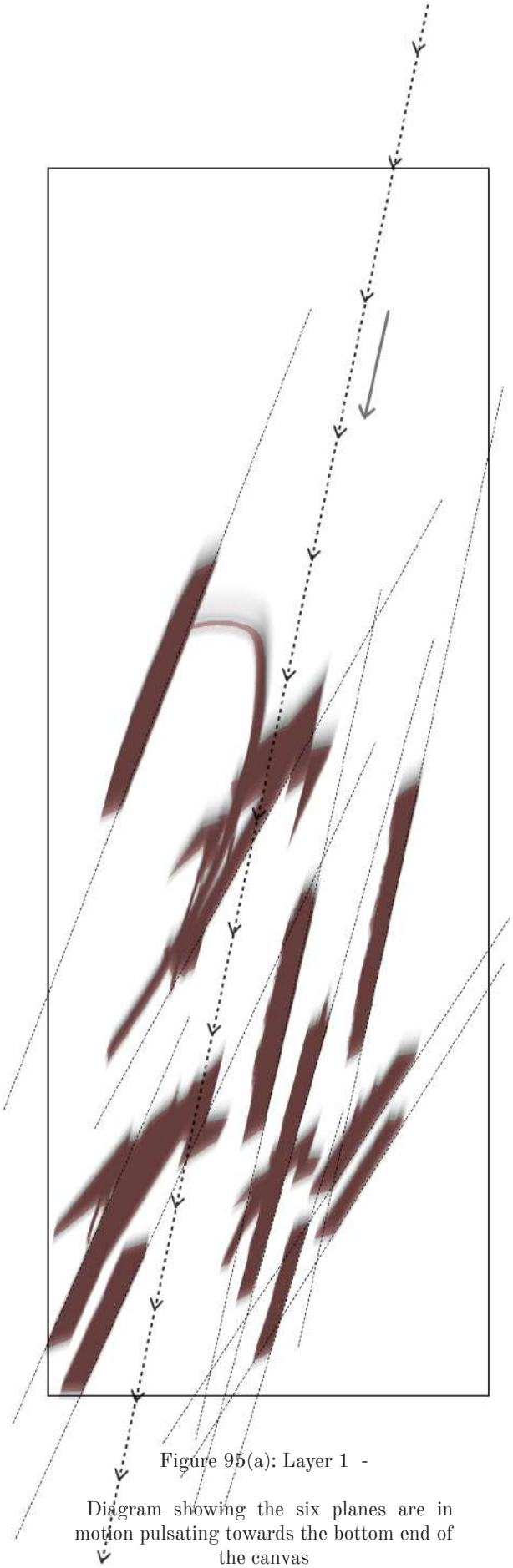


Figure 95(a): Layer 1 -

Diagram showing the six planes are in motion pulsating towards the bottom end of the canvas

Source: Author's Diagram

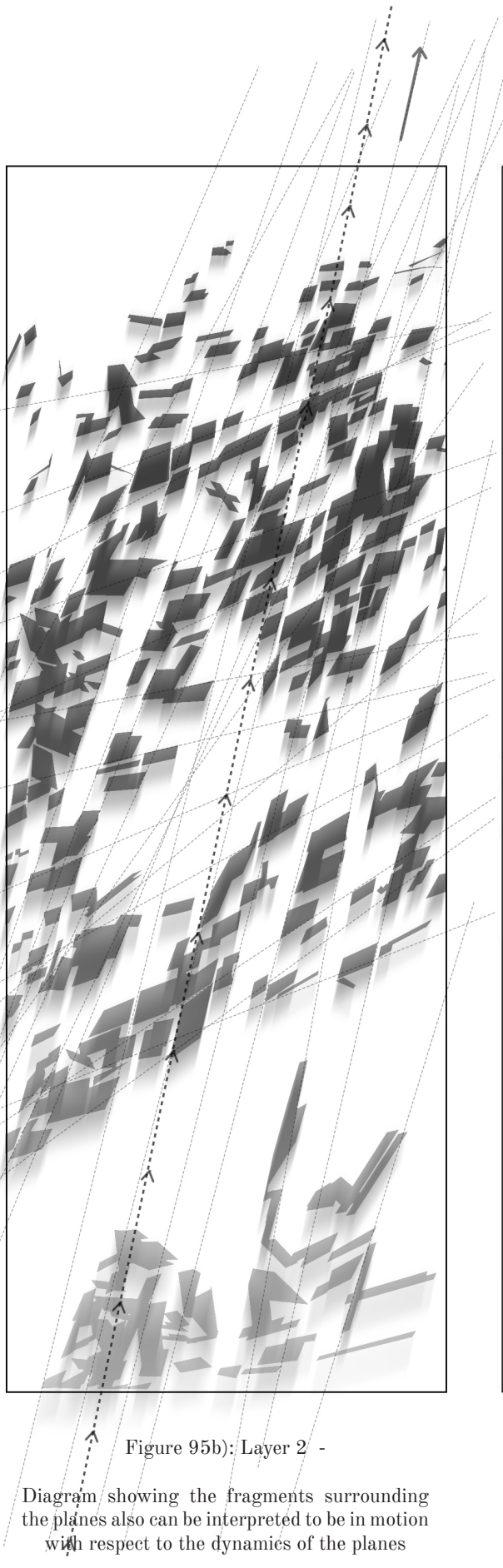


Figure 95b): Layer 2 -

Diagram showing the fragments surrounding the planes also can be interpreted to be in motion with respect to the dynamics of the planes

Source: Author's Diagram



Figure 95(c): Layer 3 -

Diagram depicting the extruded fragments (Built environment) which seem to static in relation to the dynamic elements within the composition. This can also suggest an idea of static context in a kinetic nature

Source: Author's Diagram

Background

Regarding the background elements of the painting, Few buildings or extrusions are kept in shape as it is from the blue slab without the roof planes shifting from position (Highlighted in Figure 95(c). It is possible that Hadid has kept these intact to showcase the relative motion of other fragments with respect to the city context. As we move to the top part of the canvas, the number of particles continues to become less dense suggesting an effect of transition fading away towards the mountain (Figure 97). Here, the mountain is represented with a faint horizon outline as a subtle reference to the context.

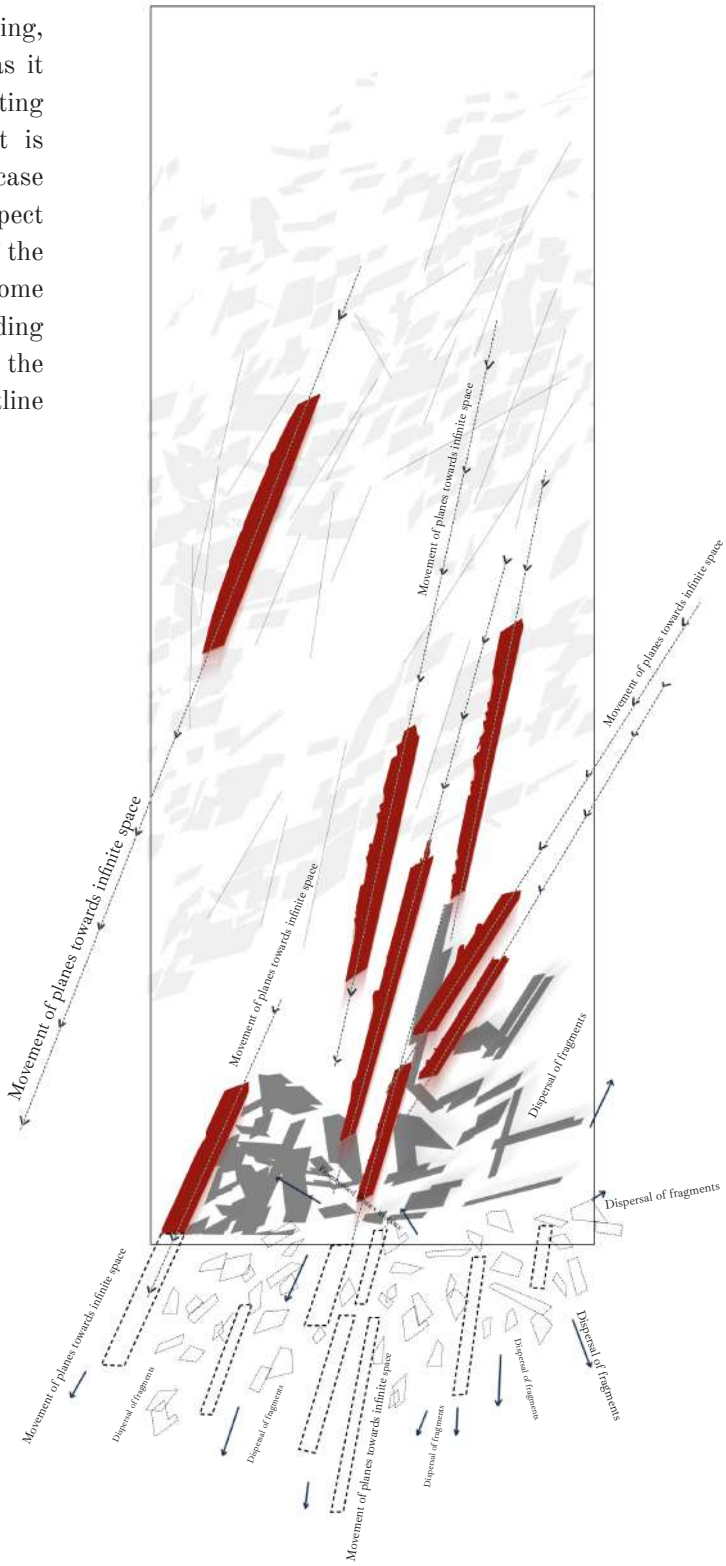


Figure 96: Analytical Diagram depicting the act of floatation with the programmatic planes. The arrangment of planes is a speculation of active movement towards the bottom of canvas space resulting in dispersal of smaller fragments. This also gives an effect of infiite space though its movement beyond the picture frame

Source: Author's Diagram

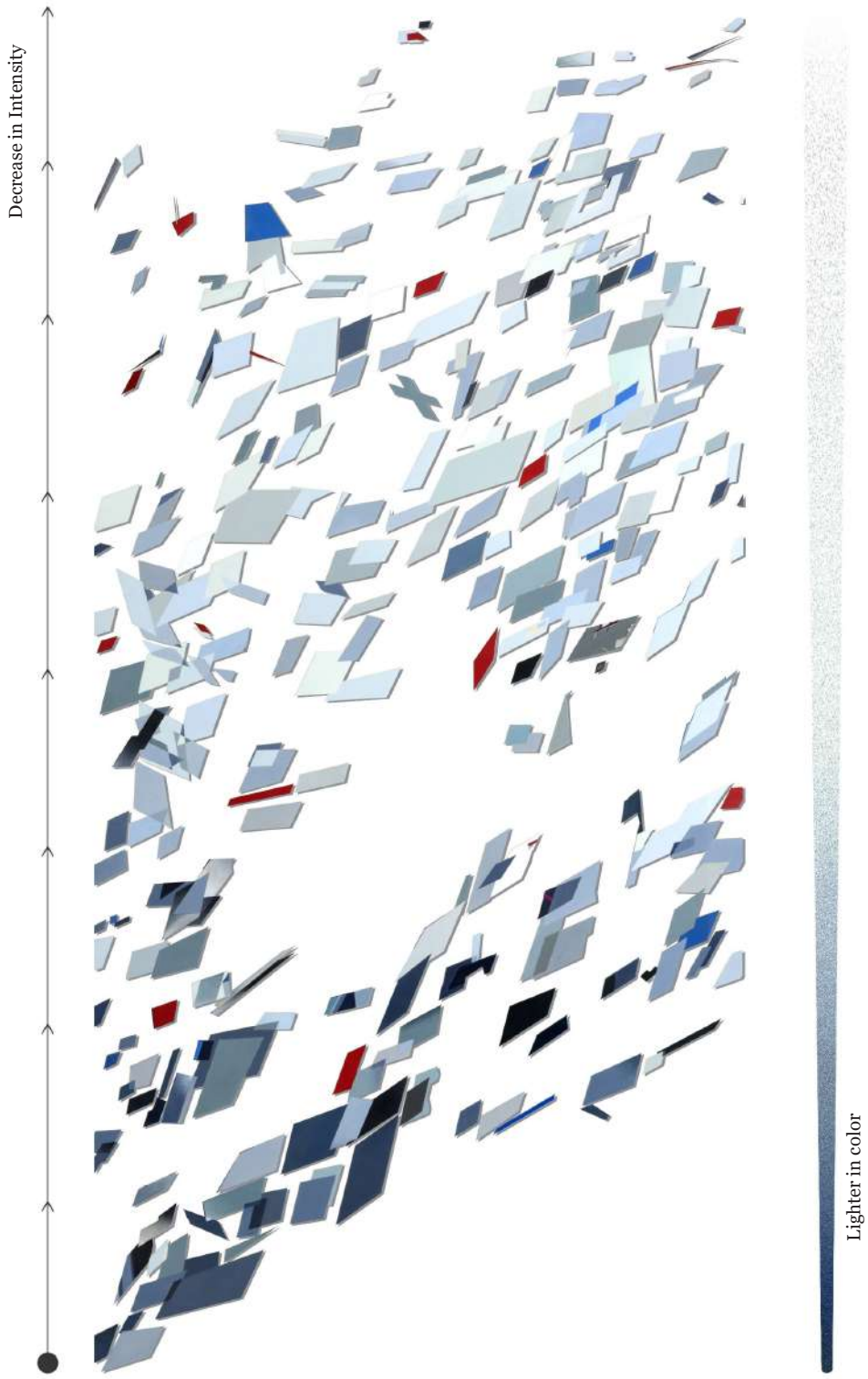


Figure 97: Analytical Diagram showcasing the fragmentation effect of the planar elements. The number of elements proceed to become less dense towards the top showing an sense of field transitioning towards the mountain.

Source: Author's Diagram

Tracing In Three-Dimension - Physical Model

Spaceship

3mm thick white acrylic sheet, 3mm thick transparent acrylic sheet and 1mm thick red acrylic pieces.

This physical model is an analytical by-product of the previous chapters which culminates itself as a synthesis of allthe diagrams into a three-dimensional construction. This model allows one to interpret the concepts of paintings 2.1 and 2.2 in three-dimension through understanding of objects and its physicality.

The concept of the model majorly shows the development from diagram 3 to 5 where the planes undergo the process of levitation and gradually settle on the mountainside by arranging several planes together into a built form

Making

Here, the rigid mountainpeak is represented through slides of white acrylic arranged on an A4 size surface. To showcase terrace planes in the act of floatation, red acrylic planar pieces are fixed onto the vertical slides of transparent acrylic which suggests that the planes are in suspension.

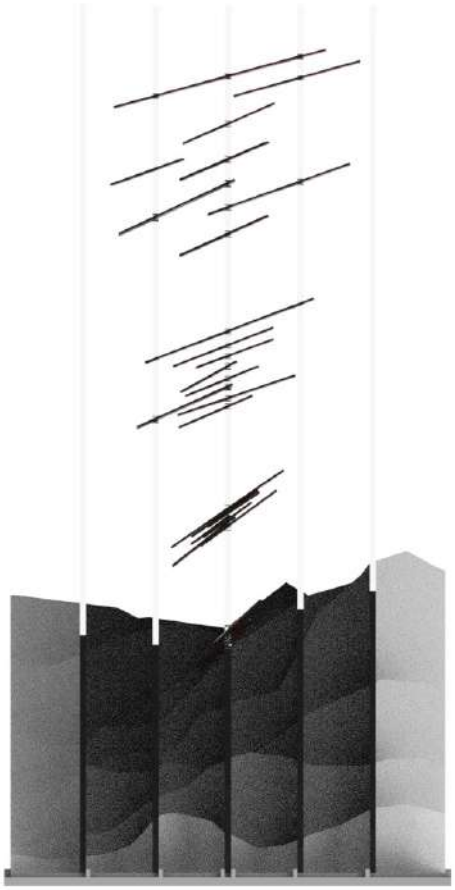


Figure 98(a): Front view -
Re-arrangement of planes in space

Source: Author's Image

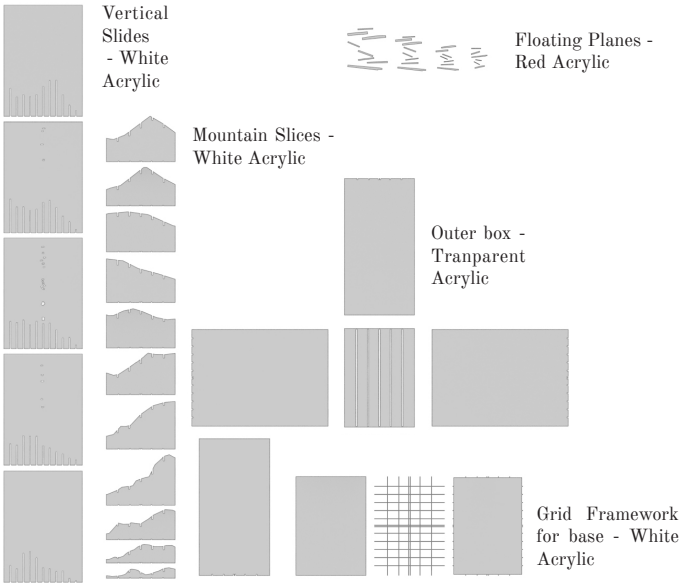


Figure 98(b): Kit of parts - Physical model preparation

Source: Author's Image

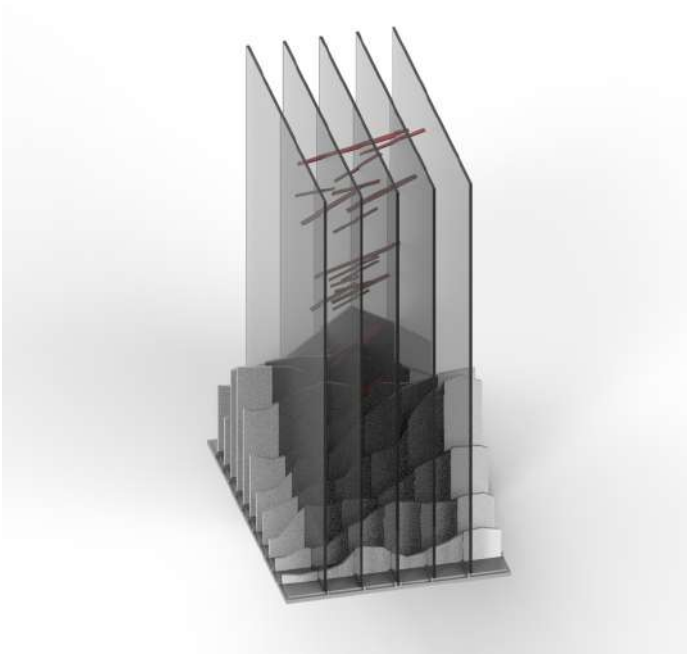


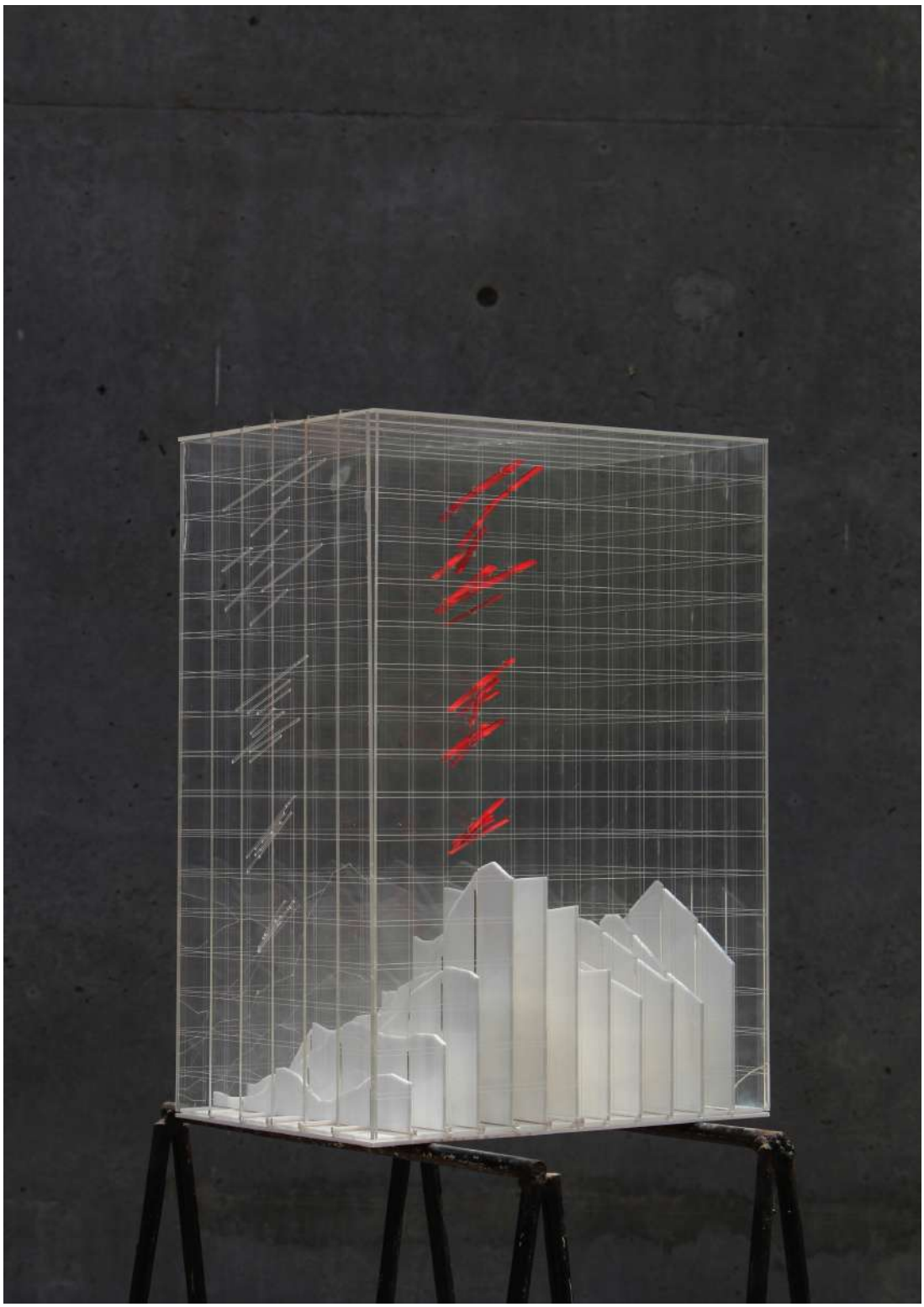
Figure 98(c): Visualized model - Perspective view

Source: Author's Image

Figure 99: Physical Model Photographs - *Spaceship*

Source: Manjunath.S, 2024

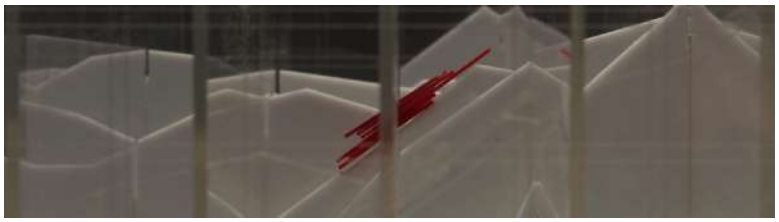


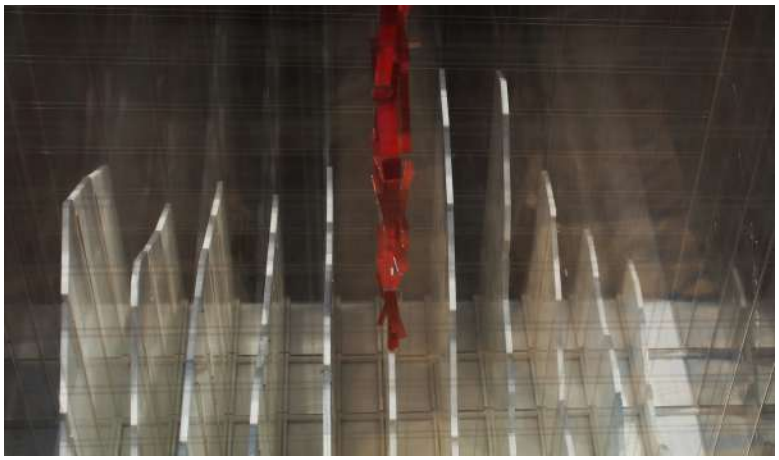


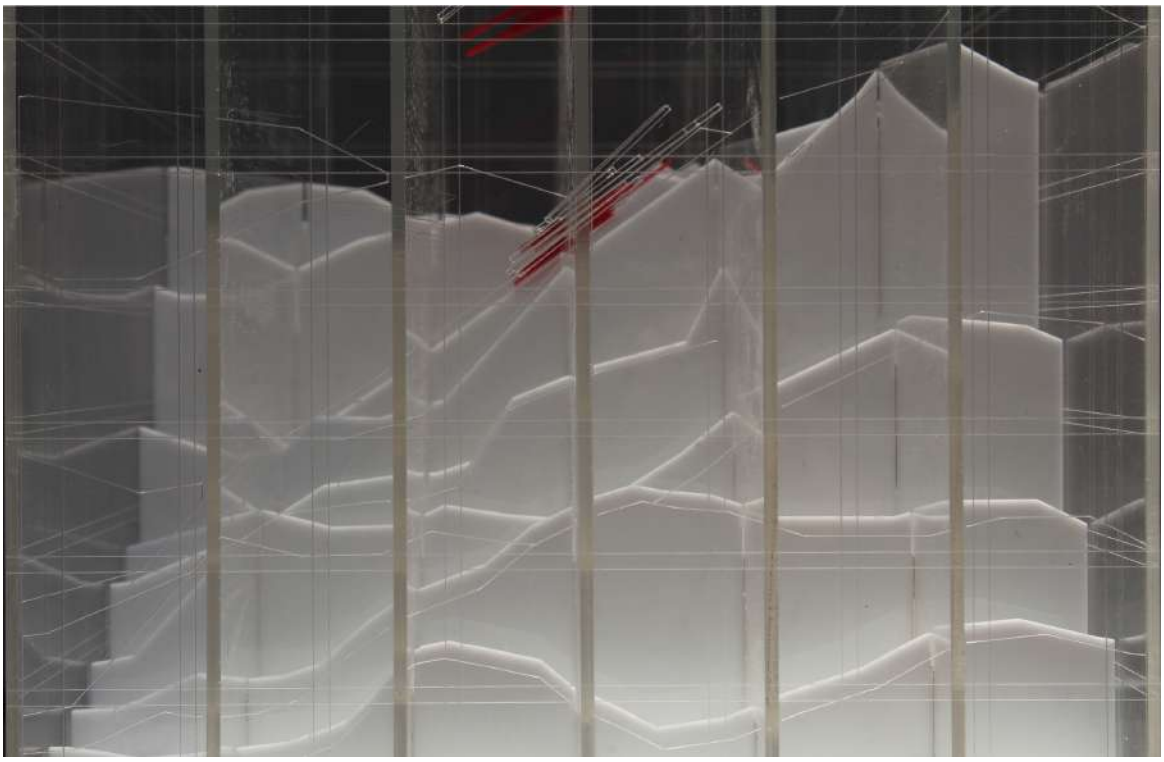


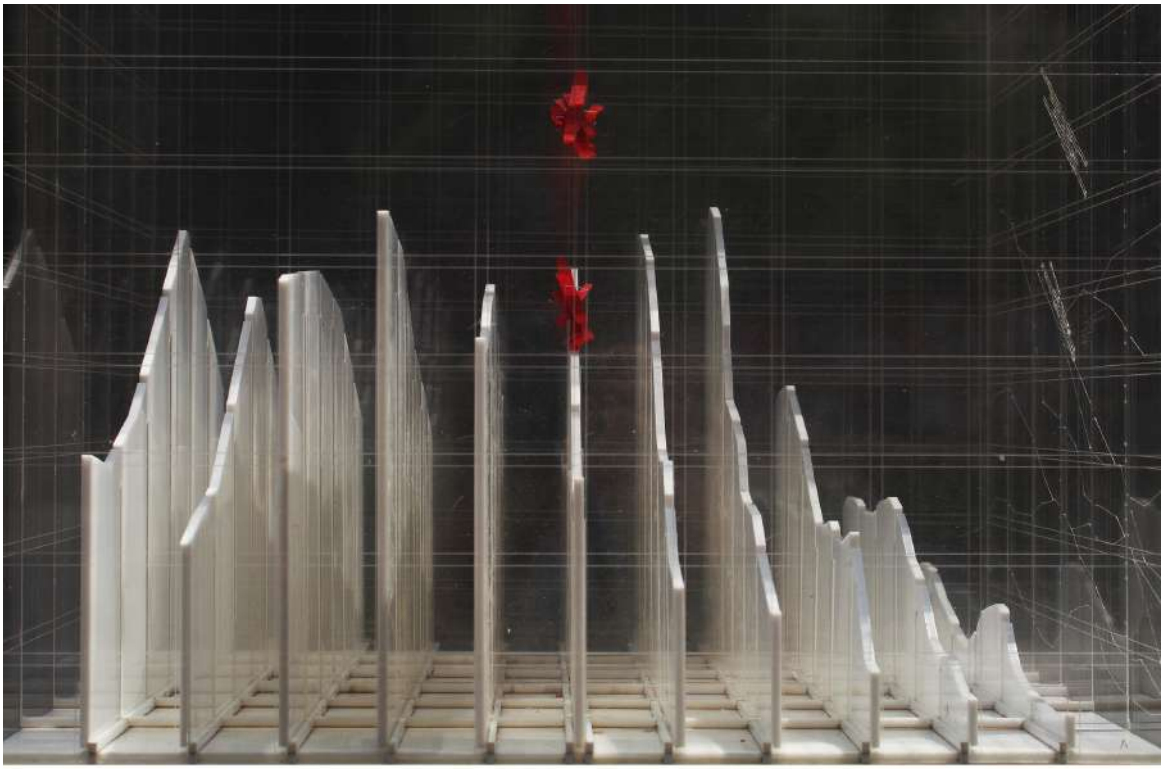


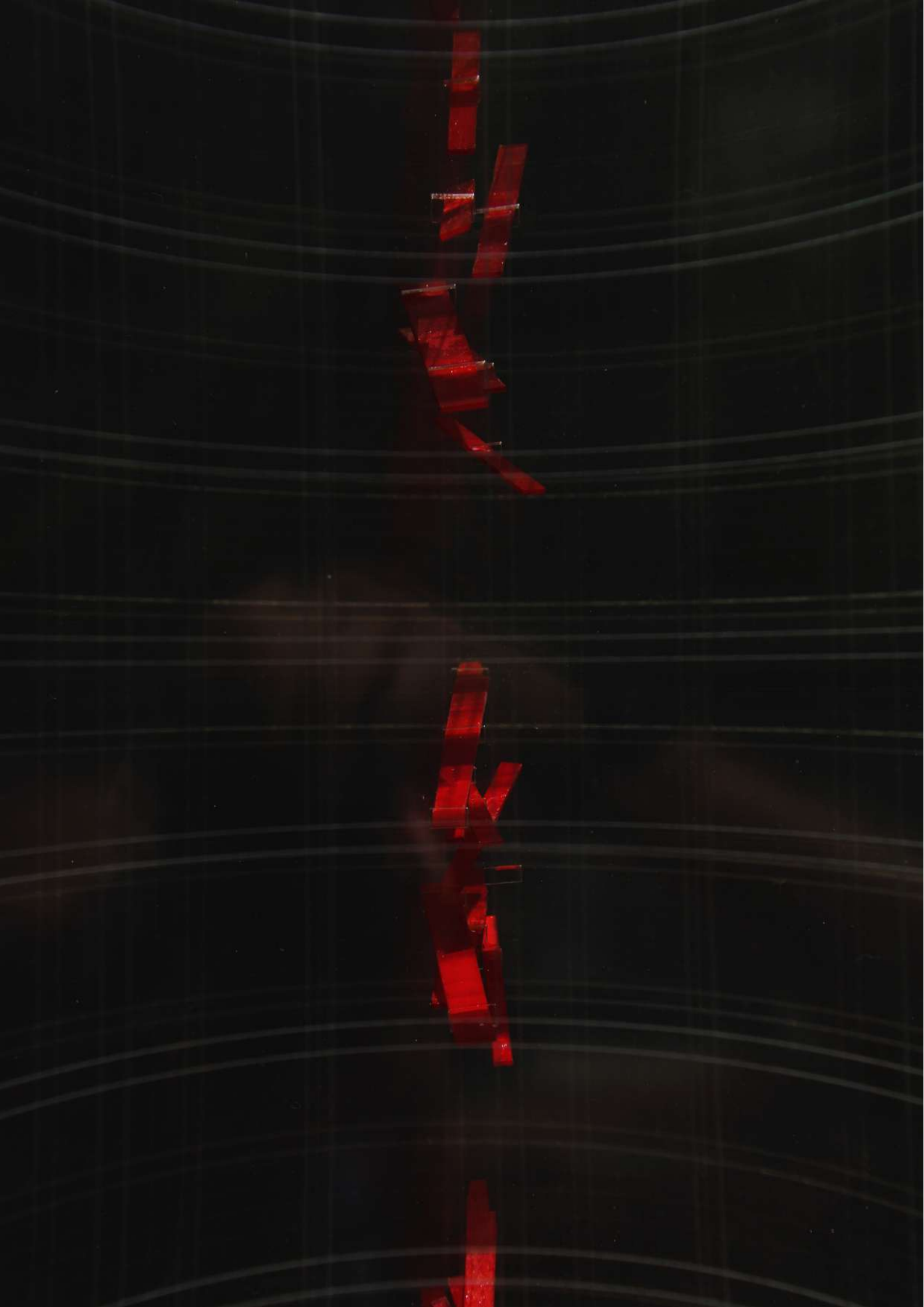












Project Painting
03

The Great Utopia

Exhibition
New York, USA
1992

3.1 Tectonic



Figure 100

VR Video Frame,
Tatlin Tower and Tectonic “Worldwind”, 1992-93
Zaha Hadid. Acrylic/pencil on cream paper.

Source: ZHVR Group, 2014

Architectural Introduction

The Great Utopia is one of Zaha Hadid's explorations which deals with exhibiting the works of Suprematism and Constructivism in Frank Lloyd Wright's Guggenheim Museum. This was a design proposal for showcasing these Russian Avant-garde works through two large-scale installations, Vladimir Tatlin's "The Monument to the Third International" tower and Kazimir Malevich's Three Dimensional Assemblage called Arkhitekton. In addition to installations, the proposal also includes interior gallery paintings speculating the exhibits of suprematist and constructivist works (Betsky, 1998).

This project had features which allowed visitors to gain insights through visual engagement with the proposed installations. It displayed the interventions of Tatlin and Malevich which were set up in opposing directions to convey the unique schools of thought during the Russian avant-garde period (Betsky, 1998).

Moving onto the major installations, Tatlin's tower stood high in the centre of the Guggenheim Museum enclosed within the spiral of the rotunda as observed in the section of Figure 103. Here, Zaha's abstract version of the Tatlin Tower stood out with its spirals contrasting with the architectural spirals of Frank Lloyd Wright's rotunda. Malevich's tektonik was also executed to be an interactive installation which was distorted on the spiralling lines of the central Tatlin's tower.

Paintings

The Great Utopia project included various paintings ranging from perspective views of the installations to plan paintings of Guggenheim galleries with exhibits of suprematist and constructivist works (Figure 101). To investigate the aspects of cosmic character as outlined in this research hypothesis, the paintings chosen will only have the various abstracted perspective visions of the Tatlin tower and Malevich tektonik to separate the core programmatic paintings which do not include floatation or other cosmic attributes. The chosen paintings comprise two perspective paintings of the installation along with supporting plan paintings and rotunda views.



(a)



(b)



(c)

Figure 101 (a), (b) and (c):
Drawings for "The Great Utopia" exhibition, 1992, Zaha Hadid

Source: Spiraling up to Utopia | Getty News, 2022



Figure 102: Plan of abtracted Tatlin's Spiral,
Zaha Hadid1992/1993, Acrylic and pencil on card

Source: Zaha Hadid Foundation, n.d.

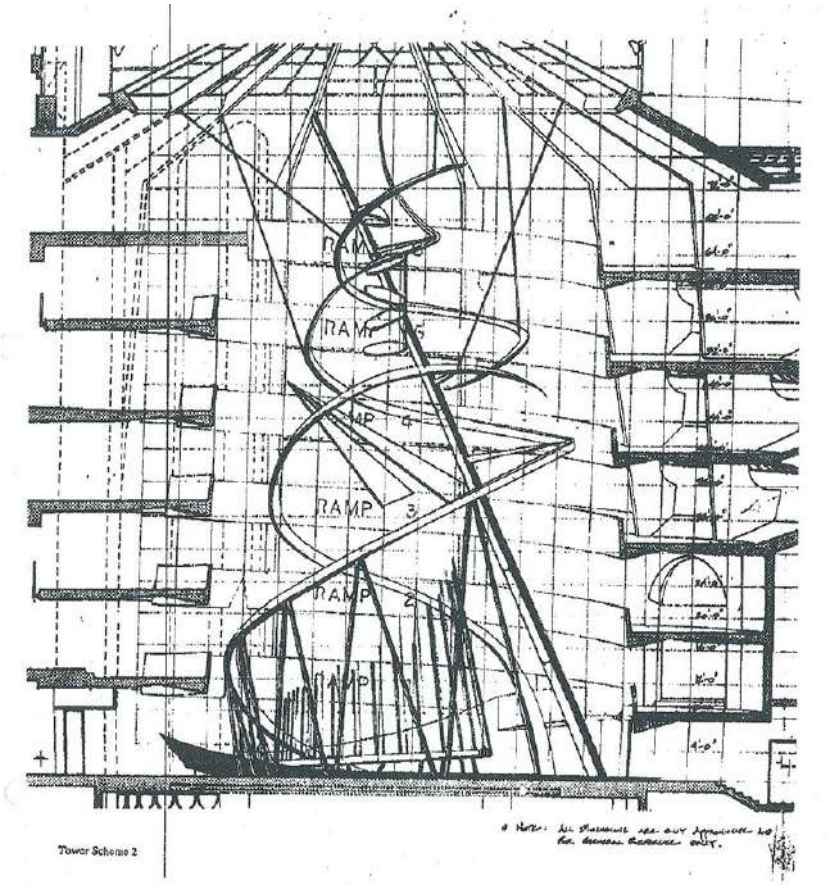


Figure 103: Fax copy, Tatlin's Tower Installation
proposal in Guggenheim Museum's Rotunda

Source: Mendelsohn, 2016

Painting [3.1]

Concept

In the case of The Great Utopia, "The Tectonic" reveal the combination of abstracted Tatlin's tower where Malevich's tektonik take shape by hovering along the tower structural spiralling line around the central axis of the Guggenheim's rotunda .

Foreground

Regarding the painting "Tectonic", foreground elements take up the majority of the painting's composition with subtle lines of Guggenheim's spiral rotunda as the background. One of the major foreground elements originating from the bottom-left corner of the canvas is the Tatlin tower [B] which is illustrated as an abstract version of the actual monument with a certain level of perspective foreshortening resulting in visual breakage of the structural member in the centre.

As annotated in the Figure 107 and 108, the whole tower comprises several components like the spiralling-helix plane [D], inclined structural girder [B] and geometrical forms like cylinders and a pyramid [E]. Here, these components are abstractions of Tatlin's tower which is the "Monument of the Third International. The original tatlin tower has the same components which is the upward spiral structure along with the diagonal girder and set of geometrical forms. Although these geometrical forms are meant to have functions and were supposedly revolving along the spiral, Zaha Hadid potentially tried to abstract symbolically taking the forms as per the scope of the Guggenheim's installation.

In the painting, the Tatlin Tower is represented through perspective distortion taking the spiralling force lines of Guggenheim as a reference. Like interpreted in Figure 106, An intriguing exercise would be to visualise this would be a space vortex warped from top to bottom distorting the dynamics of the objects enclosed within it. The technique of perspective foreshortening is more likely comparable to scientific forces such as centripetal and centrifugal forces since the objects follow a fixed curvilinear axis along with a central body.

This distortion is more likely suggesting the Soviet symbolism behind Tatlin's tower design where the upward spirals and the sense of astronomical revolution towards the top resemble the act of dynamic and futuristic goals of a utopian society. It appears that Zaha Hadid has employed the spiralling path in her painting to show the underlying symbolism behind the construction of Russian avant-garde and thus justifying the exhibits of "The Great Utopia".

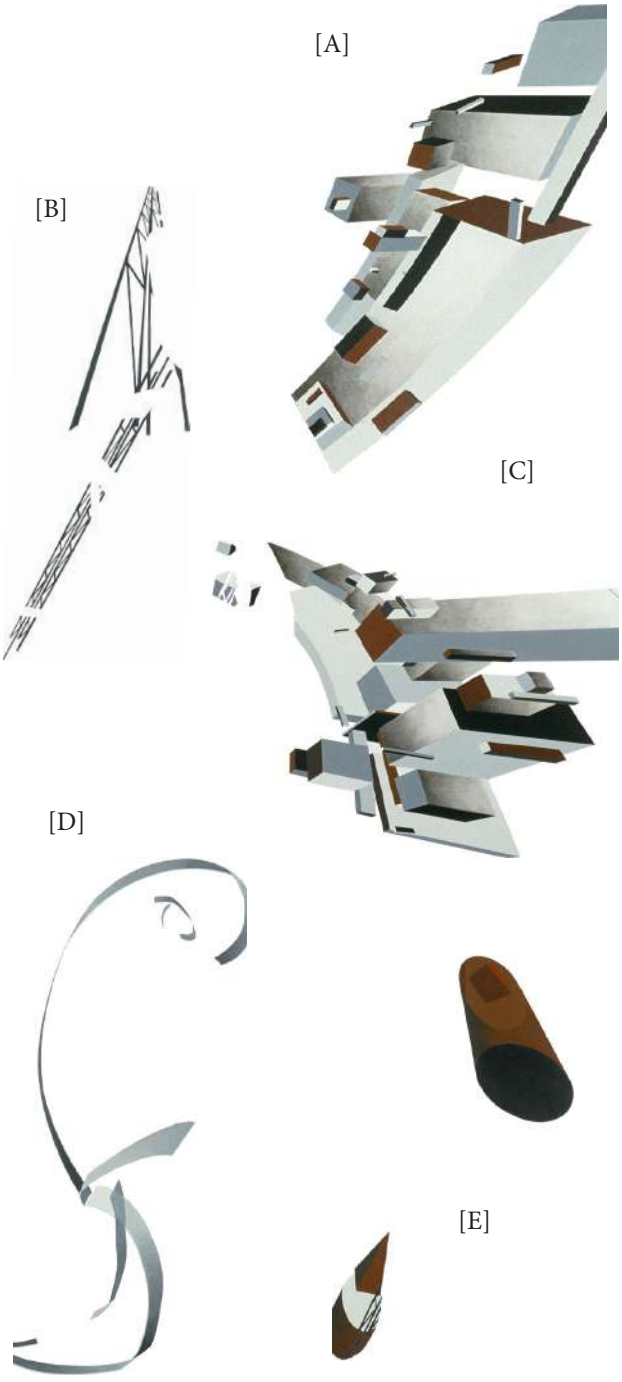




Figure 104: Painting 3.1 - Tectonic
Acrylic and watercolours on cartridge paper,
Zaha Hadid, 1992/1993

Source: Mendelsohn, 2016

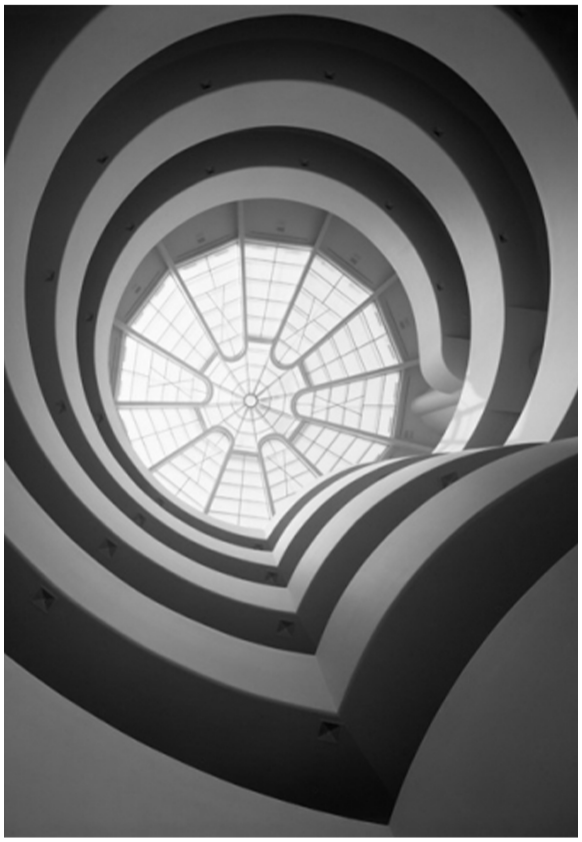


Figure 105: Solomon. R. Guggenheim Museum's Rotunda

Source: Heald, SRGF, 2020

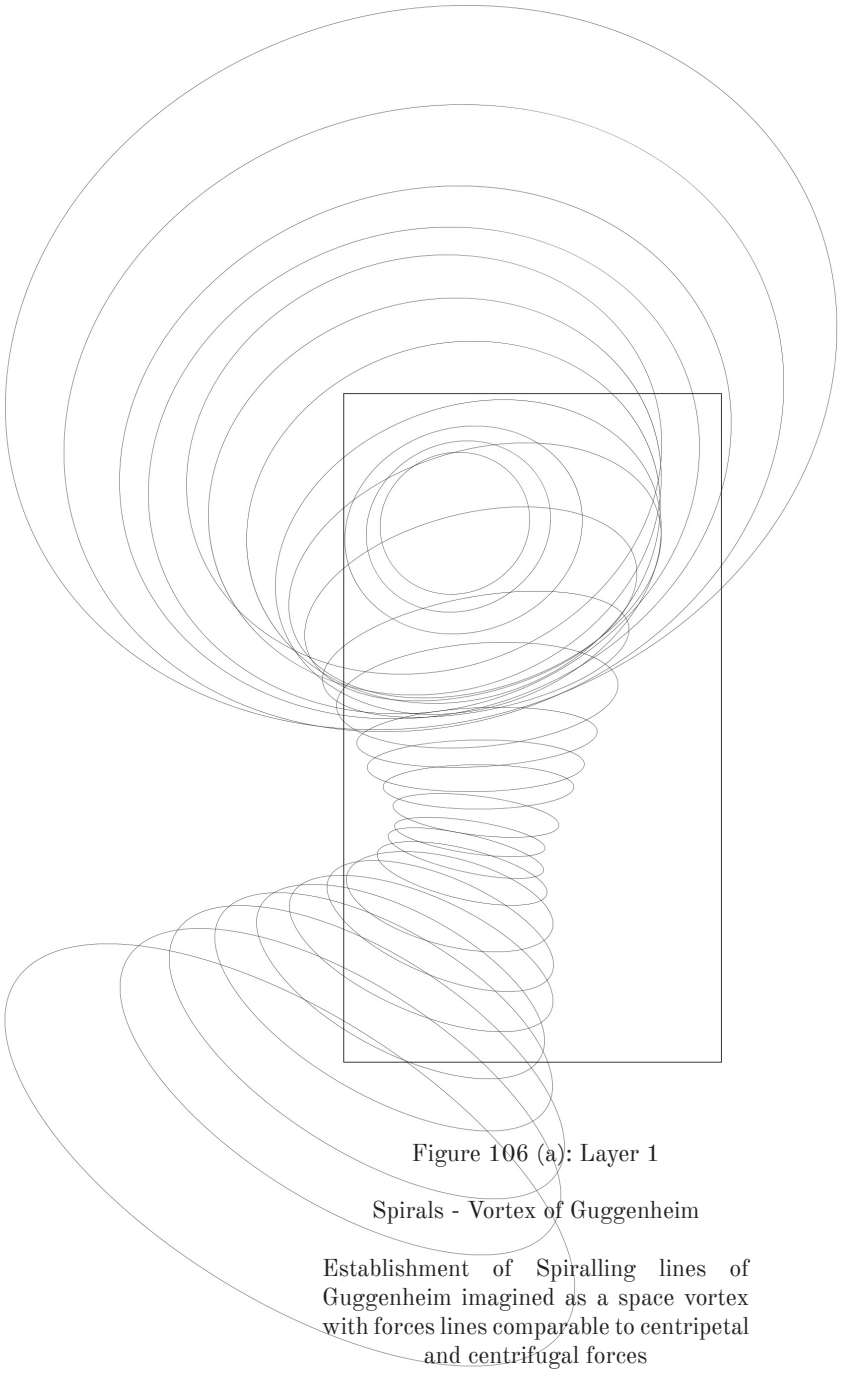


Figure 106 (a): Layer 1

Spirals - Vortex of Guggenheim

Establishment of Spiralling lines of Guggenheim imagined as a space vortex with forces lines comparable to centripetal and centrifugal forces

Source: Author's Diagram



Figure 106 (b): Layer 2

Tatlin's Tower

Abstraction of the Tatlin's tower along the central axis of the spiral vortex coinciding with the spiral of Guggenheim's Rotunda. Breakage of the diagonal structural girder is also evident due to the perspective foreshortening

Source: Author's Diagram

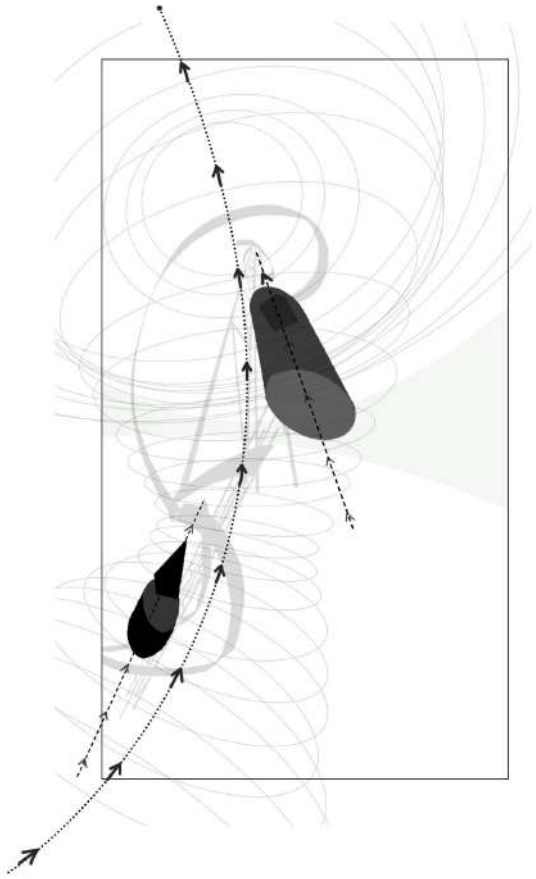
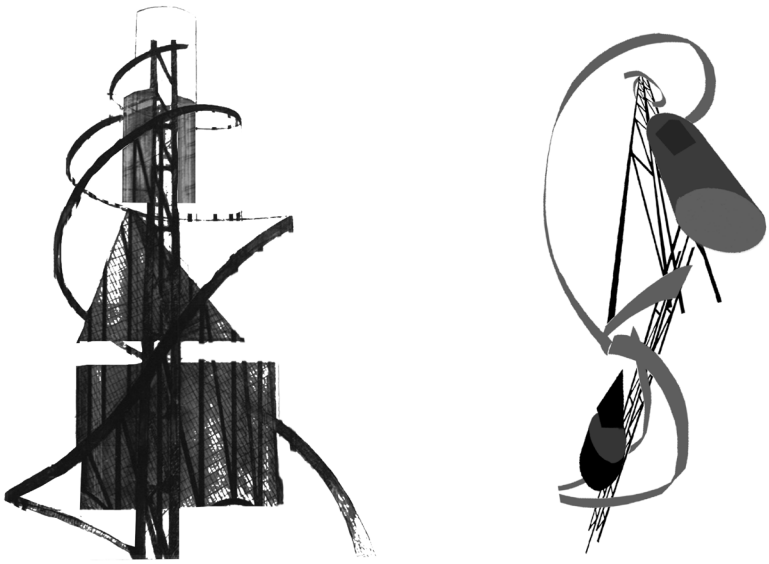


Figure 106 (c): Layer 3

Geometrical Forms

Abstract versions of the revolving geometrical forms warped following the the tower's distorted axis through the center of the vertex

Source: Author's Diagram



(a) (b)

Figure 107: (a) Original Tatlin tower - Components include Geometric forms, Diagonal girder with spiral framework.
(b) Abstracted version of the Tatlin's tower using technique of perspective distortion

Source: (a) VLADIMIR TATLIN | Emmanuelle et Laurent Beaudouin - Architectes, 2015
(b) Author's Diagram

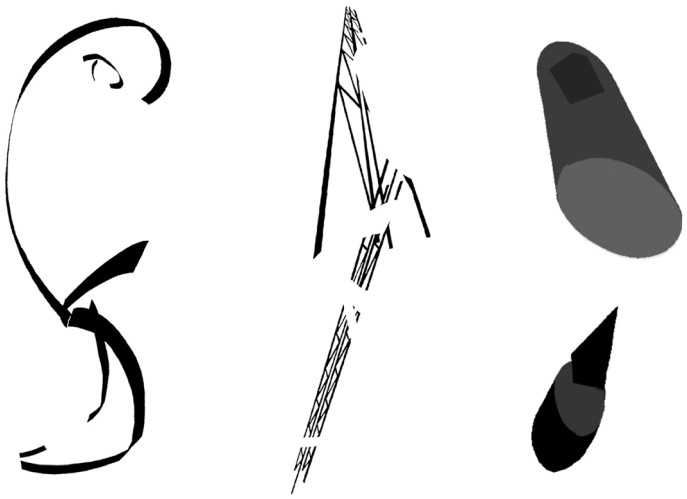
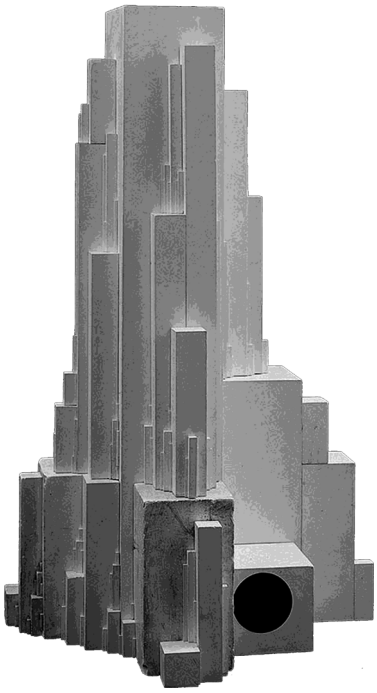


Figure 108: Separate components of the Zaha Hadid's abstracted Tatlin's tower

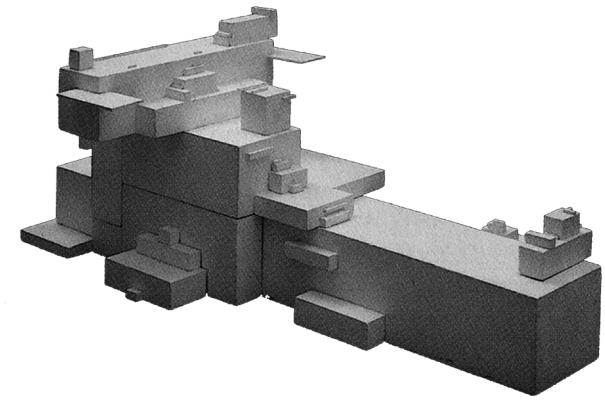
Source: Author's Diagram

Malevich's tektonik [A] and [C], another foreground element within the composition also follows the lines of the spiral and places itself at specific balconies of the Rotunda edges as per the illustrated proposal for this project. These elements are abstract representations of the actual arkhitektons produced by Kazimir Malevich between 1923 to 1930 (Figure 109) .These were three-dimensional assemblages of pure form playing a part in Suprematism ideologies in architectural experimentation. In such compositions, the central form acts as a main element and other linear plaster forms are added onto the side rather than following the conventional architectural process of assigning function.

Zaha Hadid attempted to represent the tektonik as a hovering object with the set path as the spiralling line. This attempt is likely suggesting the dynamic nature of suprematism where the flotation of objects in space is an evident cosmic nature within Malevich's ideologies. Hadid's manipulation of the tektonik contributes to the exhibit agenda for interactive engagement within the Guggenheim Museum where visitors pass through the assemblage.



(a)



(b)

Figure 109 (a) and (b): Malevich *Arkhitektons*

Source: "Suprematism in Architecture: Kazimir Malevich and the Arkhitektons," 2014

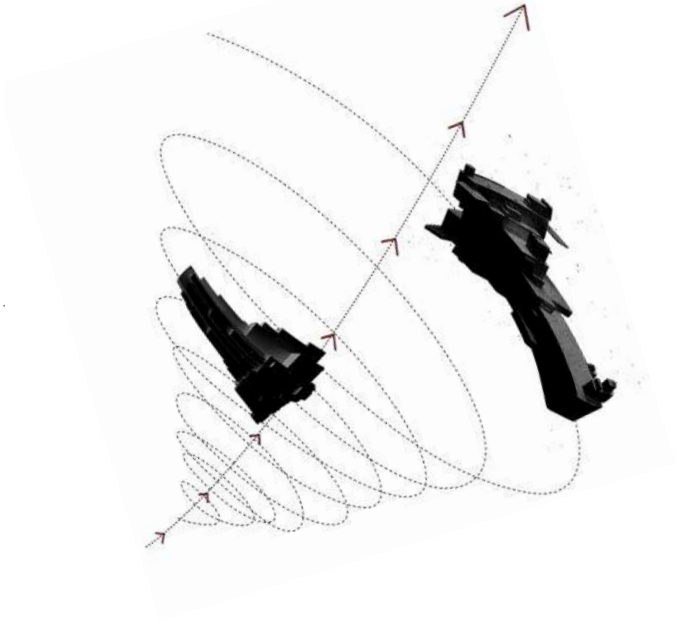


Figure 110: Malevich's *tektonik* assemblages are distorted based on the rotunda's axis. This warping conveys a sense of revoution and dynamism within the compostion

Source: Author's Diagram

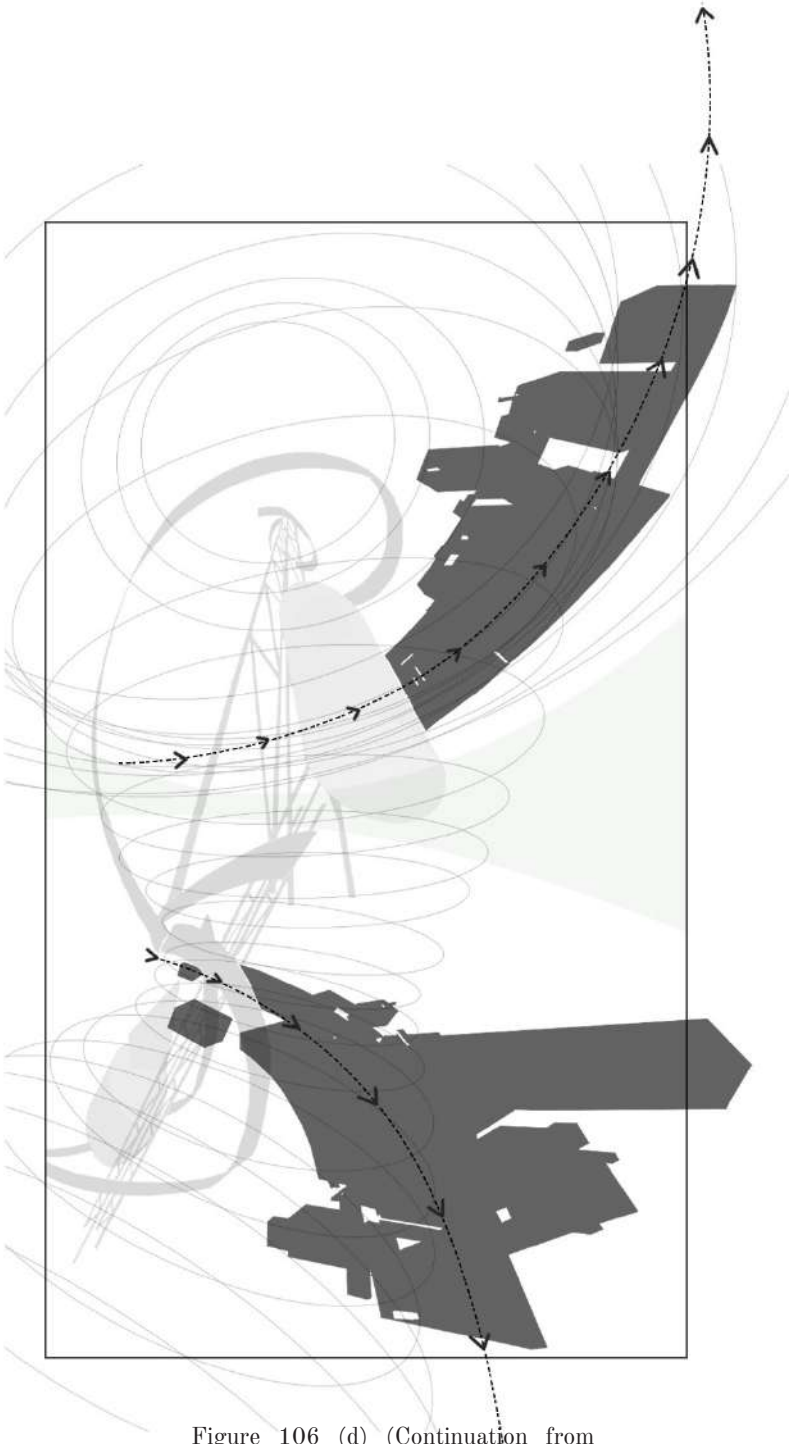


Figure 106 (d) (Continuation from Fig.106: Layer 4

Malevich's *Tektonik*

Malevich's *tektonik* assemblages abstracted and made to orbit around the Tatlin's tower in a spiralling axis.

Source: Author's Diagram

Tracing In Three-Dimension - Physical Model

Spirals

3mm thick white acrylic sheet, 3mm thick transparent acrylic sheet and 1mm thick strip of white acrylic.

In this physical model, the idea was to attempt the complexity of the chosen abstract painting in three dimension in order to understand and imagine the composition on practical grounds.. So, this model incorporated the same context of the rotunda with acrylic slides showcasing the spiralling lines of the space. The main elements of the tower is abstracted in three-dimension to fit with the scale.

The model can be interpreted as a direct conversion of the painting into a physical model but the key feature remains in the understanding of abstract elements in physicality and practicality

Making

The rotunda was imagined to be floorplates of 3mm white acrylic slides which are supported by an A3 size cuboidal transparent acrylic box holding the abstract version of Rotunda in place. Spirals are shaped using acrylic strips supported with threads from braced inclined girder. All these componenets are fixed with a groove onto the circular base.

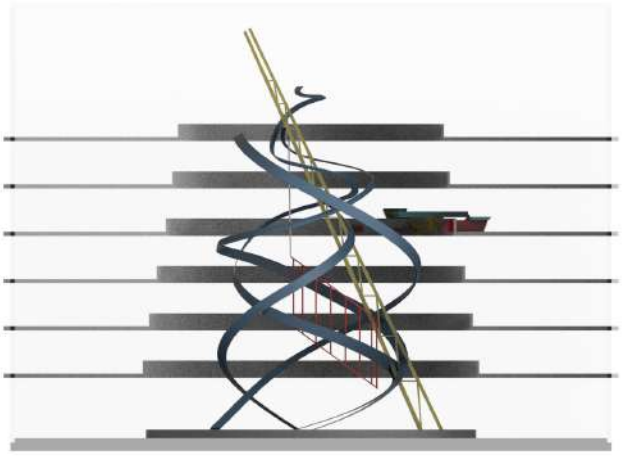


Figure 111 (a): Front view - Spiralling Tatin Tower

Source: Author's Image

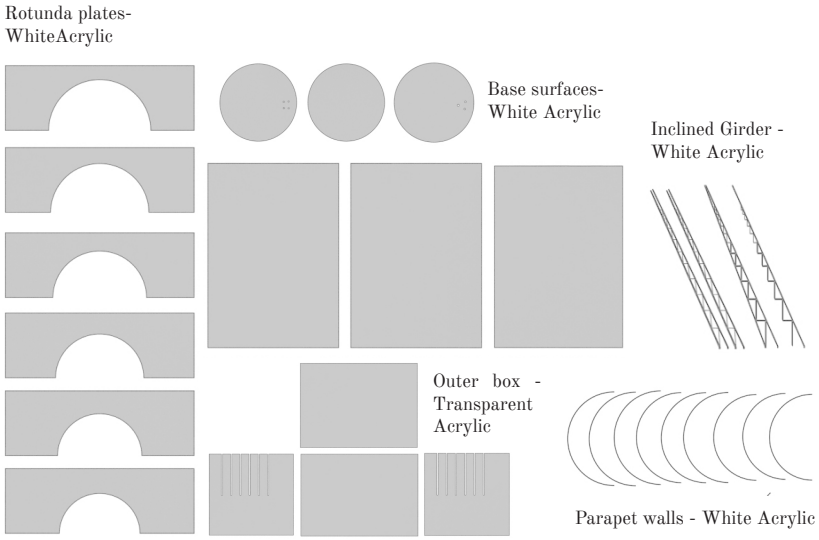


Figure 111 (b): Kit of parts - Physical model preparation

Source: Author's Image

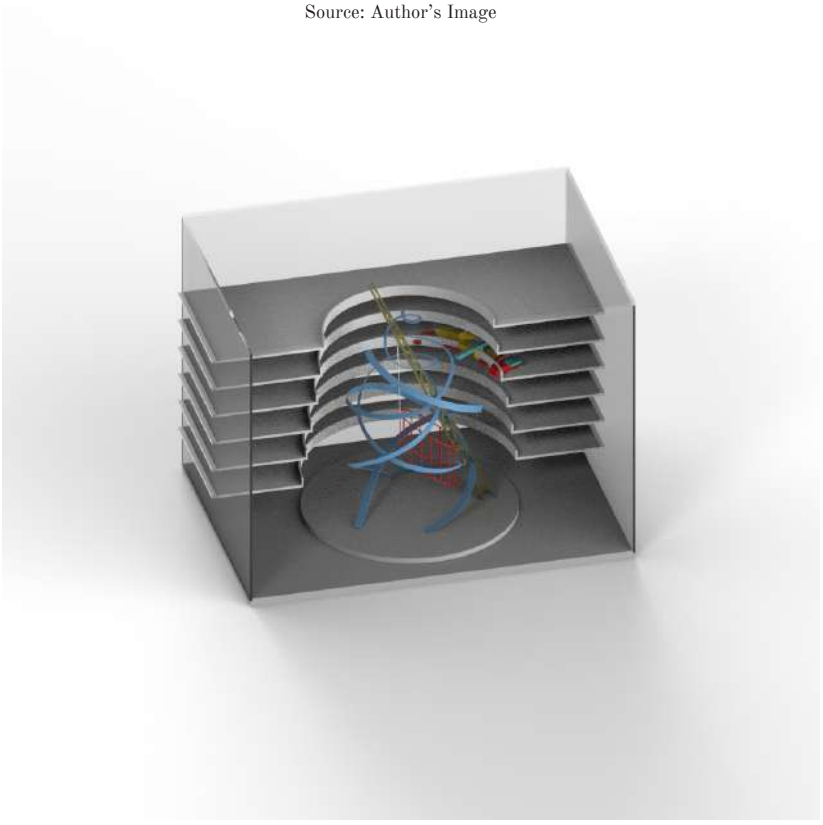


Figure 111 (c) : Visualized model - Perspective view

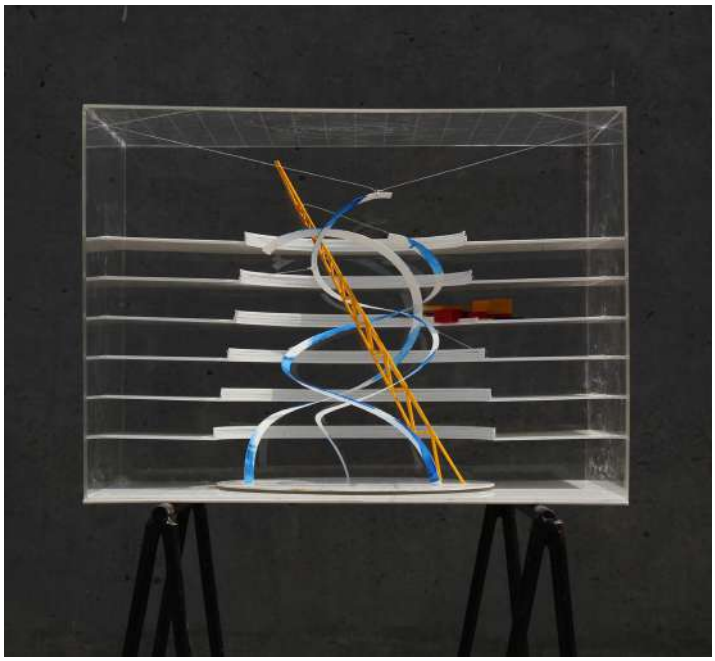
Source: Author's Image

Figure 112: Physical Model Photographs - *Spirals*

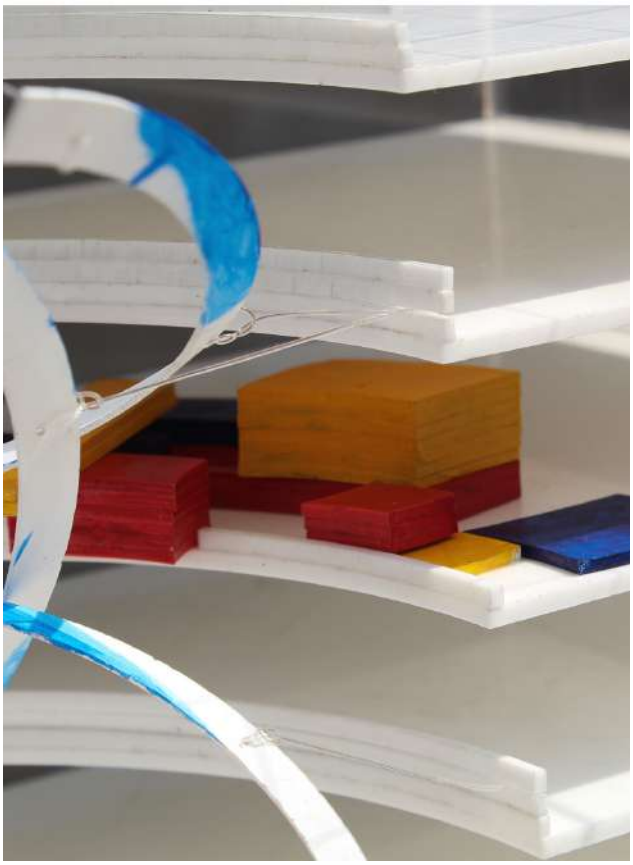
Source: Manjunath.S, 2024



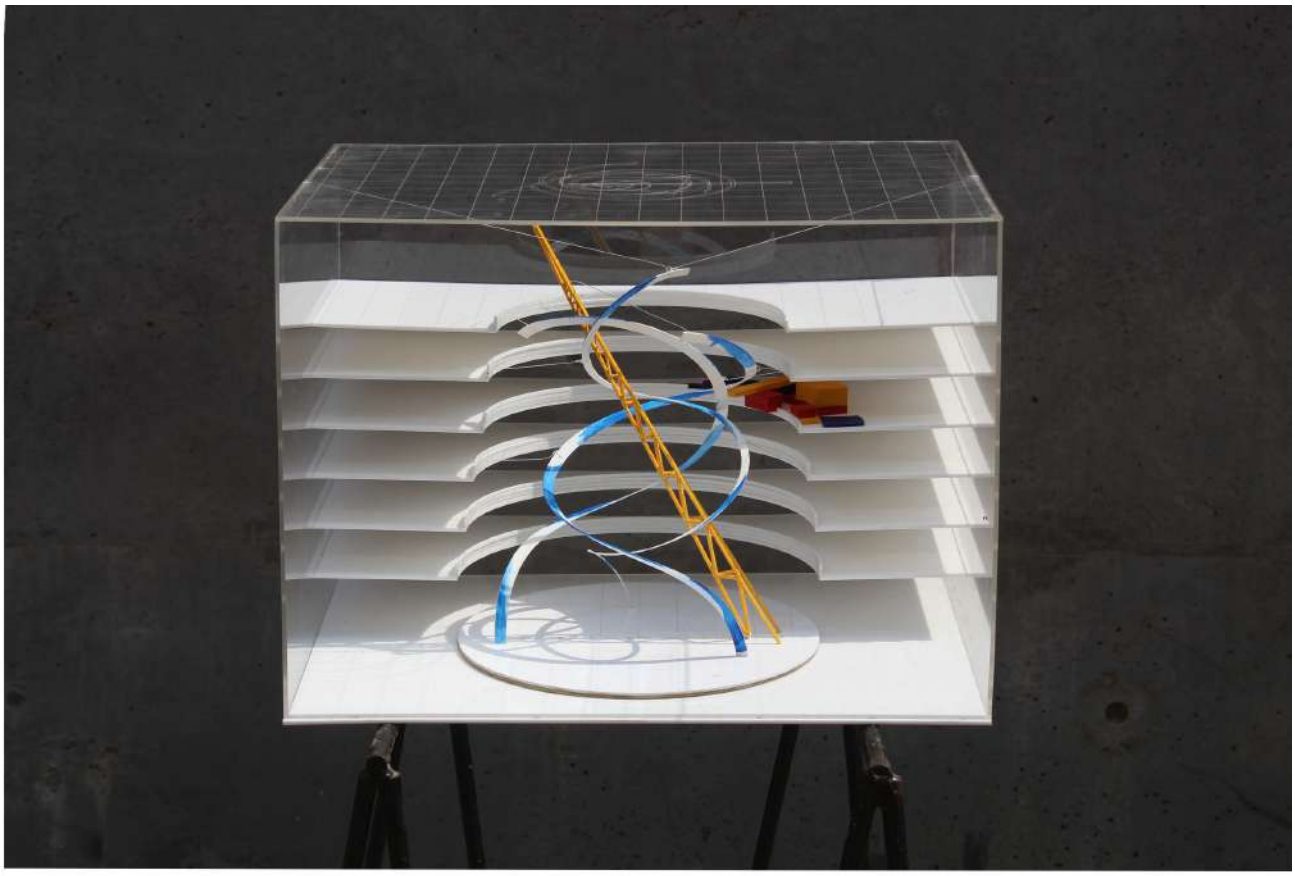














11

Conclusions

This study has set out to trace the cosmic aspects of Russian Avant-garde within Zaha Hadid's early abstract paintings for the architectural projects: Vitra Fire Station, Peak and the Great Utopia. In this investigation, the aspects of cosmism emerged as real contributors to Zaha Hadid's abstract explorations executed using painting as a tool. Through diagrammatic and Hands-on abstract modelling analysis, this investigation confirms the presence of several cosmic attributes within Zaha's chosen paintings which will be elaborated further in the following sections. The following sections contain:

Floatation of objects - Space Flight
Perspective/Geometric projections
/Three-Dimensional reading - Cosmic Space
Celestial body
Force lines - Orbits
Intersection of Planes - Inter-Relationship between bodies - Planetary systems

which synthesise all the cosmic attributes and their references within the chosen paintings through figurative diagrams.

Connection 1

Floatation

SPACE FLIGHT



Figure 113 : Planes in Motion, 2024
Poster Paint on paper

Source: Author's Painting

Flight of Planar Elements

Connection : Painting 2.1 and 2.2 - Malevich and Lissitzky's Suprematist Compositions

The most significant finding to emerge from this investigation is the presence of the cosmic attributes, Flight/Floatation/Movement of Objects in the analysed paintings from sections 1.1 to 3.1. Notably, the investigation brought out aspects of flight from paintings 1.1 and 1.3 of Vitra's section. However, the major attributes of floatation and dynamic movement can be interpreted from Peak's paintings 2.1 and 2.2 along with painting 3.1 of the Great Utopia.

Inter-relationship of Fragments in paintings 2.1 and 2.2 - Malevich's composition

The peak as an architectural project established an idea of six dynamic terrace planes rearranging themselves in space which led to its eventual descent onto the mountain peak as a built form. Zaha Hadid's paintings incorporated the floatation of various planar fragments to reinforce her dynamic architectural concept. Thus, painting 2.2 "Confetti" suggests a dynamic transition which includes the six terrace planes and surrounding planar fragments lifted in space to establish flight resonating a cosmic environment.

In accordance with the attributes of painting 2.2 mentioned above, Figures 114 and 115 showcase an interesting match of cosmic character between Hadid's composition of planes (Figure 114) and Malevich's movement of forms (Figure 115). From Figure 115, Confetti has a specific cluster of fragments arranged diagonally from the top right to the bottom left corner of the canvas whereas the fragments situated at the lower end of the composition follow another trajectory signifying a dynamic inter-relationship with respect to static extruded built fragments spread across the mountain. This characteristic is similar to Malevich's Suprematist composition as interpreted in Figure 114 where the orientation of square forms follow a different potential trajectories whereas ciruclar and other shaded elements can be interpreted as static in nature. These observations can confirm the concept of dynamic inter-relationship and floatation/movement of forms which are indirectly associated with the

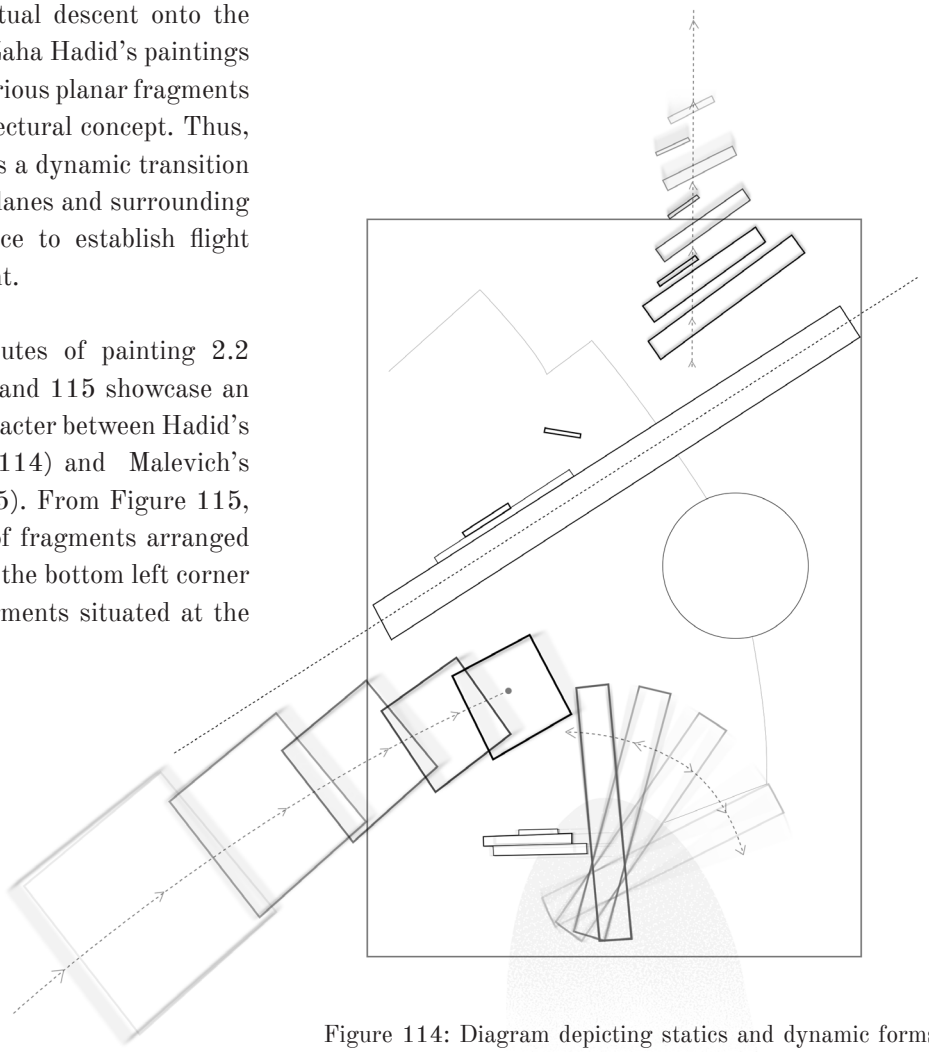


Figure 114: Diagram depicting statics and dynamic forms of the composition from figure 45. Here, interplay between various forms and their orientation can be interpreted to have dynamic trajectories beyond the picture plane

Source: Author's Diagram

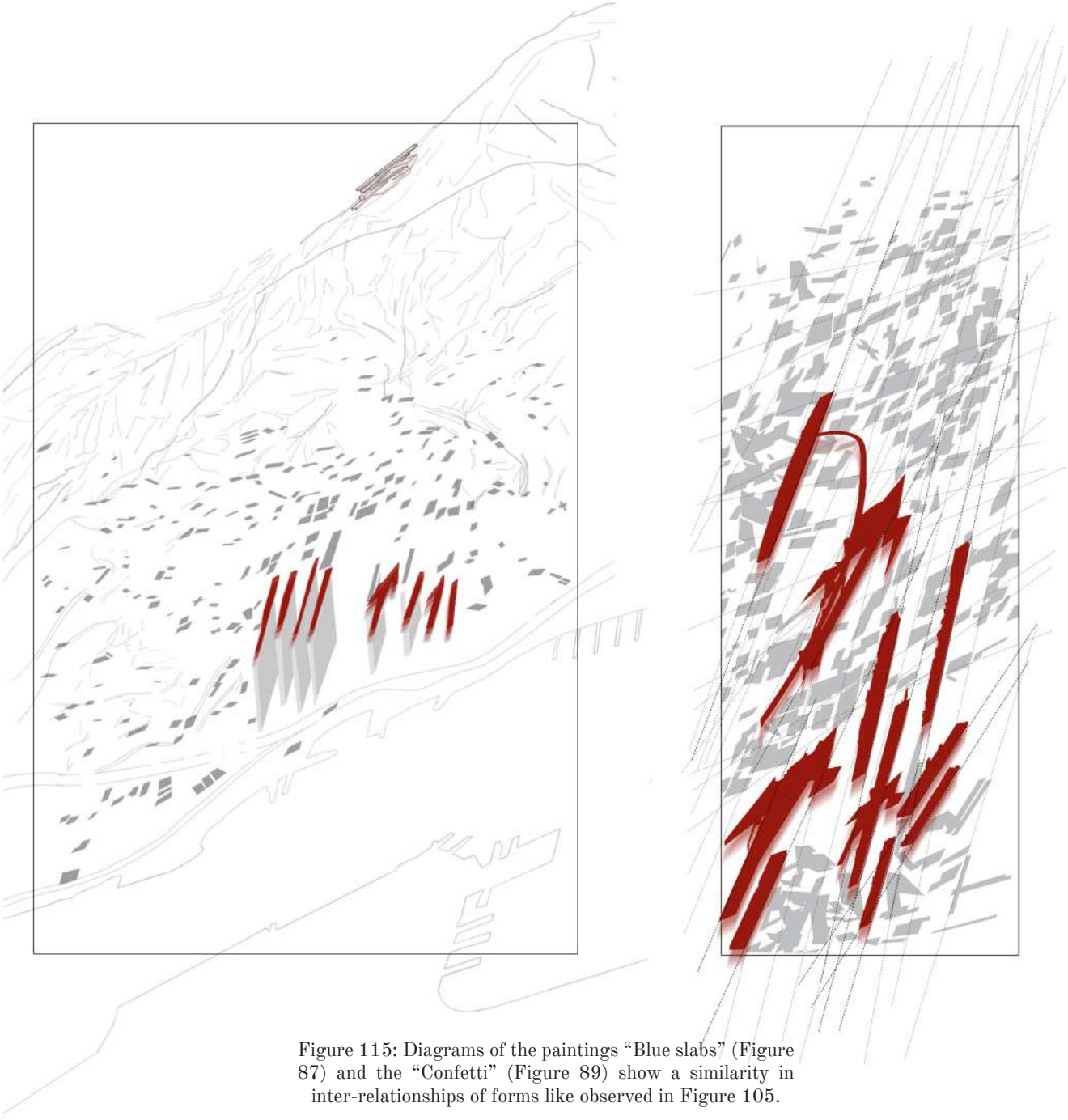


Figure 115: Diagrams of the paintings “Blue slabs” (Figure 87) and the “Confetti” (Figure 89) show a similarity in inter-relationships of forms like observed in Figure 105.

Source: Author’s Diagram

Floatation towards infinity in painting 2.2 “Confetti” - Lissitzky’s breaking the picture plane

Another striking cosmic attribute that can also be associated with painting 2.2 is the floatation of objects crossing the picture frame of the canvas. Here, the floatation of objects appears to have movement paths pushing the limits of the canvas frame signifying an underlying backdrop of cosmic space within the composition of geometric forms. As depicted in figures 116 and 117, the “Confetti” painting and Lissitzky’s composition from the “About Two Squares” series share a key feature of form floatation. In the “Confetti” daigram from figure 117, the terrace planes which were supposedly in the transition phase appear to be pulsating towards the bottom end of the canvas creating a reaction within surrounding planar fragments. Similarly, the interpreted diagram of Lissitzky composition from figure 116 suggests an inter-relationship between forms where the red square seems to be heading towards the lower end of the square frame generating an active movement within surrounding cuboidal elements. These similarities can confirm the attributes of cosmic floatation existing within Zaha Hadid’s paintings of the project “The Peak”.

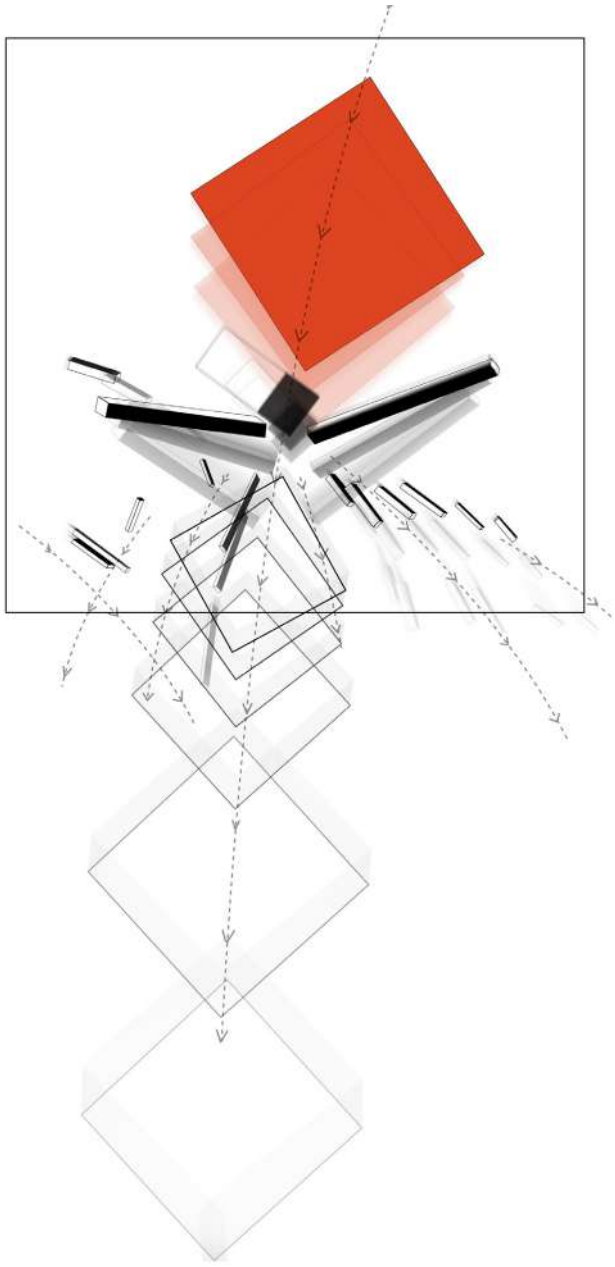


Figure 116: Analytical Diagram of figure 49(h). This diagrams illustrates the concept of forms breaking the picture plane boundaries signifying a sense of infinity beyond the canvas

Source: Author’s Diagram

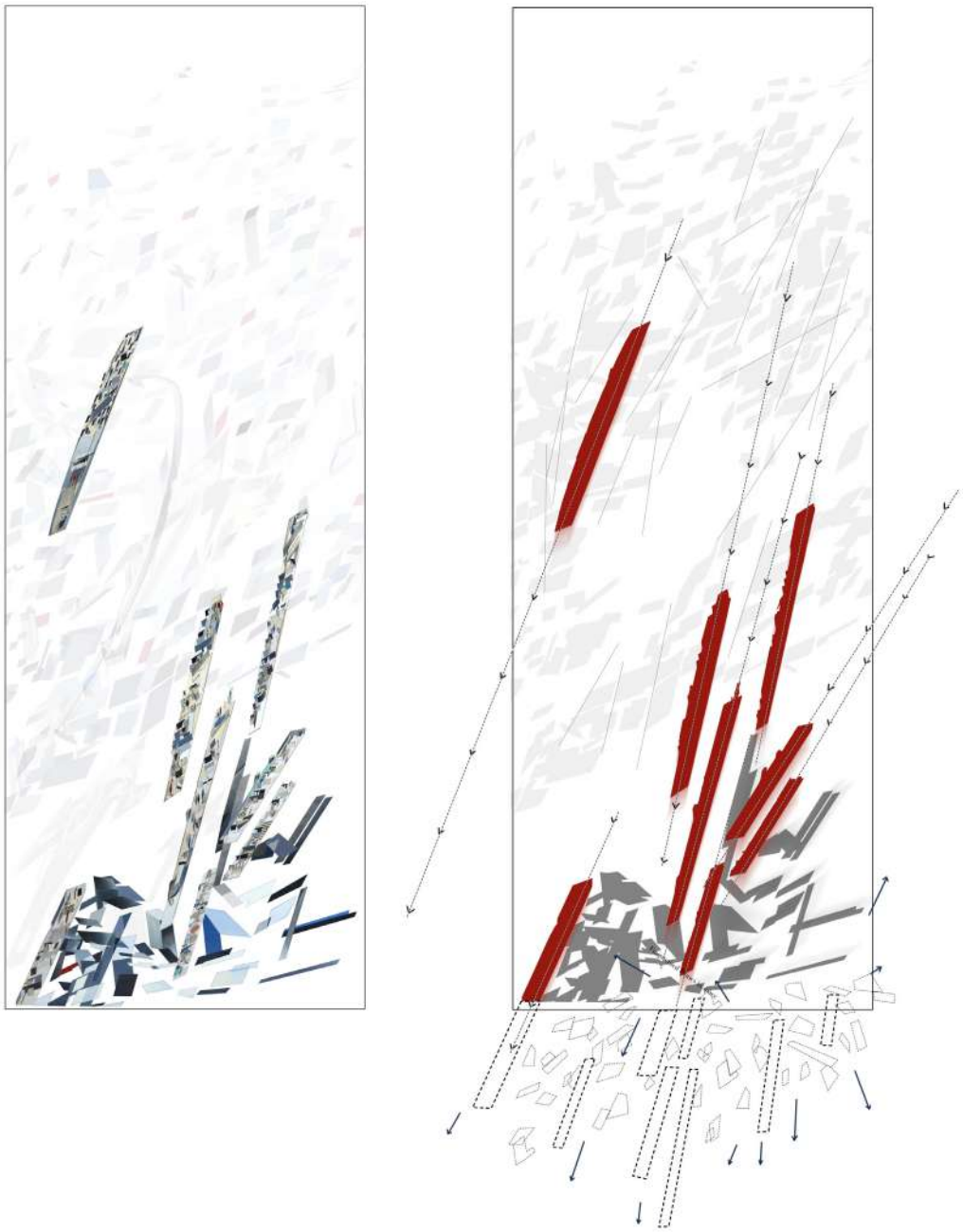


Figure 117: Analytical Diagram of "Confetti". This diagramsillustrates the idea on how planes break the barriers suggesting a strong existence of infinite cosmic space which is comparable to the observations seen in figure 116.

Source: Author's Diagram

Connection 2

Perspective Manipulation

INFINITE SPACE



Figure 118 : Dynamic Cuboid, 2024
Poster Paint on paper

Source: Author's Painting

Perspective Distortion of Geometry and Space

Connection : Painting 1.3 and 2.1 - Lissitzky's Proun

Painting 1.1 and 1.3's Perspective Manipulation (Warping) and Lissitzky's Cavalier perspective to establish a three-dimensional reading.

This investigation also identified cosmic characteristics like perspective distortion and geometrical treatment of forms within Zaha Hadid's paintings 1.1 and 1.3 of Vitra Fire Station and 3.1 of the Great Utopia. Through the manipulation of perspective principles, the canvas embodies a sense of infinite space resonating with attributes of cosmism. The objects composed within this infinite space can be perceived as three-dimensional entities projecting towards the viewer establishing dynamic relationships.

Paintings 1.1 and 1.3 are consistent with the concept of perspective distortion. Here, Zaha Hadid's abstract concept was based on capturing movement in time to establish dynamism. To establish such a dynamic concept, Hadid employed the technique of perspective warping (first frame of figure 120) to modify the floating three-dimensional planes. All the sharp edge planes follow a curvilinear path beginning from the top end of the composition constructed using a single vanishing point. These planes ultimately appear to be projecting towards the viewer, breaking the character of a two-dimensional picture plane. This perspective manipulation is comparable to Lissitzky's composition like Proun P23 (Fig 119) where the three-dimensional objects are represented with a cavalier perspective in which lines cease to converge into a single vanishing point. Such manipulations with perspective geometry make objects appear to protrude out towards the viewer, thus creating a three-dimensional reading of the canvas space similar to the sensation of an infinite cosmic void.

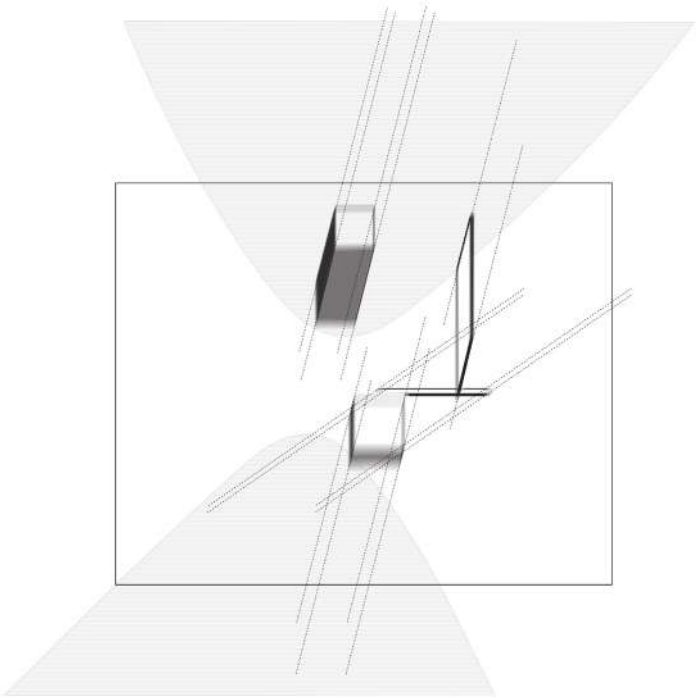


Figure 119: Analytical Diagram of Lissitzky's painting Proun P23 (figure 48). This diagrams shows the visual manipulation as a method to distort the reading of the geometry and space surrounding the forms

Source: Author's Diagram

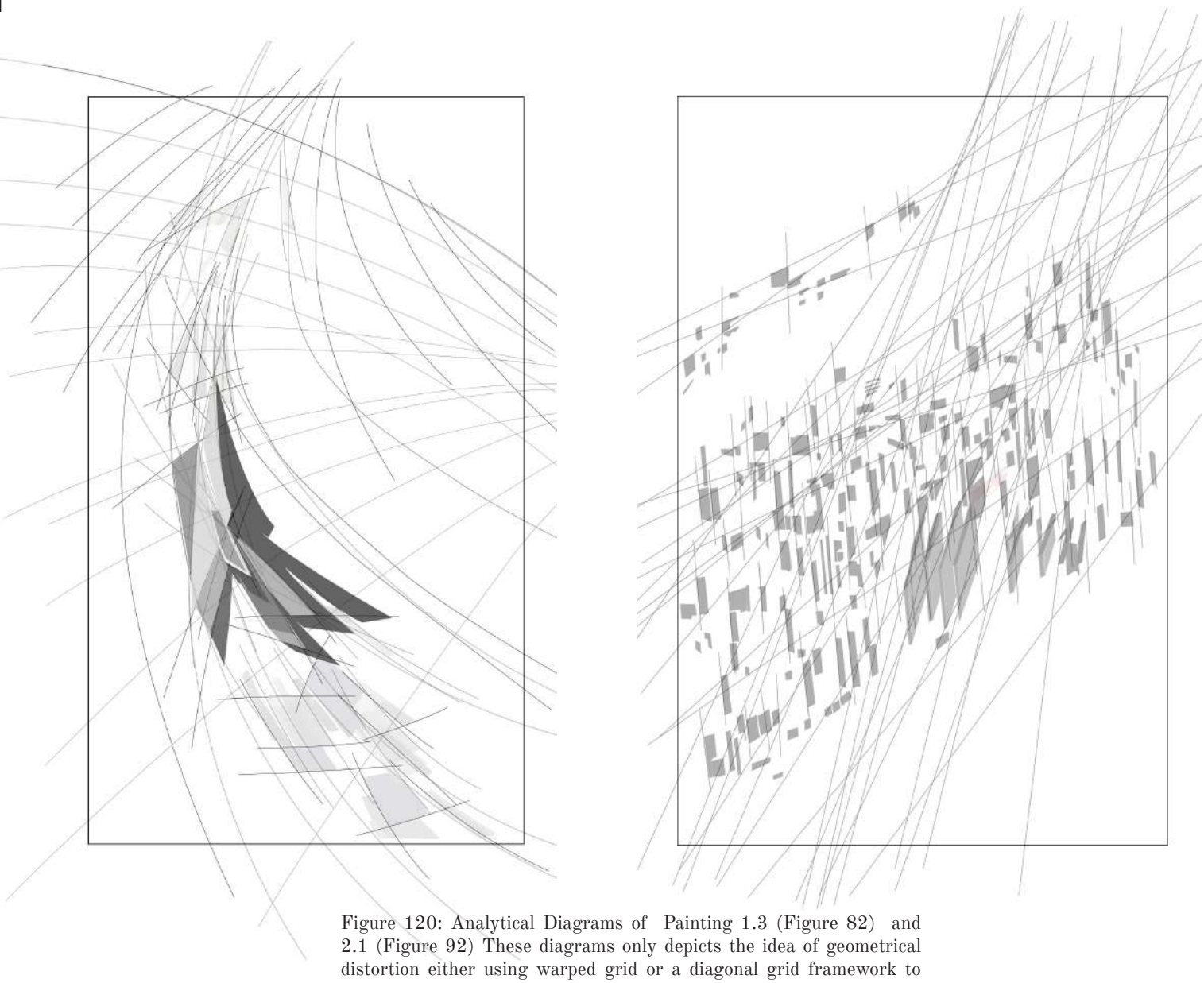


Figure 120: Analytical Diagrams of Painting 1.3 (Figure 82) and 2.1 (Figure 92) These diagrams only depicts the idea of geometrical distortion either using warped grid or a diagonal grid framework to establish dynamism within the composition similar to Figure 119.

Source: Author's Diagram

Connection 3

Presence of Celestial Body

PLANETARY SYSTEM



Figure 121 : Planet, 2024
Poster Paint on paper

Source: Author's Painting

Framework of a Cosmic entity

Connection: Painting 1.1 and Lissitzky's About Two Squares

Painting 1.1 and 1.3 - Aerial viewing of a planetary body from cosmic space

The presence of a horizon line at the top of the composition is a common observation within paintings 1.1 and 1.3 of the Vitra fire station. The most possible explanation for the presence of a curved horizon line which can be revealed from this study is that the objects are supposedly hovering over a spherical body.

As highlighted in figures 123, the objects are represented as entities moving from the top to the bottom end of the canvas originating from a vanishing point. This movement appears to be arranged in a curved pathway possibly confirming the existence of an underlying curvilinear grid framework where all the foreground elements are constructed. Based on the curvilinear grid, distant horizon line and the vanishing point, one can derive a conclusion that the whole composition seems to be constructed on a spherical body and represented as an aerial view looking at the objects from above.

Paintings 1.1 and 1.3's aerial view compositions also share a key feature with one of the compositions from Lissitzky's "About Two Squares". As seen in Figure 122, the cosmic interpretation of Lissitzky's composition is the two square forms acting as celestial bodies heading towards the flat circular disc, meant to be the earth. Although the presence of the circular disc as the celestial body can be an obvious connection with paintings 1.1 and 1.3, one can observe the objects drawn tangentially on the circular disc and this can be imagined if the view is with respect to the approaching squares. This offers a picture of an aerial view witnessing the tangentially drawn objects. It is therefore likely that such connections as cosmic entities exist within paintings 1.1 and 1.3.

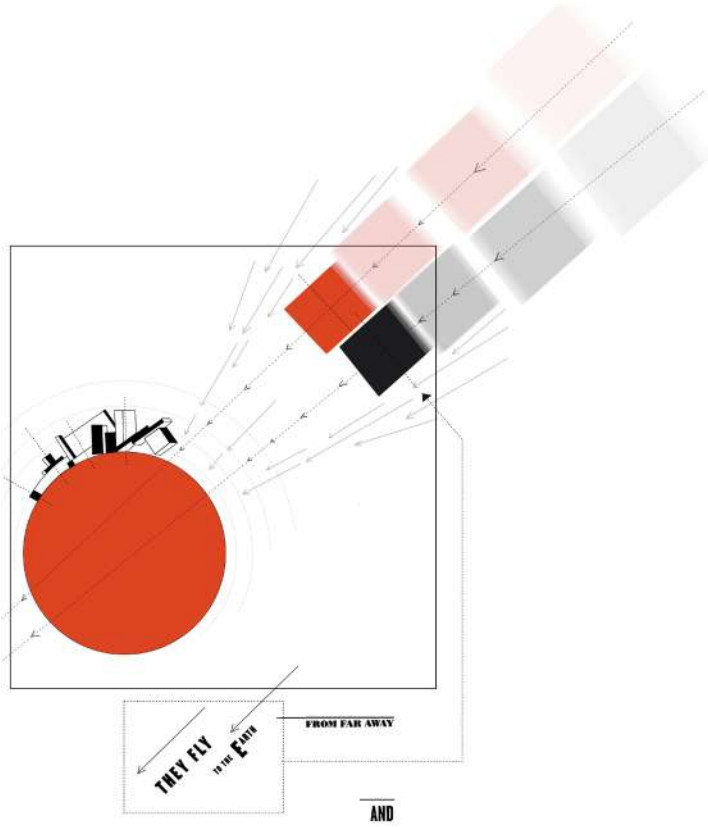


Figure 122: Analytical Diagrams of Lissitzky's painting figure 49 (f). This diagram clearly depicts a circular disc as a larger ethereal entity where the two squares forms are headed towards the cosmic entity

Source: Author's Diagram

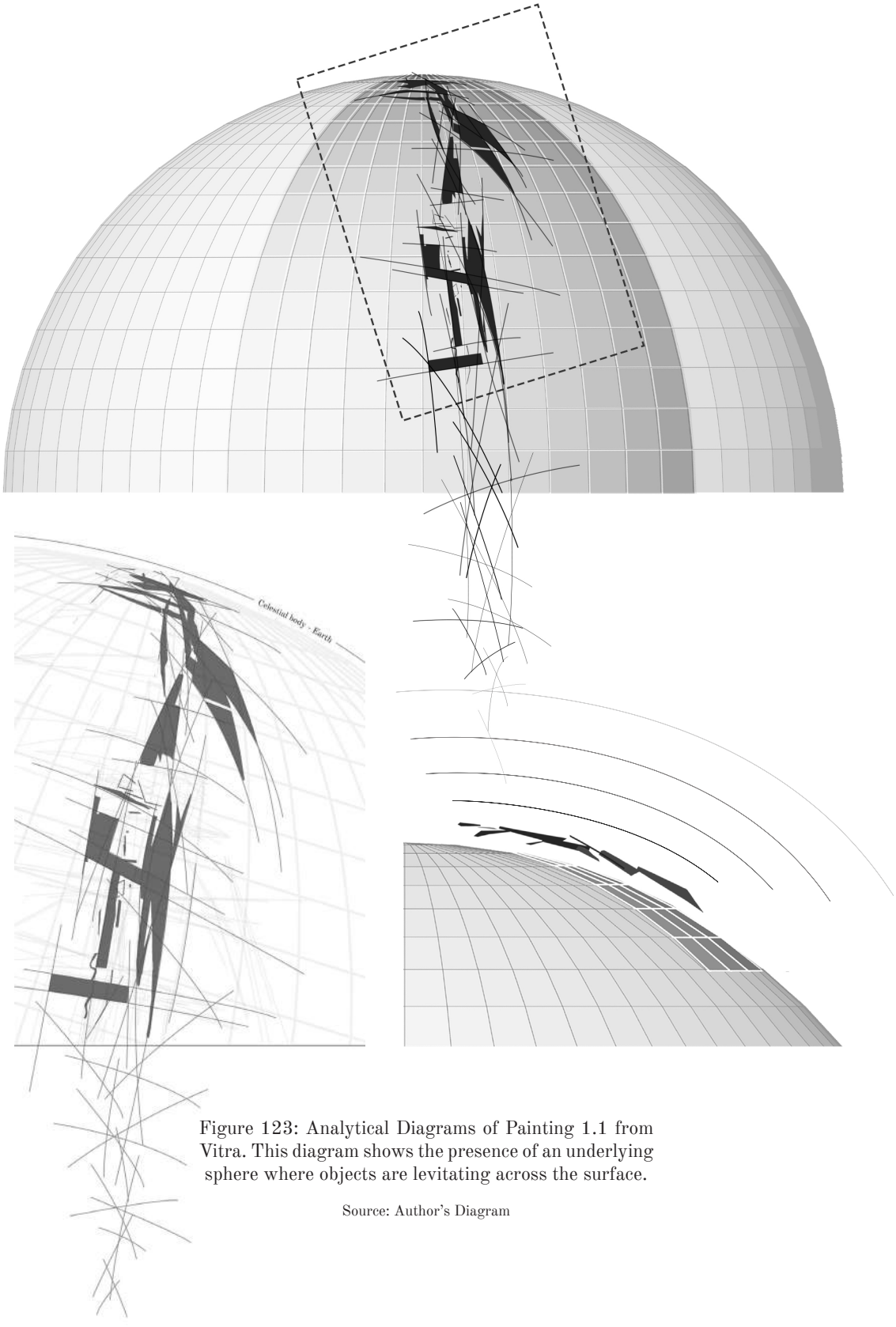


Figure 123: Analytical Diagrams of Painting 1.1 from Vitra. This diagram shows the presence of an underlying sphere where objects are levitating across the surface.

Source: Author's Diagram

Connection 4

Force/Energy Lines

ORBITAL MOVEMENT



Figure 124 : Rings, 2024
Poster Paint on paper

Source: Author's Painting

Force Lines as orbits and movement paths

Connection: Painting 1.2, 1.3 and 3.1 - Rodchenko's Line Constructions

One of the major findings from this investigation is the construction of force lines within Zaha Hadid's composition which suggests an establishment of dynamics and enhances movement through energy lines. This resonates as a cosmic feature due to its similar interpretation with an axis or an orbital pathway for cosmic bodies. Also, a cluster of circular or linear segments can be interpreted as an energy field which is comparable to a set of magnetic field lines in a cosmic setting.

In painting 1.2 of the Vitra Fire Station, all the planar elements are represented in the plan with respect to the context. Along with different coloured planes, lines also seem to play a crucial role in defining the movement and energy of the planes stretching across the narrow street from top to bottom. As per Figure 126, certain lines beginning from the left side produce an intersection with the planes whereas several other lines also form a set of patterned overlaps. These intersections and overlapping lines can be interpreted as force/energy lines which are drawn similarly to Rodchenko's compositions (Figure 113).

It is more likely that the cosmic character exists in the energy produced within the line constructions of Hadid's Vitra paintings and Rodchenko's line constructions. Painting 1.3 of Vitra fire station also has a foreground form which seems to be generated from a set of force lines overlapped and intersected at various stages across the canvas from the top to the bottom end. As per the analytical figure 127, the planes follow a curvilinear path and all the planes which are constructed along that path follow the same language of intersections.

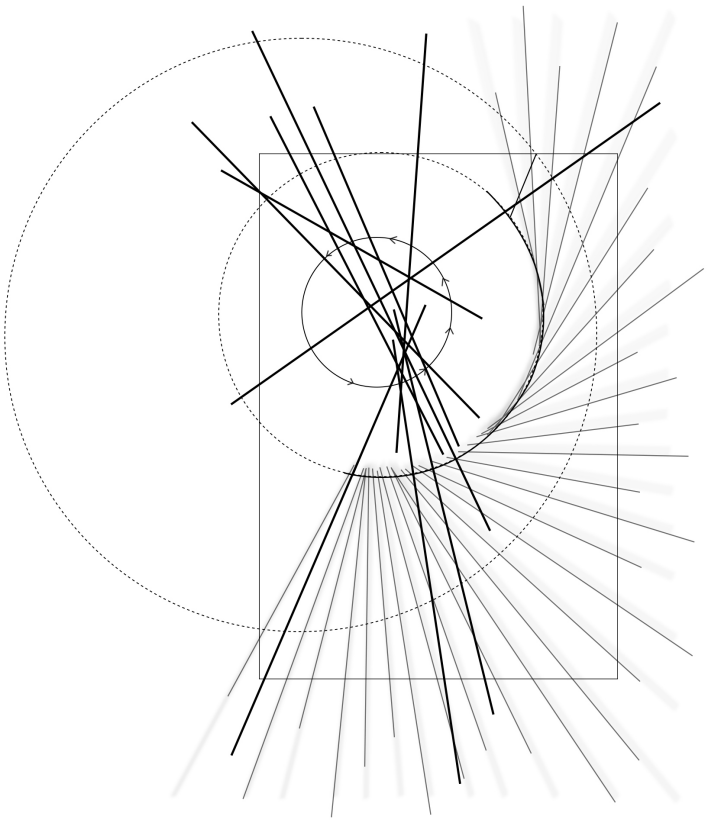


Figure 125: Analytical Diagram of Untitled construction by Rodchenko (Figure 56). Along with the depiction of lines as kinetic elements, this diagram can also be interpreted as lines arranged along a circular oribt signifying strong movement along a path similar to that of an orbits within planetary systems.

Source: Author's Diagram

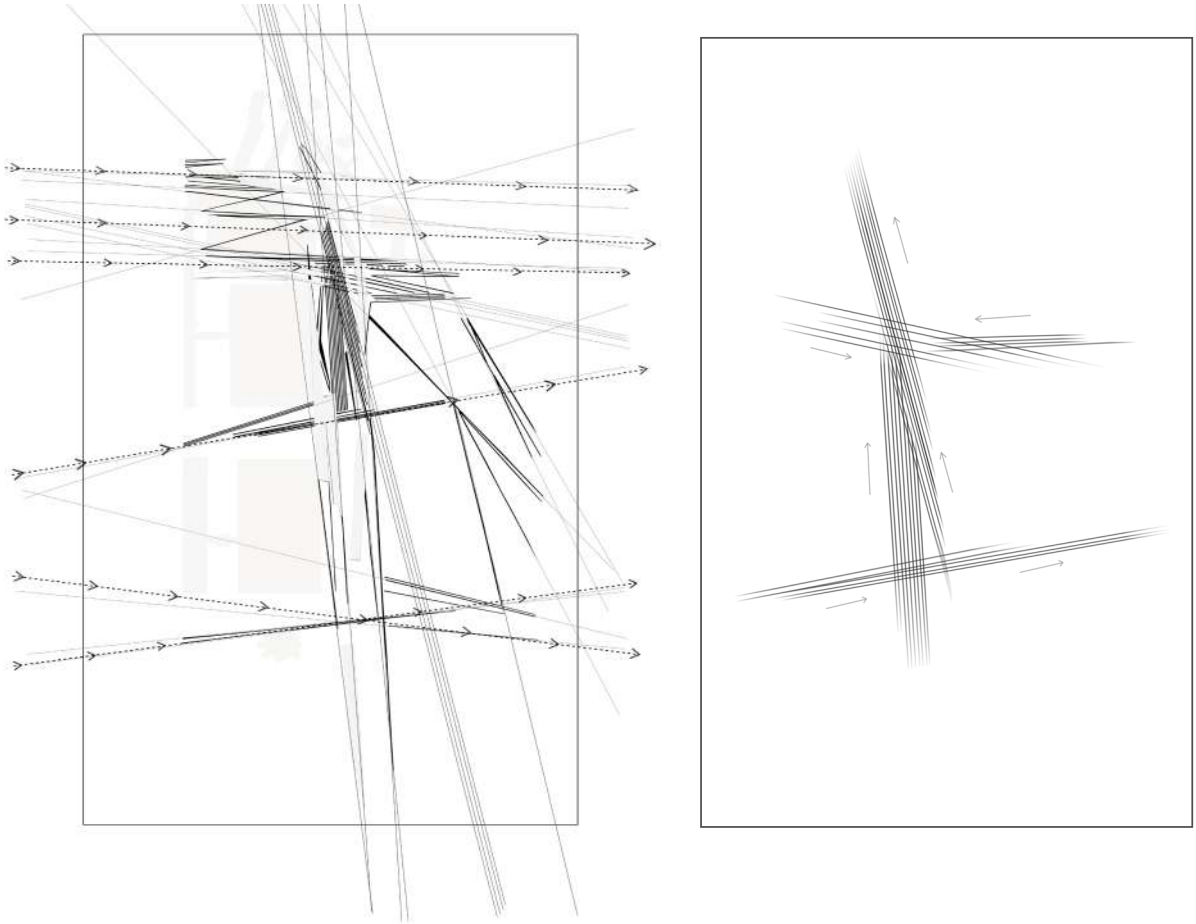


Figure 126: Analytical Diagram of Painting 1.2 from Vitra. Although these diagrams do not contain circular elements as orbits. The idea of force and movement through lines can be significantly seen like Figure 125.

Source: Author's Diagram

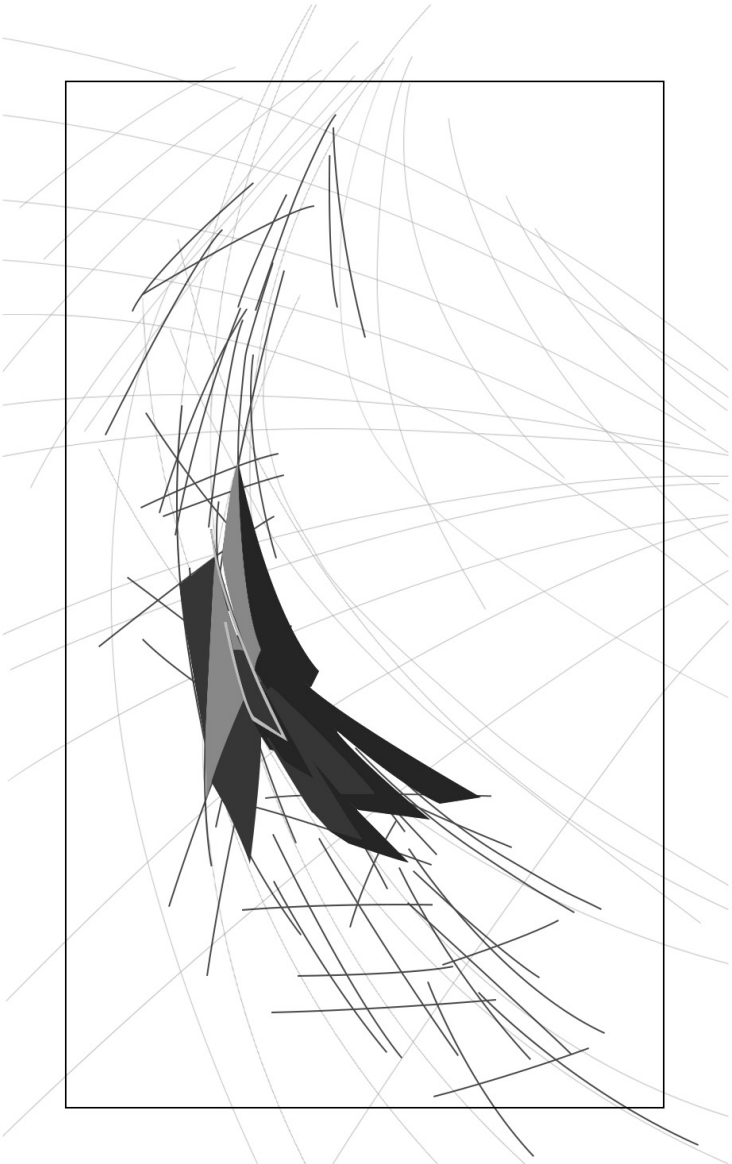


Figure 127: Analytical Diagram of painting 1.3 from Vitra. These diagram encompass linear elements as force lines to generate a set of planar elements ultimately resulting in a built form

Source: Author's Diagram

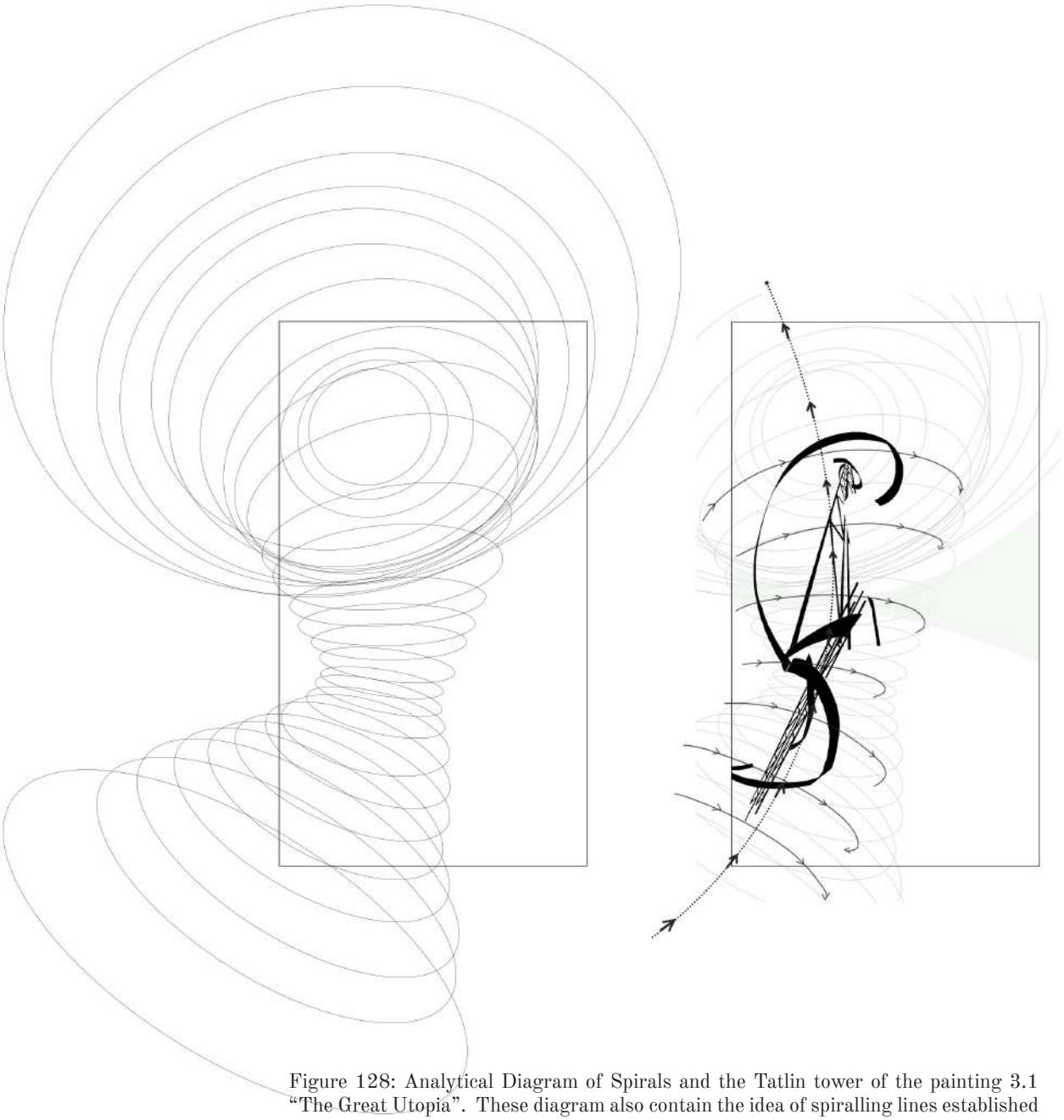


Figure 128: Analytical Diagram of Spirals and the Tatlin tower of the painting 3.1 "The Great Utopia". These diagram also contain the idea of spiralling lines established in order to visually abstract the tower. In the painting. the spiralling lines are very similar to the lines of space vortex or force lines which deal with revolution of entities.

Source: Author's Diagram

Connection 5

Intersection of Elements

INTER-PLANETARY RESONANCE

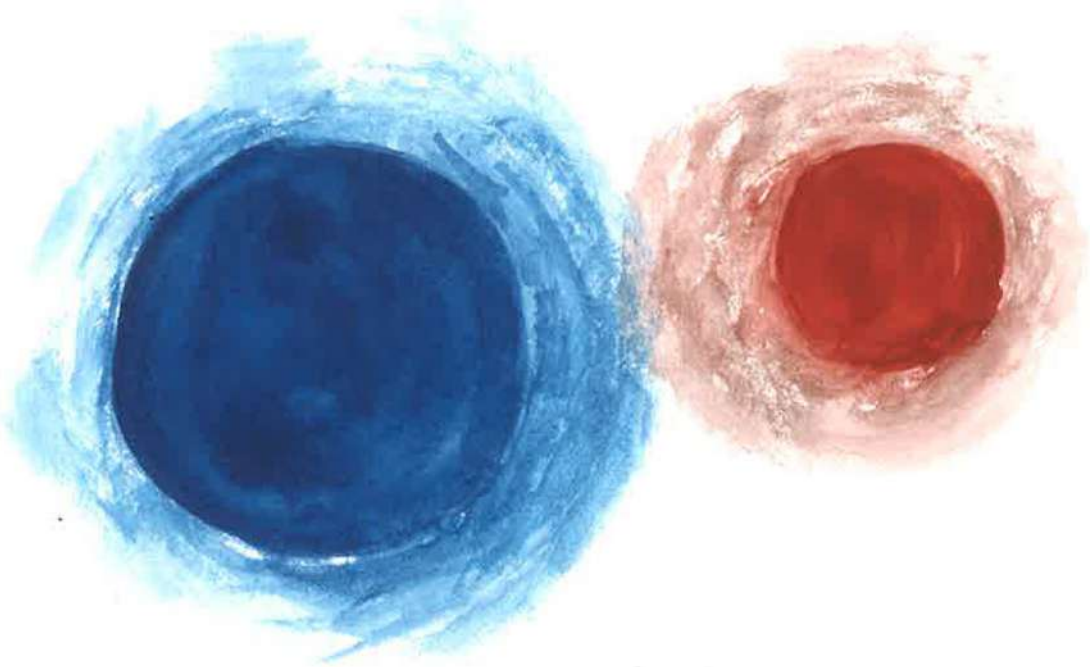


Figure 129: Attraction, 2024
Poster Paint on paper

Source: Author's Painting

Inter-relationship between elements

Connection: Painting 1.1 and 1.3 - Tatlin's Reliefs

The final significant result from this investigation deals with the active arrangement of planes exerting energy affecting the surrounding space. This arrangement differs in various forms such as intersections and overlaps ultimately leading towards generating a set of complex planar entities. Painting 1.1 and 1.3 are employed with stronger forms of intersection to generate the desired concept of dynamism for the built form.

As per the analytical figure 130 and 131, the planes that continue to sprawl towards the bottom of the composition have unique overlaps and intersections generating a larger cluster of planes. It is also possible to make connections with the Reliefs of Tatlin where the intersection of varied materials was a prominent system. Here in figure 129 of Tatlin's Selection of Materials: Iron, Stucco, Glass and Asphalt, one can observe the construction of various materials through fixed intersections and overlaps resulting in a resonance with the surrounding. Therefore, it results in establishing an active spatial relationship with the three-dimensional space. However, Hadid's exploration had a two-dimensional effect within this case study but similarities can be established in terms of resulting active engagement with the real space. These attributes support the idea of cosmism in terms of spatial engagement and active resonance between entities which is comparable to celestial bodies in the universe.

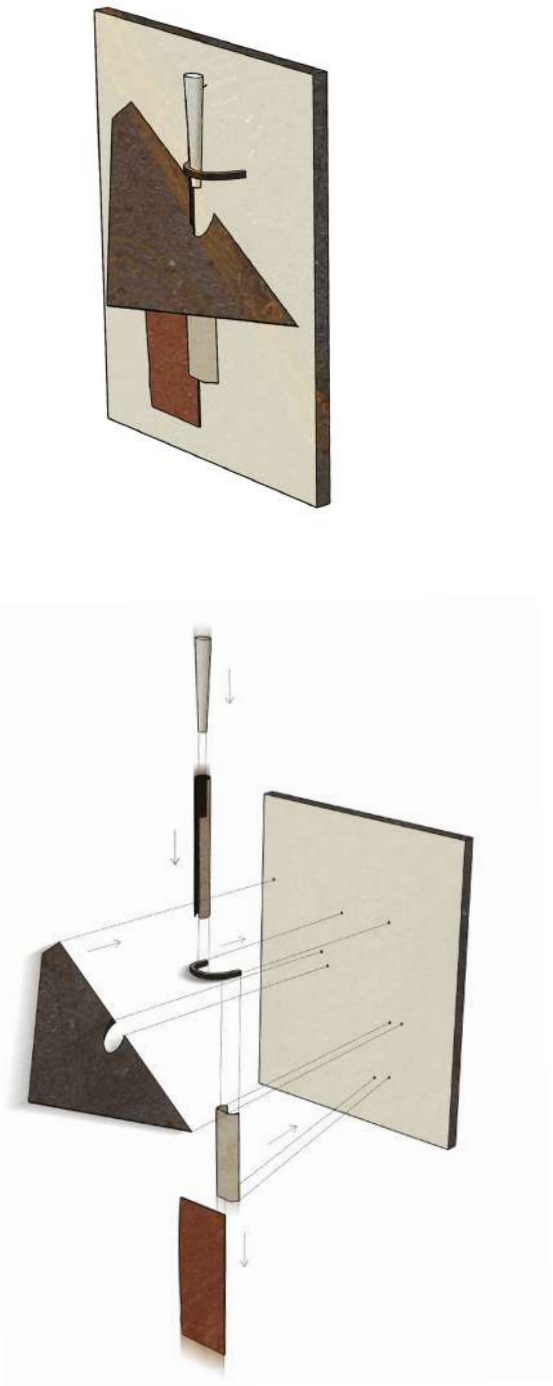


Figure 130: Diagram showing the deconstruction of Tatlin's relief from figures 61 and 63. This diagram showcases the concept of interplay between elements through planar intersections. Various elements come together within the composition in order to create an active relationship with surrounding space.

Source: Author's Diagram

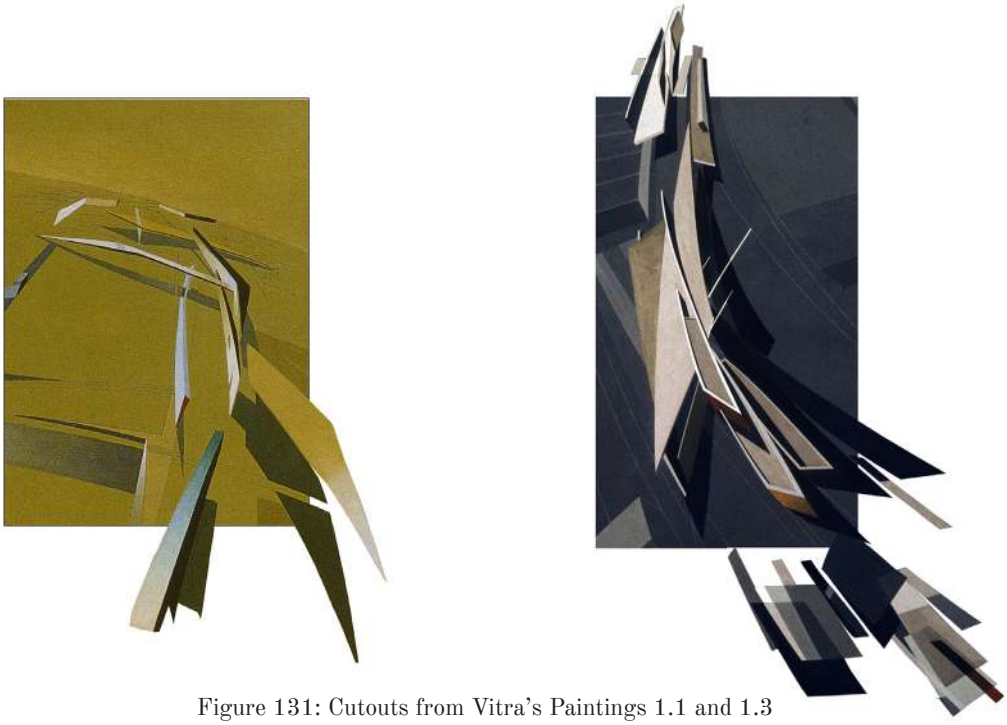


Figure 131: Cutouts from Vitra's Paintings 1.1 and 1.3

Source: Author's Diagram.
Base image source: (Hadid,2000)

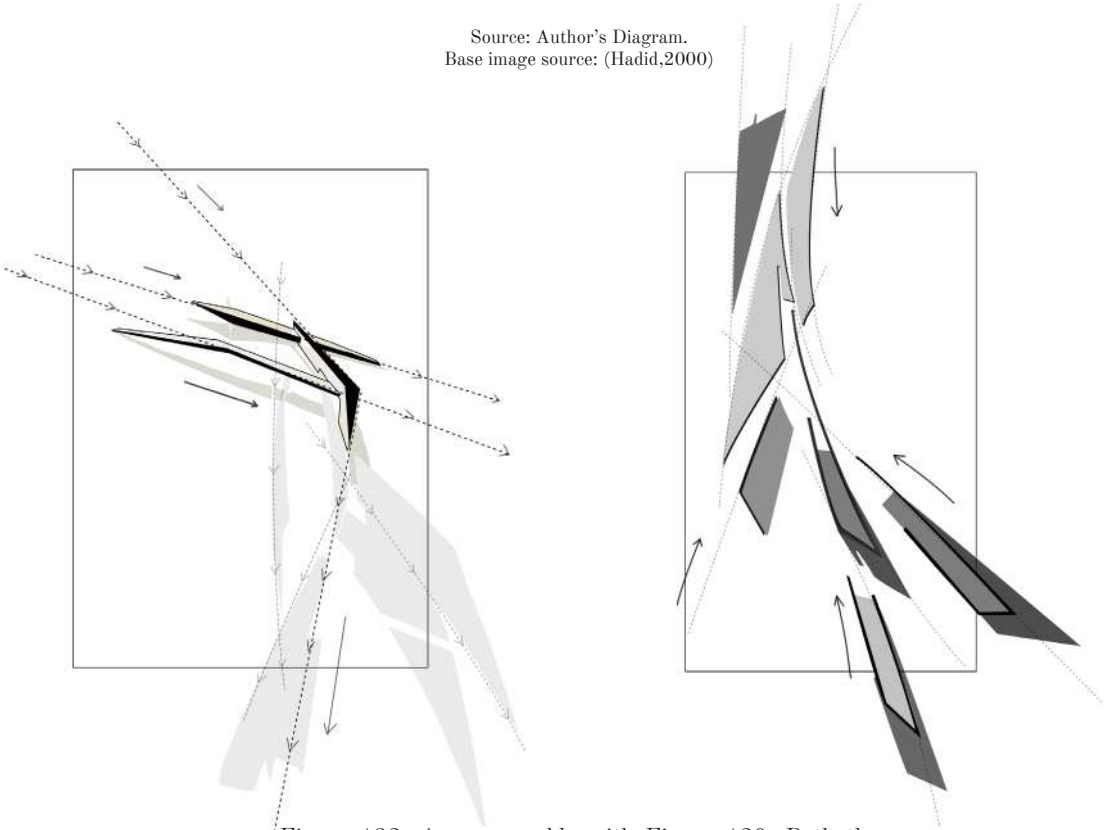


Figure 132: As comparable with Figure 129, Both the frames have various elements coming together creating a dynamic object participating in the kinetic quality of the composition.

Significance of the Study

Study of Cosmic traces in Zaha Hadid's paintings

Overall, the cosmic traces from this investigation indicate that Zaha Hadid's abstract paintings inculcated existing formalist theories of Russian avant-garde which had an underlying influence of cosmism.

This investigation of tracing cosmic characteristics within her paintings provides a new understanding of **how abstraction can manipulate architecture to achieve fluid aspects like dynamics and movement within space.** The cosmic findings from this investigation can be labeled as **real contributors towards her inculcation of dynamism** within her buildings.

In this investigation, connections between the cosmic imaginations of Russian avant-garde and the architectural space-making of Zaha Hadid **sheds new light on the process of converting statics and dynamics of space into a built environment.** Taking the case of the Vitra fire station, it can be observed how the cosmic force lines of Rodchenko were key elements used to generate wall planes of the built form. The process of Vitra's space-making takes another step through the technique of planar inter-relationships in generating spaces which suggests a similarity with Tatlin's Reliefs and his use of intersections between varied elements.

The present study has gone some way to expand our understanding of the impacts of cosmic attributes on Zaha Hadid's paintings through the medium of a diagram which interprets the statics and dynamics of objects within a chosen composition.

Abstraction as a process

Formal Invention by Zaha Hadid

The study also contributes to our understanding of visual manipulation, also termed as abstraction of existing concepts to respond contextually and establish inhabitation in an architectural space. In a 1995 conversation with Luis Rojo De Castro, Hadid points out that architecture doesn't necessarily deal with altering an existing theory but fulfilling the fundamentals of innovating architectural space through investigative methods. She highlights the importance of contextual response on opening up the ground and developing connections with the civic. She continued to add how drawings act as an investigative tool to achieve fundamental space-making.

This showcases that her emphasis was placed on the formal invention of an architectural space bringing in unique aspects within functions. All the abstract paintings carry a significant contextual representation which makes all the explorations practical to the ground laying foundational thoughts for design and construction. In her investigative process, Russian avant-garde can be revealed to be a groundwork for her technique of abstraction which led her to visually manipulate a function-based architectural approach. Aspects like floatation and geometric distortion are highlights within her abstract process which generated a set of unique built forms throughout her career.

Limitations

The most important limitation of this study lies in the fact that the paintings were solely investigated and made connections based on formalistic attributes of abstract works without taking into account the social and spiritual aspects. Since this study was limited to visual abstraction and formalistic analysis, it was not possible to dwell deeper into either Zaha Hadid's or Russian artist's social, cultural and spiritual thoughts embedded into the works of the painting.

This study is also limited by the absence of physical exposure towards colour and textural qualities of the paintings which ultimately made it difficult for this investigation to have an in-depth analysis with colour and texture as primary factors. Despite these limitations, the study did partially consider colour to decode specific concepts through the availability of online formats.

This study will only investigate the early paintings of Zaha Hadid and does not take any parametric built idea into account. This study's only focus is to investigate the early paintings which potentially had Russian avant-garde characteristics.

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Figure 103: Fax copy, Tatlin's Tower Installation proposal in Guggenheim Museum's Rotunda. Retrieved from https://www.guggenheim.org/articles/checklist/painting-for-the-guggenheim-zaha-hadids-exhibition-design-process

Figure 104: Hadid. Z (1992). "Tectonic" , Acrylic and watercolours on cartridge paper, [Painting]. Retrieved from https://www.guggenheim.org/articles/checklist/painting-for-the-guggenheim-zaha-hadids-exhibition-design-process

Figure 105: Herald. SRGF (2020). Solomon. R. Guggenheim Museum's Rotunda. Retrieved from Npr.org website: https://www.npr.org/2009/08/05/130274408/guggenheim-museum-the-spiral-that-broke-all-the-rules

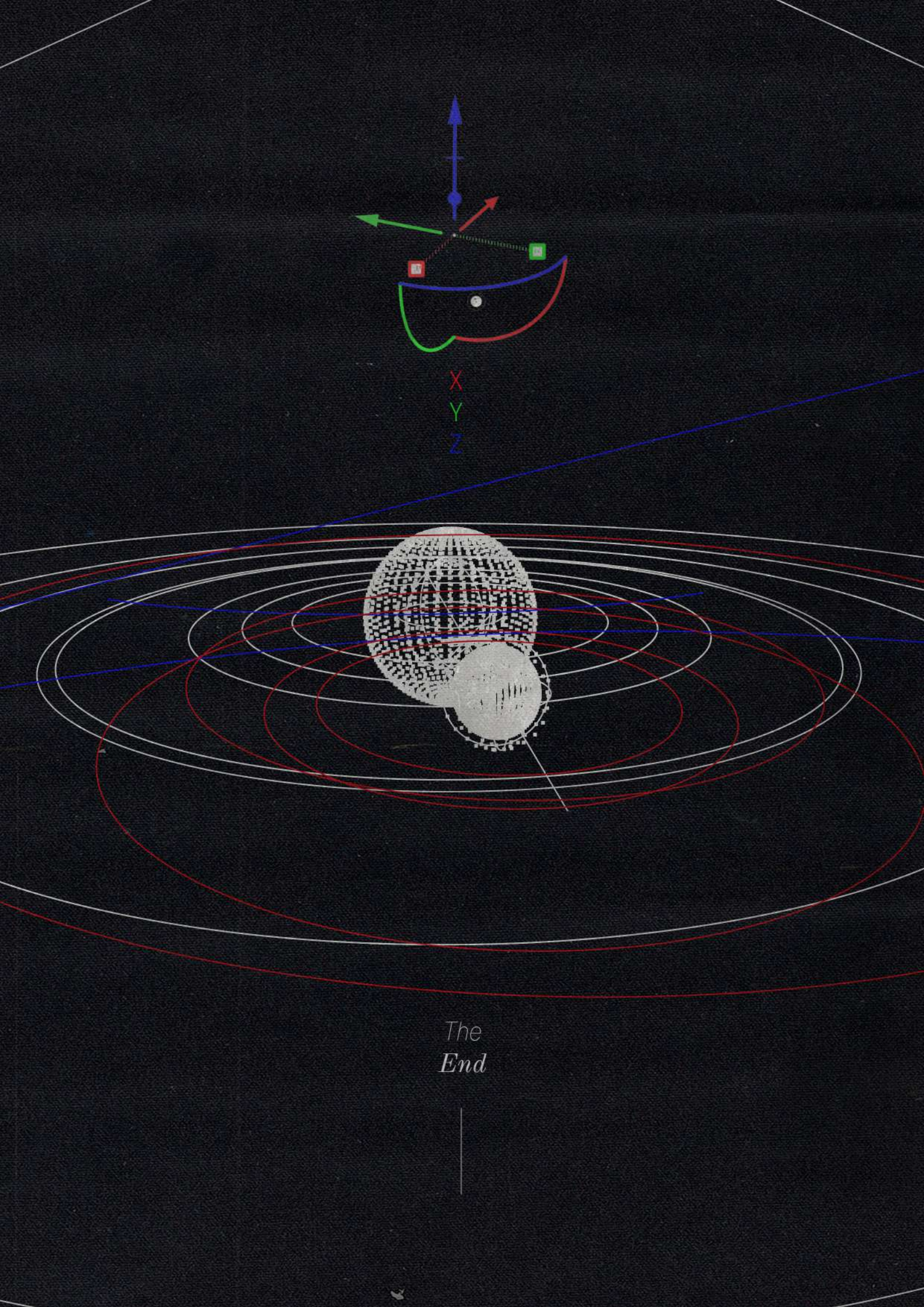
Figure 106 (a) - (d): Author's Diagram

Figure 109: Suprematism in architecture: Kazimir Malevich and the arkhitektons. (2014). Malevich *Arkhitektons*. [Online Image]. In The Charnel-House website: https://thecharnelhouse.org/2014/03/12/suprematism-in-architecture-kazimir-malevich-and-the-arkhitektons/#jp-carousel-18086

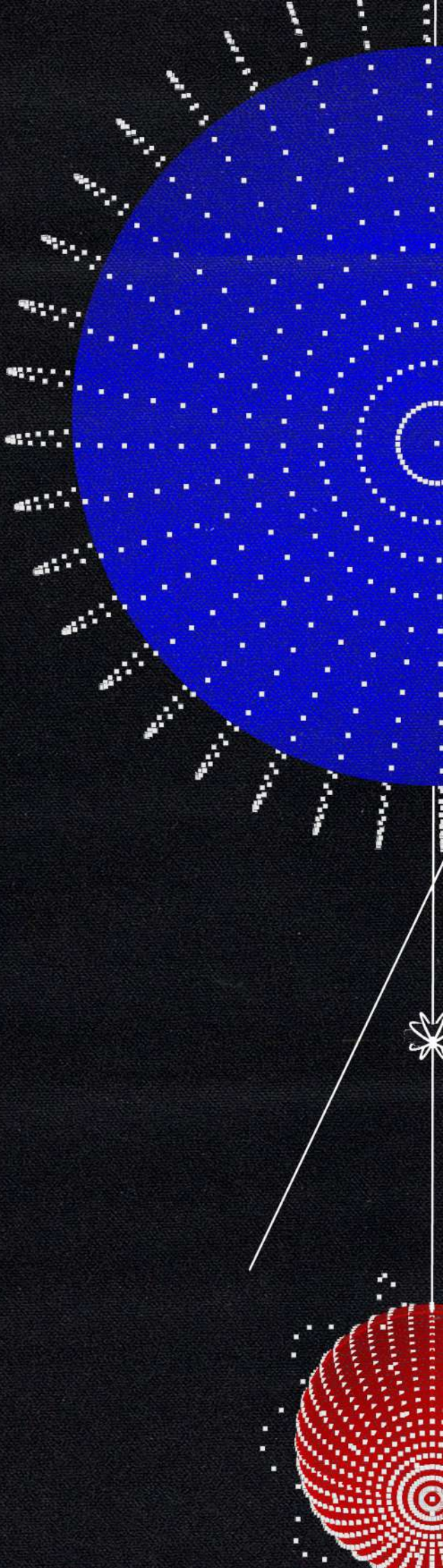
Figure 111 (a)-(c): Author's Diagram

Figure 112: Manjunath. S (2024). Author's Physical Model. {Photograph]

Figure 113 - 132: Author's Diagram



The
End



How Abstraction as a process of visual manipulation can help in creating unique architectural experiences?

How underlying visual layers embed itself during the process of architectural making?

Cosmic imaginations is a research experiment weaving the abstract findings of Russian cosmic avant-garde attributes within the paintings of visionary architect Zaha Hadid during her explorative time period between 1983-1991. Cosmic imaginations tracks the painterly inventions of Zaha Hadid and present a set of visual cosmic patterns which brings the dynamism in Hadid's abstractions.This study is essential to understand the underlying dynamic layers of cosmism which dictate the built environment and experience created by Zaha Hadid. This inquiry of cosmic character would open up new perspectives on the influence of underlying concepts which could be concealed within a larger abstraction dictating the practical world.

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