

Making the mechanism to make forms¹

Construyendo el mecanismo para hacer las formas

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ABSTRACT

SLIT was originally developed as a construction toy. At the same time, it is also a spatial model. In other words, it is a model of the “mechanism that creates shape”, and the form completed by the mechanism is not the work, but the “mechanism” itself is the work. Here, we first explain the formation of SLIT. and we will examine the relationship with modern abstract art and architecture, which was used as a prototype model for SLIT. In addition, while simultaneously verifying the model as a prototype and the meaning of its deformation, we explore the meaning of SLIT as a spatial model.

Key words: Mechanism / Model / Spatial model / Transformation

RESUMEN.

SLIT se desarrolló originalmente como un juguete de construcción. Al mismo tiempo, también es un modelo espacial. En otras palabras, es un modelo del “mecanismo que crea forma”, y la forma completada por el mecanismo no es la obra, pero el “mecanismo” en sí es la obra. Aquí, primero explicamos la formación de SLIT. y examinaremos la relación con el arte y la arquitectura abstractos modernos, que se utilizó como modelo prototipo para SLIT. Además, mientras verificamos simultáneamente el modelo como prototipo y el significado de su deformación, exploramos el significado de SLIT como modelo espacial.

Palabras clave. Mecanismo / Modelo / Modelo espacial / Transformación

I will explain the construction toy named SLIT that patented in 2015 in Japan. This 'SLIT' was a development of construction toy. But it is an art work that exhibit on geometry art exhibition in Paris in May 2017. (CARREMENT 4, Espace Christiane Peugeot)

In addition, this is a model on thinking about space (architecture) for me at the same time. I want to investigate a theme to be common to the different genre called these toys, art, architecture, this time.

SLIT AS THE CONSTRUCTION TOY

The opportunity was development of the kits which made a sculpture of the paper as one of the activity of our workshop group for children named CHICK (children's creative kingdom presents).

In addition, we thought about a workshop that connects several cardboards that is two-dimensional parts together and made a three-dimensional structure like a sculpture. In Japan we learn the three-dimensional expansion plan in third graders by the current curriculum for the first time. For children, the conversion from the two dimensions to the three dimensions is important themes, because in the previous infancy, they made a solid by putting the three dimensions called the building block together.

There figures are this kit that three people of facilitator of the art brut, sculptor and mine. And, after experience here, I wanted to develop this kit. In other words, it may be said that this is an educational toy.

BUILDING BLOCK OF FROEBEL

The building block is one of the toys spreading most. As for the building block, Friedrich Wilhelm August Fröbel (1782-1852) 「フレーベル自伝」 長田新・訳 (岩波書店) who was the founder of the kindergarten did an original idea. Froebel observed children and considered a building block as the tool which generated the play.

By the way, the Frank Lloyd Wright of the American architect got close to this building block in the days of a child. He said, "my architecture was affected by this block". Furthermore, this building block affects Bauhaus.

The definitions of the building block by Froebel are as follows.

Principle of the building block

- Comparison, categorize = Upbringing of a basic thought (1)

The formation of the basic intellectual power is possible by activity such as a comparison, contrast, analogical inference classifying a form, size, amount to be seen in the whole and the part of each building block.

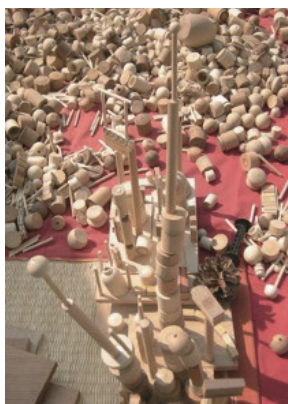
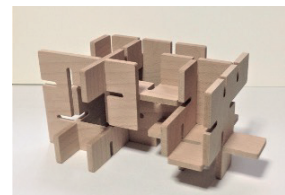
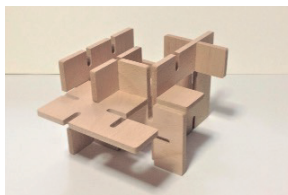


Image 1

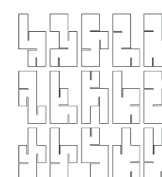
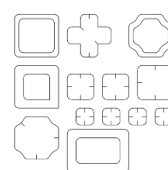


Image 2

> Image 1. Previous CHICK performed a workshop using the scrap wood from a woodshop mainly. It is a workshop to assemble the chip of wood which has been broken in a process making furniture and a toy in bond. This is like the building block. Font. Phot by Atsushi Kobayashi

> Image 2. SLIT cards for three dimensions. Font. Drawing by Atsushi Kobayashi

- **Constitution using the basic form**

The formation of the self-expression is possible to recognize external environment and a relation of the internal mind based on a building block comprised of a basic form to symbolize the essence of all things, and to reconstitute the recognition.

- **Concreteness and the abstraction = Upbringing of a basic thought (2)**

The formation of the aesthetic creativity is possible by an activity method to create the graphic beauty that I can abstract from concrete things in nature and the society based on each building block.

- **Constitution by a systematic principle**

Because each building block becomes the basic material constructed based on systematic unifying principle, it can cope with the long-term development of children and various ability.

"The building block" is called "the Froebel Gifts". In other words, the building block was given from "God" and was comprised of the piece that divided "a cube" into. The cube is stable world itself having center = the God. Then it may be said that each piece is an element constituting the world.

In other words, a purpose of the building block is to let you realize the world way through play. In addition, children reflect concrete scenery and things while piling up the abstract peace such as a cube and a cuboid, the triangular prism.

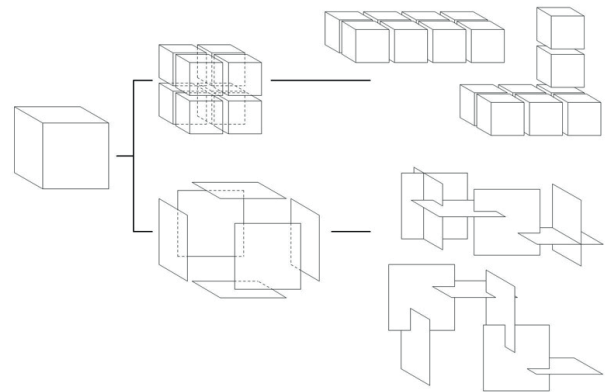


Image 3

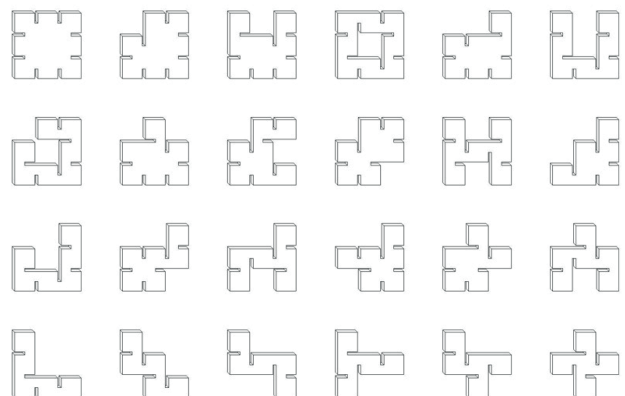


Image 4

SOLID AND VOID

There are solid and void in the structure. The construct with the building block is solid, and the internal space (void) does not exist.

I thought about making internal space by connecting "a plane" together. However, in a square and the single form, there is a limit in the combination and form to be generate from there. Therefore, I thought about connecting 24 kinds of "planes" which were born by lacking in a part of "the square". Thereby internal space appeared.

And SLIT came to be able to create complicated forms relatively easily and came to be in this way made by number limitless assembling. In addition, these pieces are intended to make it based on a square systematically. Therefore, SLIT is equal to the principle that Froebel proposes in this sense. The above is a summary of "SLIT" as the construction toy.

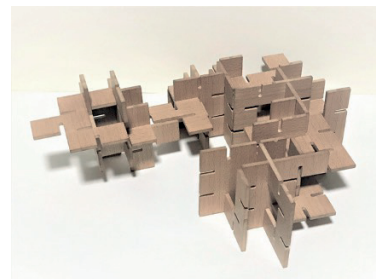


Image 5-6

- > **Image 3. Structure of solid and void Font: drawing by Atsushi Kobayashi**
- > **Image 4. Pieces of Slit Font: drawing by Atsushi Kobayashi**
- > **Image 5 - 6. Construction of SLIT Font: photo by Atsushi Kobayashi**

SLIT AS THE ART

Then, I talk about the side as the art. I was invited by the photographer of my friend who lived in Paris to see SLIT when I participated in a group exhibition of the geometry art that they belonged to. And I exhibited SLIT at a group exhibition called CARREMENT where was held in May 2017.

ABOUT AN IDEA OF DE STIJL

This CARREMENT is a group of artists affected by De Stijl and the Russian constructionism of the modern art movements.

I was surprised at talking about such De Stijl and Russian constructionism, Cubism and Dadaism or Surrealism as yet familiar existence when I talked with them. Only as for it, a modern art movement will root in their life. They are cut as grounds and develop own thought and molding.

De Stijl was one of the modern art movements aiming at the secession from a classic and was a movement beyond the genre of picture and sculpture or architecture.

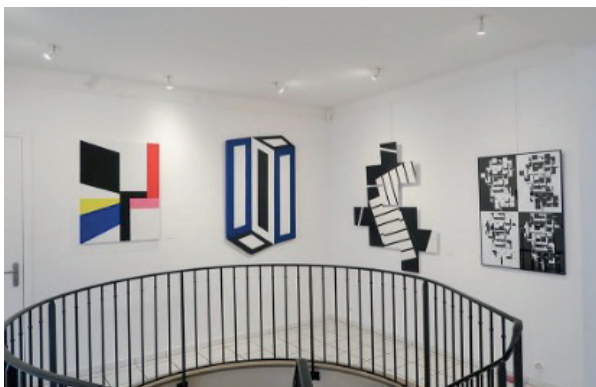
The characteristics of De Stijl (1924) 「世界建築宣言文集」ウルリヒ・コンラーツ編 / 阿部公正・訳(彰国社) are as follows (extract).

- 01 Negation of the fixed form = formless
- 05 The space division by the plane, negation of three-dimensional (cubic)
- 11 The central loss and gravitational negation
- 14 Active affirmation of the color = red, blue, yellow

Theo van Doesburg (1893 - 1931) who is the artist of De Stijl said 'The new architecture is like an anti-cube. We do not load it with various functional small space in a closed cube, and it opens them for the outside from the center. At height, width, depth and time, we will show molding expression new at all on this occasion in open space.' (1924) 「世界建築宣言文集」ウルリヒ・コンラーツ編 / 阿部公正・訳(彰国社)

In other words, De Stijl denied a cube = stable closed solid. It is the movement that aimed at the open "space" that put "plane" together and is constructed. It is the dynamic centrifugal, unstable space that is not like classicism-stable static centripetal space. There is not the completion form, and it may be said that the next development is always assumed constitution there.

I want you to remember a building block of Froebel here. The building block of Froebel assumes a cube a model. A stable thing was idealized so that it was representative in the times of Froebel by the Platonic solid such as a cube or the ball and so on. And God controls the whole. the parts



> Image 7 - 8. CARREMENT 4 (Space Christiane Peugeot) Font: photo by Jun Sato

from cube have a role to constitute the whole beforehand. De Stijl does not consider overall order to be given directly by the existence of individual elements anymore but considers that a principle to arrange a factor creates order. In other words, the whole = world comes out of the relations of the individual elements which became independent. It has the vector in contradiction to the view of the world called the world where it is like classicism in the times of Froebel ---The world that I idealized beforehand exists, and an element depending on it exists as a role.

ABOUT COLORS

From the above-mentioned consideration, I want to consider SLIT as the art once again. At first about a color. About SLIT as the toy, I thought about a design on the basis of being made of wood from the use. But I exhibited three sets of the type that colored a white-based thing and white, blue, red with woodenness at this group exhibition.

This is because it was aimed for constitution itself by the connection of pieces. This is because it avoids coming to lack a purpose called the constitution by the touch and an image taken in from the material of the wood.

ABOUT A UNITY AND FRAGMENTATION---ABOUT MATERIALS

Two types of meanings that using single color (all in white) and plural colors are as follows.

This construct is made by plural pieces together. It may be said that it indicates an overall unity to make with single color or one material. And it is not a thing indicating the existence of individual elements. In contrast, it indicates what is made because the construct connect plural pieces together to use the plural colors and material.

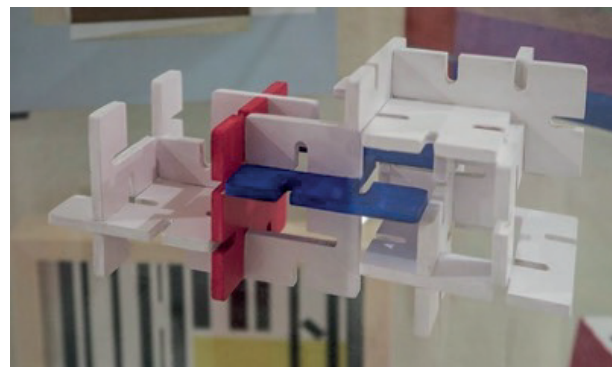
For example, Gerrit Thomas Rietveld (1888-1964) paint each plane in white, gray, red, black in Schröder House (1924) 「近代建築史図集」(日本建築学会) And he indicated the plane combination as the piece than an overall unity.

Based on this example, I prepared three structures that made by material itself, single color, plural colors. And I showed various ways of the construct.

CONCRETENESS AND ABSTRACTION – 1 FLOOR, WALL, CEILING AS THE PLANE

The word “wall” expresses the role as “a plane built perpendicularly” and “a thing dividing space” in the architecture. In other words, the word “wall” has already prescribed the function in itself. When I express this in other words with “a plane” not “a wall”, how about? In other words, we abstract it.

It is “plane” before saying a floor, a wall, a ceiling prescribing space. It is “space” saying a house, a school, an office



> Image 9 - 10. CARREMENT 4 (Space Christiane Peugeot)Font: photo by Jun Sato

and so on. I abstract it and try to think in this way. Then question of the space and its constitution are born. And it leads to a question to methodology "how the space is made". Here, as for the art and the architecture, a common way of thinking called the constitution of "the plane" is born. Briefly, I think it is one of the ideas of modern art and the abstract art, including De Stijl.

In addition, Wassily Kandinski of Russian constructionism expressed the component of the picture(lithograph) by the words from "a point to a line and the plane". And he discussed a type of each constitution of a point, a line, the aspect and the characteristic. In addition, Kasimir Malevich (1879-1935) 『無対象の世界』カジミール・マレーヴィッチ / 五十嵐利治・訳 (中央公論美術社) insisted that abstract itself was concreteness.

From such a point of view, I can place "SLIT" as abstract art, geometry art.

ABOUT ARCHITECTURE

At first, please watch the architecture which I designed 15 years ago.

I designed it that bent, lacked, and enlarged of one plane. The continued plane transformed it into a floor, a ceiling as well as a wall. At the same time, the plane changes a scale into a desk or a shelf and so on. In other words, I practiced that the space was not the thing which existed beforehand, and that it was generated by our physical act. The next image drew this state. As our eyes chase a line, space is born here.

By the way, in those days, I was thinking that this architecture was made by transforming one piece of plane. But it may be said that it is the space that this connects plural planes and constituted when I change a viewpoint. Then what kind of form will those planes do?

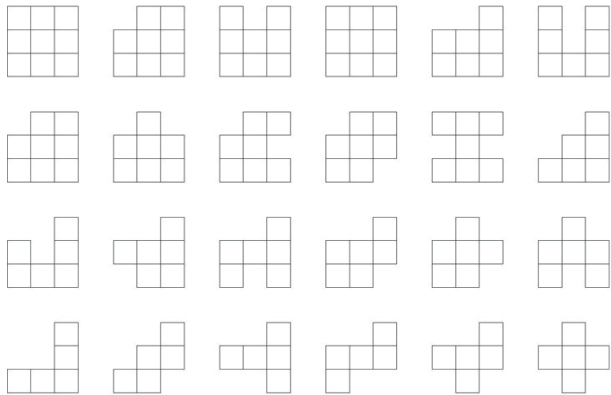
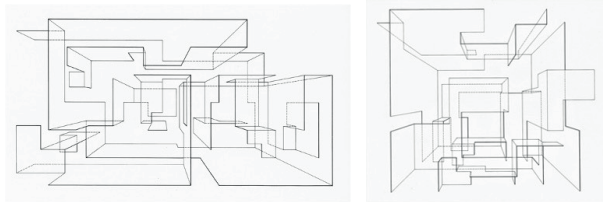
To inspect it, I thought on the basis of the form that divided a square into with 3x3. Then I understood that 24 kinds of variations were born. And this leads to a component of "SLIT".

It may be said that this architecture connects an edge of these piece and is constructed. "SLIT" is connected for it at a one-third point of the piece and is constructed.

When I think in this way, it may be said that "SLIT" is space model.



> Image 11 - 12. Space - P Font: phot by Hiroyuki Hirai



SPACE MODEL - ABOUT THE CHARACTERISTIC PROPERTY OF THE ARCHITECTURE

In National Museum of Modern Art, "Japanese house" is held now (2017) 「日本の家 1945年以降の建築と暮らし」(新建築社) (This exhibition was finished already. This was travelling exhibition in Roma, London and Tokyo since 2016.) There exhibits the genealogy of the postwar house in Japan according to a category. And

"Masuzawa house" (by Makoto Masuzawa (1925-1990) 「日本の家 1945年以降の建築と暮らし」(新建築社), an architect in Japan) and "House in Sumiyoshi" (by Tadao Ando (1941-) 「日本の家 1945年以降の建築と暮らし」(新建築社) an architect in Japan) which I took in the class of the first grader were included. (I teach the first grader of the Musashino Art University, department of architecture how to describe drawings since 2009. These two houses are subjects of the trace at this class.)

Here, I will watch two houses as space model.

The Masuzawa house (1952) was wooden small house that designed as space model of the postwar house. However, we can see influence of the domino-style of Le-Corbusier when we take out only the structure. In other words, it may be said that this adopted a domino-style as space model.

The house in Sumiyoshi pursued the way of the architecture in the crowded city environment. And it may be said that Ando reproduced "Machiya" (a style of traditional Japanese house in the city) as a model in the present age. In this house, Ando uses division space by close geometry. For "disorder" of the outside world, he made stable space using order called the geometry. This method is one of the themes of art and architecture since Greece.

By the way, the way of thinking about the model is a question about the characteristic property of the architecture. In other words, it is to think about structure itself of the space. It becomes mainstream now to think about an architecture from context such as neighboring environment. However, the way of thinking about this model asks the way of building in itself before considering them.

It may be said that the origin of art and architecture of the modern times as the concept to be opposed to classicism was for the acquisition of such a characteristic property from the start. Therefore, modern architecture called international style and the modern art use geometry; geometry has the commonality beyond the genre groped for an area and a race, the religion and so on.

5 principles of the modern architecture that Le Corbusier (1887-1965) 「世界建築宣言文集」ウルリヒ・コンラーツ編 / 阿部公正・訳(彰国社) proposed are an example of the space model. They are a piloti, a rooftop garden, horizontally consecutive windows, a free plan, free vertical planes--there are a way of thinking to be opposed to a classical architecture: the classic architecture is made of stone, and there is the sloping roof, and an opening is small, and both

> **Image 13 - 20. Continuity / Transformation of plane** Font: drawing by Atsushi Kobayashi

> **Image 21. Transformation of square** Font: drawing by Atsushi Kobayashi

the vertical plane and the plan are restricted in the structure. That is why the modern architecture spreads through all parts of the world.

CONCRETENESS AND ABSTRACTION – 2 A MODEL AND ITS TRANSFORMATION

As modern architecture spreads, regionality appears again. It transformed the abstract space model to various conditions. So, I can think it to have been possible because there is the existence called the abstract space model.

Because the building block of Froebel connected an abstract form with a concrete phenomenon and aimed at up-bringing of the aesthetic creativity. In other words, it is one of the basic concepts in all genres to connect concreteness and abstraction.

Making the system to make the forms - A system and its variation

Then the following question is born. Can you define the space model as a “work”?

5 principles itself of the modern architecture is not surely “works”. However, I can think that it is a system to make a “work”.

The system creates the work as the variation. It may be said, “system itself is a work”. In other words, “the system to make the forms” may become the “work”.

SLIT is the model that anyone can make space through play. And it is system generate space and form. And this system in itself is the “work”. It is the existence that can become the model of the three-dimensional art and architectural model by the abstractness.

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「日本の家 1945年以降の建築と暮らし」 (新建築社)

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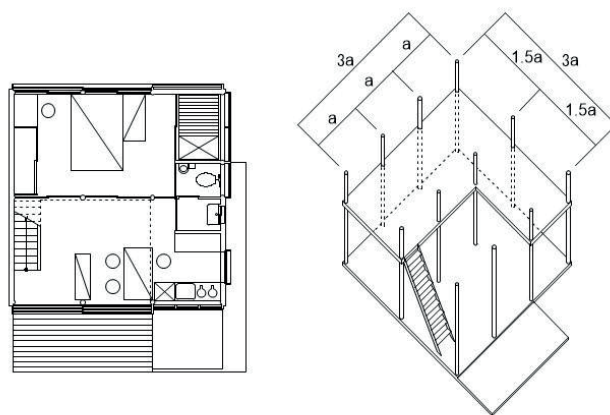


Image 22

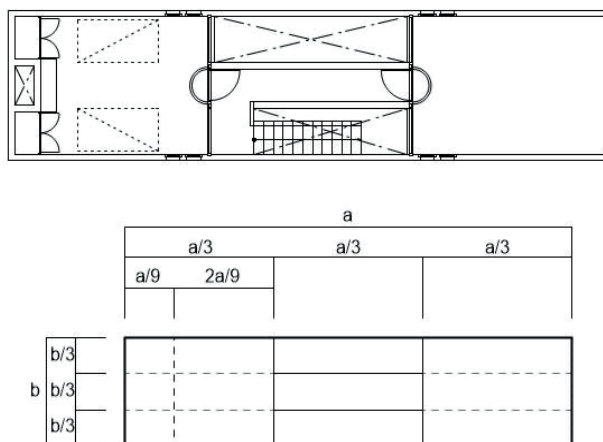


Image 23

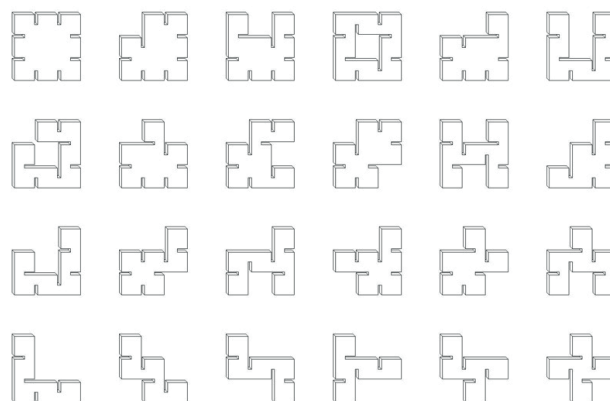


Image 24

> Image 22. Masuzawa House and space structure / domino - system Font: drawing by Atsushi Kobayashi

> Image 23. House in Sumiyoshi and space structure / division of space Font: drawing by Atsushi Kobayashi

> Image 24. Pices of SLIT Font: drawing by Atsushi Kobayashi

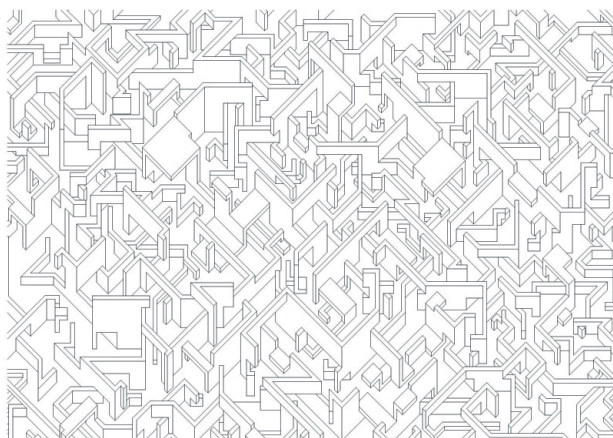


Image 25

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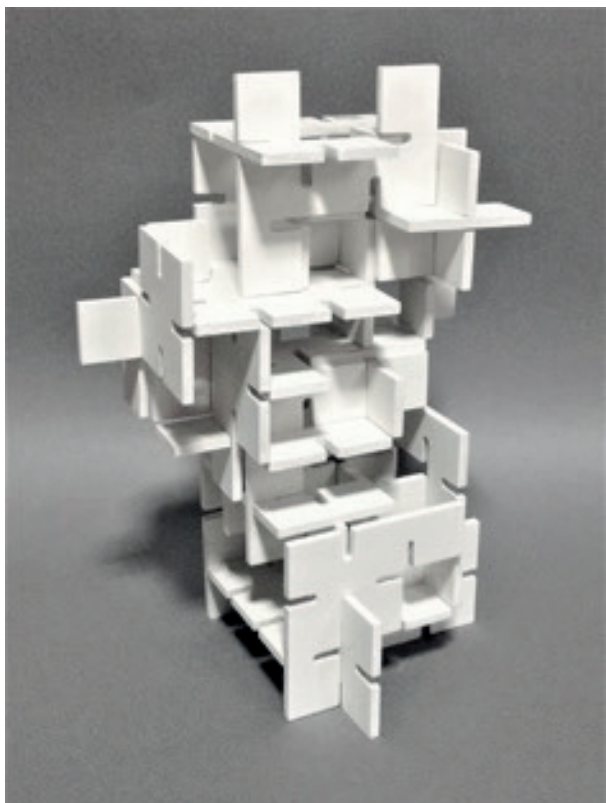


Image 27

> Image 25, continuity Font: drawing by Atsushi Kobayashi

> Image 26 - 27. SLIT in CARREMENT 4. Font: phot by Atsushi Kobayashi