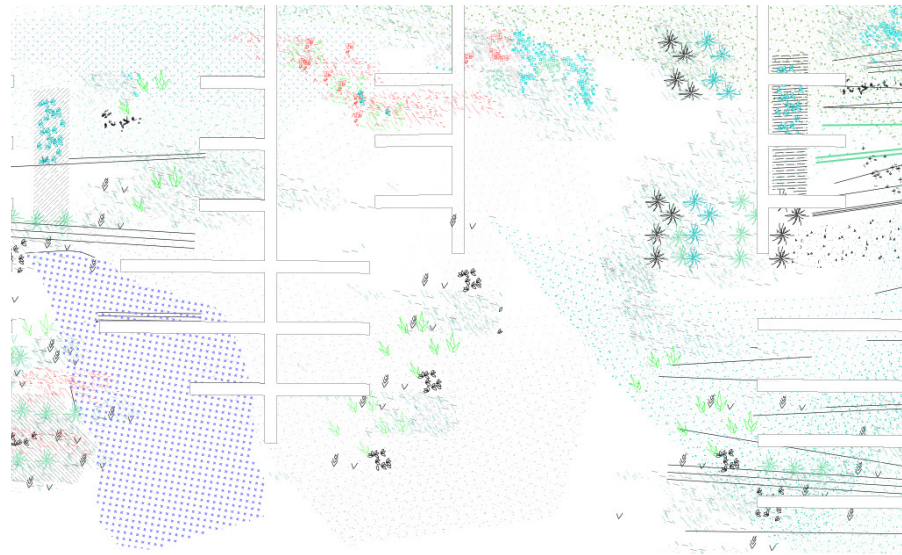


# EXPERIMENT

A MANUSCRIPT FOR NEOMETABOLISM



Gjorgjievski Nikola



# TOWARDS A NEW METABOLISM

## PART THREE: A MANUSCRIPT FOR A NEOMETABOLISM

student:

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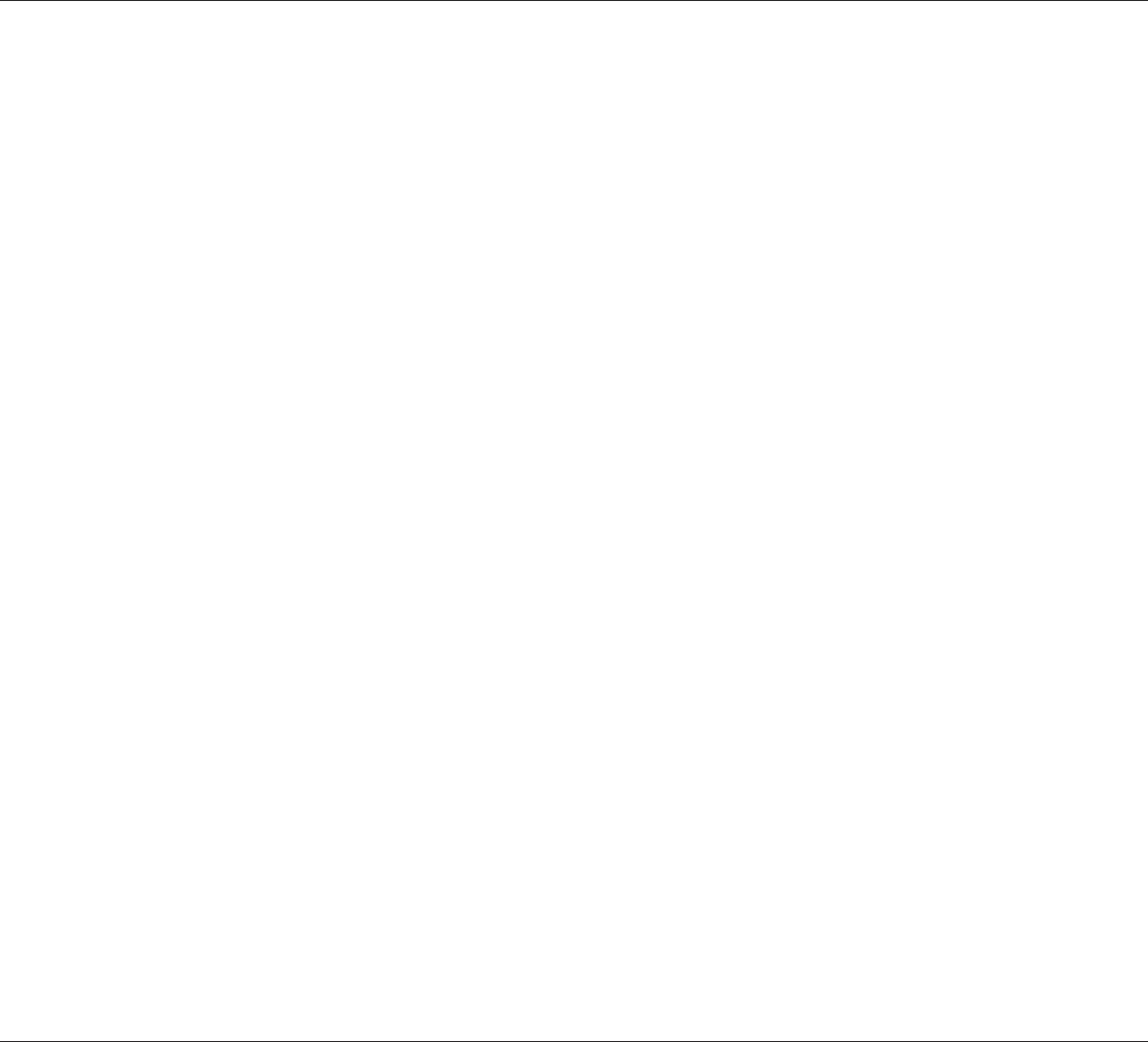
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Arkitektur- og designhøgskolen i Oslo  
The Oslo School of Architecture and Design

fall/ 2017





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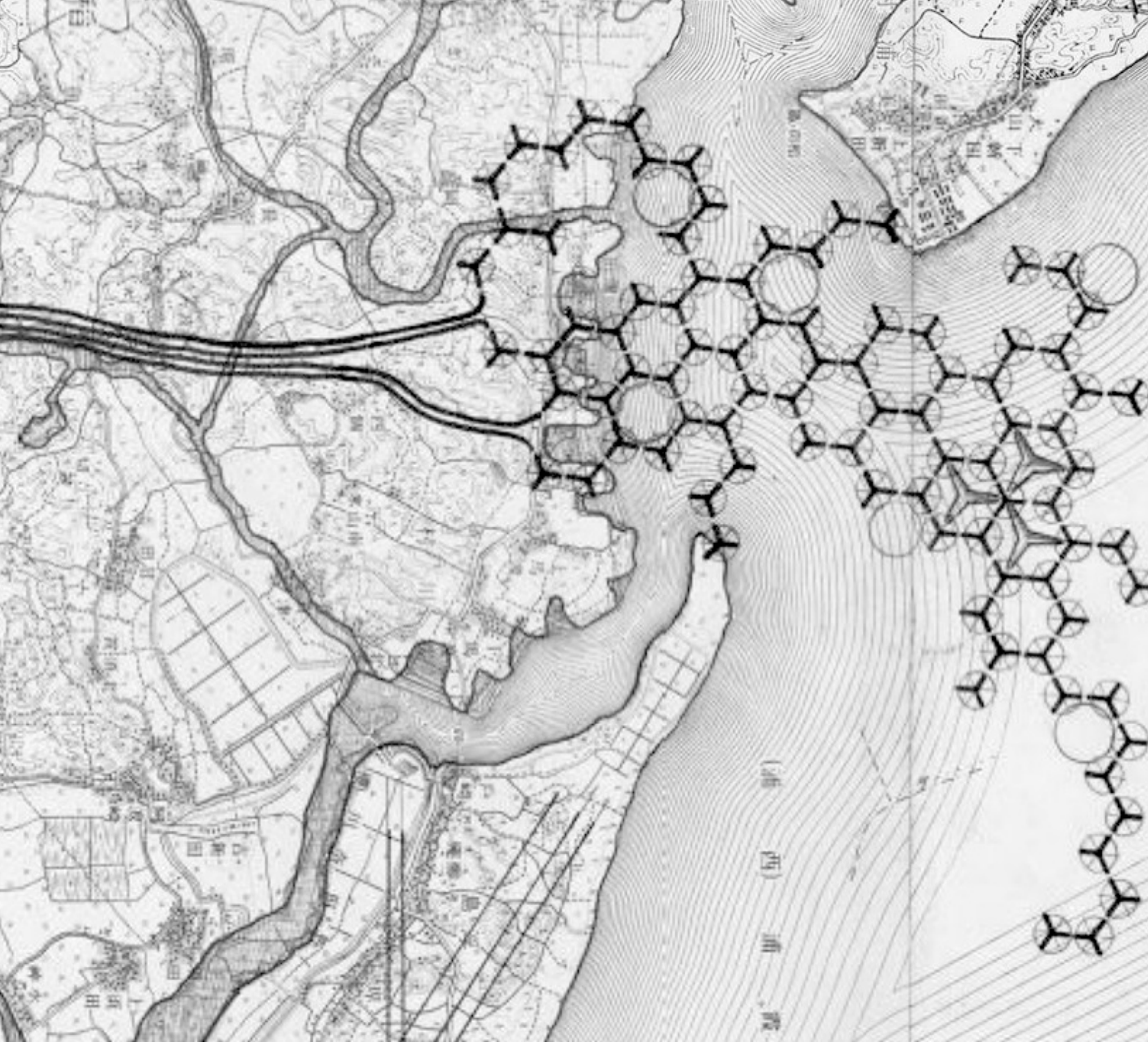
beyond built landscapes

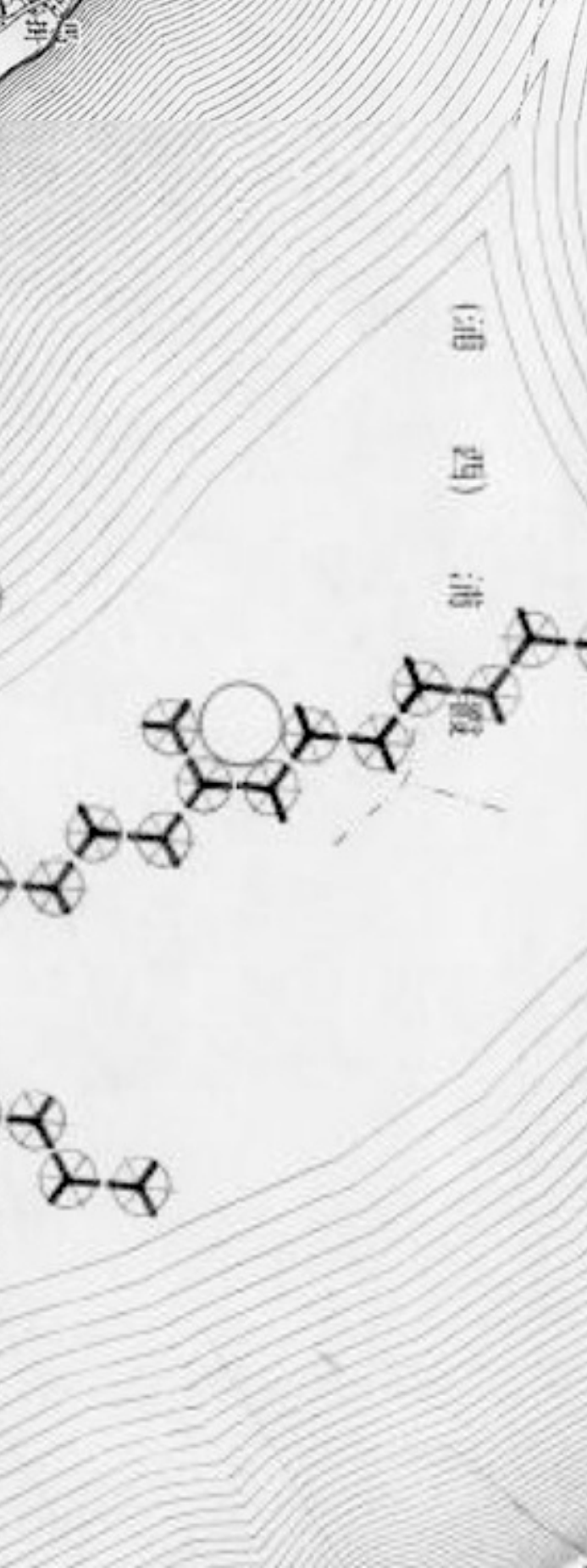
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## Part Three: EXPERIMENT

towards a neometabolism

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## TOWARDS NEOMETABOLISM

### METABOLISM IN LANDSCAPE ARCHITECTURE

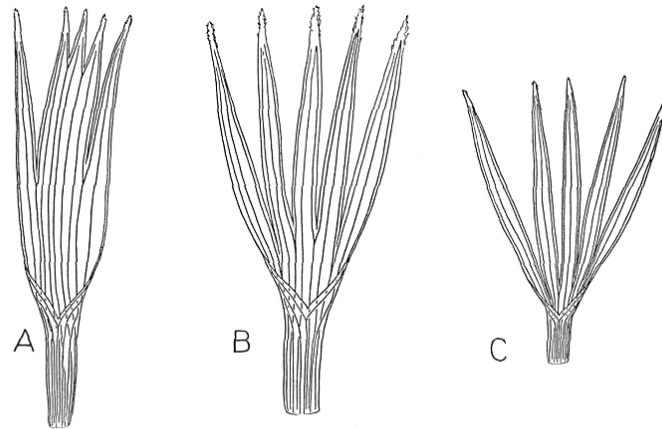


Fig. 5. Corolla vasculature in species of *Fitchia*: a, *F. nutans*, Dana (*Wilkes Expedition*); b, *F. cuneata*, Moore 655; c, *F. tahitensis*, St. John 16983. Corollas are viewed from adaxial side; lobes are typically adnate at anthesis, though shown spread apart here.  $\times \frac{1}{2}$ .

^ - TOWARD ACCEPTABLE EVOLUTIONARY INTERPRETATIONS OF FLORAL ANATOMY, S.CARLQUIST 1969.

< - FLOATING CITY, KASUMIGAURA, 1961

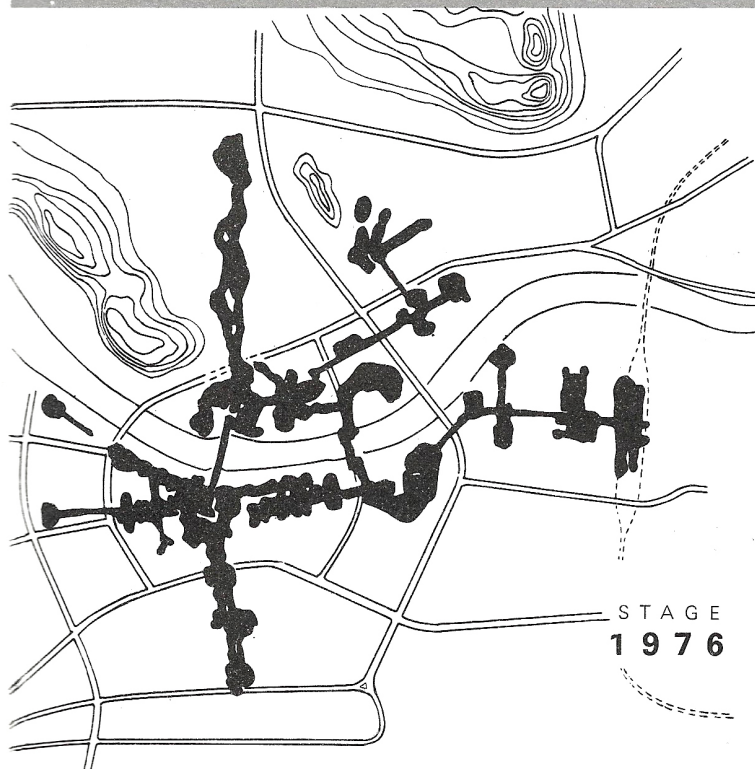
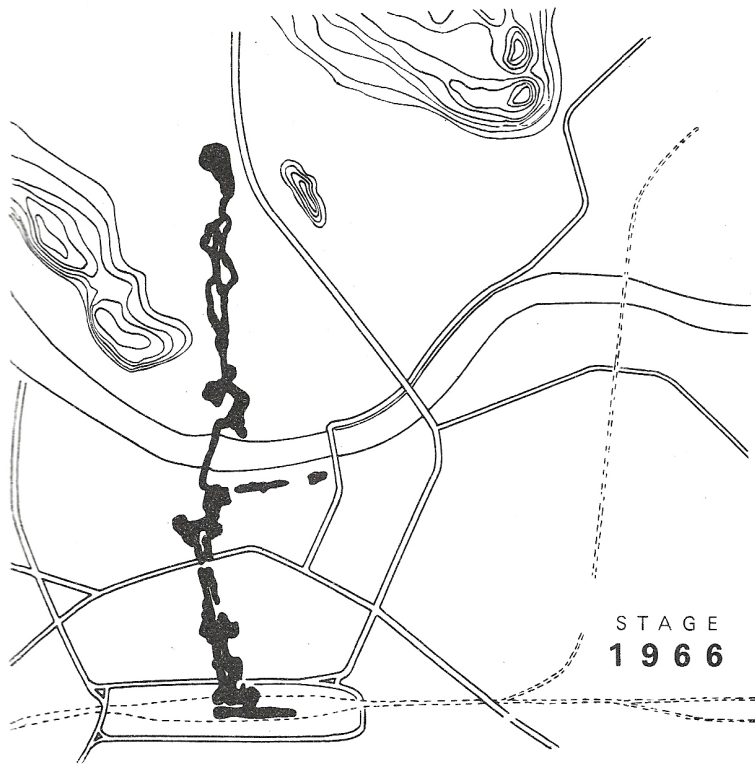


*"Individuality belongs to certain systems, but they must also be equal.  
I, me, you, tree."*

*- K.Kurokawa, Metabolism in Architecture, pg:10 ;1977*

---





## THE PHILOSOPHY OF METABOLISM IN ARCHITECTURE

a post-war Japanese architectural movement that fused ideas about architectural megastructures with those of organic biological growth.

**research topic:** *identifying the ideology behind the metabolism in architecture*

---

### > nature = society = technology >

*"We regard human society as a vital process, a continuous development from atom to nebula. The reason why we use the biological word metabolism is that we believe design and technology should denote human vitality. We do not believe that metabolism indicates only acceptance of natural, historical process but we are trying to encourage the active metabolic development of our society through our proposals." - Metabolism 1960 - A Proposal for a New Urbanism*

The Metabolist movement filled the void left in 1959 when the Congrès internationaux d'Architecture Moderne (CIAM), founded in 1928 by Le Corbusier and other Europeans, disbanded.

At the 1960 World Design Conference in Tokyo, the old European ideas about static urbanism were challenged by a group of young Japanese architects. Metabolism 1960: Proposals for a New Urbanism documented the ideas and philosophies of Fumihiko Maki, Masato Otaka, Kiyonari Kikutake, and Kisho Kurokawa. Many Metabolists had studied under Kenzo Tange at Tokyo University's Tange Laboratory. This is where the idea for a new urbanism emerged. Defining the city's constitution with megastructures and links which are attentive to the definition of "living" organisms came forth the notion of a city that can expand and retract, heal and regrow, regenerate and replace itself, identical to that of cell regeneration as in animal or plant bodies. But to better understand the manifesto of the Metabolism, the last architectural movement as Rem Koolhaas puts it in his book "Project Japan", it is crucial to start from the very beginning, more precisely, from the philosophy of metabolism, the questionable relationship with nature and the instrumentality of the drawings.

The philosophy behind the metabolism can be understood rather clearly if these six key-notions are taken into consideration.

**connecto** (a metabolic neologism, a concept)

*\*as a unifying idea which directs the whole project*

**engawa** (en-space/ in-between space)

*\*Against Le Corbusier's city segregation with methods of transport, in metabolism "street > road"*

*\*Towards Jane Jacobs' observations of active street systems as described in her book "The Death and Life of Great American Cities"*

**homo movens** (mobility, pilgrim)

*\*the vision that the human of the future will not have a single home but rather travel is his home;*

*"The Narrow Road of Oku - Masuo Basho" (haiku poet)*

**the capsule** (oriental individuum)

*\*the oriental individuum is different from the individual, in theory, there is no single individual but one individuum is delineated by the whole*

**ephemerality** (use-and-discard)

*\*space composed on the basis of the theory of the metabolic cycle, unservicable parts can be replaced....*

*-the principle that architecture should change with time, the principle of repeatability and interchangeability*

*-the principle of a metabolic cycle*

*-the belief that architecture, cities and humanity itself are ephemeral*

*"By distinguishing between the parts that **do not change** and the parts that **need to be preserved**, it is possible to ascertain the parts that must be **periodically replaced**."*

*Breakdown and recomposition.*

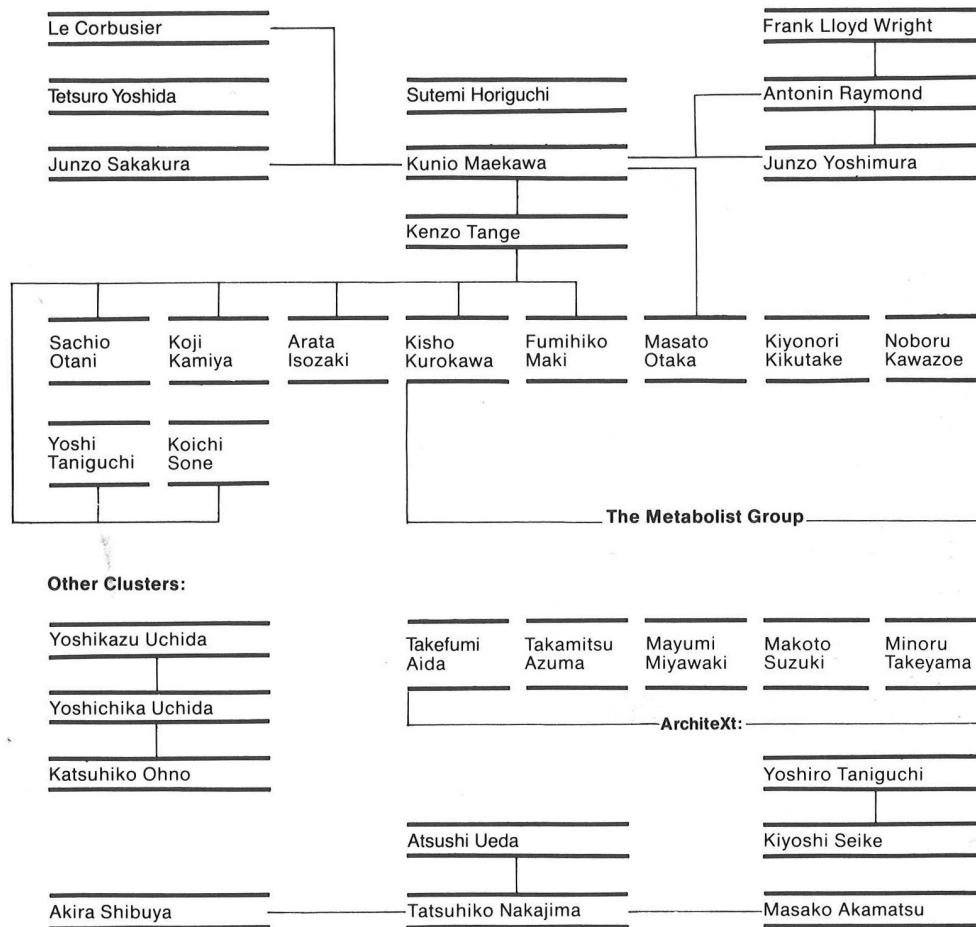
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<- Arata Isozaki, Phasing Diagram of Skopje, 1965





# THE FAMILY TREE OF MODERN ARCHITECTURE IN JAPAN



<- KENZO TANGE AND HIS TEAM WITH THE MODEL OF SKOPJE, 1967

# JAPANESE IMAGES *of* NATURE

*Cultural Perspectives*



Edited by

PAMELA J. ASQUITH and ARNE KALLAND

## IDEALS AND ILLUSIONS

claims and contradictions, a general critique

describing the complex and multiple relationship of Japanese people with nature

**research topic:** *Japanese perception of nature*

---

The book describes about various forms of nature, often philosophical as to understand and dwell upon the being of the human. The focus is set towards the connections or disconnections with the physical environment, its ecology and the immediate landscape in relationship with the Japanese lifestyle and culture. The purpose of this exploration is to better understand the meaning of metabolist masterplans and their pure indications towards the definition of:

**> human = nature = technology >**

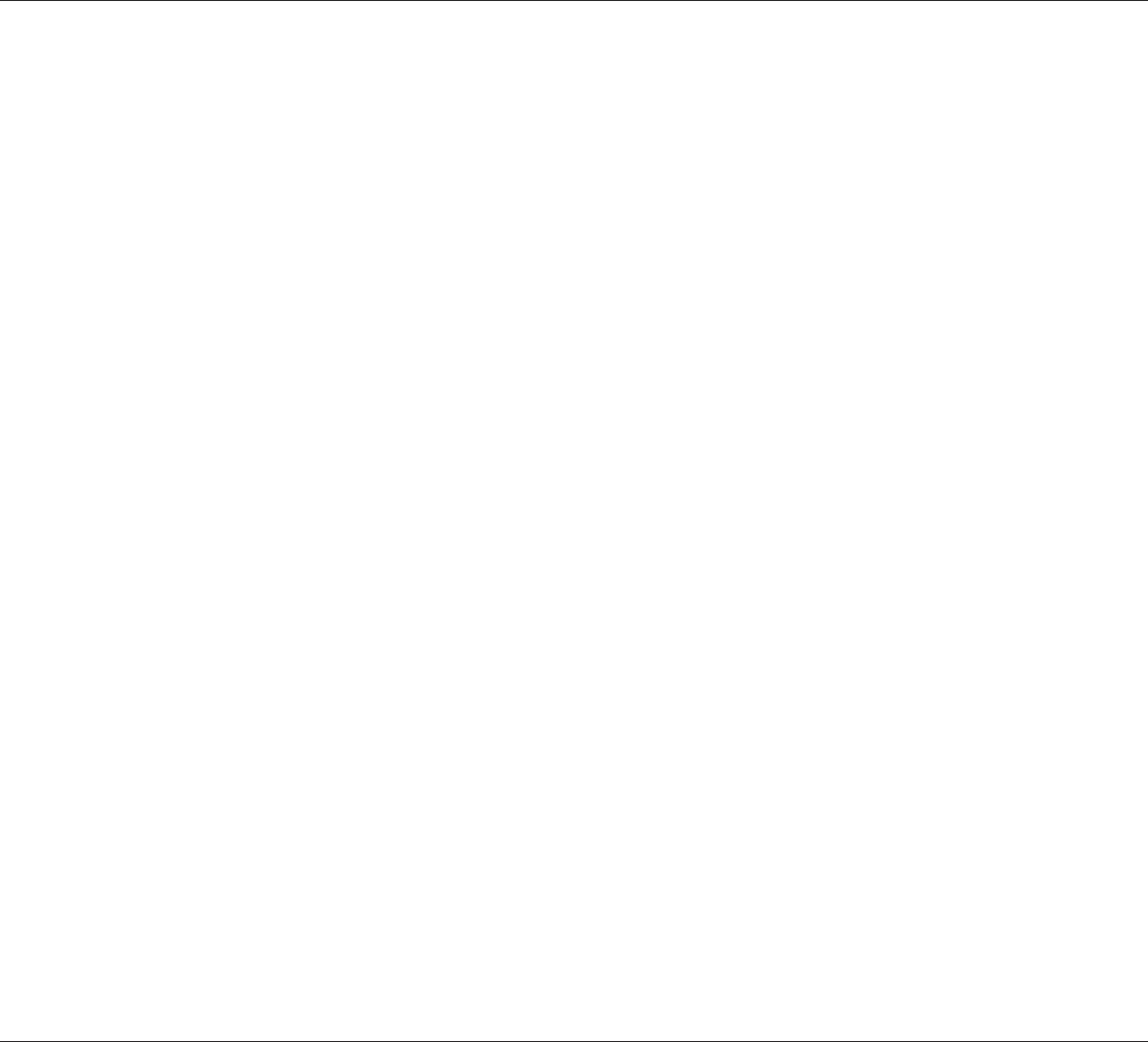
> *nature = society = technology* >

*"We regard human society as a vital process, a continuous development from atom to nebula. The reason why we use the biological word metabolism is that we believe design and technology should denote human vitality. We do not believe that metabolism indicates only acceptance of natural, historical process but we are trying to encourage the active metabolic development of our society through our proposals." - Metabolism 1960 - A Proposal for a New Urbanism*

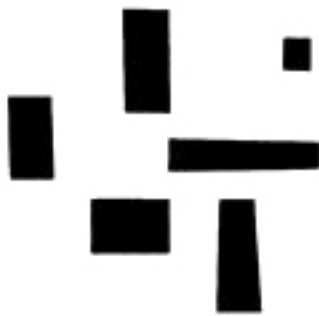
The book covers topics which bring to light a dialectic approach to nature regardless to the notion in which Japanese people would like to consider themselves as one with nature. In that sense, the book becomes a general critique towards this allusive comparison stating that the Japanese people have long since been predisposed to conquer nature, objectifying its aspects and making peace respectfully. It has been brought about to my attention that Japanese people have a selective approach to whether something is concerned a nature or not. Aesthetics plays a major role in this decision making agenda. For example, the mountain Fuji is considered as nature, but a dilapidating hill with poor ecology is not. If we argue that nature gravitates between two poles: a wild nature (untamed) and domesticated nature (tamed) then the latter

is preferred by the Japanese. Yet they are both natural. This leads into a concept of divine nature. Nevertheless, a divine nature is, therefore, no guarantor against environmental degradation. The same can be applied in relation with the Japanese attitudes, which are complex and often contradictory. In visual arts, literature and other fine arts, the Japanese have created works of unparalleled beauty but this selective aesthetic approach talks little about perceiving nature as a whole. Again, if this so called "Love for Nature" exists very presently in the ideology of the Japanese society then why do so many modern articles talk about pollution and environmental deterioration. Following, the book represents these aspects in greater detail, consequently in:

The myth  
.....  
Japanese concepts of Nature  
.....  
Contextualization of Nature  
.....  
Enhancing Nature  
.....  
Nature in rituals and contemplations  
.....  
Nature as metaphor  
.....  
Nature as ideology







COMPOSITIONAL FORM



MEGA-FORM



GROUP-FORM

## INVESTIGATIONS IN COLLECTIVE FORM

group form: operational categories by Fumihiko Maki, 1964

**research topic:** *from a megastructure towards a group form*

---

The book "Investigations in collective form" by Fumihiko Maki, becomes pivotal to the idea of a neometabolism. Intrinsicly, the book itself represents an attempt to rid of the singular mega-structure notion and move towards a group form or a collective. In the following chapter "Experiment" it will be explained why this writing becomes essential foundation for the research. Firstly, an outlook towards how Fumihiko Maki explains the contemporary environment of the metropolis. Respectfully, in the book, the author defines four highlights about the modern society and the new urban condition. Following:

1. *Coexistence and conflict of heterogeneous institutions and individual*
2. *Unprecedented rapid and extensive transformations in the physical structure of society*
3. *Rapid communications methods*
4. *Technological progress and its impact upon regional cultures*

What becomes even more important is the way Maki interprets the definitions which transcend the concepts behind the civic, the masterplan and the built form. In this text he defines the civic as an agile urban society, he encourages that the masterplan ought to change to a masterprogramme and finally, the built form into a master form. Consequently follows the writing from the book:

**Urban society:** dynamic field of interrelated forces, a dynamic equilibrium which changes as time passes.

**Master program:** a form plan which includes a time dimension

**Master form:** a notion different from a building, time responsive

Maki continues to describe the city or the heavy masterplan as: *"visually and physically confused - they are monotonous patterns of static elements, they lack elasticity and flexibility ..."*

*"Our city must change as social and economic progress dictates, and yet they must not be temporary"*

Maki also depicts the idea behind the group form stating its purpose, morphology and programme, therefore, accordingly, "A Collective Form" – the segment of our city – not a collection of unrelated buildings but a coalescence that has a reason to be together. As the book furthers onto exploring the design question of the new form and to distinguishes itself from the past, conceptually, it concludes to three major typologies or approaches:

**Compositional form** - compositional approach

A commonly accepted and practiced concept of the past

**Megastructure (form)** – structural approach

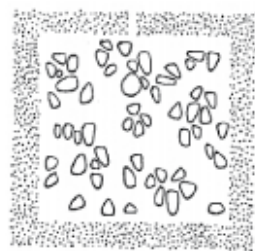
A large frame in which all the functions of a city or part of a city are housed. Static nature suggests that many and diverse functions may beneficially be concentrated in one place. The ideal is not a system, on the other hand, in which one physical structure of the city is at the mercy of unpredictable change. The ideal is a kind of master-form which can move into ever new states of equilibrium and yet maintain visual consistency and a sense of continual order in the long run. A mega structure is composed of several independent systems that can expand or contract with the least disturbance to others, rather than one of a rigid hierarchical system, creating optimum relationship between the systems

**Groupform** - sequential approach

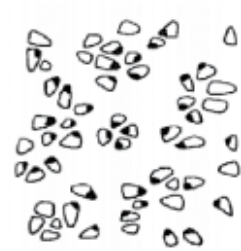
It is a form which evolves from a system of generative elements in space. In a group-form the possibility for creating grain elements, hence regional qualities, exists. In megaform, it is a large form that represents all the power of technique, and that may represent the best aspects of regional selectivity



mediate



define



repeat



sequential path



## LINKAGE IN COLLECTIVE FORM

group form: operational categories by Fumihiko Maki, 1964

**research topic:** *exploring links in a group-form*

---

In the second part of the book "Investigation in Collective Form", Fumihiko Maki explores the topic of linkages. Prudent for the mega-structure and the group-form is, in fact, its connection. As Maki puts it:

*"A Concept that deals with the constant cycle of decay in the city ... the cycle of decay can be the linking force in our cities"*

*"open-linkage" with areas yet unbuilt -links become integral parts of the system and unit, and suggest that systems can be expanded indefinitely and with variation"*

*"linking is assembling patters of experience in the city"*

-each type of link can be a **physical fact**  
-each type of link can be an **implication**

To further explain and explore these operational categories, the text examines each one of them individually

### "TO MEDIATE"

late latin: to be place in the middle > medius (verb: mediare)

from a house to a street is a link by **mediation**  
from a house to a house is a link by **repetition**

Intermediate > in-between > engawa > midway > median

----- >  
**TRANSITIONAL**

### "TO DEFINE"

"to wall"

to oppress/ to confine/ to protect/

*"it can visually connect elements that essentially may not have anything in common"*

*"from rapid transits in Chicago, to parking structures (L. Khan)"*

### "TO REPEAT"

"to grain"

to repeat/ to link/

to introduce a common factor in each of the dispersed parts which can be

a) formal b) material c) functional

*"it works as a glue, binds each element together so that they are defined as part of the same order (the oriental individuum)"*

*"one may start with the skeleton but it is the grain that makes the project"*

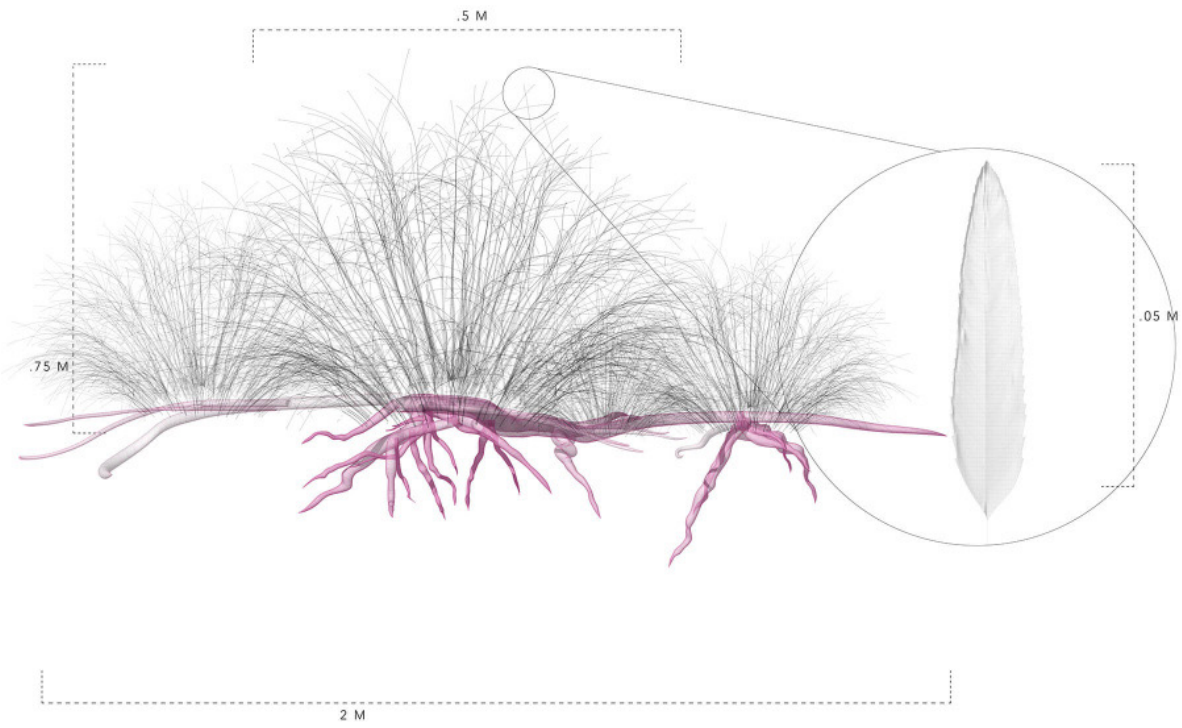
### "TO MAKE A SEQUENTIAL PATH"

*"to arrange in a sequence of useful activity"*

*"to propel a person through a designated path"*

*"to create a path that will catalyze a new development"*

SPIRAEA SPP.



## EXPERIMENT

### towards neometabolism: ground as figure

**research topic:** *the possibility for a new metabolism, from a mineral towards a diffused and ephemeral metabolism*

---

The experiment started by an accident. While perusing Maki's book, "Investigation in Collective Form", I couldn't help but wonder if he was vaguely predicting the failure of the megastructure's metabolism. Official records hold witness that only very few buildings actually managed to grow or retract. The famous Nakagin Tower in Tokyo, even though vividly portraying one of the fundamental elements of the metabolism movement, the capsule, never managed to either add or take out a unit. In a way it became a monument. The idea that these buildings or interventions became static monuments, rather than living organisms, as imagined, pushes me to conclude that the metabolism movement got crystallized, and therefore "A Mineral Metabolism". The crystal or the mineral represents a pure solid state of very rigid, nonreactive, hierarchical order which proves uneasy to break. In a way, it becomes time resistant or requires heavy machinery to get changed. But the key words here point to the "time-component". Fumihiko Maki defined the urban society and the metropolis as notions in which there must be a time variable. They ought to be able to change after time or in a way be time responsive to certain needs, demands or alterations that the metropolis may require. The Mineral metabolism, as proven in many cases, failed to attain these circumstances. But what if the logic of the metabolist movement proved legible and smart solutions if its elements of operations get changed. What if instead of a thick architectural form we move forward to a diffused or even ephemeral form. It must be brought to attention, as a corroboratory fact, that the time component of change, growth and regeneration, but also easiness in modification and mobility, is present in the landscape. Thus, by changing the core element of operation in the metabolism movement, from an architectural form to a landscape form, the original manifesto experiences a new beginning. An idea of a neometabolism. The following chapters will explain, both textually and graphically, the design morphology

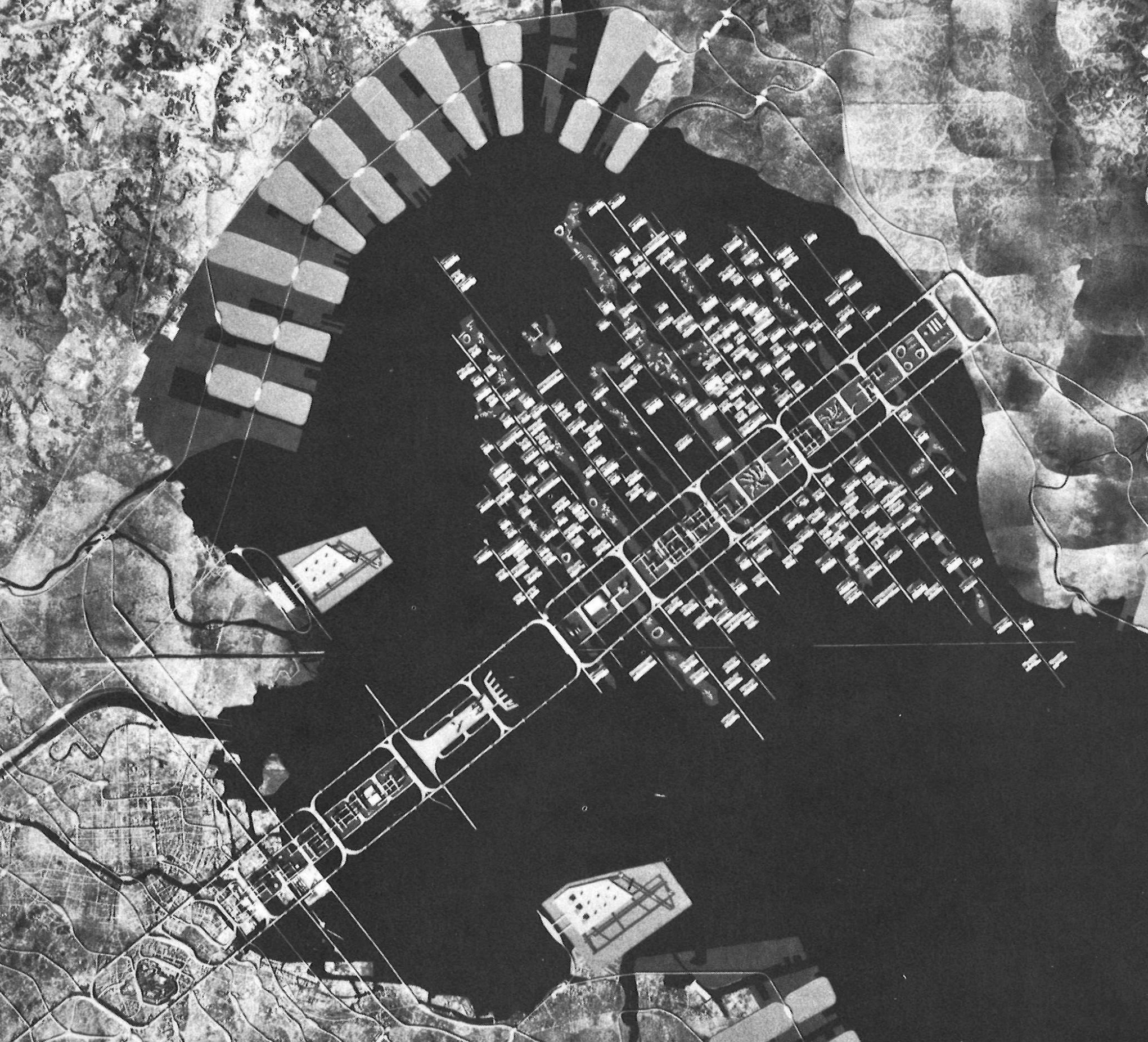
and methodology of the mineral metabolism and the way it can start to break down into diffused and ephemeral. By studying the principle elements, the skeleton's constitutions, and by replacing the thick, crystallized parts with diffused and ephemeral, it could be possible to witness a metabolist masterplan, per se, which can easily benefit its criteria of growth or retraction, regeneration or decay. What is also interesting is to point out that the mineral metabolism would typically install itself if only certain territorial criteria were met.

The first one is the "tabula rasa" condition. This is logical and explanatory because the movement was made as a post-war agenda to rebuild cities. This also can be applied to post-earthquake conditions, as it is the case with the masterplan for Skopje.

The second condition is that of the metropolis. The metabolism would preferably only seek to exist in metropolitan ambients. This means that programme-wise, the metabolism would only explore topics of housing, public buildings etc.

The third is the "a priori" relationship with nature. Even though the Japanese movement talks about being one with nature, these projects are highly destructive of the environment. This can be seen in the project for Tokyo Bay. The masterplan has minimal to zero relationship with the water environment. Its relationship with nature is metaphorical. The drawings of the masterplan resemble a tree-like shape, comparing its growth and expansion identical to the sprout of branches in living trees. A spiritual relationship which protects us not from the degradation of the environment and its ecology.

Thus, the main concept of the experiment is to tackle these conditions and explore an idea of a different but as just as intelligent metabolism.

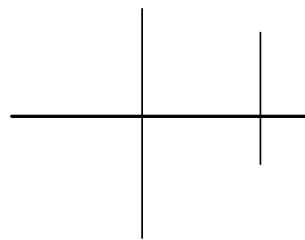


## MINERAL METABOLISM

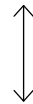
design morphology and methodology in metabolism

**research topic:** *the possibility for a new metabolism, from a mineral towards a diffused and ephemeral metabolism*

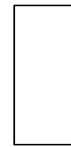
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a skeleton

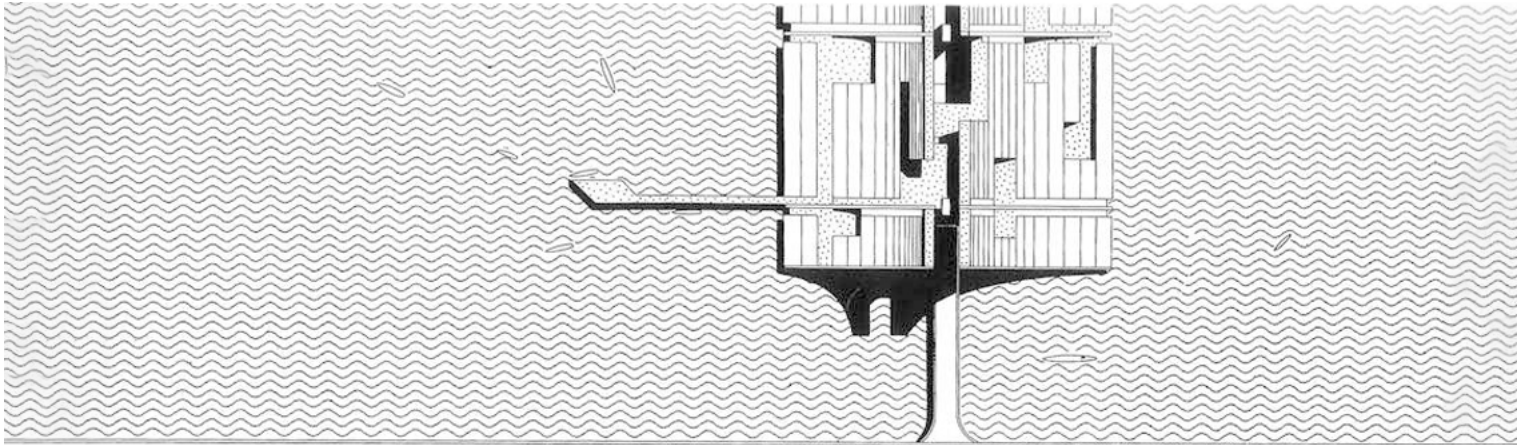


a link

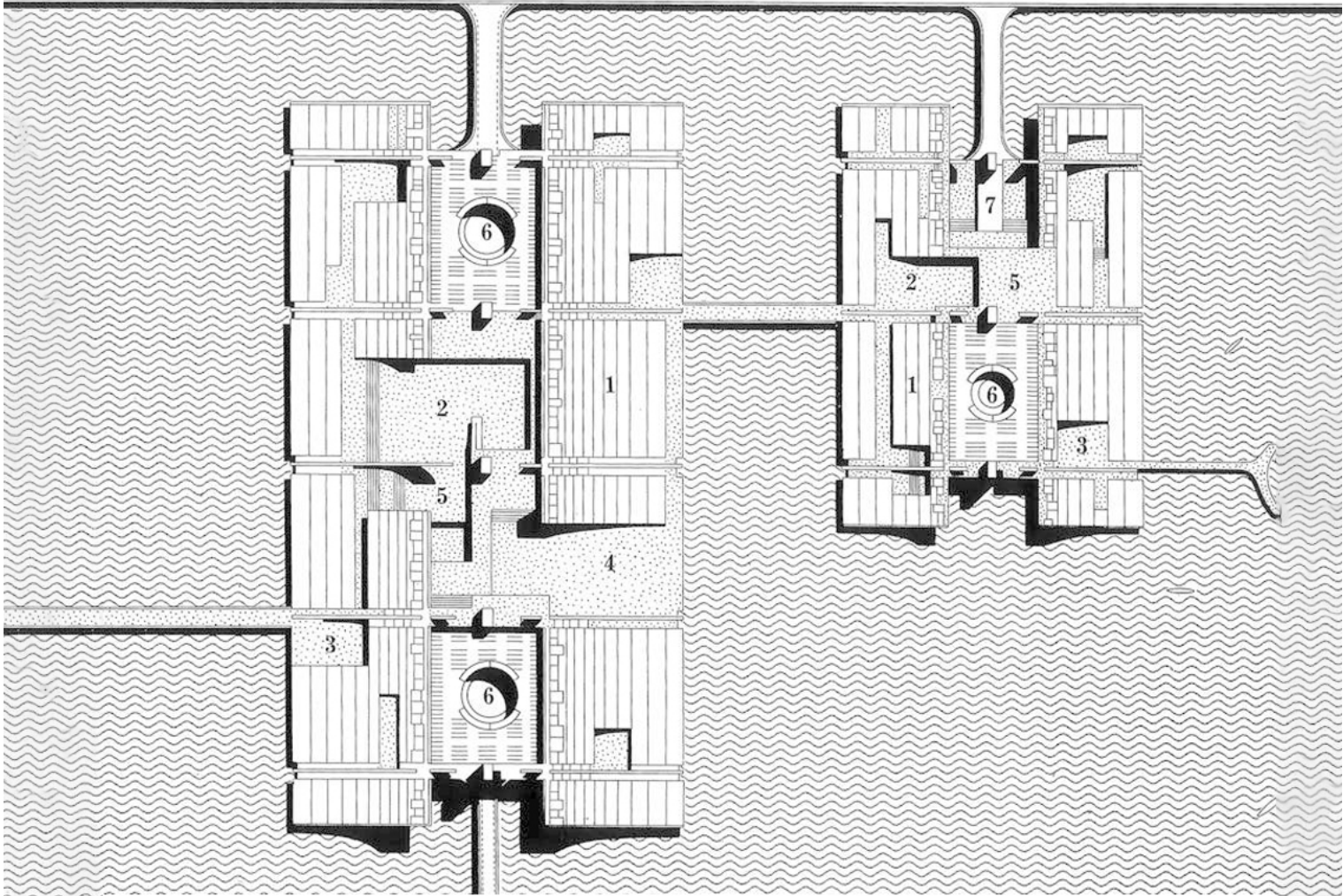


a megstructure





≡ ≡ ≡ 8 ≡ ≡

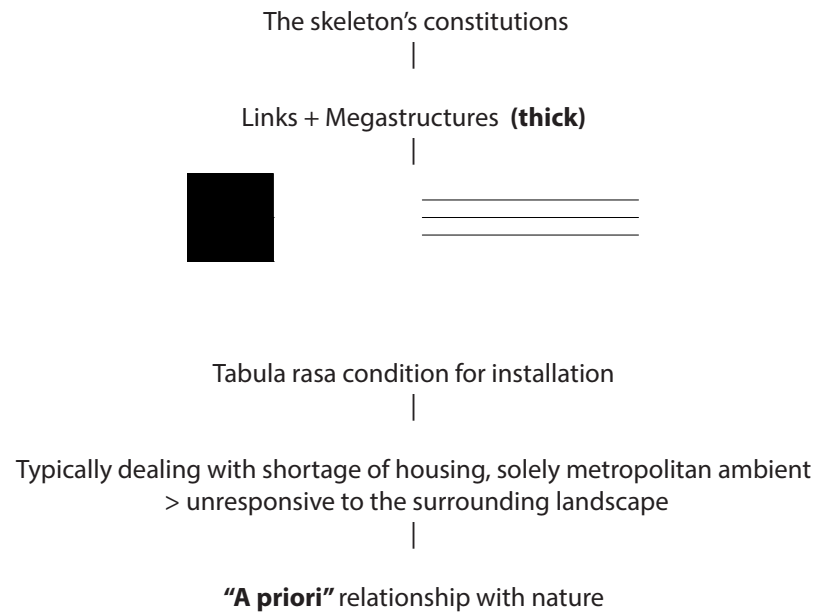


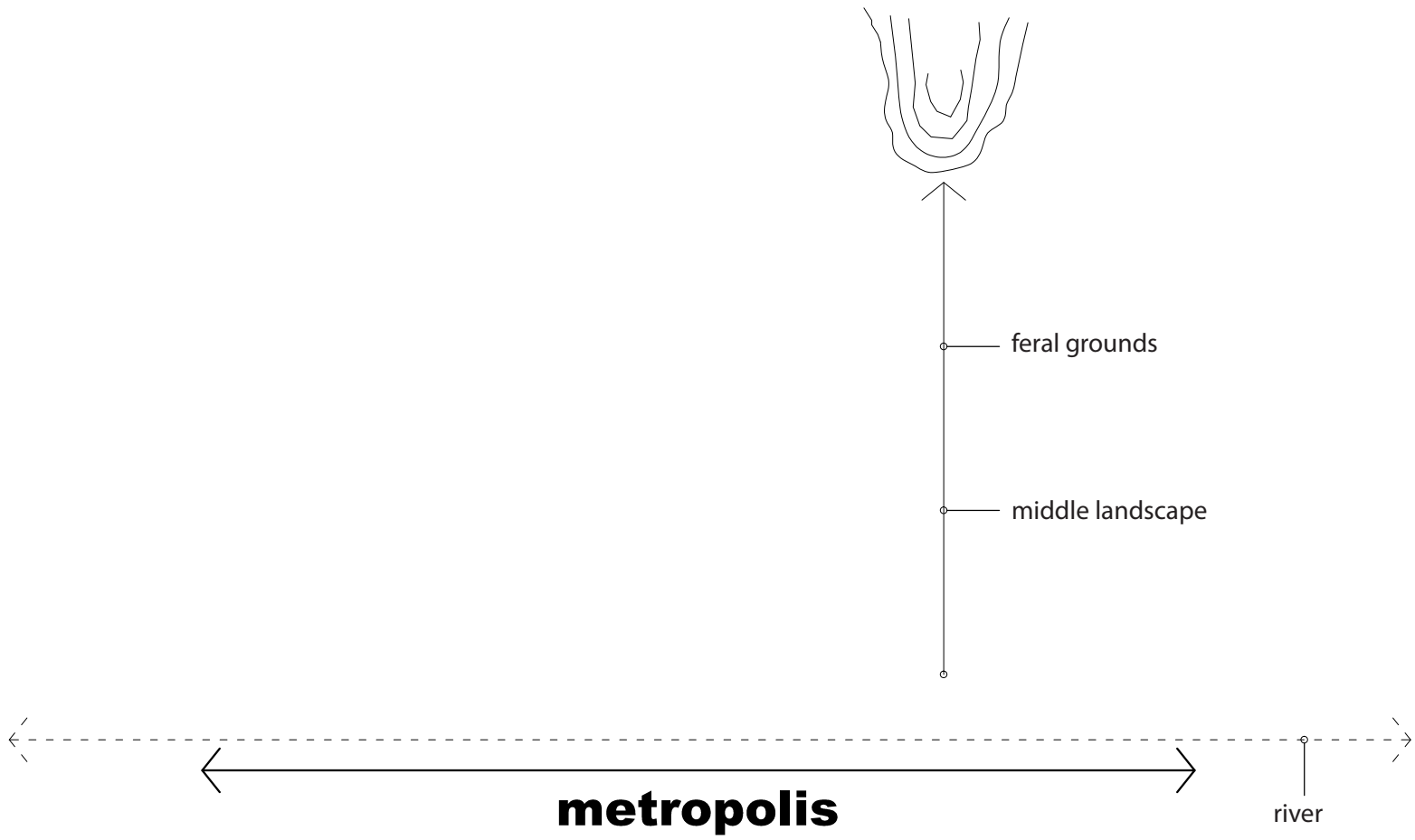
## MINERAL METABOLISM

design morphology and methodology in metabolism

**research topic:** *the possibility for a new metabolism, from a mineral towards a diffused and ephemeral metabolism*

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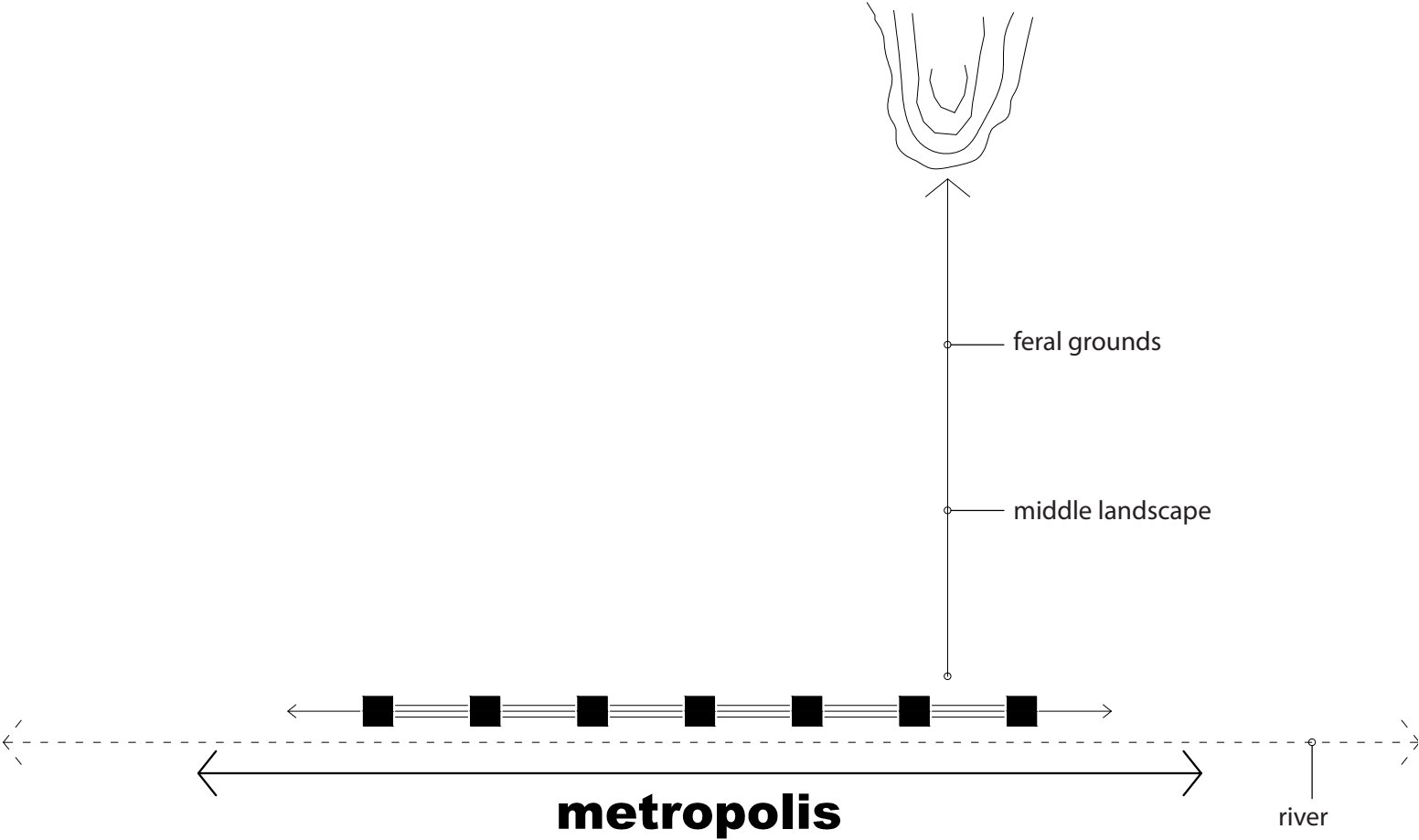




# MINERAL METABOLISM

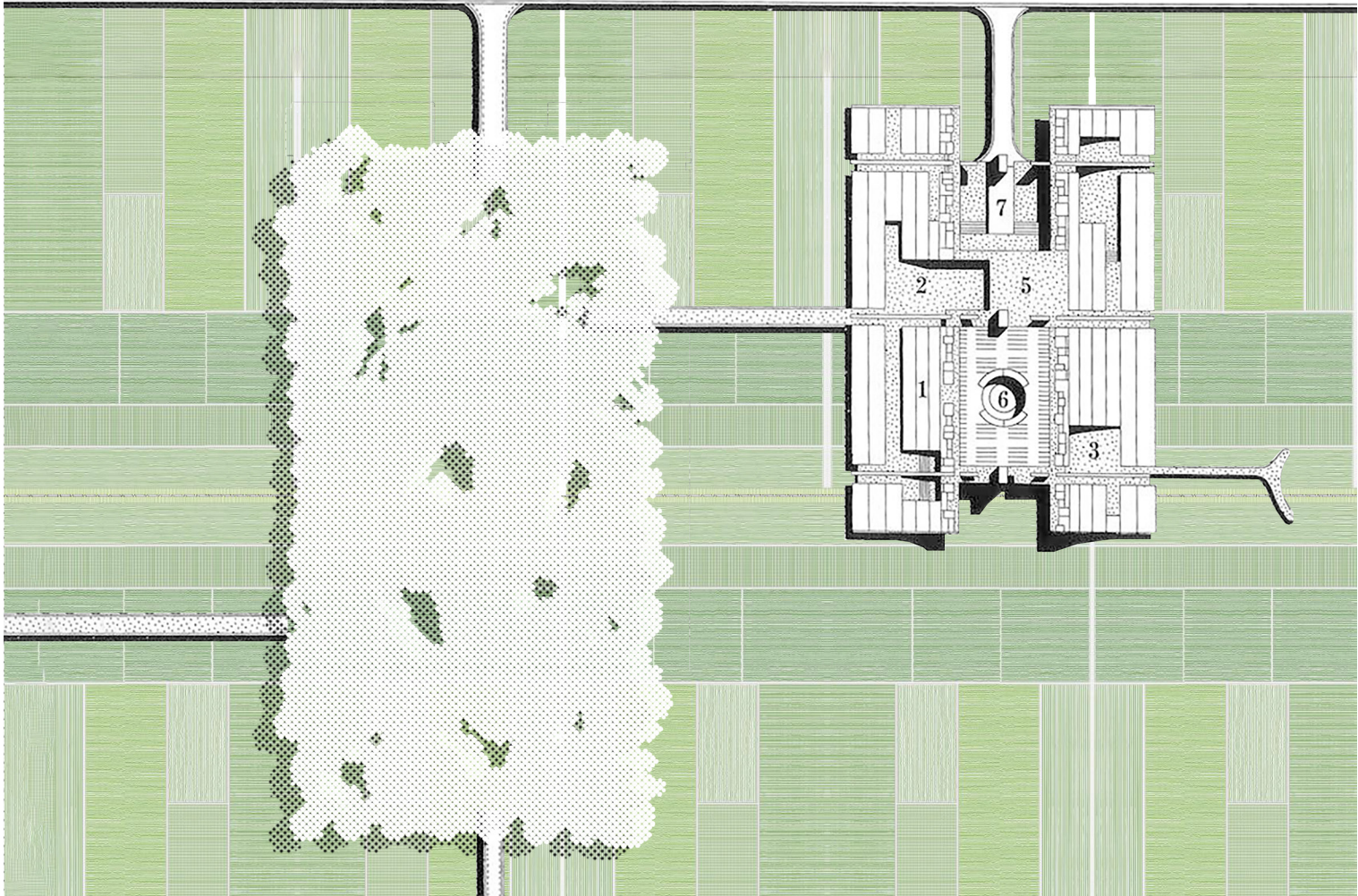
conditions for installing in the territory

research topic: *the possibility for a new metabolism, from a mineral towards a diffused and ephemeral metabolism*





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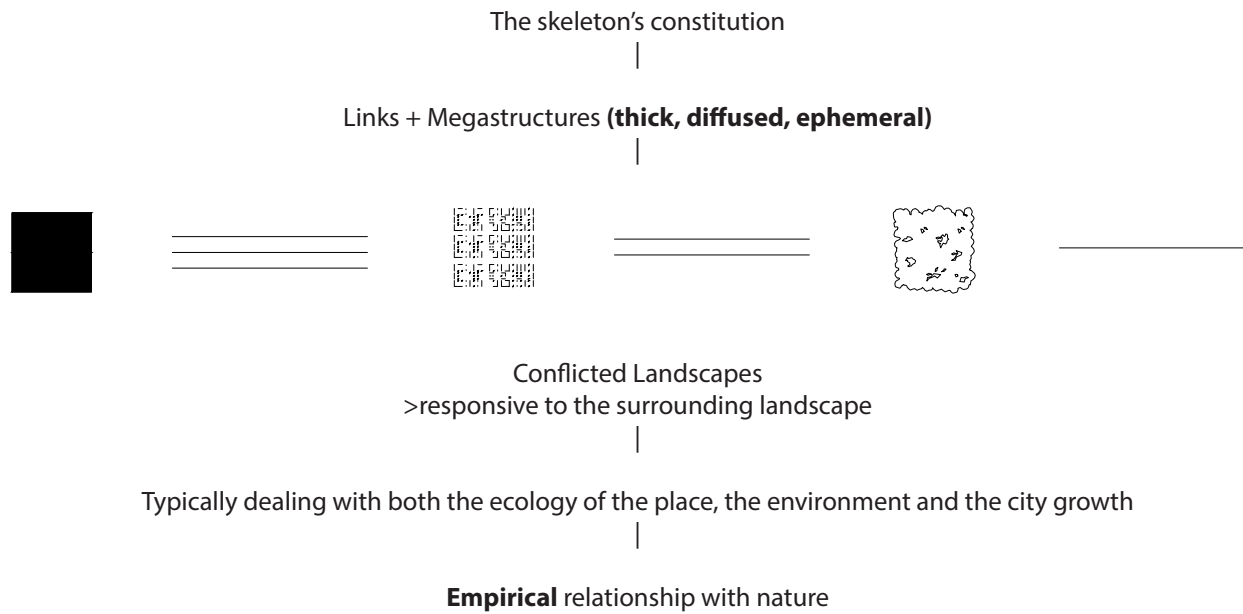


# NEOMETABOLISM

a new manifesto

**research topic:** *the possibility for a new metabolism, from a mineral towards a diffused and ephemeral metabolism*

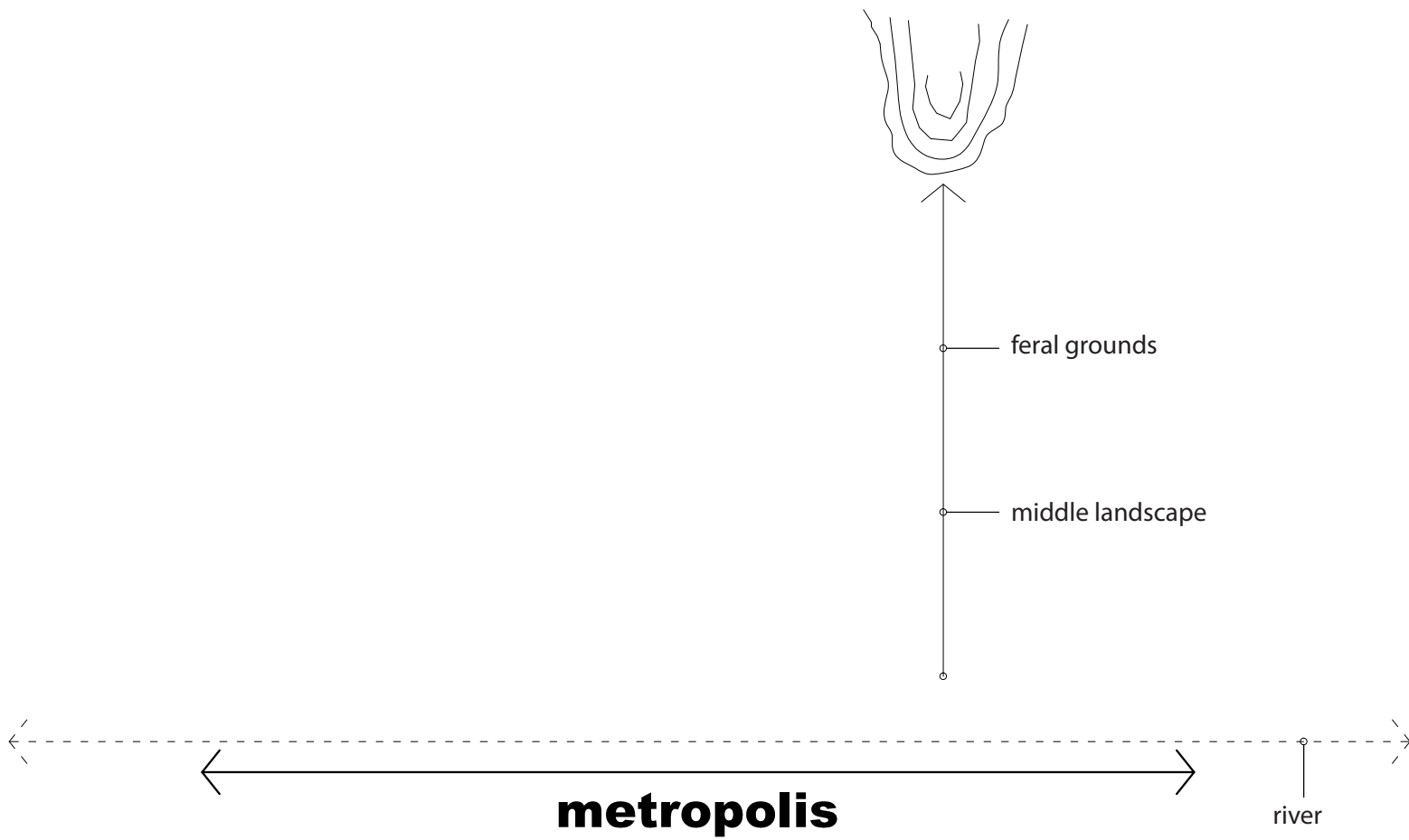
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<- KENZO TANGE, TOKYO BAY DETAIL TRANSFORMED, 1960

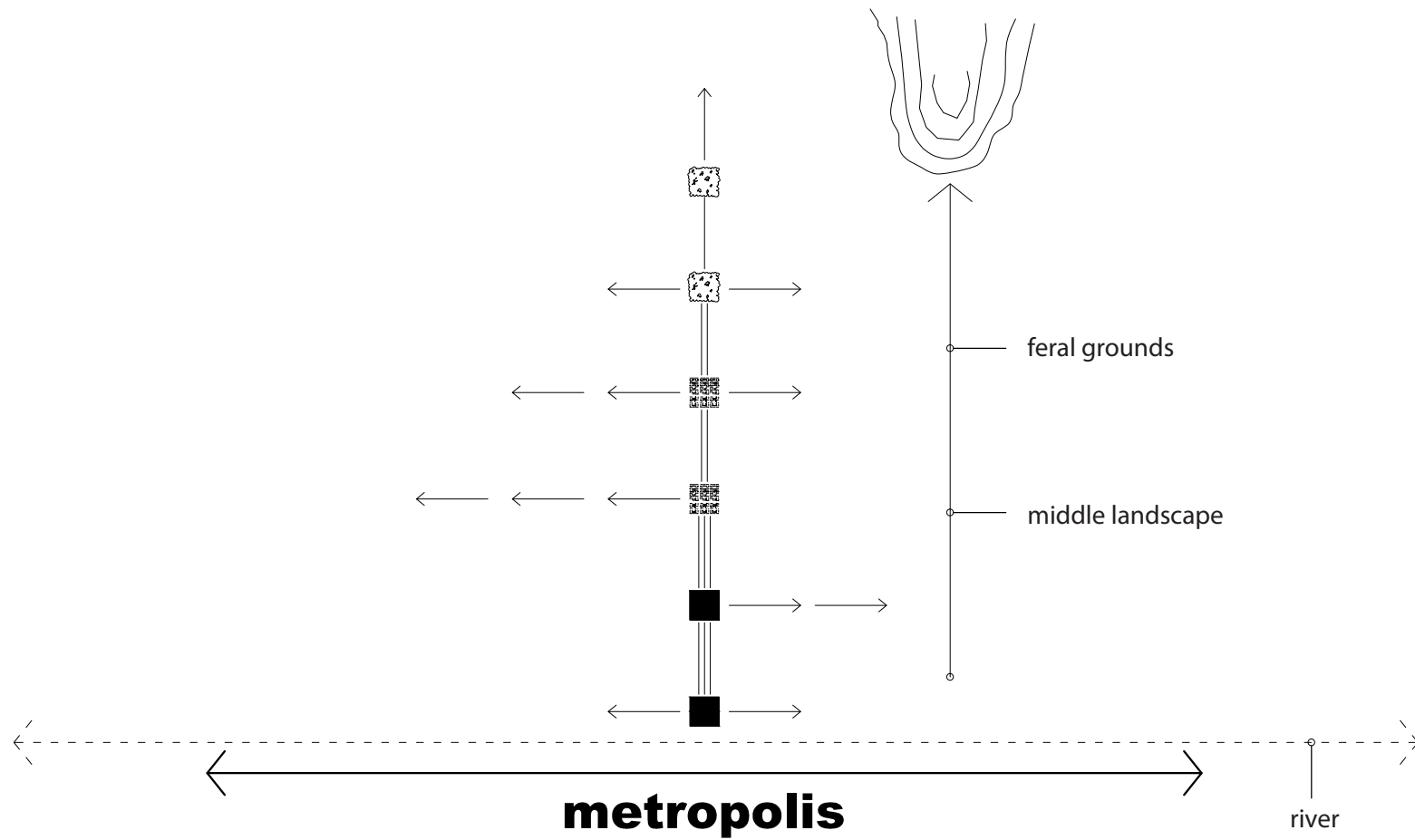
INSPIRED BY C. LEE - GSD STUDIO, THE RURAL CITY



conditions for installing in the territory

**research topic:** *the possibility for a new metabolism, from a mineral towards a diffused and ephemeral metabolism*

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## potential goals of the new manifesto

**research topic:** *the possibility for a new metabolism, from a mineral towards a diffused and ephemeral metabolism*

---

- remediation of polluted fields
- enhancing agriculture
- motorizing landuse
- purification of surface and storm water
- amortization of flood water
- counter urban sprawl
- connectedness with the feral grounds
- activates the inter-exchange of waste, industrial products and food
- enriches farmlands with connectivity
- boosts the growth of vegetation
- domestic growth
- new zones for recreation
- invites the thinking of new infrastructure

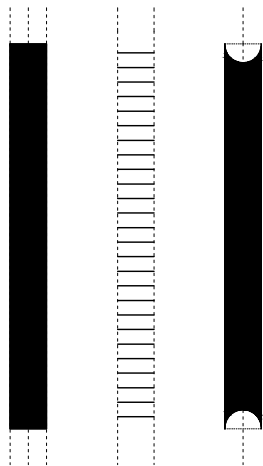


# a design manual: LINKS

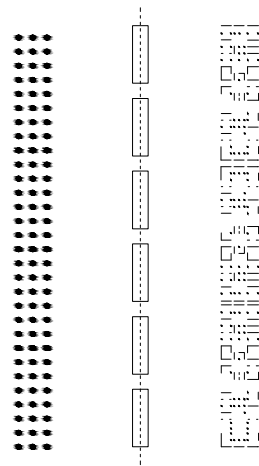
**research topic:** *the possibility for a new metabolism, from a mineral towards a diffused and ephemeral metabolism*

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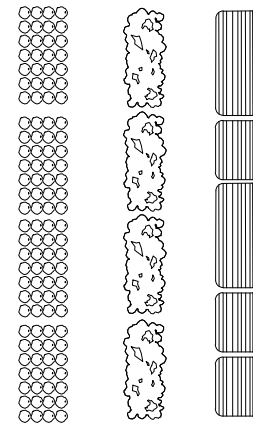
thick



diffused



ephemeral

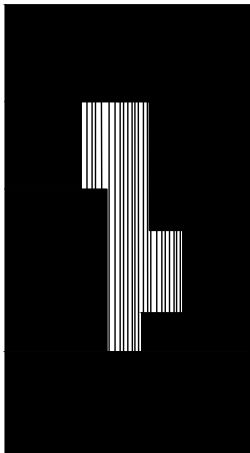


## a design manual: MEGASTRUCTURES

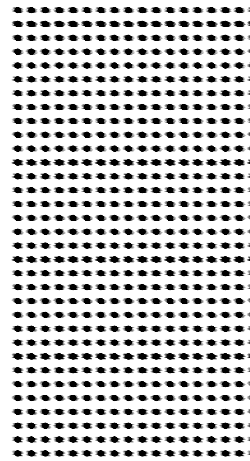
**research topic:** *the possibility for a new metabolism, from a mineral towards a diffused and ephemeral metabolism*

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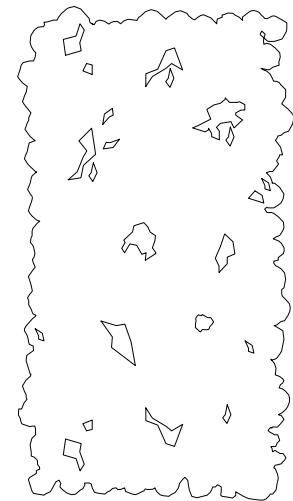
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diffused



ephemeral

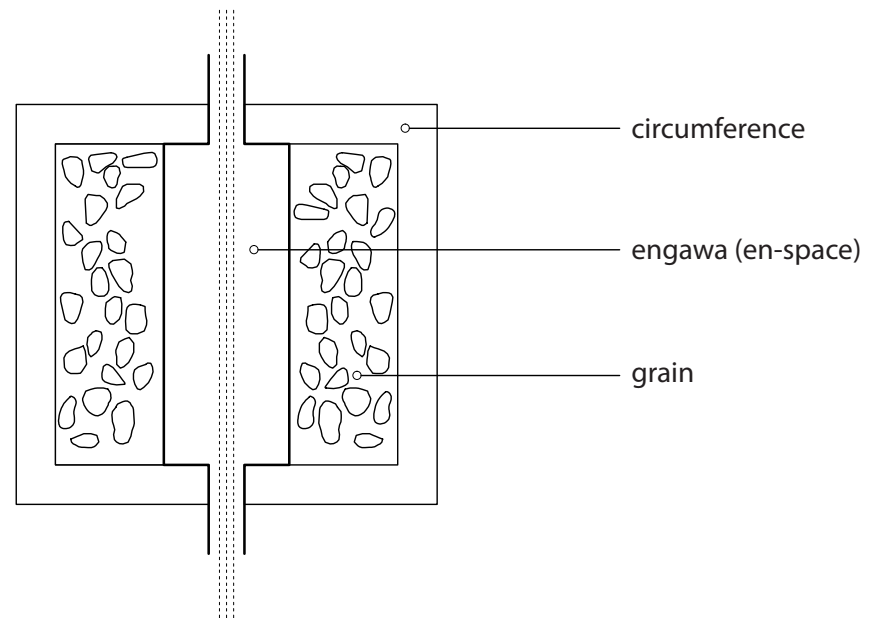




a design manual: elements of a megastructure

**research topic:** *the possibility for a new metabolism, from a mineral towards a diffused and ephemeral metabolism*

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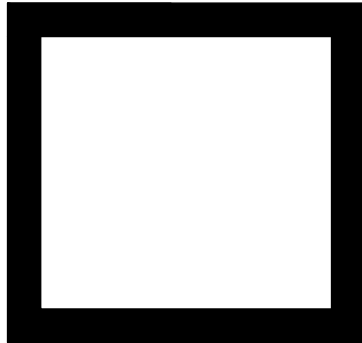


## a design manual: circumference

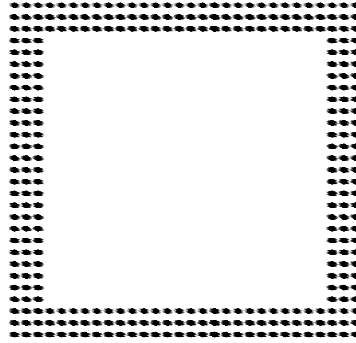
**research topic:** *the possibility for a new metabolism, from a mineral towards a diffused and ephemeral metabolism*

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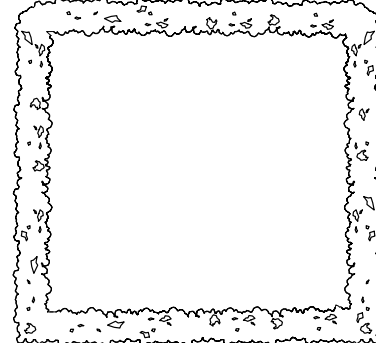
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diffused



ephemeral

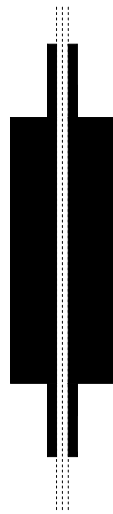


## a design manual: engawa

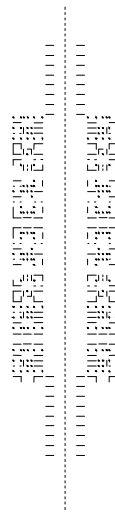
**research topic:** *the possibility for a new metabolism, from a mineral towards a diffused and ephemeral metabolism*

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thick



diffused



ephemeral

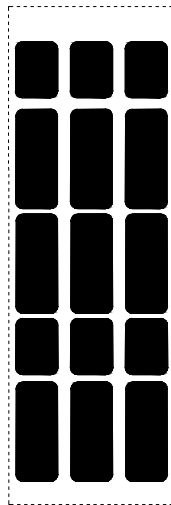


## a design manual: grain

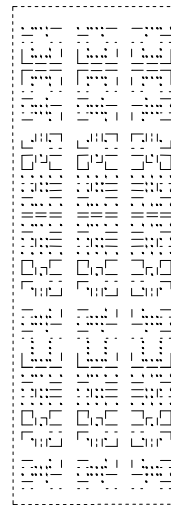
**research topic:** *the possibility for a new metabolism, from a mineral towards a diffused and ephemeral metabolism*

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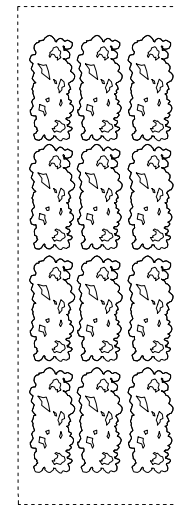
thick



diffused



ephemeral

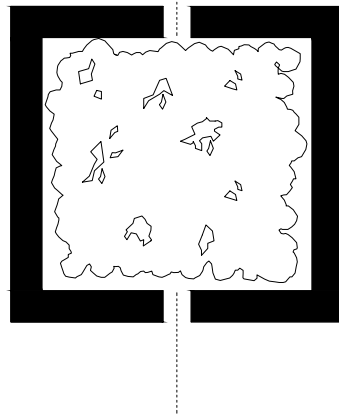


a design manual: various combinations

**research topic:** *the possibility for a new metabolism, from a mineral towards a diffused and ephemeral metabolism*

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thick +ephemeral

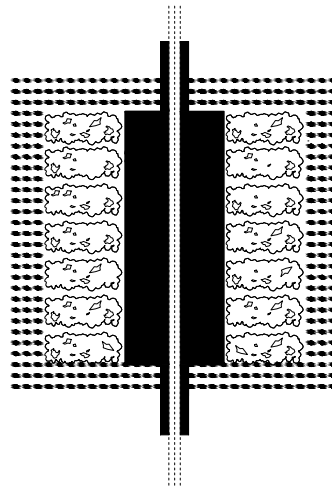


a design manual: grain

**research topic:** *the possibility for a new metabolism, from a mineral towards a diffused and ephemeral metabolism*

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diffused +thick +ephemeral





a design manual: various combinations

**research topic:** *the possibility for a new metabolism, from a mineral towards a diffused and ephemeral metabolism*

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diffused +ephemeral

