Pavilion of the Russian Federation
at the 14th International Architecture Exhibition
la Biennale di Venezia

VKhUTEMAS Training

Anna Bokov

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Curated by

Strelka Institute for Media, Architecture and Design
Anton Kalgaev
Brendan McGetrick
Daria Paramonova

Comissioner

Semyon Mikhailovsky

Text and Design

Anna Bokov

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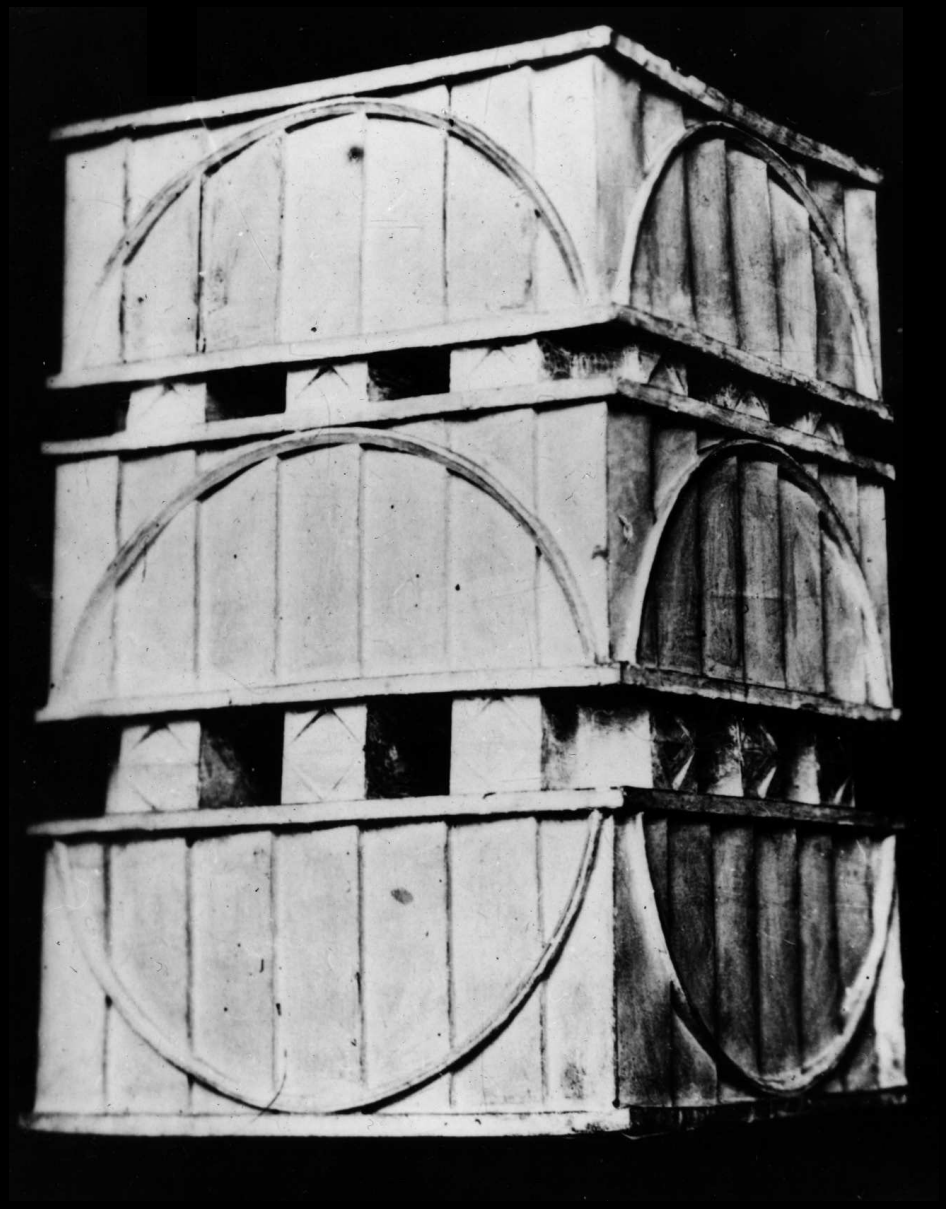
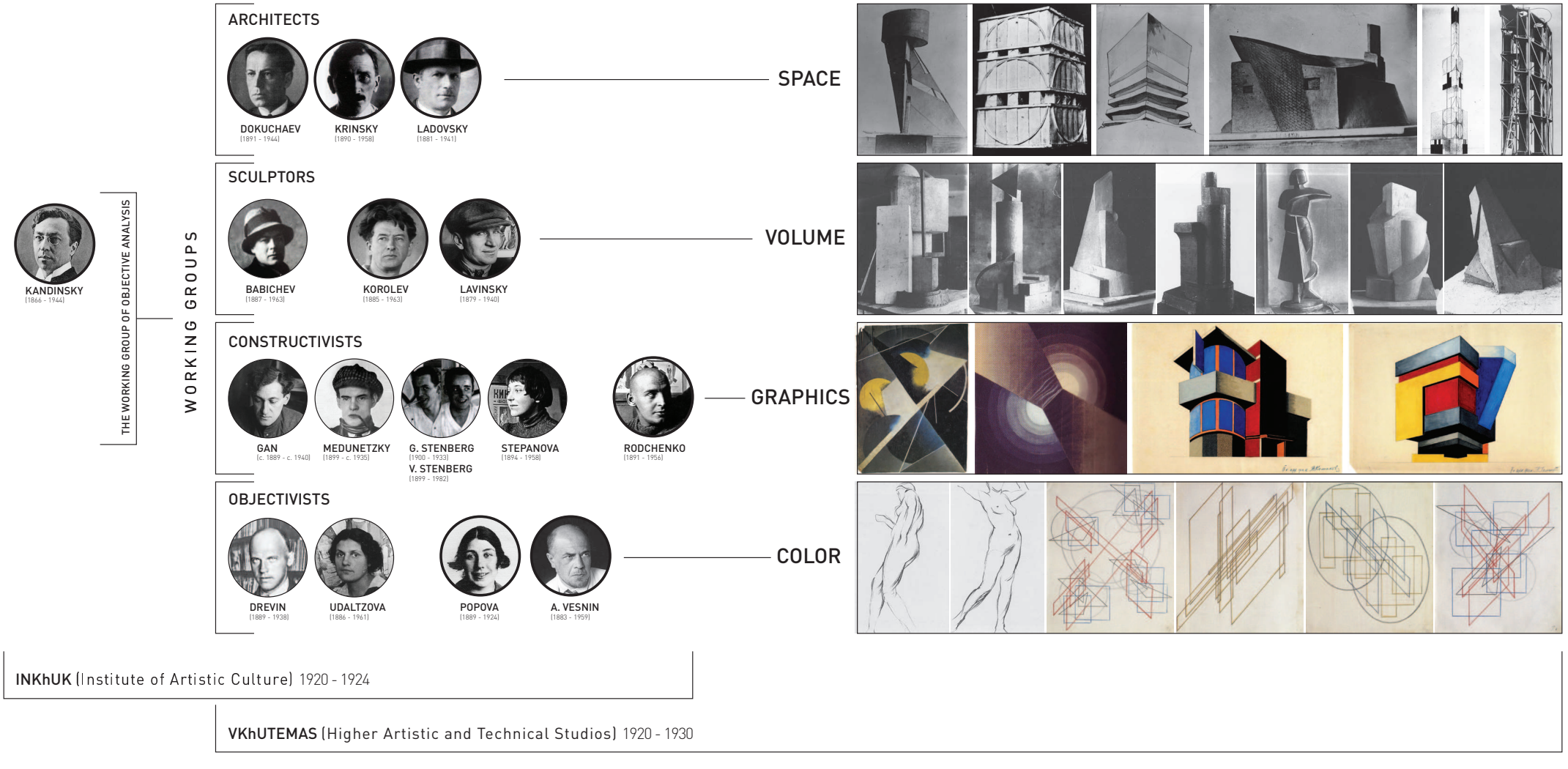


VKhUTEMAS Training

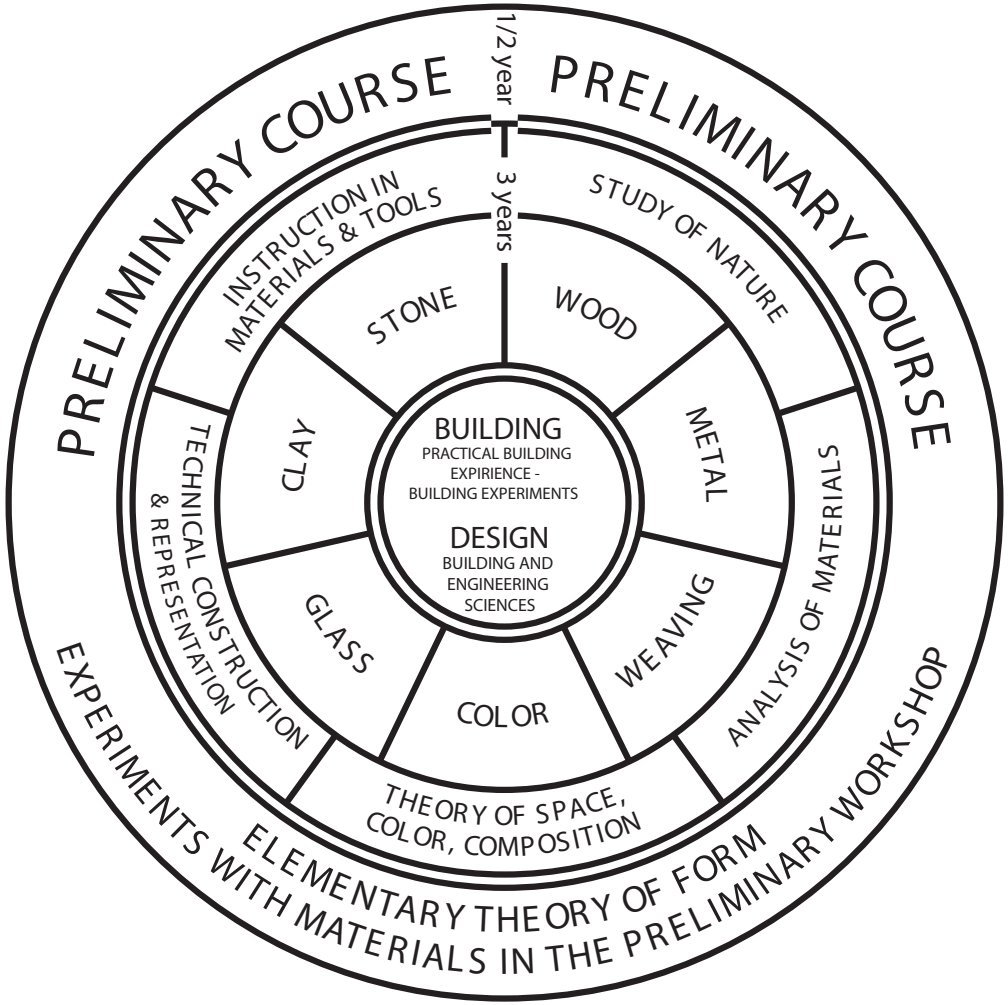
VKhUTEMAS, an acronym for Vysshie Khudozhestvenno Tekhnicheskie Masterskie, translated as Higher Artistic and Technical Studios, was conceived explicitly as "a specialized educational institution for advanced artistic and technical training, created to produce highly qualified artist-practitioners for modern industry, as well as instructors and directors of professional and technical education" (Vladimir Lenin, 1920).

VKhUTEMAS was a synthetic interdisciplinary school consisting of both art and industrial facilities. The school was comprised of eight art and production departments - Architecture, Painting, Sculpture, Graphics, Textiles, Ceramics, Wood-, and Metalworking. The exchange between the departments was facilitated by the core curriculum that consisted of four preliminary courses: Graphics, Color, Volume and Space.

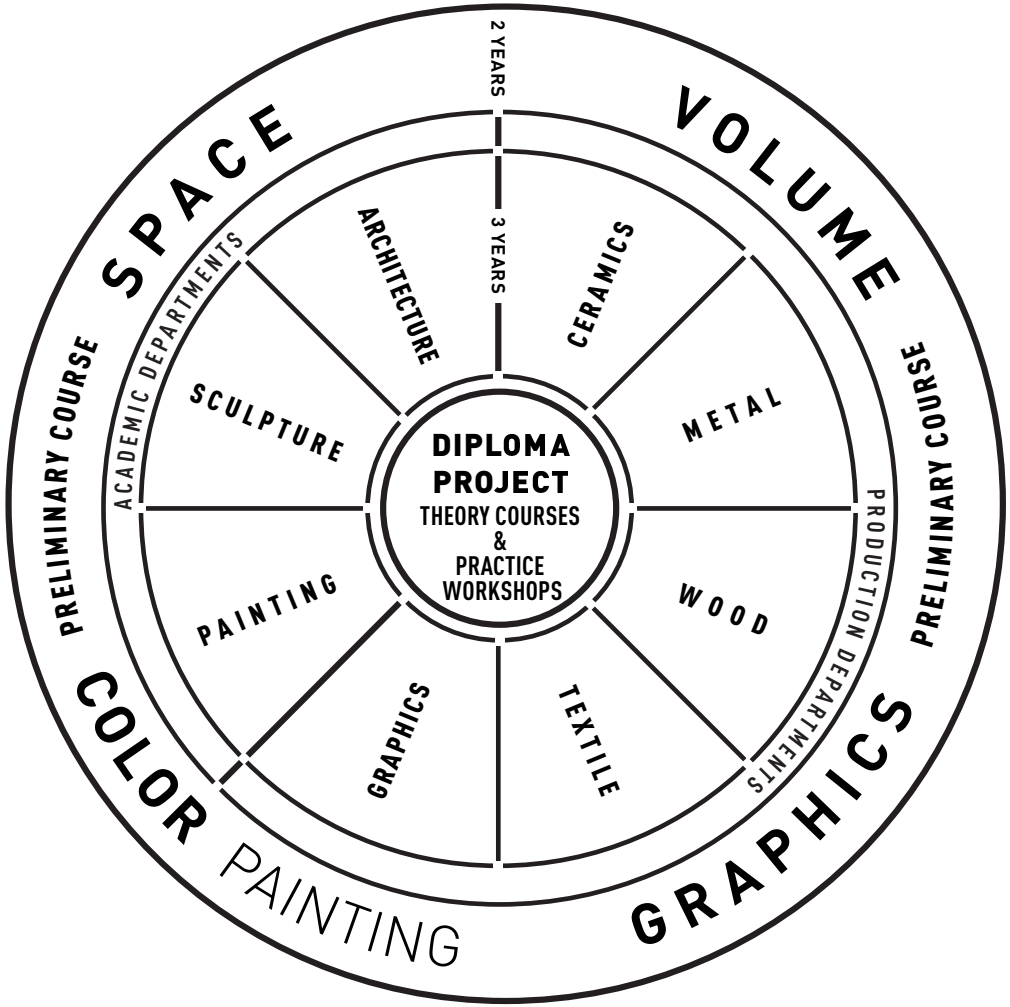


The courses were initially lead by those faculty members who had joined the Group of Objective Analysis at the Institute of Artistic Culture (INKhUK), an organization established concurrently with VKhUTEMAS in 1920, and led by Vasily Kandinsky. The principal goal of INKhUK was to systematize the emerging modern movement into a scientifically based program, known as the "objective method," that could be used for educational and research purposes. The INKhUK –VKhUTEMAS conglomerate formed special research "laboratories" within the school's departments for exploring the "objective method" and developing the primary "elements" of their respective disciplines – Painting, Sculpture and Architecture.

At VKhUTEMAS a mosaic of progressive and conservative faculty contributed to a vibrant diverse environment where new ideas were forged in heated debates. The school's faculty counted such pioneers of Russian Avant-garde as Alexander Rodchenko and Varvara Stepanova, Alexander Vesnin and Lyubov Popova, Boris Korolev and Anton Lavinsky, Nikolay Ladovsky and Vladimir Krinsky, El Lissitzky and Vladimir Tatlin, Gustav Klutzis and Moisey Ginzburg. Their pedagogical contributions made VKhUTEMAS an important center of modernist movement, engaging pedagogy as a mode of experimentation. VKhUTEMAS teachers and students saw design education not just as a process of knowledge transfer but as a vehicle for design innovation.



Bauhaus
Teaching Program Diagram, W. Gropius, 1922.



VKhUTEMAS
Teaching Program Diagram, 1923.

The history of VKhUTEMAS is closely linked with that of the Staatliches Bauhaus in Germany. The two schools conducted student visits and exhibitions, exchanged ideas through publications and correspondence and shared foundational values, disseminated by the key avant-garde protagonists, in particular, Vasily Kandinsky and El Lissitzky. However, while both schools aimed for a new unity of art and technology, VKhUTEMAS aimed to create the proletarian version of that unity, eventually resulting in an ideological gap.

Like the Bauhaus, VKhUTEMAS was an interdisciplinary school that consisted of both art and industrial departments. It also had a well-developed preliminary course. The interdisciplinarity and the core curriculum made VKhUTEMAS similar to the Bauhaus. Unlike the Bauhaus, which did not have an architecture department for the first eight years, VKhUTEMAS trained architects from the very beginning. The schools also differed greatly in size. The number of students and faculty at VKhUTEMAS compared to Bauhaus exceeded roughly tenfold.

VKhUTEMAS Historical Timeline

1749 | 1825 | 1843 | 1918 | 1920 | 1924 | 1926 | 1930

Palace School of Architecture
founded by Prince Ukhtomsky

Moscow School of Painting, Sculpture and Architecture
MUZhVZ

SGKhM 2
Free State Art Studios 2

VKhUTEMAS
Vysshiye Khudozhestvenno-Tekhnicheskiye Masterskiye
Higher Art and Technical Studios

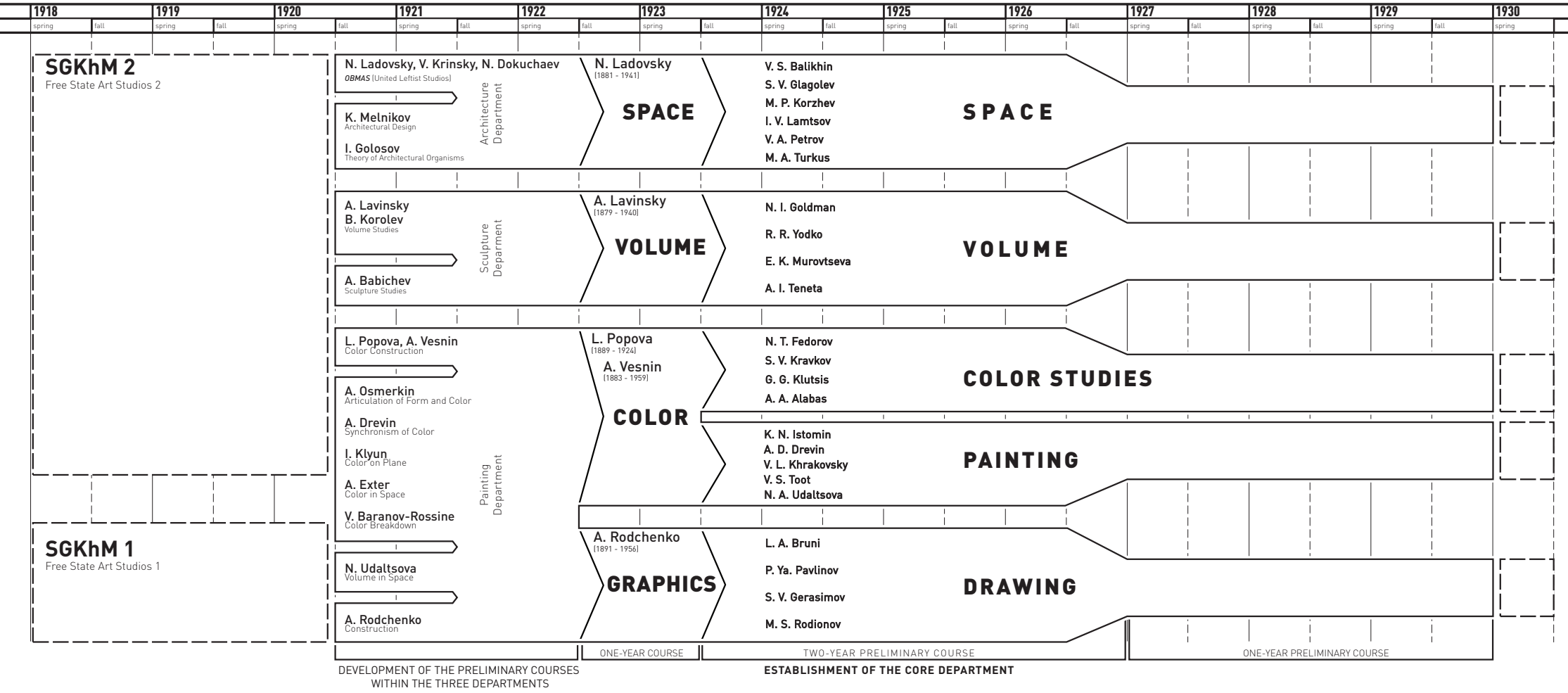
VKhUTEIN
Vysshiye Khudozhestvenno-Tekhnicheskii Institut
Higher Art and Technical Institute

Stroganov School of Applied Arts

SGKhM 1
Free State Art Studios 1

INKhUK
Institut Khudozhestvennoi Kulturi
Institute of Artistic Culture

VKhUTEMAS: Development of the Preliminary Course



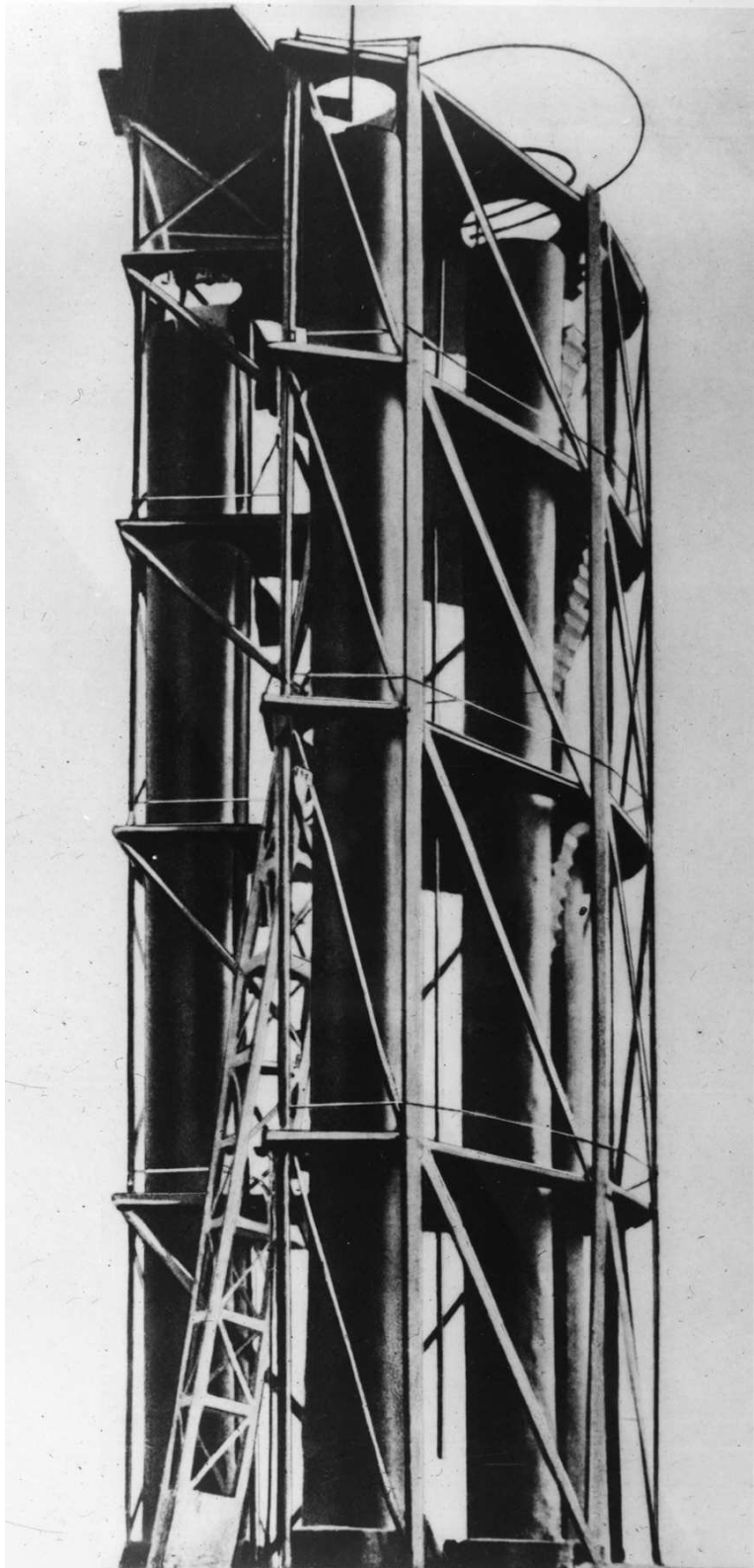
VKhUTEMAS Philosophy: New Approaches for a New Society

VKhUTEMAS was not simply an educational institution, but an agent of social change. It aimed to bring education to the masses and the masses to the growing industrial production. This could only be achieved through radical educational experimentation: the old pedagogy no longer worked, as the influx of thousands of students from the countryside could not be trained using bespoke apprenticeship or elitist academic methods.

The situation raised fundamental questions about design education that continue to resonate today: Is there an alternative to the academic and apprenticeship models? How can one teach something that has not yet been done, something that has no precedent? How do you teach that to hundreds of students with diverse backgrounds?

In response, the teachers and students of VKhUTEMAS developed an approach without precedent in which the process of teaching and learning served as a vehicle for venturing into the unknown. The school's "objective method" aimed to provide for all, creating a unified pedagogical approach across different fields - from painting to architecture. It was based on primary "elements" and their "properties," creating a solid formal foundation and allowing for synthetic thinking across disciplines. The method relied on the newest scientific discoveries and technological achievements and on the most progressive artistic trends. But the ultimate goal of the objective method was to integrate artistic culture with industrial production – to bring "art into life."

The mass-training methodology that VKhUTEMAS invented relied on a set of prescribed operations, a very basic algorithm of step-by-step written instructions, given out to students in the form of assignments as part of the Core Curriculum of four introductory courses: Graphics, Color, Volume and Space, required for all students



Space. Articulation of Volume and Space, 1922.

The Heart of VKhUTEMAS Training

The most innovative pedagogical method at VKhUTEMAS was designing directly in model. While model making as such was not new, traditionally it was based on something that already existed and then modeled. The method used in Space and Volume courses was fundamentally different. When starting a model, students were not aware of its final outcome; the result was formed as part of the process of making.

Students were given assignments in the form of written instructions and were asked to translate these into three dimensions. The models were by definition abstract, thus already suggestive of modernist forms. There was no scale or function – not unlike the early laboratory art constructions by the VKhUTEMAS teachers Rodchenko, Tatlin, or El Lissitzky.

At the heart of VKhUTEMAS training was the premise that humans were conditioned to learn faster through social interaction. The notion of "performative sociality" used by archeologists for describing the evolutionary advances in material culture applied to VKhUTEMAS as well. Working collectively in a laboratory-like interdisciplinary setting, the large body of VKhUTEMAS students produced a rich repository of proto-modernist forms.

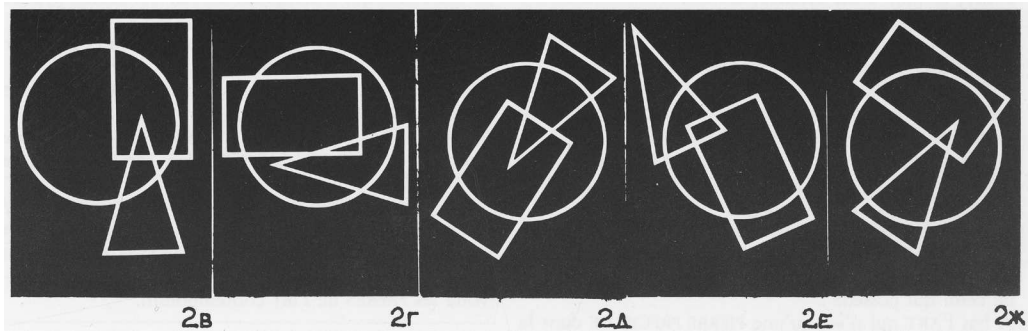
GRAPHICS

THE COURSE GRAPHICS IS NOT ABOUT DRAWING WHAT YOU SEE BUT IS ABOUT "CONSTRUCTING" A DRAWING WITH PRIMARY GEOMETRIC ELEMENTS.

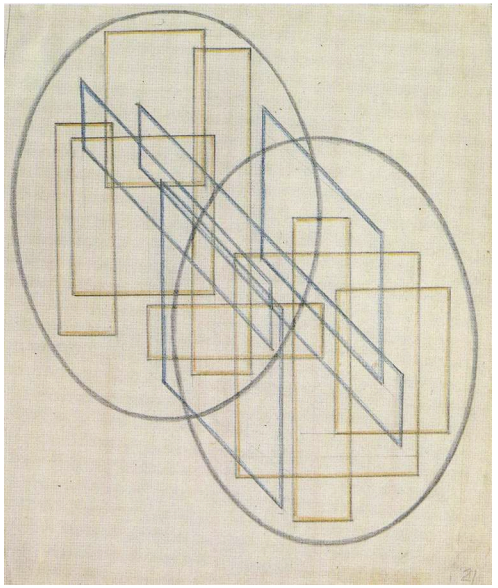
Graphics, initially called "Graphic Construction on a Plane," was conceived by Alexander Rodchenko as an alternative to a conventional drawing course. Traditionally drawing focused on the representation of human figure, still life or nature. The course Graphics was not about drawing what you see, but rather aimed at "constructing" a drawing with primary geometric elements.

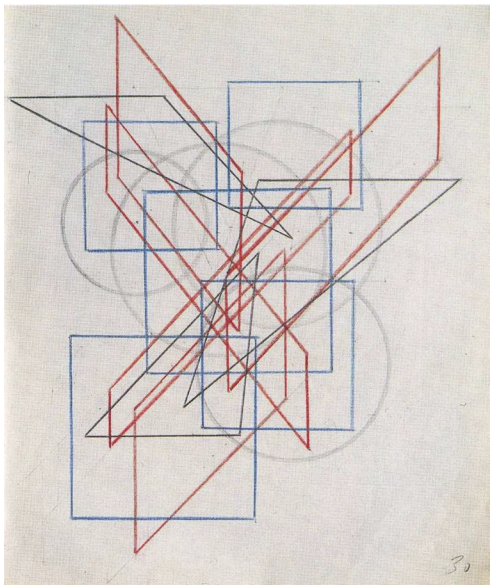
Rodchenko experimented with articulating the distinct perceptual qualities of elemental forms. Graphics exercises were designed around a set of compositional constraints and simple sequential operations, using basic geometric figures, such as circles, triangles, and squares. These had to be arranged along specific types of trajectories, "initiating" a composition. Rodchenko defined several parameters in this recombination game from proportion of a working field to the elements themselves and the relationships between them. This clear set of instructions made the course universally accessible for anyone with or without prior artistic training.

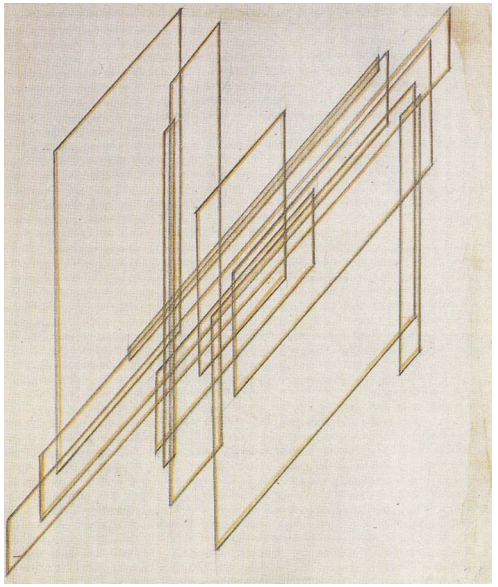
Graphics. A. Rodchenko. Construction ["Initiative"] Assignment, 1921.

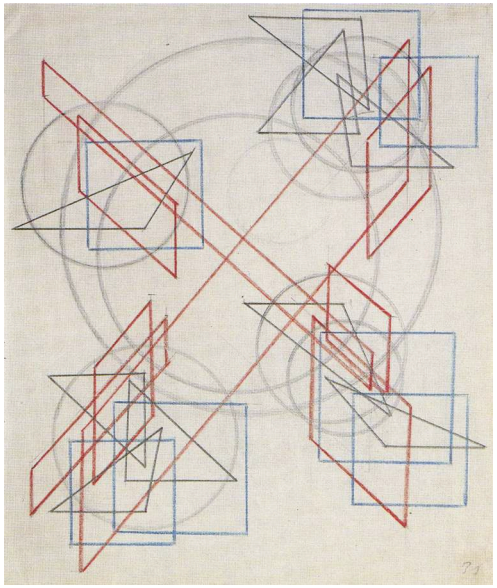


Graphics. A. Rodchenko, Construction ["Initiative"], Student A. Akhtyrko, 1921.









This course was based on the notion of color as a primary element in any painting. Like traditional academic drawing, painting also focused on representing reality as closely as possible. The 20th century marked a paradigm shift when painting was no longer mimicking the world but instead aimed to construct a new one.

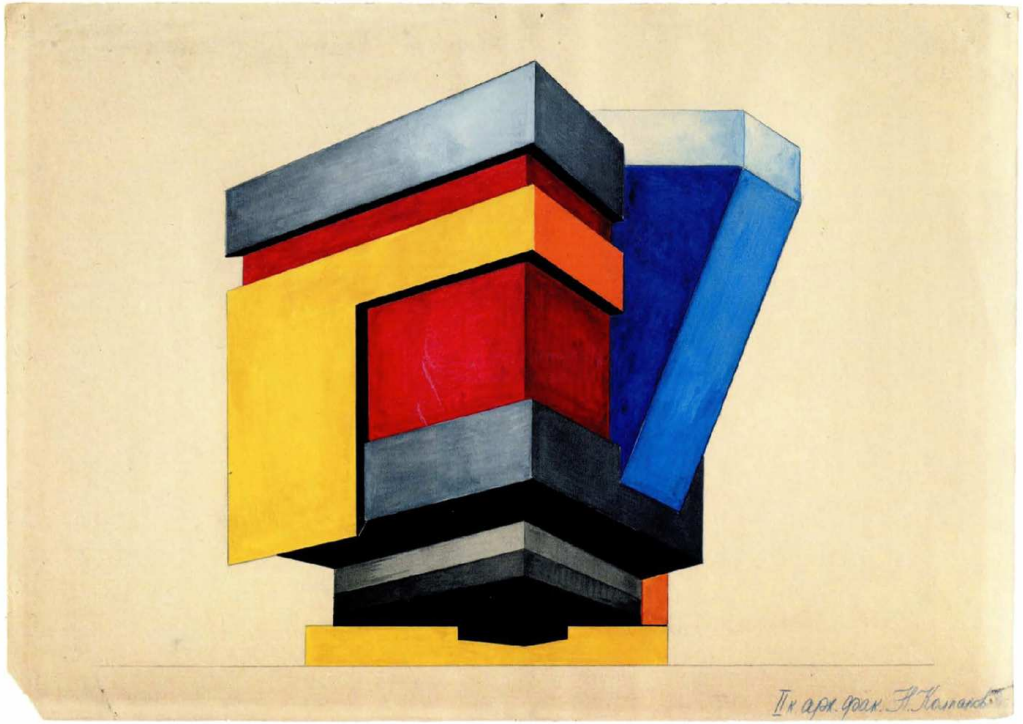
The underlying structure of the course Color was based on both scientific knowledge and artistic experiment. Starting with breaking down the spectrum of a rainbow, color theory has been a subject of scientific quest for centuries - from Aristotle to Albers. The primary and secondary color range formed a basic color circle, such as the one studied in Gustav Klutzis's exercises.

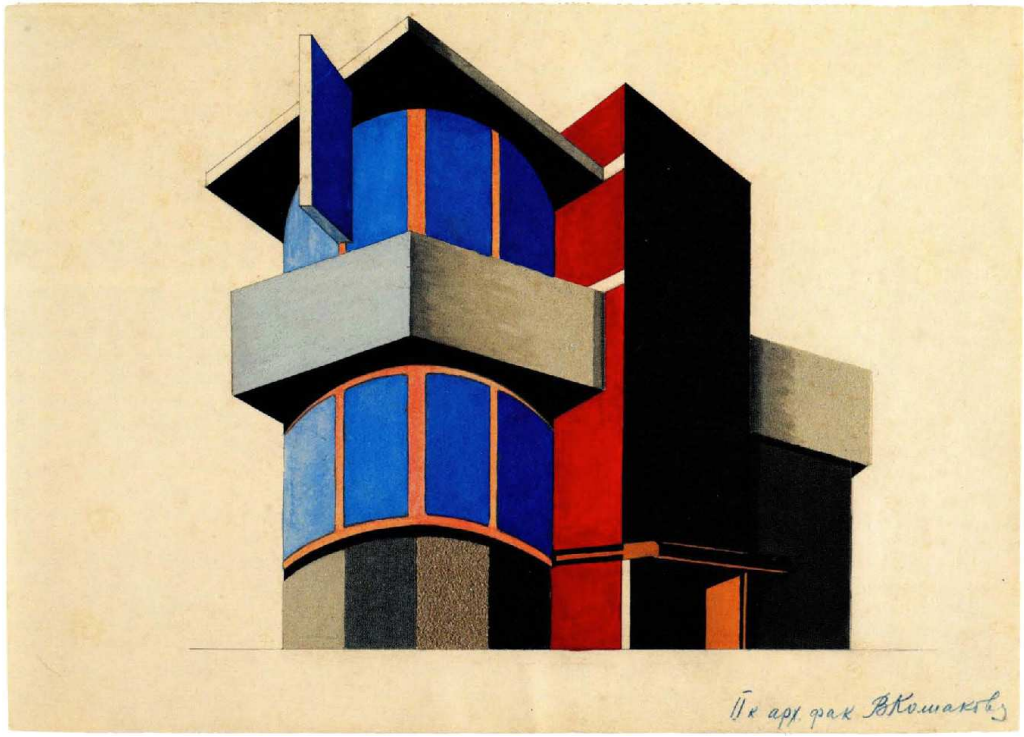
These methodological aids demonstrated how colors could be combined based on either contrasting or complimentary properties. The course experimented with the full chromatic range: from complimentary to contrasting color schemes, to explorations of the entire pallet.

The main unit of the course Color, designed by Lyubov Popova and Alexander Vesnin, claimed to distinguish between the superficial impression of an object and its coloristic essence. Students were encouraged to analyze the nature of form relative to color. Color was conceived as a primary element and even as a form of energy that does not simply cover up an object but "constructs" it.

Color. L. Popova, Color on a Plane, Student E. Bugrova, 1923.

Color. G. Klutzis, Color and Architectural Volume, Student V. Kolpakova, 1928.





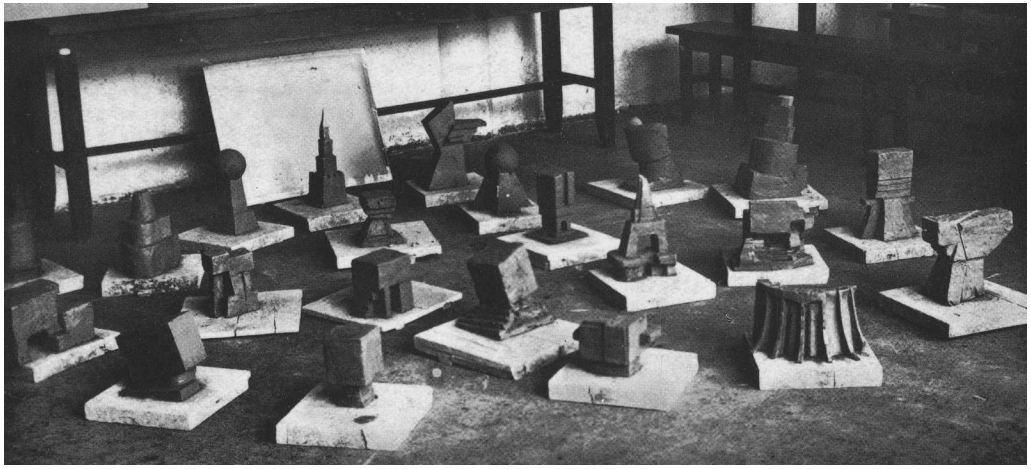
THE COURSE COLOR WAS CONCEIVED AS A PRIMARY ELEMENT AND EVEN AS A FORM OF ENERGY THAT DOES NOT SIMPLY COVER UP AN OBJECT BUT “CONSTRUCTS” IT.

VOLUME

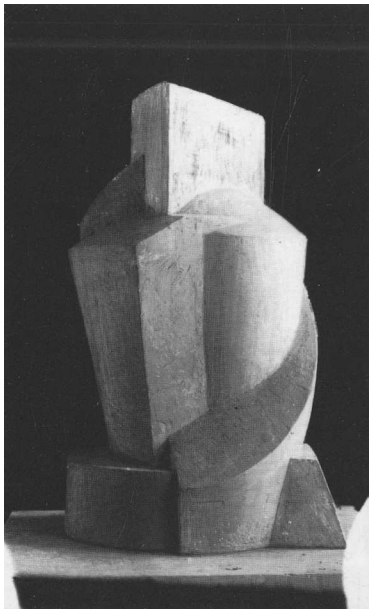
The course Volume was an alternative to age-old practices in sculpture training. It was initially influenced by Cubism, as two of its founders Anton Lavinsky and Boris Korolev were followers of this artistic movement.

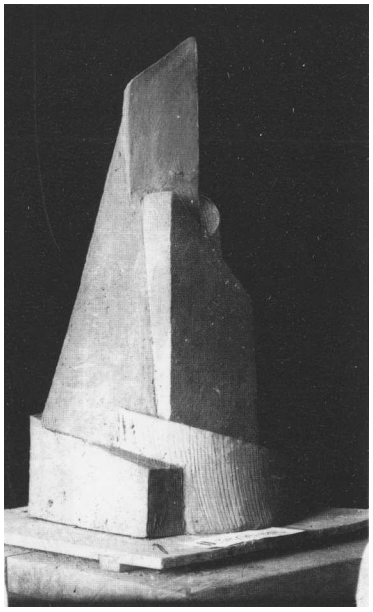
Volume exercises ranged from cubist analysis of still life and live models to abstract volumetric compositions. Students were asked to produce such compositions by exploring the properties and dynamics of a given volume in space or by articulating a relationship between volume and its weight. Some exercises focused on how to show the intersections of objects, using a kit of primary forms, such as cube, sphere, cylinder, or pyramid. Another set of exercises challenged students to compose various contrasting materials in relation to one another. Other assignments examined transition from simple to complex - from the basic geometric figures to elaborate decorative ornaments. The course Volume taught one to deconstruct complex natural and artificial forms using cubist analysis and basic geometry.

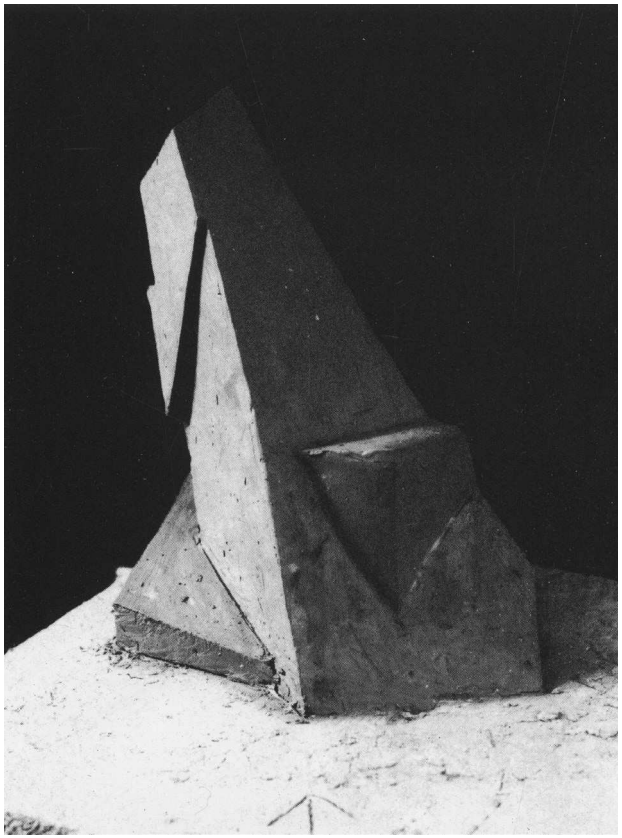
Volume. Intersection of Volumes.



Volume. Dynamic Composition, c. 1920.







THE COURSE VOLUME TAUGHT ONE TO DECONSTRUCT COMPLEX NATURAL AND ARTIFICIAL FORMS USING CUBIST ANALYSIS AND BASIC GEOMETRY.

VKhUTEMAS. Space, Exhibition of Student Work, 1927.

SPACE

The course Space was the first pedagogy developed to train a large number of students in the fundamentals of modern architecture. Developed by Nikolay Ladovsky, Vladimir Krinsky and Nikolay Dokuchaev as a foundational architecture course, Space is paramount not only for its innovative pedagogy but also as an experimental laboratory for developing new architectural language.

The course was based on a study of psychology of perception as a generator of a new syntax of plastic form. For Ladovsky the "objective," also known as "psychoanalytical," method was perceptually and experientially determined. It was based on, in his words, the "economy of psychic energy" and "the fundamental human need to orient in space."

Ladovsky established the following properties of form: geometric, physical, mechanical and logical, as the pedagogical basis for the course. These properties developed into assignments on articulation of Form, Space, Volume, Rhythm, Structure, Balance and Mass and Weight.

As part of the teaching method students used clay to visualize space. Clay, a malleable material used throughout history for anything from ceramic pots to brick walls, automatically prompted a connection between mind, body and matter. Clay's shapelessness and materiality tapped into, what psychologists call, "embodied cognition," allowing one to distance from the familiar and make a cognitive jump - ultimately arriving at new forms.

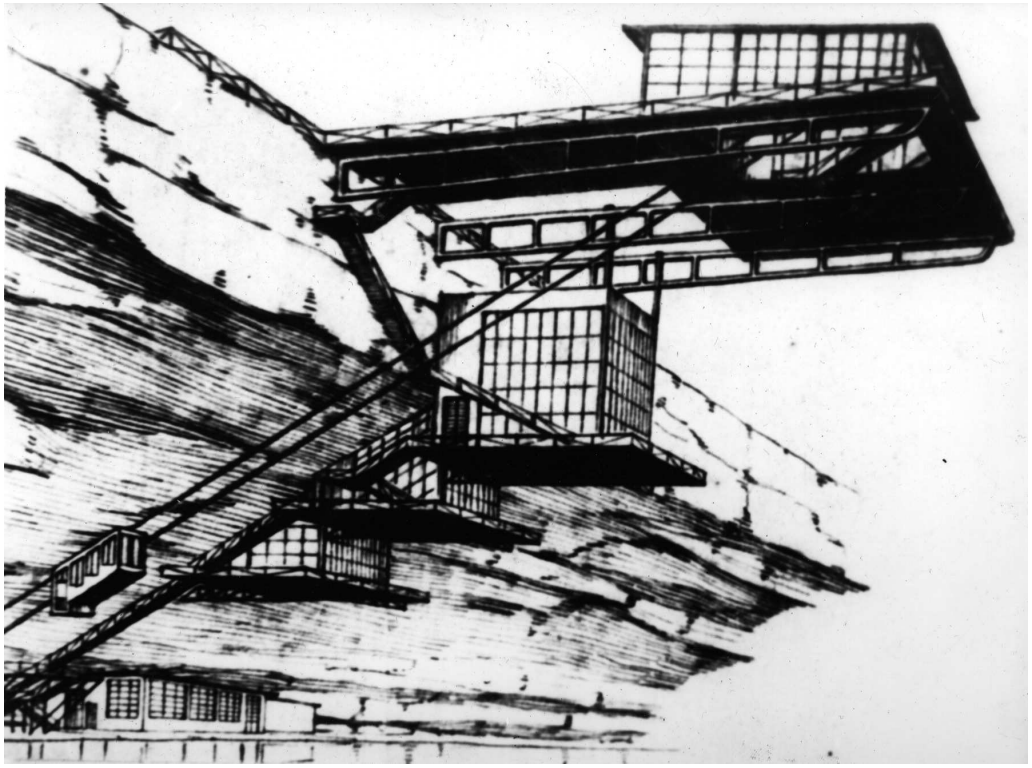
"IN THE PERCEPTION OF THE MATERIAL FORM AS SUCH, WE CAN RECOGNIZE THE EXPRESSION OF ITS QUALITIES:

1) GEOMETRIC – RELATIONSHIP OF SURFACES, CORNERS, ETC.;
2) PHYSICAL – WEIGHT, MASS, ETC.;
3) MECHANICAL – STABILITY, MOBILITY;
4) LOGICAL – ARTICULATION OF SURFACE AS SUCH AND OF SURFACE BOUNDING VOLUME.

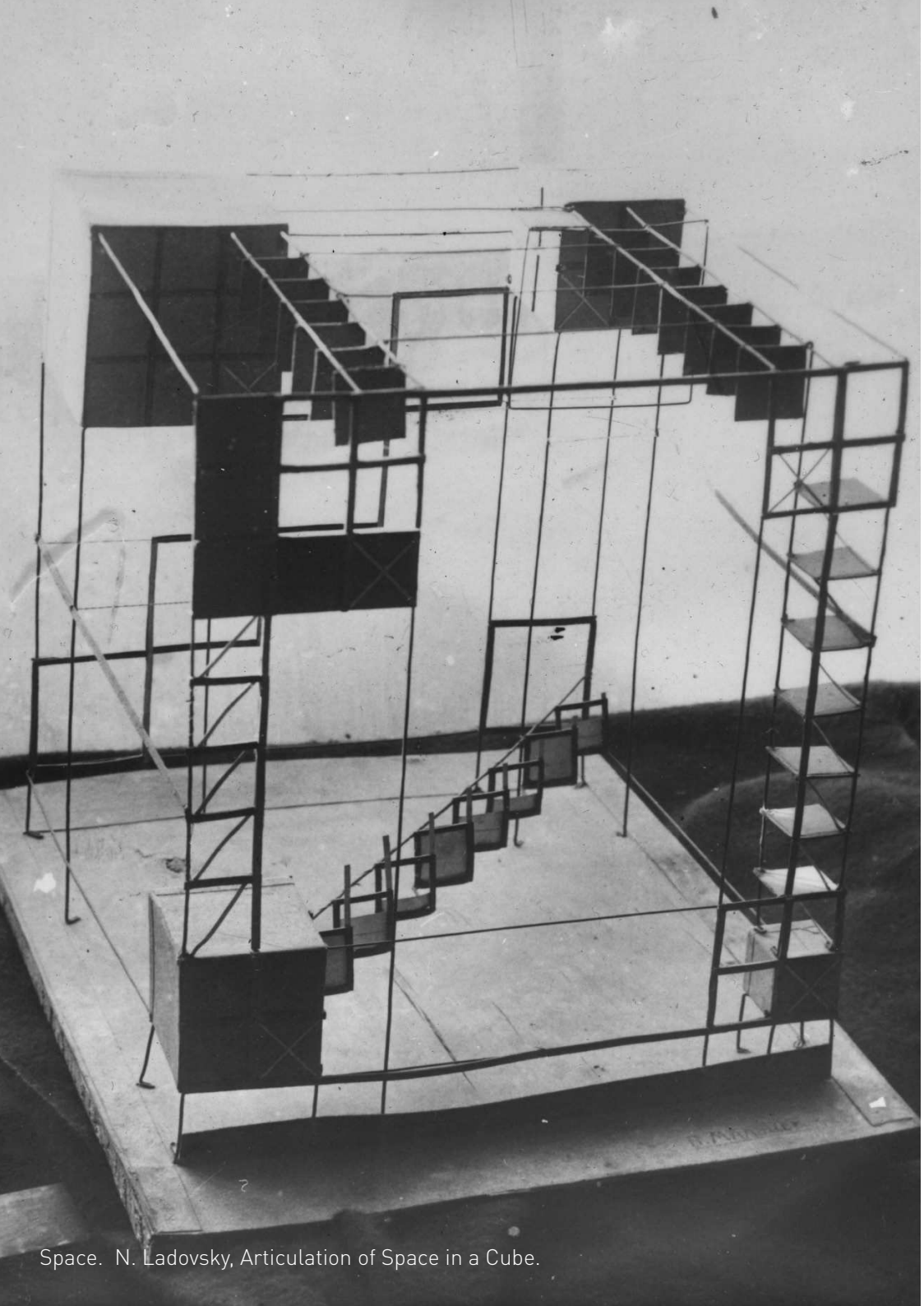
DEPENDING ON THE ARTICULATION OF SIZE AND QUANTITY WE CAN TALK ABOUT:
A) STRENGTH AND WEAKNESS;
B) GROWTH AND INVARIABILITY;
C) FINITENESS AND INFINITY.

Nikolay Ladovsky, 1926.

Space. N. Ladovsky, Articulation of Mass and Balance, 1923.



Anna Bokov

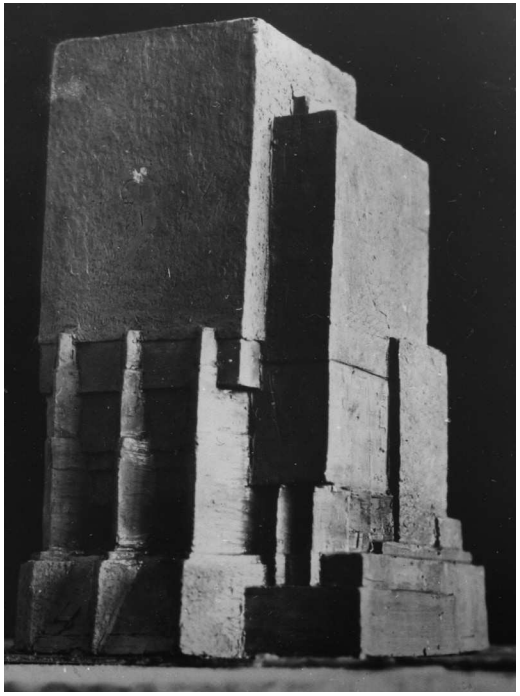


Space. N. Ladovsky, Articulation of Space in a Cube.

ARCHITECTURE OPERATES WITH THESE "QUALITIES" AS DEFINED VALUES. AN ARCHITECT CONSTRUCTS FORM, INTRODUCING ELEMENTS THAT ARE NOT TECHNICAL OR UTILITARIAN IN THE REGULAR SENSE AND CAN BE CONSIDERED "ARCHITECTURAL MOTIVES". ARCHITECTURALLY SPEAKING, THESE "MOTIVES" NEED TO BE RATIONAL AND SERVE THE HIGHEST TECHNICAL HUMAN NEED TO ORIENT IN SPACE."

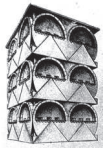
Nikolay Ladovsky, 1926.

Space. N. Ladovsky, Mass and Rotation.
Space. N. Ladovsky, Mass and Weight.

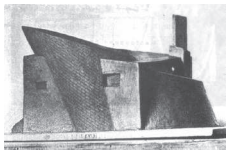


OBMAS: **ABSTRACT & APPLIED EXERCISES** 1920-22

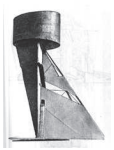
ARTICULATION OF GEOMETRICAL QUALITIES OF FORM

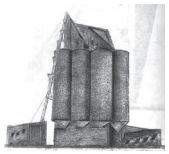
Articulation of Geometric Qualities of Form



Smithy with Two Forges



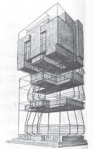
Water Tower



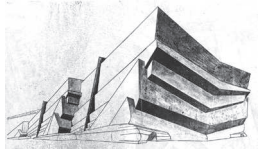
Grain Storage Tower

ARTICULATION OF THE PHYSICAL AND MECHANICAL PROPERTIES OF FORM (MASS AND WEIGHT)

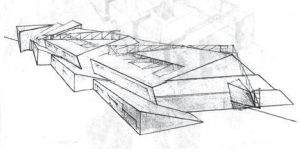




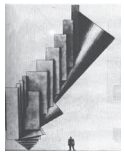
Articulation of Mass and Weight



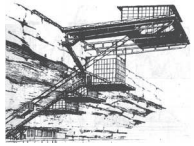
Warehouse



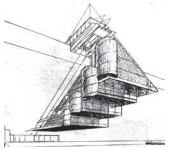
ARTICULATION OF THE PHYSICAL AND MECHANICAL PROPERTIES OF FORM (MASS AND BALANCE)



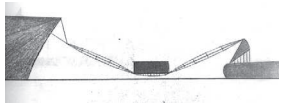
Articulation of Mass and Balance



Restaurant and Dock

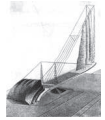


ARTICULATION OF STRUCTURE



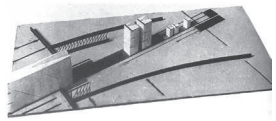
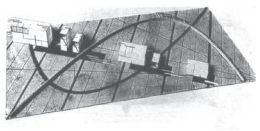
Articulation of Structure of a Beam

Structural Lever



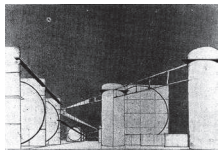
Airport Gate

ARTICULATION OF DYNAMICS, RHYTHM, AND PROPORTIONS ON A PLANE

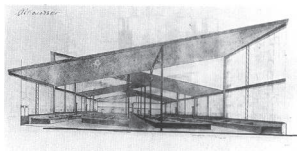



Articulation of Dynamics, Rhythm, Proportions on a Plane

ARTICULATION OF SPACE

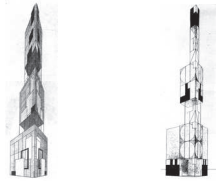


Articulation of Space: Left - Deep Space, Right - Shallow Space

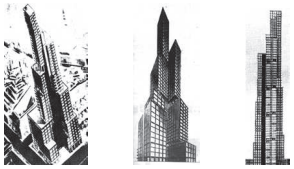


Outdoor Market

ARTICULATION OF DYNAMICS, RHYTHM, RELATIONS AND PROPORTIONS VERTICALLY



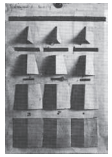
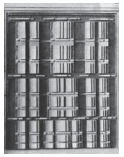
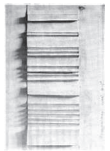
Articulation of Dynamics, Rhythm, Proportions Vertically

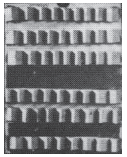
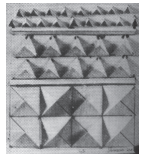


Skyscraper

CORE DEPARTMENT: **ABSTRACT EXERCISES** 1923-26

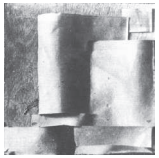
SURFACE

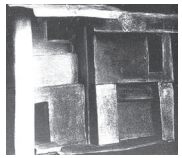



Tone and Relief | Vertical Rhythm | Horizontal Rhythm | Vertical & Horizontal Rhythm

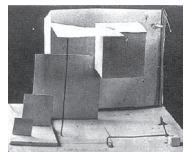
FRONTAL SPACE



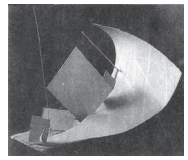
Frontal Relief



Frontal Spatial Composition

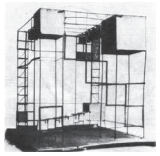


Deep Frontal Space

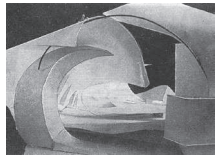


Organization of Space Above a Horizontal Plane

DEEP SPACE

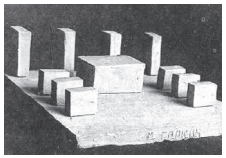


Organization of Space Inside Cube

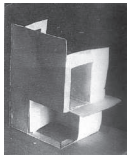


Organization of Deep Frontal Space

Organization of Deep Space on a Horizontal Plane



SPACE AND VOLUME



Articulation of Space witin Volume Using Planes

Volumetric Composition Based on Mass

FORM

Articulation of Fiorm: Rectangular Box

Articulation of Form: Cylinder

Articulation of Form: Rotation of Form

MASS AND WEIGHT

Articulation of Mass and Weight in a Volume

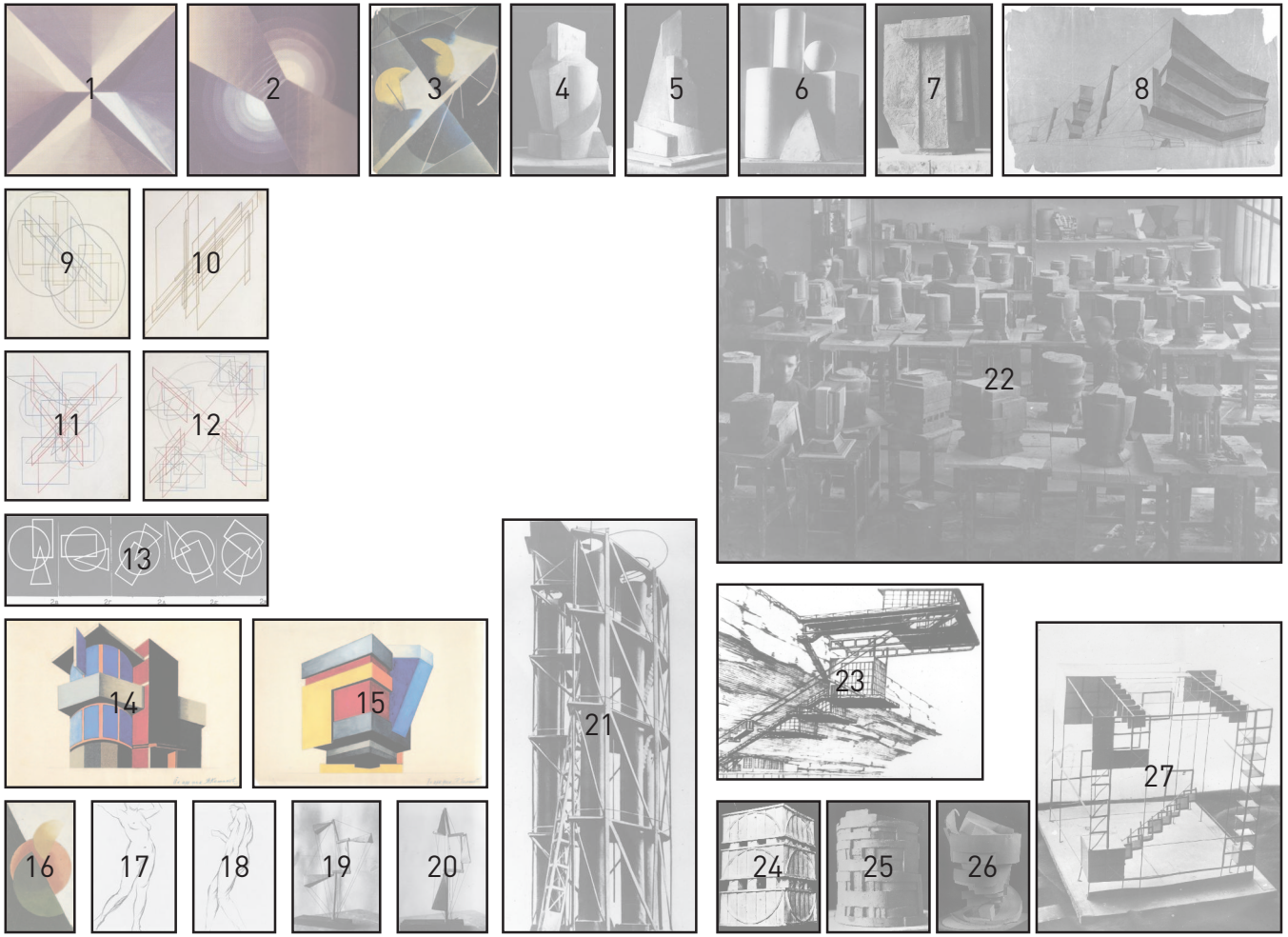
Volumetric Composition on Mass and Support

TRANSFORMATION

Transformation of a Vertical Plane

Texture Transformation

Transformation of Tension Structure



1. Color. Analysis of Achromatic Levels, 1927.
2. Color. Analysis of Achromatic Levels, 1927.
3. Color. Color on a Plane, 1923.
4. Volume. Intersection of Forms, 1921.
5. Volume. Dynamic Composition, c. 1920.
6. Volume. Arrangement of Geometric Forms.
7. Space. Articulation of Form, Mass and Weight.
8. Space. Articulation of Mass and Weight, 1922.
9. Graphics. Construction ("Initiative"), 1921.
10. Graphics. Construction ("Initiative"), 1921.
11. Graphics. Construction ("Initiative"), 1921.
12. Graphics. Construction ("Initiative"), 1921.
13. Graphics. Construction, 1921.
14. Color. Color and Architectural Volume.
15. Color. Color and Architectural Volume.
16. Graphics. Construction (Transition), 1921.
17. Graphics. 5-minute Figure Drawing.
18. Graphics. 5-minute Figure Drawing.
19. Space. Vertical Transformation.
20. Space. Vertical Transformation.
21. Space. Articulation of Volume and Space, 1922.
22. Space. Articulation of Mass and Weight, 1927.
23. Space. Articulation of Mass and Balance, 1923.
24. Space. Geometric Properties of Form, 1920.
25. Space. Articulation of Form.
26. Space. Articulation of Form and Rotation.
27. Space. Organization of Space within a Cube.

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Anton Kalgaev
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Semyon Mikhailovsky

Text and Design

Anna Bokov

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