Utopia – future city

life under on over H_2O

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On the occasion of two movies, one small foreword→

Why .....u- topia ..?

One has the title **'Captain Nemo And The Underwater City** (1969) and the other **'Stalker'** – Tarkovsky, (1979)…

First movie, in brief, refers to **a city** (ideal), which is under deep water and the world over is not aware of its existence .
At the beginning of the movie there is a shipwreck and 5 **people** are saved and be transferred to it. The city is run by Captain Nemo, who in God's role, imposes **a law** : .. "nobody ever leaves from there' ..
However, the city is ideal. So **some** choose to stay there forever,
while **two of them** select and manage in the end to escape.

Second movie,
refers to a place where anyone can go and after walking in a room will be able to fulfill his **biggest wish** (which finally may not be the one they think).
Something like that though, would might be **catastrophic** either for themselves, or for the **others.**

In one case (even) I get something 'ideal'

But with the lack of the right to choose

the 'old', the 'wrong', the 'problematic' ..

Total = / = freedom of the individual

In the other case the one has the possibility

to take the responsibility for something that can be devastating for many ..

people = / = total freedom

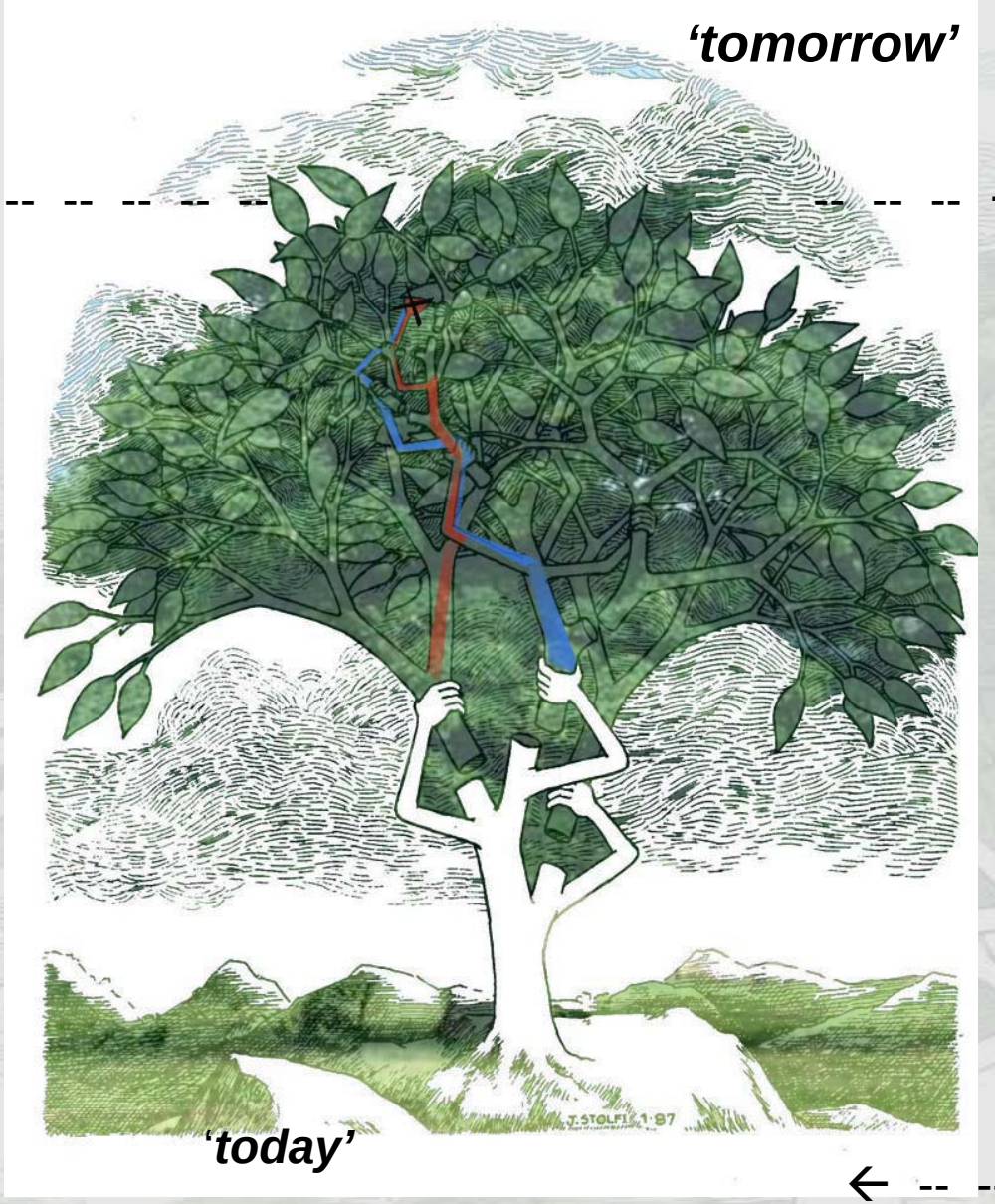
City: an ensemble.

To exist **'the ideal',** ideal city, should also total (choice of many as the ideal) to coincide with the Unit (choice of each), and vice versa,

or even the **unit not to** have an ideal that would be disastrous for **many ...**

This is **impossible**

heterogeneity of the members of the total , will always promises heterogeneity in needs and desires.

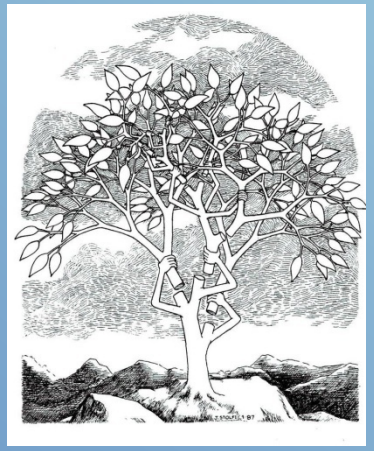


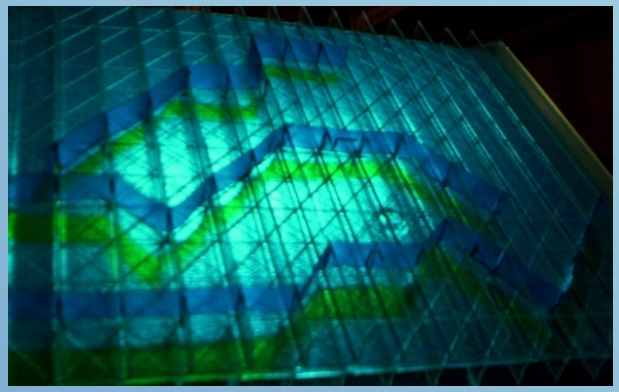
If **‘today’** is the bottom of a tree
→**‘tomorrow’** could be the edge of any branch of it..

→Putting down all the parameters we would start from the roots..
→Here I’ m going to start from a branch somewhere in the middle.. But even if from there the path would differs and depends on the arguments every time..
→An argument (cause) could take me from branch to branch giving a result or suggest 10 other different ‘branches – results’
→From the result someone could think 10 different causes, which means the route can’t be bidirectional …

‘origins-axioms’

So in the end, if anyone, having the final 'picture‘, would try to make an assessment or to reach the starting line, ***couldn’t make it*** *..*





‘tree – city’ → *water city*

ΝΕΡΟ – ΚΑΤΕΥΘΥΝΣΗ ⇒ ΛΥΣΗ; → ΑΠΙΕΣ / ΠΛΕΟΝΕΚΤΗΜΑΤΑ

→ "... Ως προς την αντιγραφή, πρέπει να διευκρινήσουμε και την εφεύρεση. (...) Υπάρχει πάντα αντιγραφή και ο βαθμός δημιουργίας είναι μόνο το μέγεθος των πληροφοριών που προσθέτεις".

(σελ. 16)

- μη κεντρομόλος αρχιτ/κή
- κλίμακα χωρίς όρια
- διάδραση
- γαιόμορφη αρχιτεκτ.
- ελαφρότ. κ' διαφαν.
- στιγμ. μνημείο – βάσεις δεδομ.
- καθολική επικοινωνία (+ παγκόσμ.)
- αποεδαφοποίηση κ' διασύνδεση

→ επάσιμο κύβου → προς το αυτό

▷ ανύσματα φυσης από αυτό που συμβαίνει γύρω του.

▷ μετάβαση στο χρόνο

κατασκευαστική ευελιξία

ΤΑΚΗΣ ΖΕΝΕΤΟΣ

βασικά χαρακτηριστ.

- [μεταβατικό στάδιο] Από το [σήμερα] στο [αύριο]:

→ ο Ζενέτος προτείνει μεταβατικά στάδια έως ότου να σταθεί στην κυαρτημένη πόλη. (σελ. 39)

Η αλλαγή – μετάβαση γίνεται ωστόσο πάνω στο ίδιο το αυτικείμενο – πόλη (σκίτσο [A])

- [Ιδιότητες νερού] // Πλεονεκτήματα – μειονεκτήματα (χαρακτηριστικά)

αρνητικά – θετικά // σύγκριση //

[ηλεκτρον. πολεοδ./σημερ. πολεοδ.]

- καθολικότητα (αποεδαφοποίηση)
- έδαφος μικροκλίμακας = έδαφος μεγ. κλίμ. (ίδιοι κανόνες)
- νερός: μετάδοση πληροφορίας · τοπικά: οπτική επικοιν.)

ΓΕΝΙΚΑ: σημερ. πολεοδ. ⇒ Έδαφος ⇒ μη διαφάνεια / συνοδ. από 2ουσες λειτουργ. συγ. (αλλάζει χαμηλή ποιότ. ζωής)

[ΠΟΛΗ · ΔΕΝΤΡΟ] – [ΥΠΟΘΑΛΑΣΣΙΟ]

- μερική καθολικότητα (τοπ. στοιχεία)
- [...] όχι ίδιοι "κανόνες"
- ευελιξία μέσω του υγρού στοιχ. χωρίς αρχιτ. θέαμα
- στο νερό: [ημιδιαφάνεια] / μεταδ. πληροφ.
- λειτουργ. κύρια (κατοικία)

Ημιδιαφάνεια: Προσφ. ιδιωτικότητα και διακριτικότητα ως προς το περιβάλλον αλλά επιτρ. την οπτ. επικοινωνία

- οπτ. επικ. (τοπικά)
- σπασ. κύβου
- ποιοτ. ζωής > Έδαφος

Επιφ. νερού: φυσικό διαχωριστικό (ιδιωτ. – δημόσιο / τοπικό – καθολικό)

- [βιομηχανία – κατοικία] (γραμμική πόλη; ⇒ βλ. σκίτσ.)
- [βιομηχανοποίηση / μαζική παραγ.]

‘WATER – DIRECTION => solution? → Causes / advantages

‘’..as far as the ‘copying’ (*transcription) is concerned, we have to clarify the invention (…) There is always ‘copying’ and the degree of creation is only the amount of the information we add..”

(T.Zenetos – ‘Digital Visions’)

-‘Non-center’ architecture
-Scale without limits
-‘reaction’
-‘earth-shape’ architecture
-Lightness and transparency
-Instant ‘monument’ – data base
-Global communication
-*over-ground (?) and connection

-‘Break of ‘cube’.. as far as the ‘bodiless’
-‘Vectors of escaping’ from what is happening around
-Transition in time (from ‘now’ to ‘then’)
-Flexibility in construction

Takis Zenetos – Basic ‘points’ (characteristics)

Transitional stage : from ‘today’ to ‘tomorrow’
--Zenetos proposed transitional stages as far as he reaches his target (the *over-ground city)
However these stages are taking place on the same area of the already existing city.. (drawing 1)
--water : merits : advantages / disadvantages
(+ / -) comparison

Digital urban planning
-global planning
-ground of small scale = ground of big scale (same rules)
-air → transmission of information – local: visual connection
(in general- today: urban planning:
Ground → no transparency / second. functions / low quality of living
---
- Industry – dwelling:
  → ‘Linear’ city?
- Industrialization - mass production

[‘tree–city’] – [underwater]
-partly ‘global’ (local elements)
-[…] not same rules
-Flexibility through water – without *‘spectacle-architecture’ (see: Zenetos – comment about architecture of Metabolists)*
-Under water: ‘half- transparency’ -- transmission of information [gives privacy, plus environmental friendly + visual connection (local) / break of cube / quality of living > ground, / level of water natural limit: private – public, local – global]
--basic / main functions: ‘dwelling’

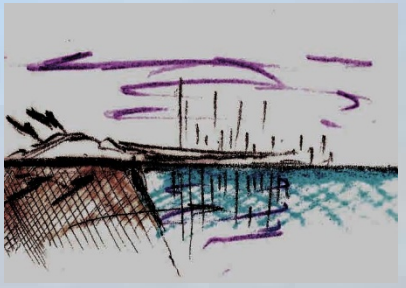
‘why water.?’..

•*In a comparison with* ***<u>the ‘city’ of Zenetos.. at digital urban planning..</u>***
•*A lot of things in common*
•*Difference: not a city over the land/ ground, but → direction of water..*

Next ..putting down the characteristics of the 3 elements.. ***water – land – air..***
a first approach..

Every idea includes ***more than one*** *element.. So, which combination has the most advantages (+) , and less (-) in the whole ‘unit’.. ? A first view, shows that water-air is a ‘noticeable’ combination..*

‘tree city’→ takes place where the ground finds water .. And keeping the connection, combinates water and air..



1. oxygen – **breathing**
2. **visual / sound** connection
3. transmission of **information**
4. **transition** (in time) -- **flexibility** (in space)
5. **Transparency**
6. **Quality of living** (light – oxygen)

gravity
'animal kingdom

1. **instability** in construction (reliance on the ground)
2. **movement** → specific
3. **reliance** on the ground / land
4. **Noise pollution** (greater transmission through air)

AIR

GROUND

WATER

1. **instability** in construction
2. possibility of '**controlled environment**' (?)

1. **no visual** contact
2. movement **'only'** on it
3. **no flexibility**
4. quality of living (**lack of light – oxygen**)
5. **no transparency**
6. **reliance on** the air

instability
'animal /vegetal kingdom'

1. **Visual contact**
2. **movement (free)**
3. possibility of **transition** in time / **flexibility** (in space)
4. possibility of **'controlled environment'** (so : better quality of living)
5. Half transparency → existence of **light** (? : different in levels but exists)
6. large thermal capacity

1. **no breathing** / (oxygen)
2. **partly instability** in construction
3. **reliance on** the air **and** the ground

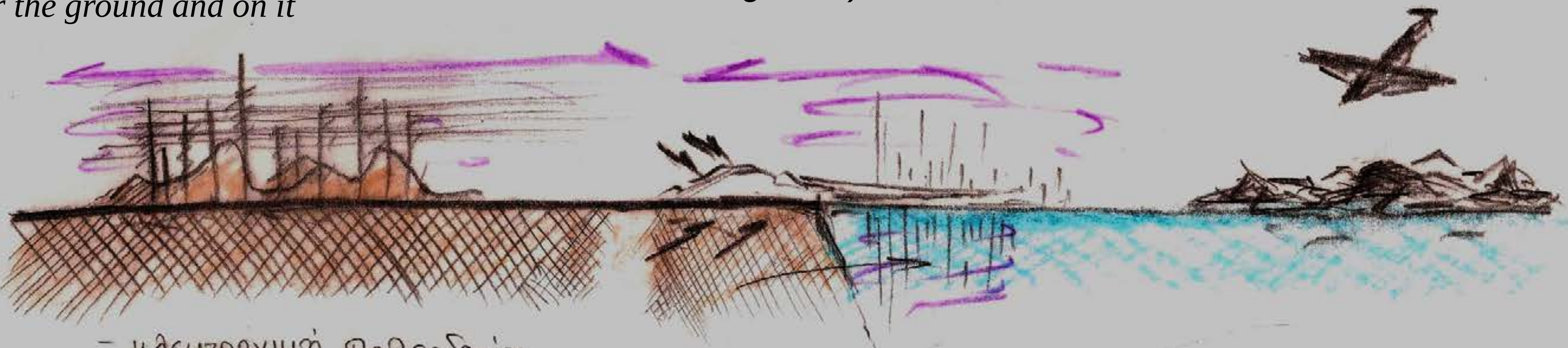
buoyancy
gravity
'animal kingdom'

3 ΔΙΑΦΟΡΕΤΙΚΑ ΣΥΣΤΗΜΑΤΑ.

‘Digital Urban Planning’
- Takis Zenetos → takes place over the ground and on it

‘tree city’ *→ takes place where the ground finds water ..(under water, on and over it – connection with the ground)*

‘Floating constructions’
‘Metabolists’ → ‘spectacle architecture’ (Fred Thomson & T.Zenetos pg. 92) …Invisible architecture(?)…



- ηλεκτρονική πολεοδομία (Τ. Ζενέτος)
- (απεδαφοποίηση
- αυλή αρχιτ.
- ευελιξία - φλαφροτ.- διαφ-

μπορεί να εφαρμοστεί παντού στην ξηρά

(+) καθολικότητα. σεβασμός στο περιβάλλον. ευελιξία μεταβ. στο χρονο. κλπ.

(−) μεταβατικό στάδιο

«ΠΟΛΗ - ΔΕΝΤΡΟ»

Εφαρμογή στην ένωση νερού - ξηράς

(+) . . .

(−)

- πλωτές κατασκευές.
- μεταβολιστές. (Fred Thomson κ' Ζενετ. σελ. 92)
- "αόρατη αρχιτεκτ." αρχιτεκτονική θέαμα

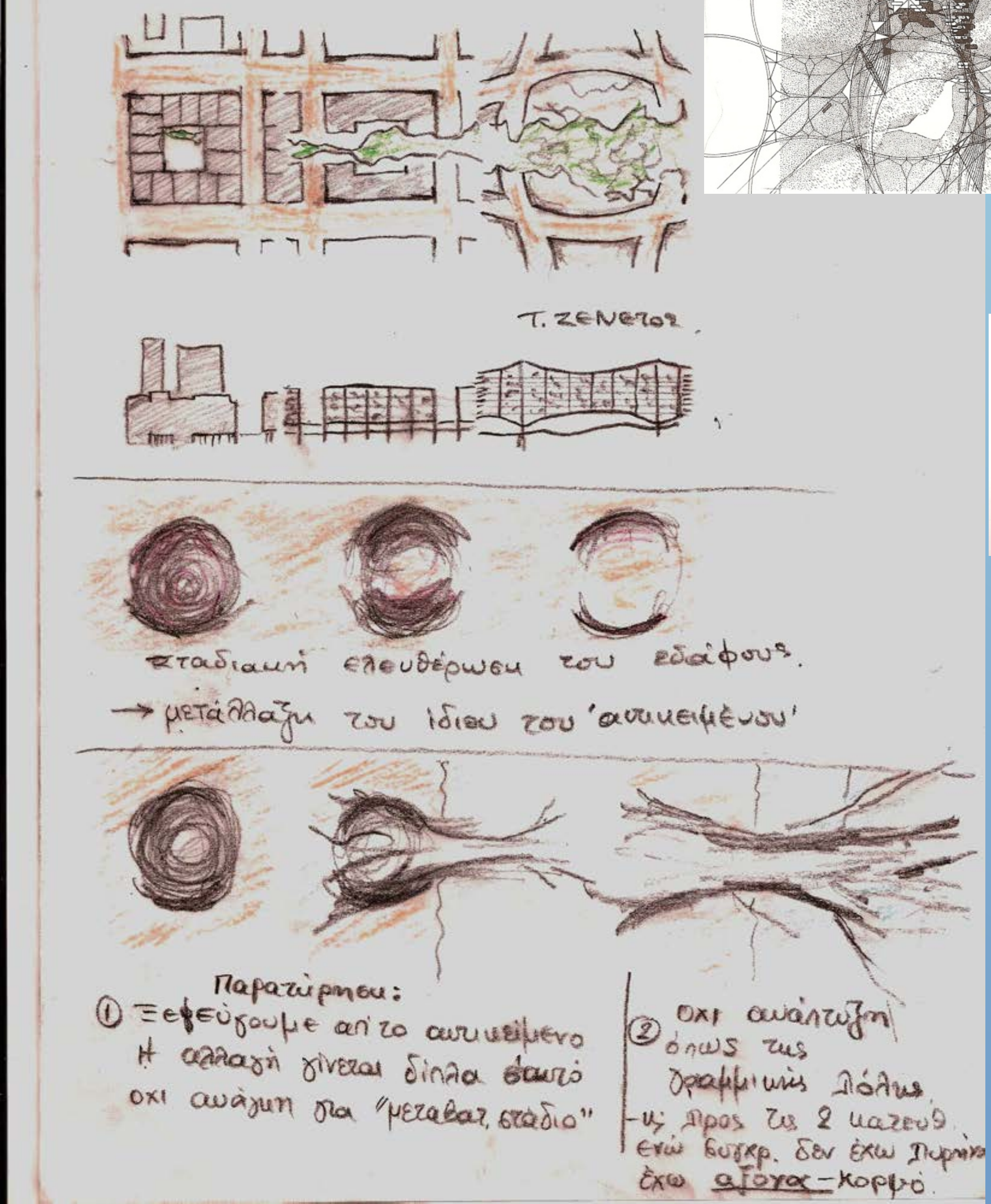
Εφαρμογές στο νερό.

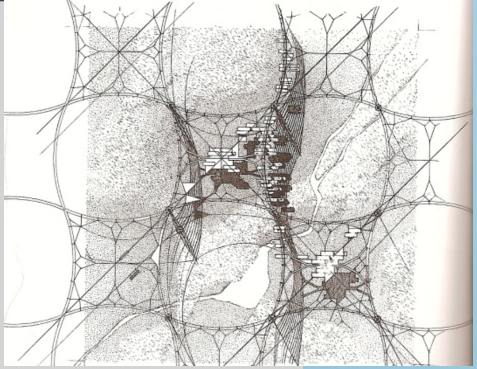
(+) ευελιξία..

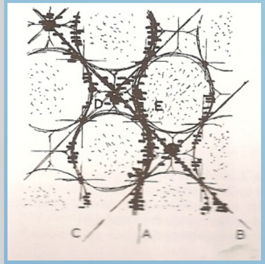
(−) ορατή αρχ. όχι σεβαστοί στο περιβ.

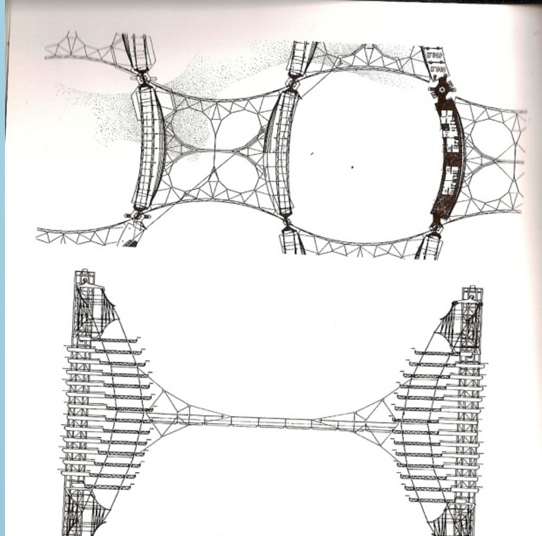
*…‘**Tree city**’ .. i gave this name because i am talking about a city / urban planning that reminds or takes the leaf out of the book of the ‘tree growing’.. not because it looks like a tree.. in the following, it is described the way that functions, as well as the ‘sections of production’, are developing / changing (from today to tomorrow) as far as where the planning ‘escapes’ from the ground and takes place in water (under/on/over)…*
The ‘picture’ is not permanent.. It is possible to change over ..in time..
(future providence)

• μεταβατικό στάδιο







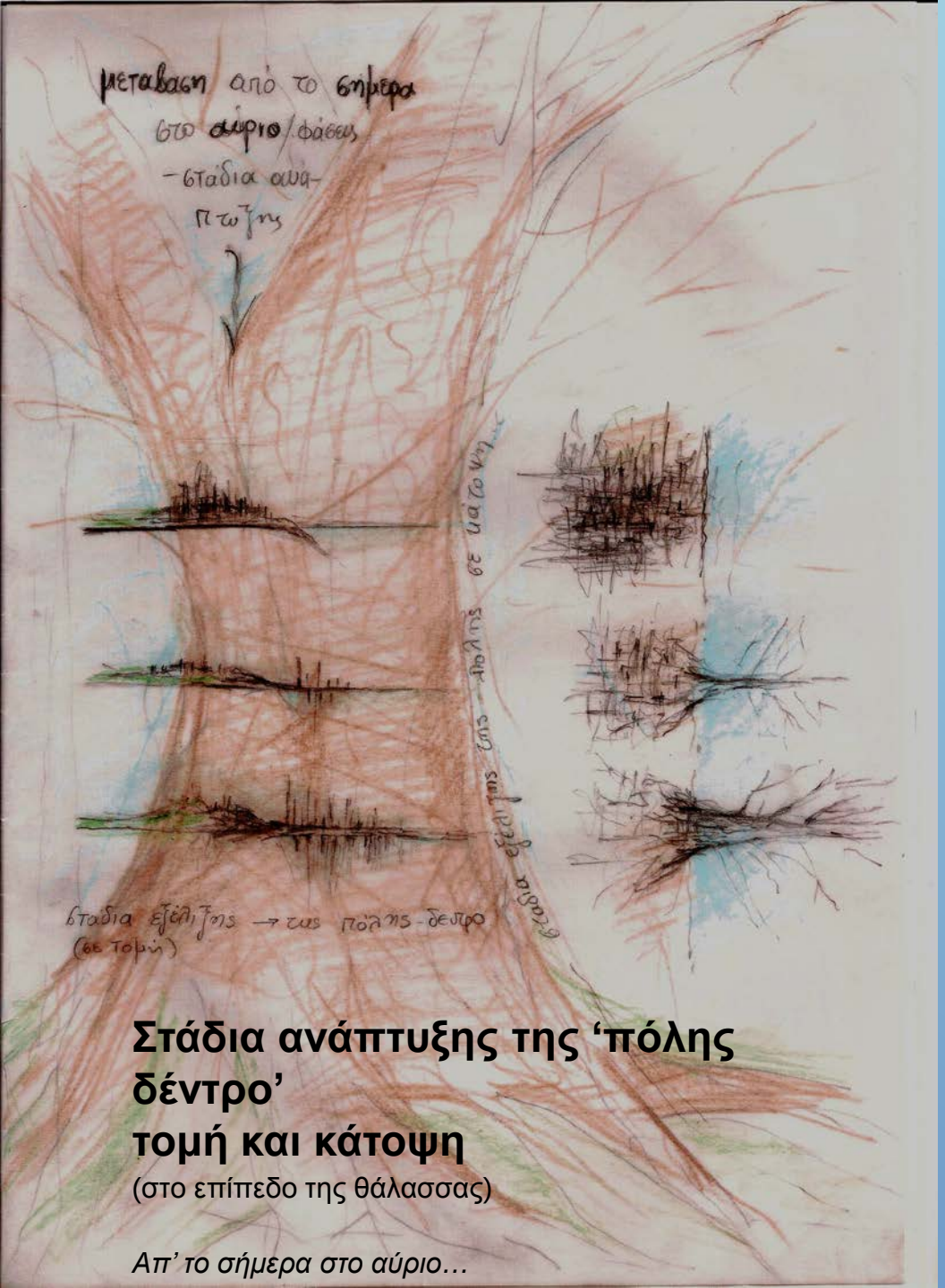


Η αναρτημένη πόλη.

Μερική κάτοψη και τομή τυπικού τμήματος της αναρτημένης πόλης.

«*Η αρχή του συστήματος προεντάσεως.* Οι πλαγίες ωθήσεις ανέμου (ή σεισμού) στην περίπτωση ενός κρεμαστού κτιρίου και μιας κρεμαστής γέφυρας αποτελούν το *βασικό στατικό πρόβλημα*. (Στην περίπτωση του ανηρτημένου οικιστικού συστήματος, τα δεδομένα είναι ευμενέστερα γιατί η ύλη είναι λιγότερο συμπαγής τόσο ως προς τα νεκρά όσο και ώς προς τα κινητά φορτία) Ο παράγοντας αυτός μηδενίζεται από τους "απέναντι" φορείς. Έτσι το "κτίριο" παίρνει τη μορφή τμήματος σφαίρας (και υπερβολικού παραβολοειδούς προς τα άκρα)»[69].

Here.. I m showing (left – above) the transition in time for the 'digital urban planning'
Zenetos proposed stages which take place (slowly) over the existing city.. in the drawing is a ground plan and a section.
So, I m translating that as a change on the subject itself..
(3rd pict.)
On the bottom (4rth pict)
I m showing a transition which isn't in the subject (city) itself..
the 'new' is happening next to the 'old'.. and slowly we go from the land to the sea.. the development follows rules which are described next..



Στάδια ανάπτυξης της ‘πόλης δέντρο’
τομή και κάτοψη
(στο επίπεδο της θάλασσας)

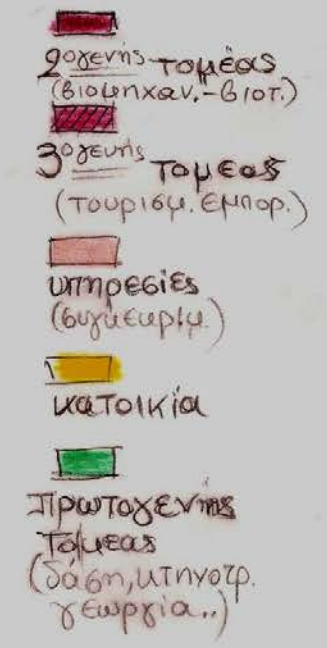
Απ’ το σήμερα στο αύριο…

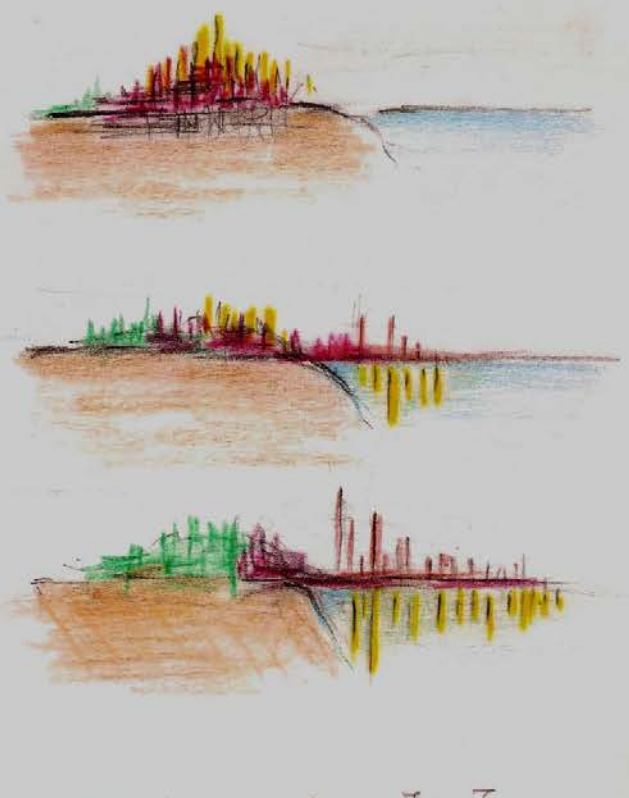
‘section and floor (sea) level drawing’ of the way of development of ‘tree city’

from ‘today’ to ‘tomorrow’…

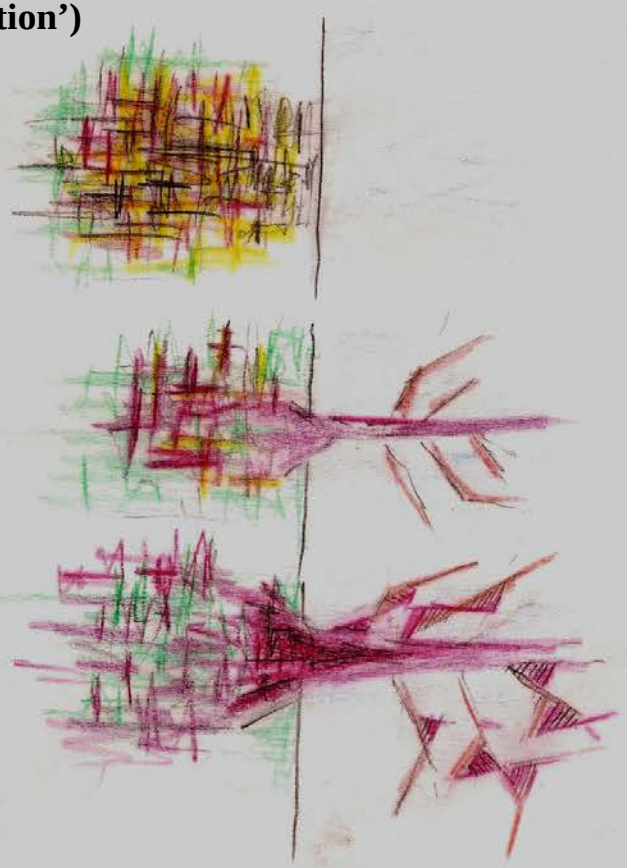
στάδια ανάπτυξης → (σταδιακή μετατόπιση των διαφόρων τομέων παραγωγής κ' χρήσεων.)

Stages of development → **(Slow 'displacement' of functions and 'sections of production')**





τομή ⇒ στάδια εξέλιξης

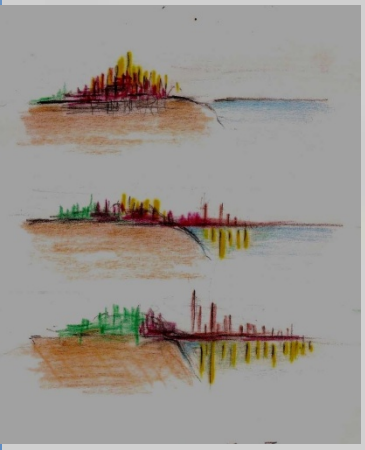


κάτοψη ⇒ στάδια εξέλιξης (στο επίπεδο της θαλάσσας)

→ 1-genic section
→ 2-genic section
→ 3-genic section
→ 'Dwelling'
→ 'services' (specific)

..system of development:
City starts from the ‘roots’ (land)
However the ‘start point’ is not the center..
There is no center. There is ‘body’..
Development is not linear exactly.
City goes to one direction (sea), but instead of center we have ‘body’ which can turn larger not only in linear but in width too, keeping balance between the needs and the rate of development (constructions – people)

Industry starts from the ‘roots’ (land)
It is developing ‘on’ the body
(development : decreasing → ‘discharge’ as ‘removal’)



The ‘leaves’ mostly ‘hold’ the 2^{-genic} and 3^{-genic} section, (the services, trade e.t.c.)
However we find topical trade near body too. *(which might belongs to the municipality)*
The body consists mostly of the basic movements, like transportation, and public places.

Note: *the possibility of change of the city in time.. is important*
..it also gives the ‘body’ the possibility to change

as well..

NOTES – QUESTIONS - COMMENTS

→ Where ‘tree city’ can take place?
Which are the limits?

In ‘digital urban planning’ of Zenetos, the meaning of ‘global’ has also another timbre… Except the ‘bodiless’ and the ‘connection’, it can also take place everywhere. In relation to some other factors (like economic factor), he considers and presents the application in different places/ areas…

→ ‘tree city’ has limits though. It has the ‘limit’ of water need…

It needs the point where land finds water. So if we think that we are talking about global architecture (except the ‘global’ character from transmission of information), what happens with all that part of land that does not connected with water?

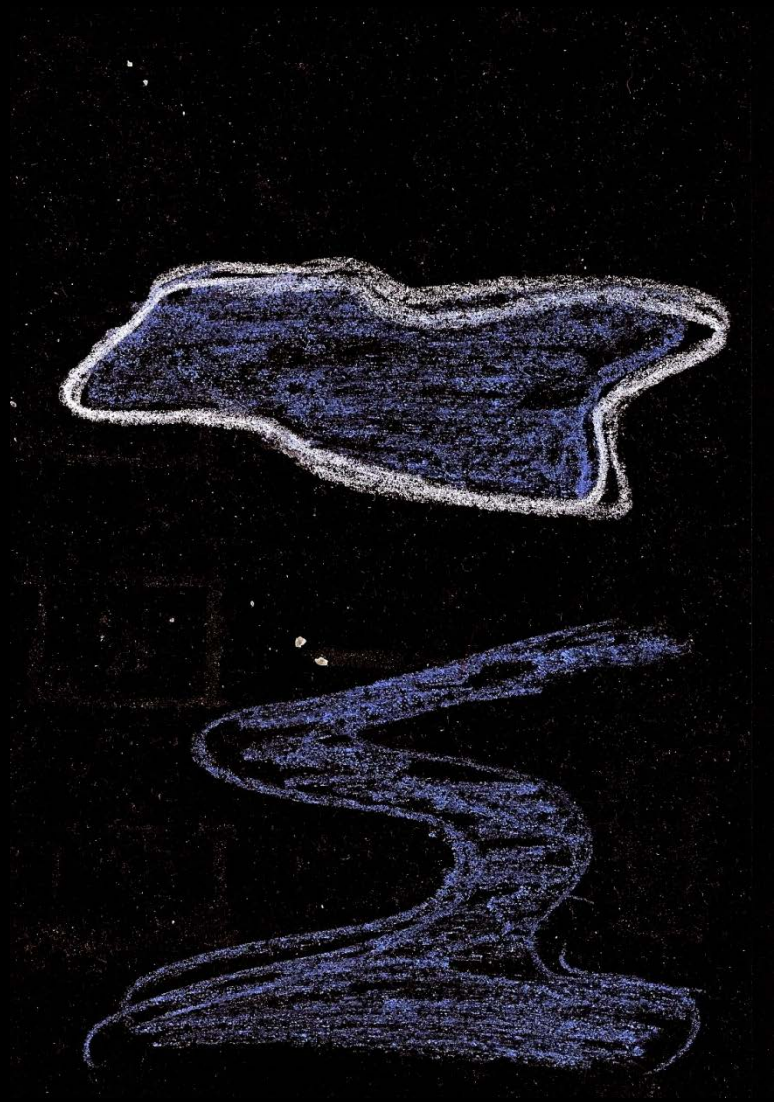
→Does rivers, lakes and lagoons have the right specifications so to accept the system of ‘tree city’?

→ If not, can I create them?

→Even in that case, which is the point, in the end?

Will I have benefits, so to go for it?

Or it will just reach the limit of ‘local appeasement’, having at the same time answers about an ‘architecture that is walking on the ‘footprints’ of Zenetos planning..?



→the ‘part’ which the city ‘moves over’ the sea: what is going to replace it?

-nature (or 1genic section)
-‘memories’ of yesterday..
-Space for industry (in time)

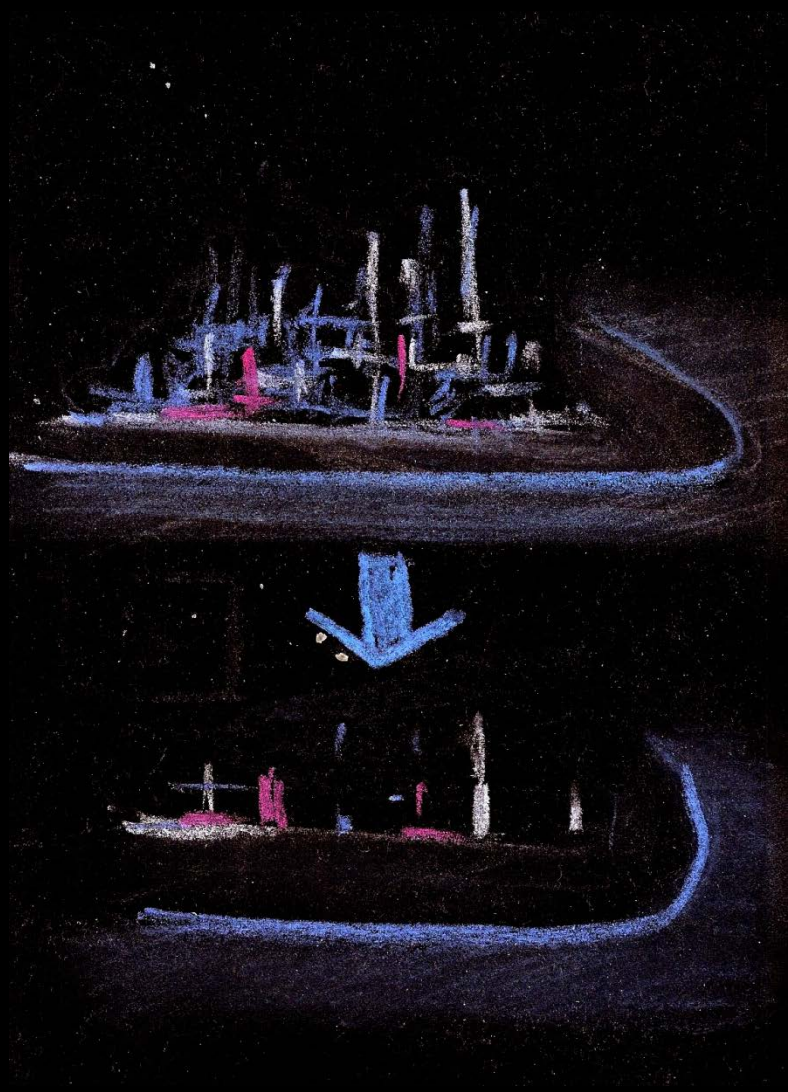
-in the possibilities (as far as the ‘global’) : it leaves the opportunity to the ‘land cities’ to use somehow this part (scenario b, see below)

→ combination of the above

Is there ‘Satiation’ ? → (f. ex. a tree dies or looses its leaves ..etc)

-if yes, => which city doesn’t? the point is to be able to ‘escape’, so not to have ‘over-localism’ (*?)

--**‘prevention’:** maybe with ‘seeds’→ creation of smaller bodies, at the same time, in order to discharge (or subsequence)
-connection of different ‘tree-cities’, creating ‘forest’: bodies and roots are working together and the one complete the other ... (change of relations) – see ex. → scenario c)



→→ *The condition 'today'*

tomorrow:

A.) possibility

'tree city' takes place, but
supremacy of both systems..
(old and new). The new 'gives space' to the old … (characteristics of both, remain)

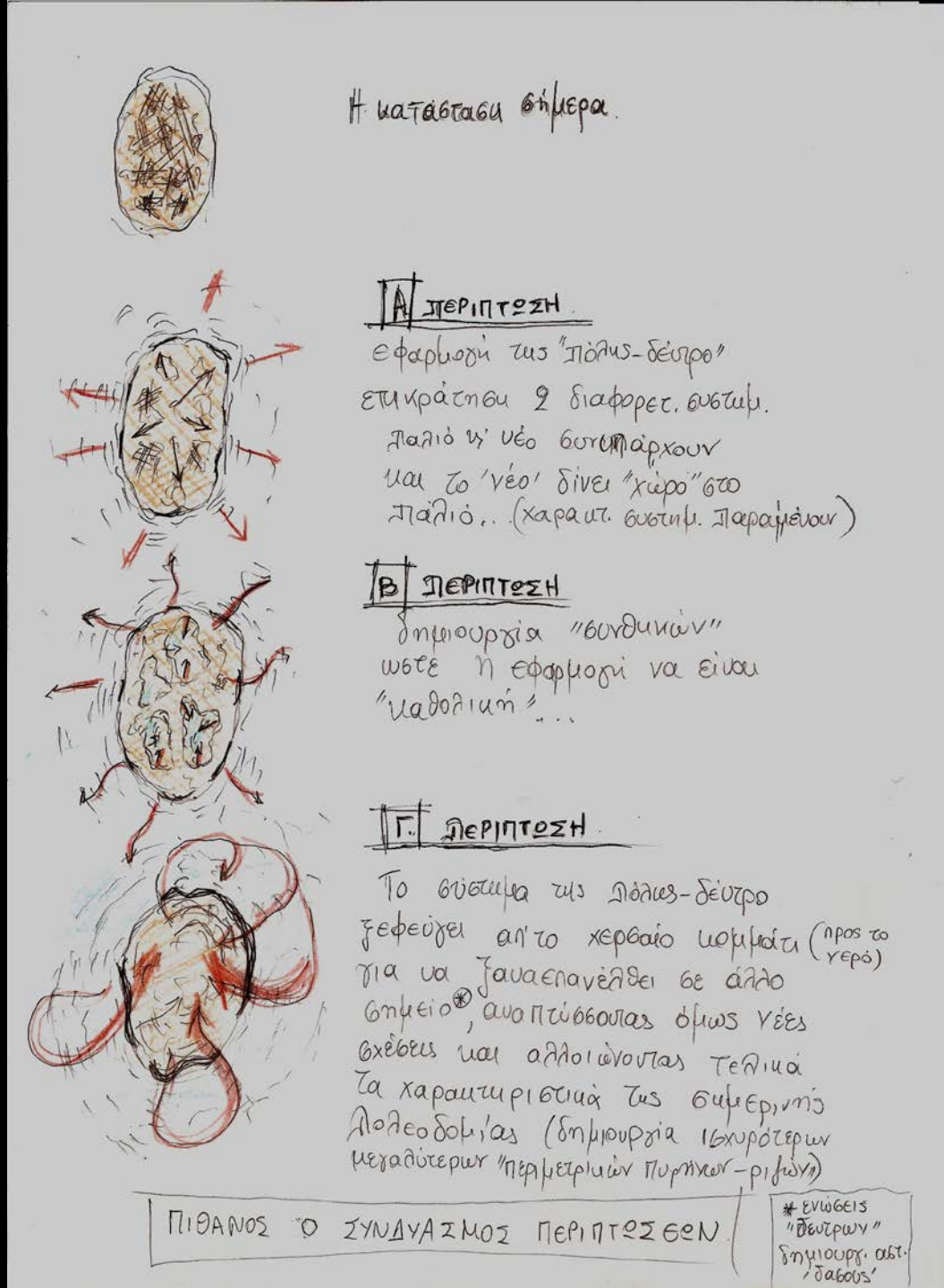
B.) possibility

creation of those 'conditions',
where the application will be global.. (?)

C.) possibility

the system of 'tree city' leaves the land (going to water), so to find land again in another point (connection of trees, model of urban forest), but new relations are created, so in the end, the character of today's condition will change (there will be bigger and stronger 'circumferential root-centre)

- POSSIBILITY OF COMBINATION



- **‘Industrialization’ (mass production) → on demand..**

T. Zenetos turned down the dwelling ‘*with the living room and the stone wall*’…

He proposed the possibility of choice between 2 or 3 models (industrialization on demand)

→tree city’: I embrace the ‘industrialization’ as far as a point

⇨Thought of the model of ‘carrier’ and fastening ‘cells-cases’ on it : (maybe cells of different shapes or multiples of a unit), 2,3 or 4 levels…

⇨inside them, possibility to format the space

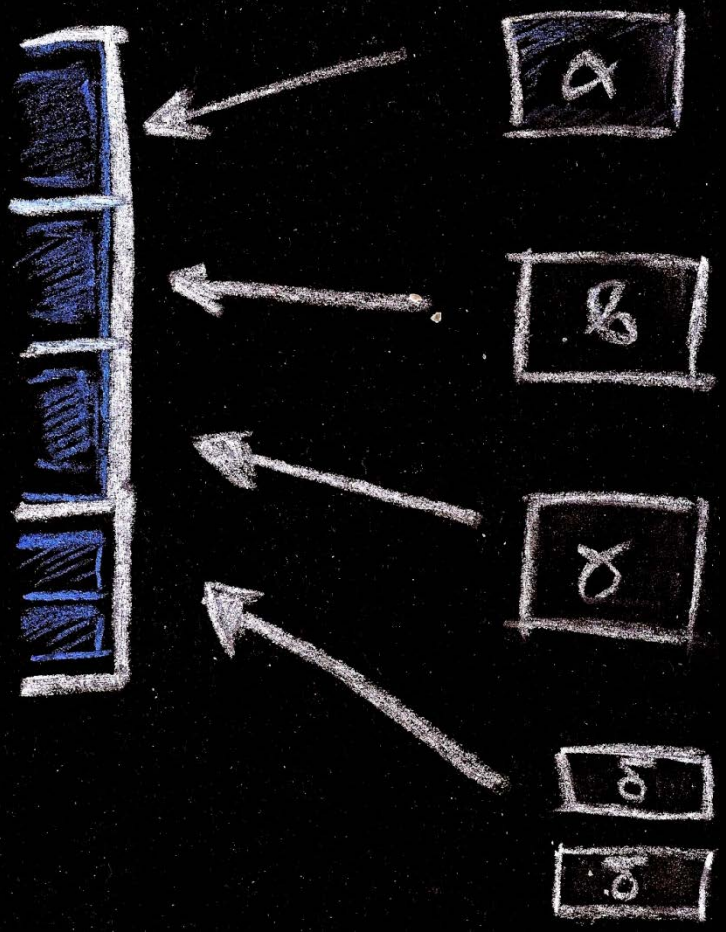
→ the static study of the ‘group’, will give flexibility and enough possibilities to construction…

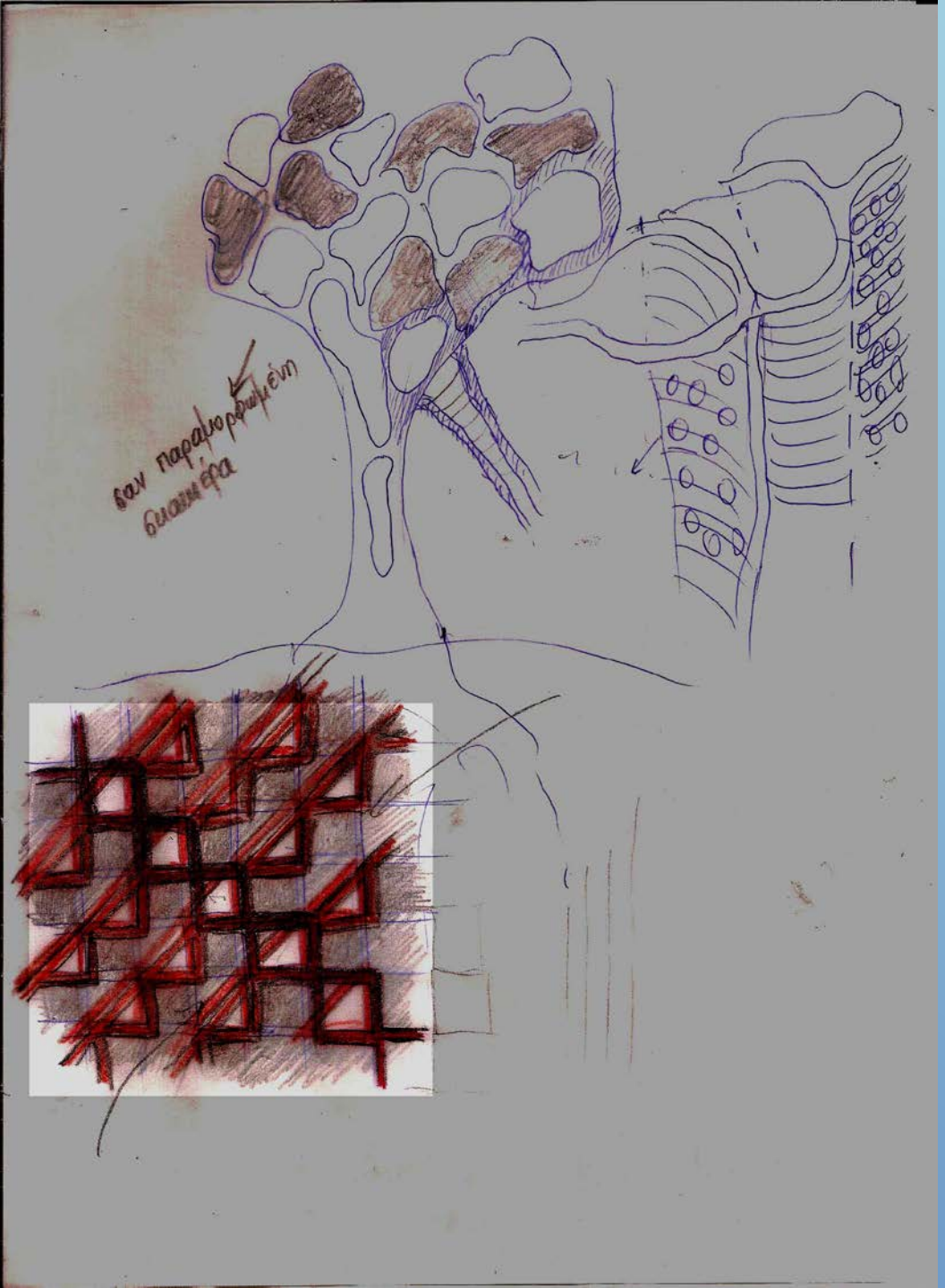
Maybe an ‘over-static’ model which will allow the personal character in every ‘cell-dwelling’..

‘CONSTRAINTS’ → limits of the dwelling are given, but we are not talking about those limits that a wall can create.

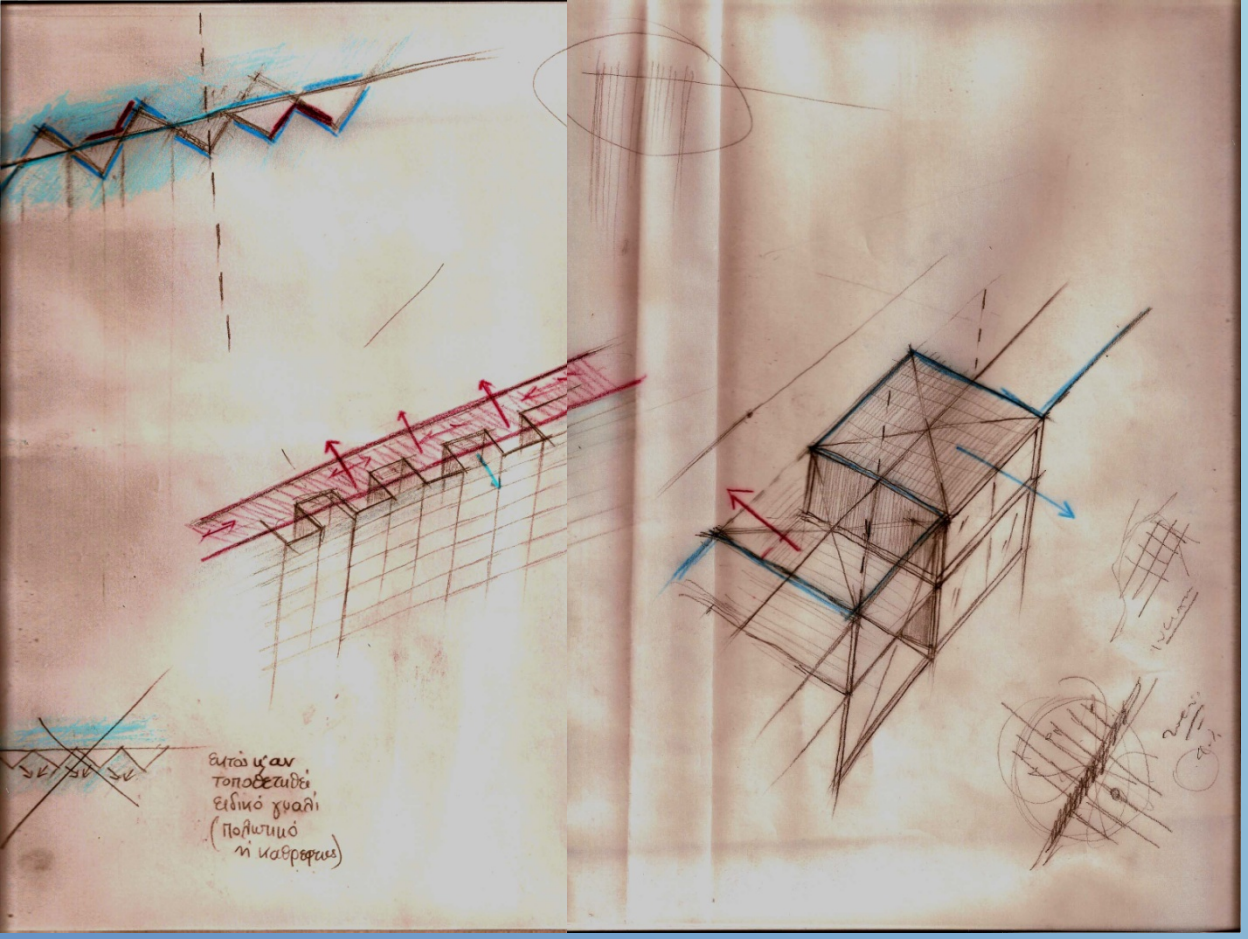
‘Glass-water’ work together as a factor which ‘breaks the cube’ (ref. to Zenetos)

- there is visual contact, plus transmission of information



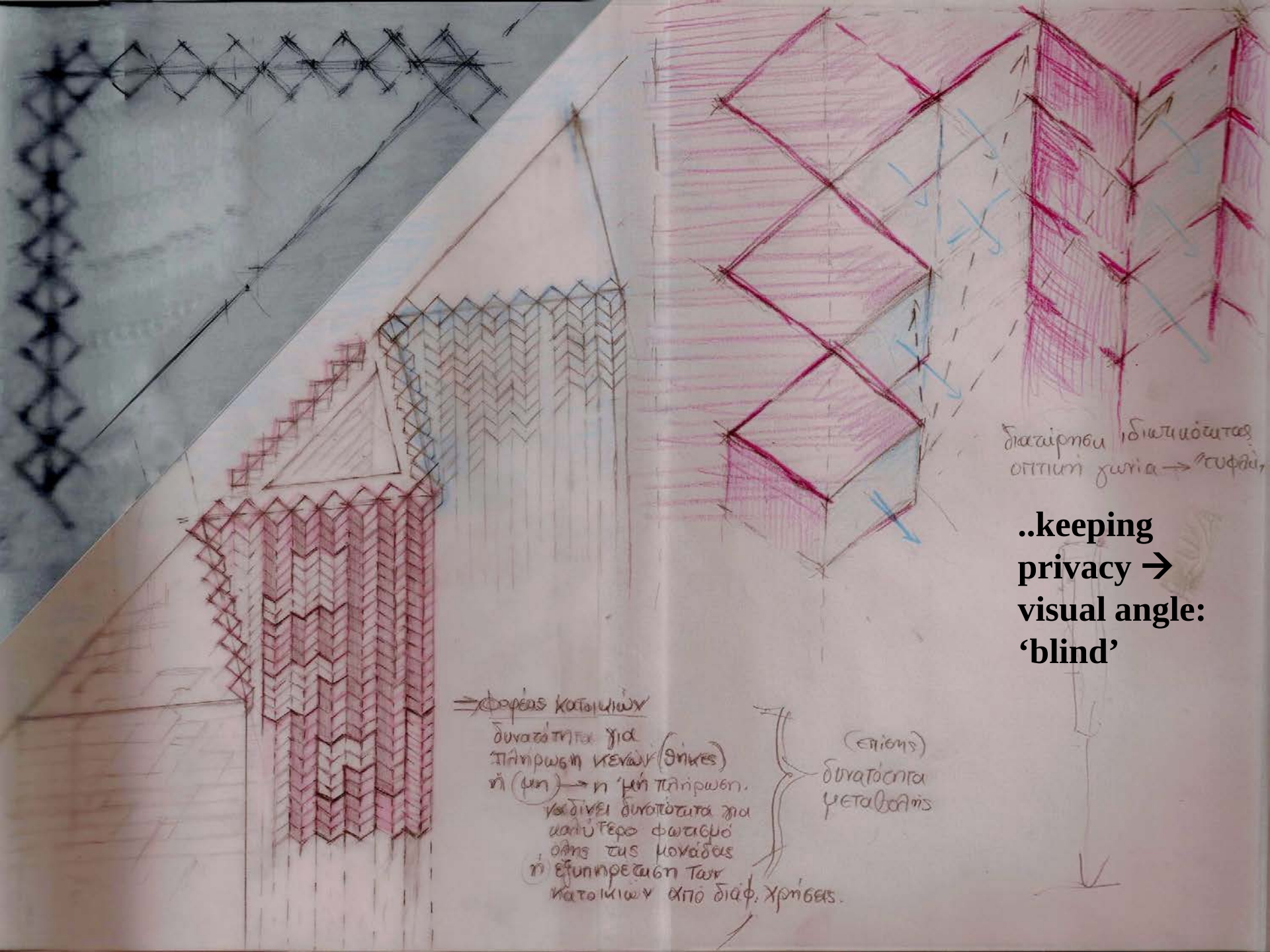


First efforts to create a picture of ‘tree city’..
An unshaped body is adopting a logic of triangles in order, fitting in 2 grids…
These triangles perforate water, so there is oxygen in the middle (and water around)..
Every triangle will be a ‘carrier’, which will hold the ‘dwelling-cells’

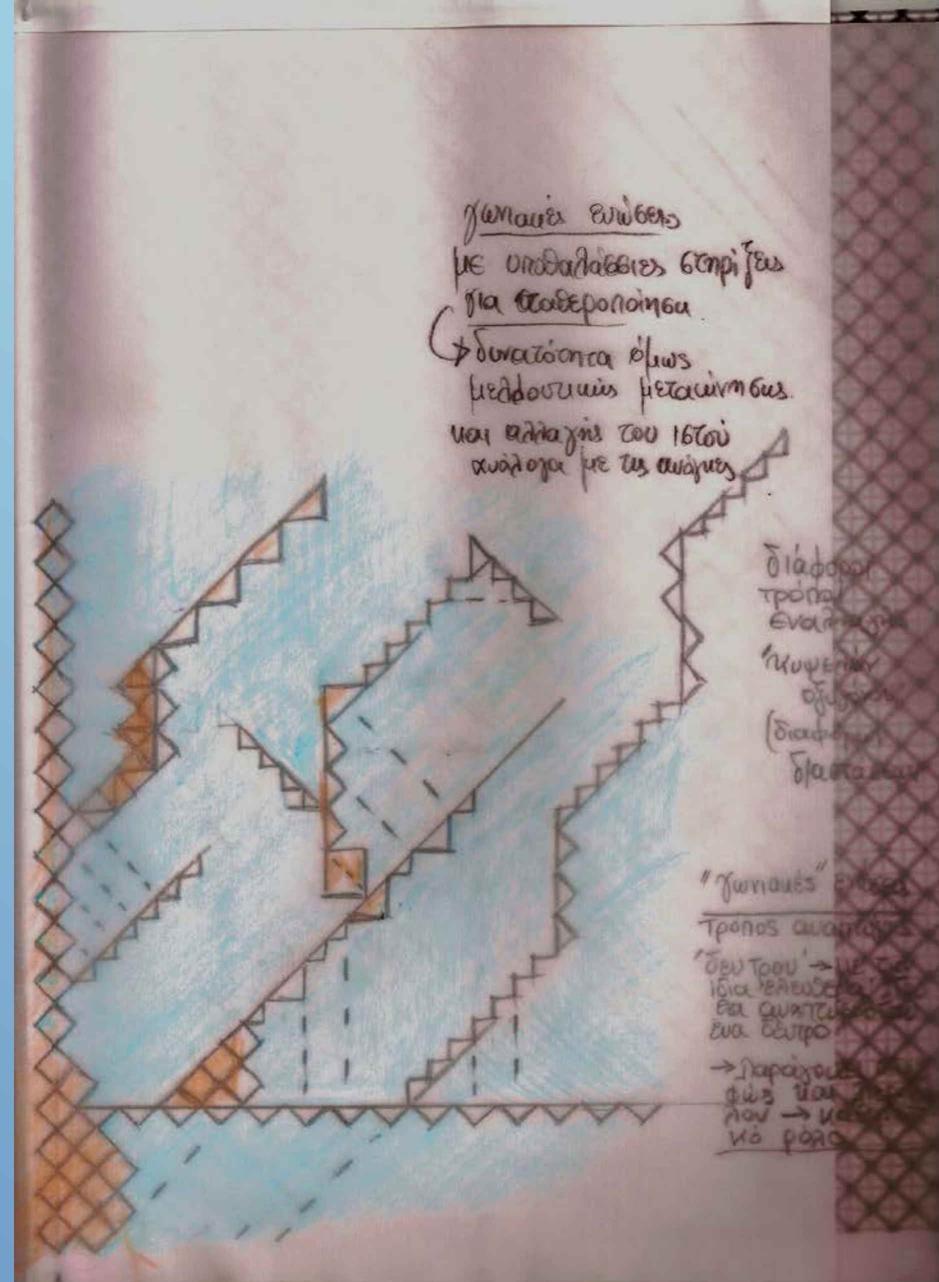


1. *trying to find a way that cells will fasten on 'triangle-tentacle-carriers'…*
2. *studying the movement*
3. *privacy too*

problems which come up with privacy (the ortho - way of fastening doesn't give the privacy I need.. water has half-transparency, and even with specific kind of glass wouldn't give the necessary privacy) → this problem I m gonna try to solve in the next drawings, where I put the dwellings in 45^{o} angle.. (see next)


διαχείριση ιδιωτικότητας
οπτική γωνία → "τυφλή"
..keeping privacy → visual angle: 'blind'
(επίσης) δυνατότητα μεταβολής


γωνιακές ενώσεις
με υποθαλάσσιες στηρίξεις
για σταθεροποίηση
→ δυνατότητα όμως
μελλοντικής μετακίνησης
και αλλαγής του ιστού
ανάλογα με τις ανάγκες
Πλωτές ελαφριές
κατασκευές ⇒ στην
επιφάνεια της θάλασσας
→ Πιο μεγάλες κοντά στον "κορμό"
→ αναστρέψιμη κατάσταση


γωνιακές ενώσεις
με υποθαλάσσιες στηρίξεις
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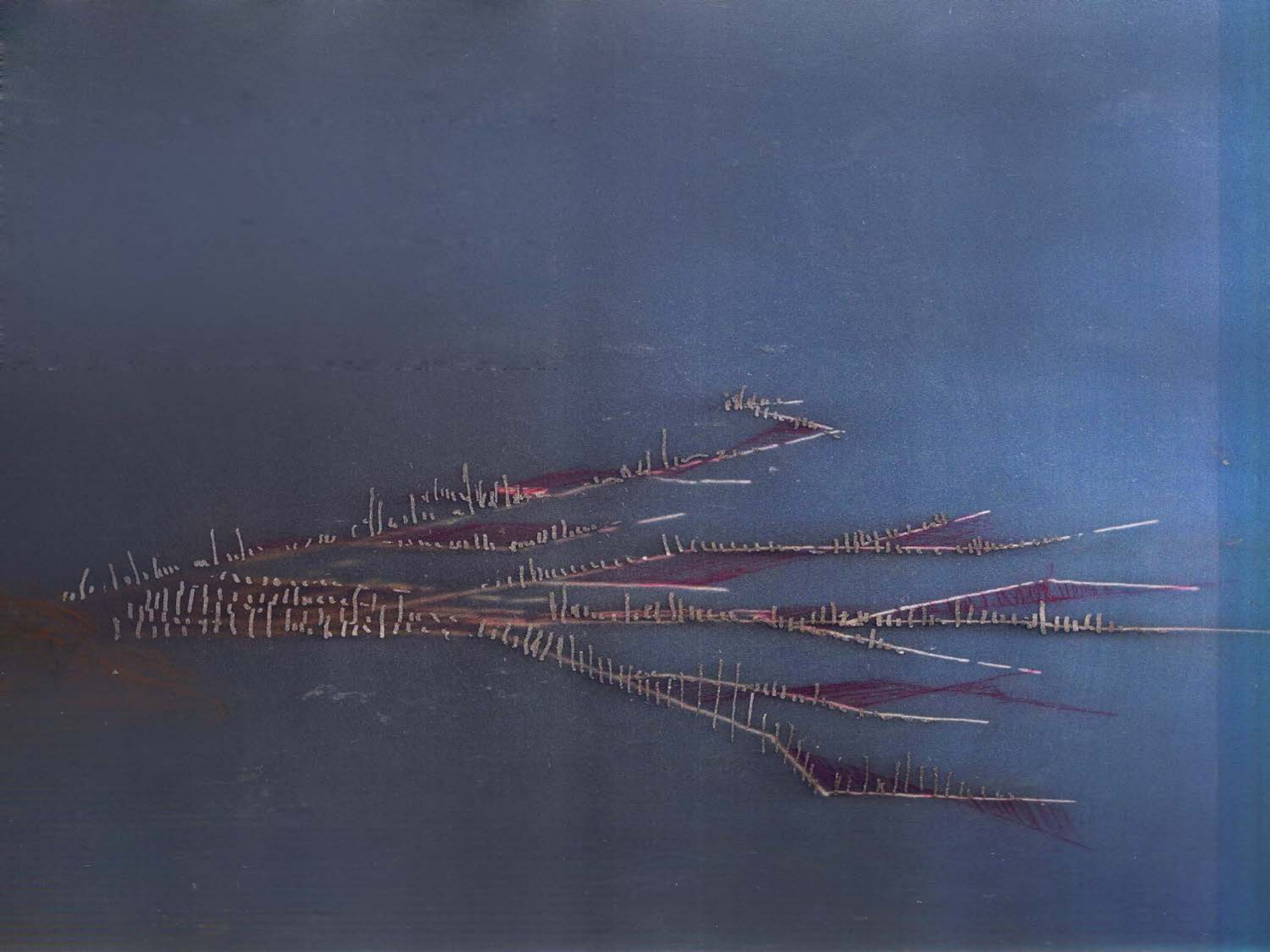
και αλλαγής του ιστού
ανάλογα με τις ανάγκες



.. these 'dwelling units'.... The picture till now is like 'vertical tentacles', which play a role of a 'neighborhood', and as far as the construction is concerned, they are 'carriers' in which dwellings are going to fasten on..
(The idea of the 'carriers' is something that we can see in Zeneto's logic as well.)

→*..working as well on* the way these 'carriers' can stand, and what exactly their characteristics will be..
→*…trying to* study the water conditions, physics rules, e.t.c.

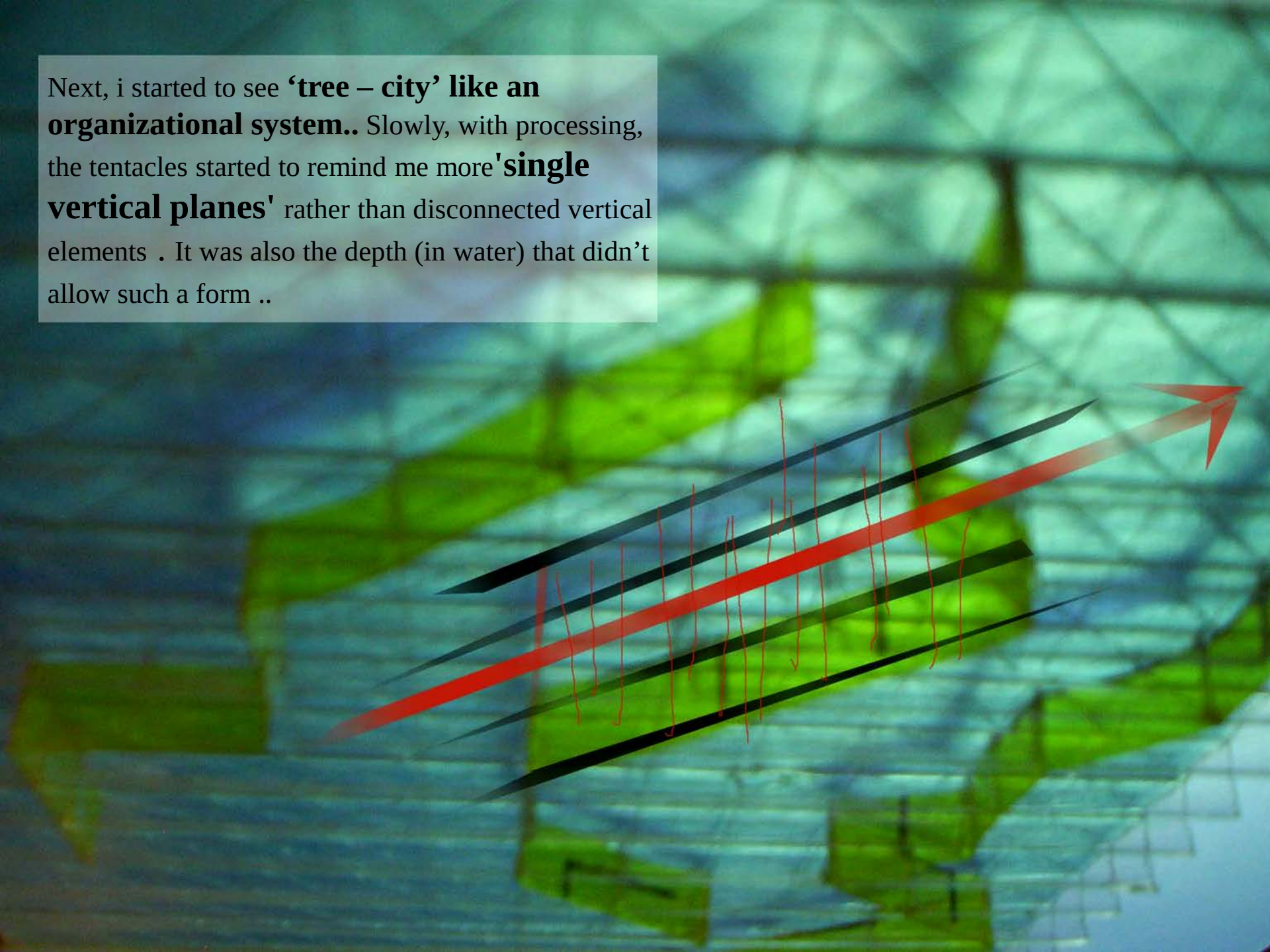
Conference on a bioclimatic direction and logic, so for example above these tentacles, could be used constructions like wind generators.

… next steps **→ 'unit' and the 'whole group'..**

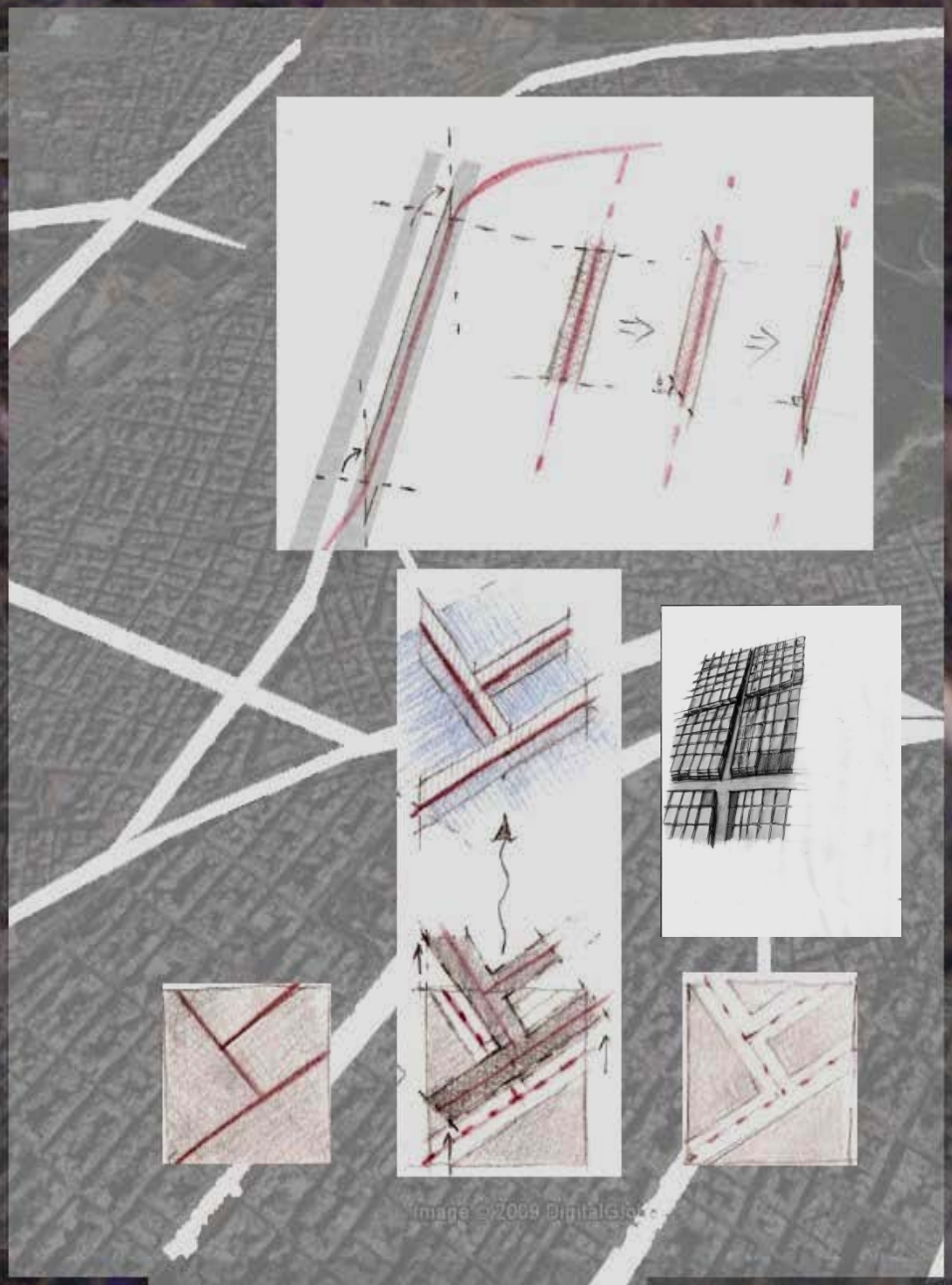
→ trying to advocate the idea of the separation of functions, in this way.
→In what way I realize the city life..

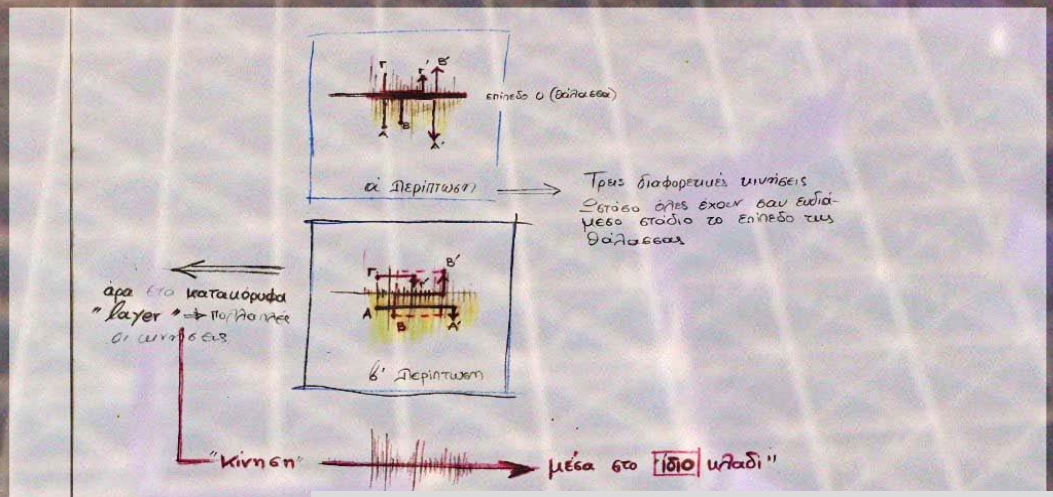
City → A number of relationships between its components →So what would really mean such a separation?

Next, i started to see **‘tree – city’ like an organizational system..** Slowly, with processing, the tentacles started to remind me more **'single vertical planes'** rather than disconnected vertical elements . It was also the depth (in water) that didn’t allow such a form ..



So the next step was to see these elements as **vertical layers**, where the **'branch'** now acquire meaning of **pointless shaft**, while simultaneously I was seeing that their organization reminded me the organization of building blocks looped in **90º**



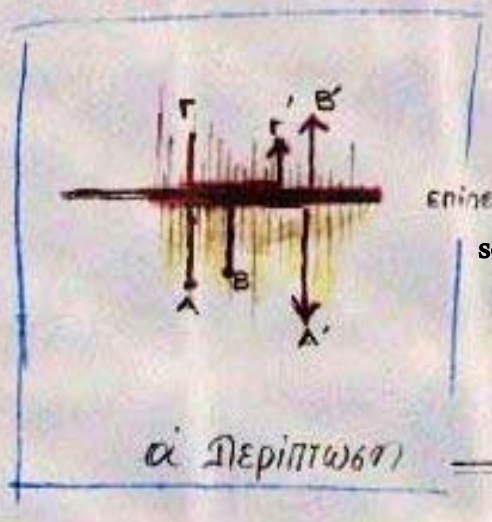


If you think the upper sections as floor plans that we looped in 90^{o} and if you see the vertical 'branches – tentacles' as neighbourhoods then the above two cases could be translated into words as follows

A] the union of any two points will always pass through

- The main axis (2d)
- intermediary level (3d)

B] the union of any two points could happen with more than one ways.
e.g. I could say that I choose to go to work or to my relative from the alleys or from the main street..



επίπεδο 0 (θάλασσα)

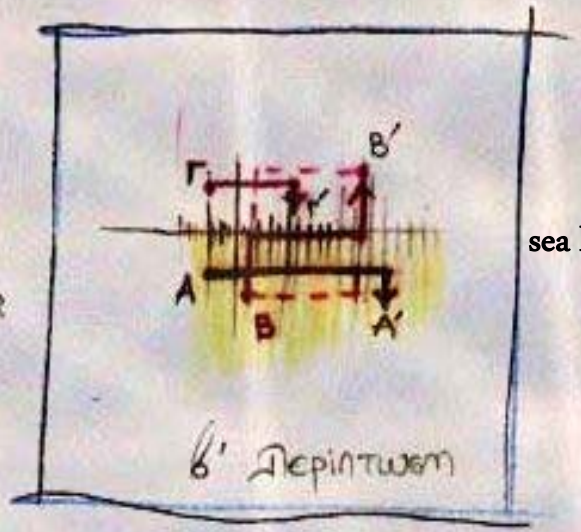
sea level

3 different moves
However, they all have as intermediary stage as the sea level

Τρεις διαφορετικές κινήσεις
Στάδιο όλες έχουν σαν ενδιάμεσο στάδιο το επίπεδο της θάλασσας

Vertical layer → many moves

άρα στο καταιόρυφα
"layer" → πολλαπλές
οι κινήσεις



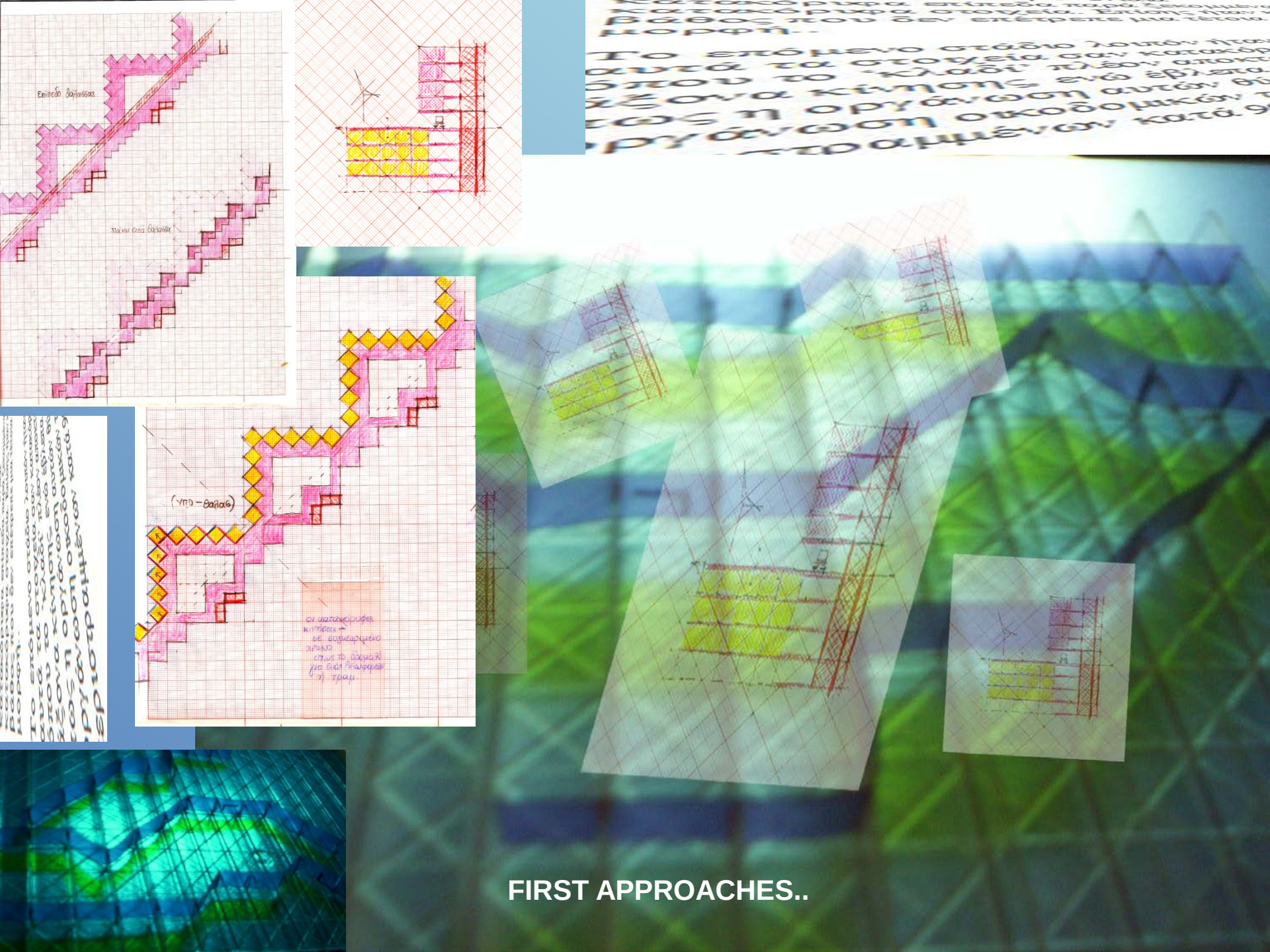
sea level

β' περίπτωση

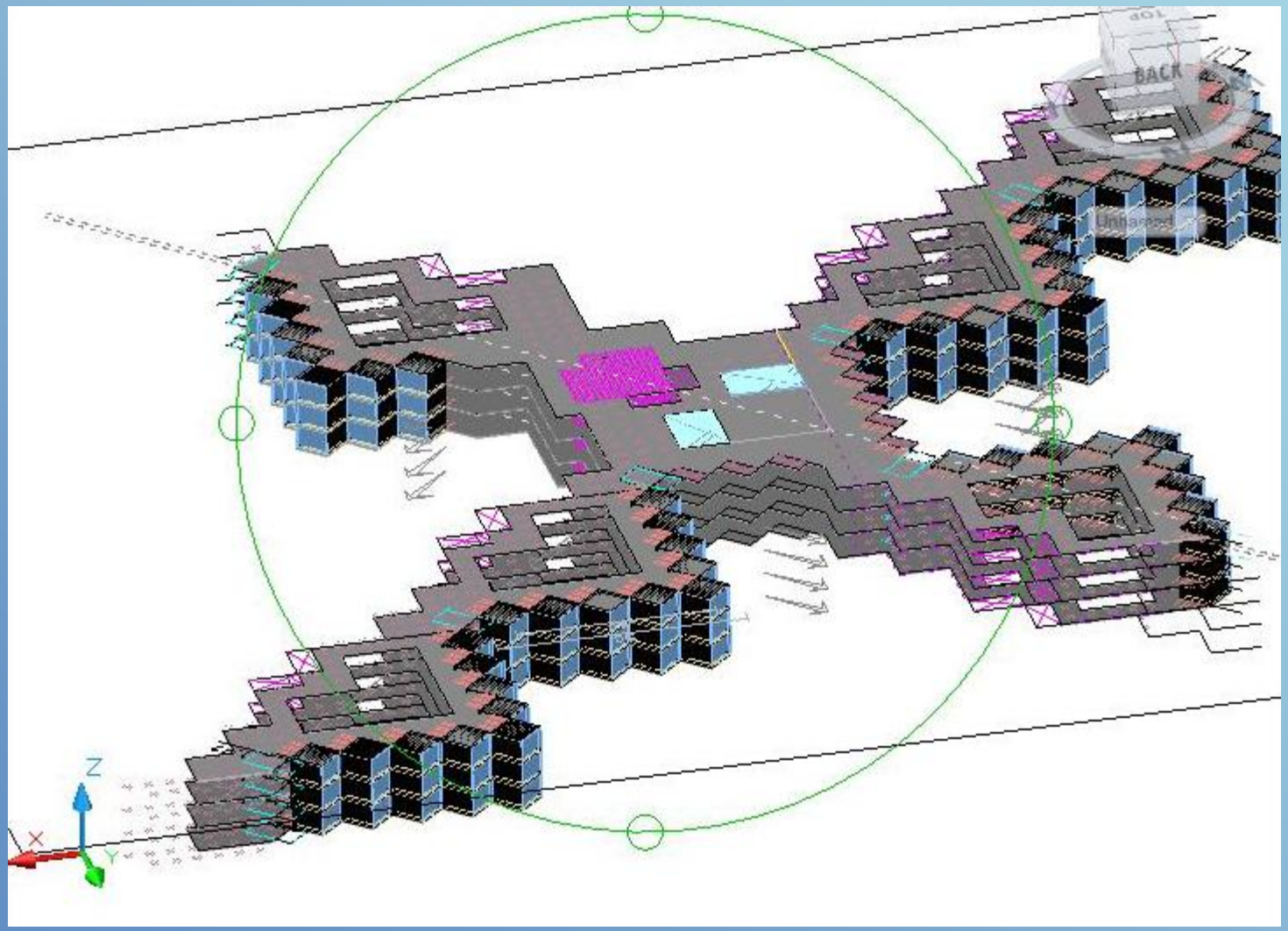
"κίνηση" → μέσα στο ίδιο κλαδί"

Movement

In the same branch

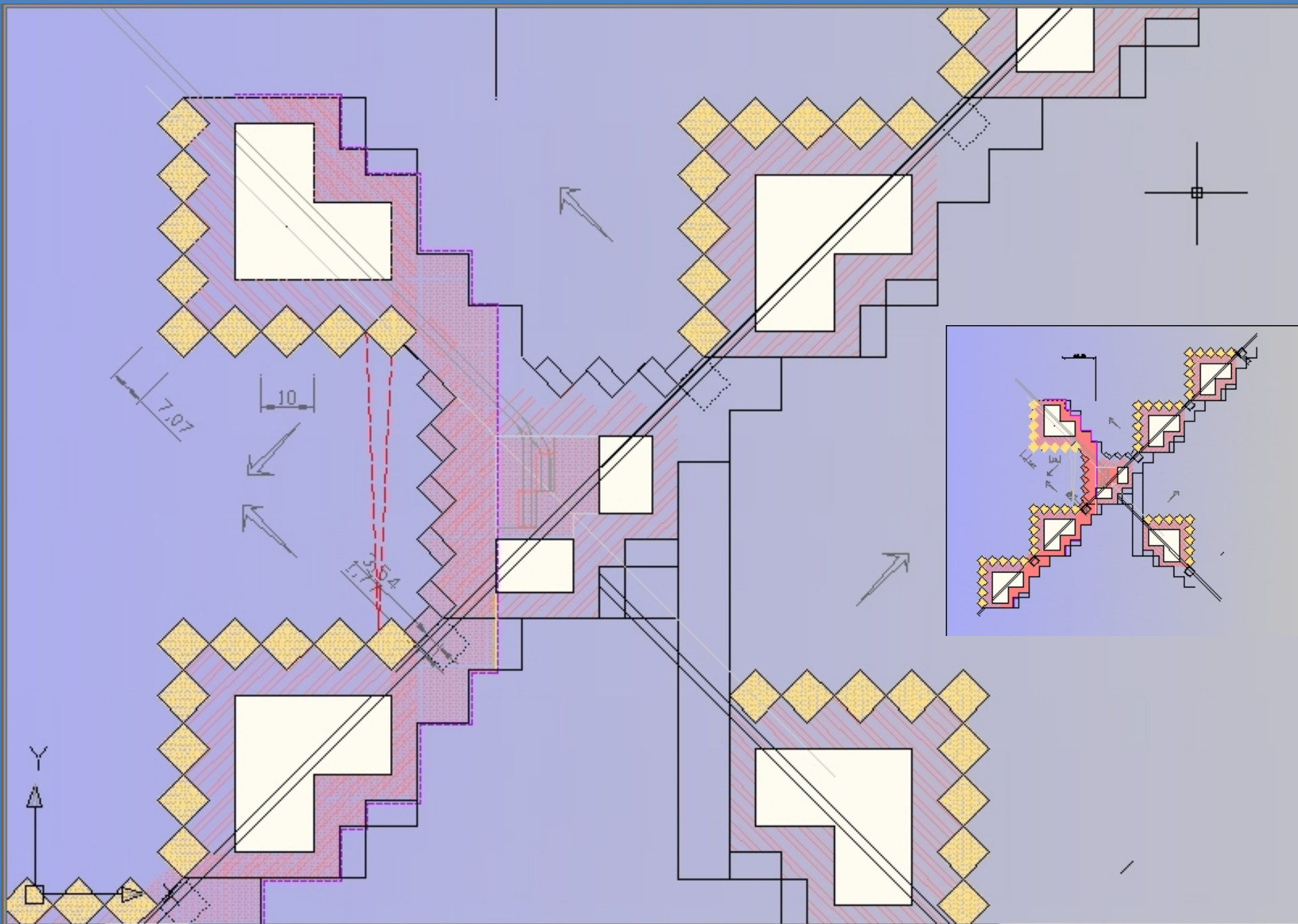

FIRST APPROACHES..

FIRST APPROACHES..

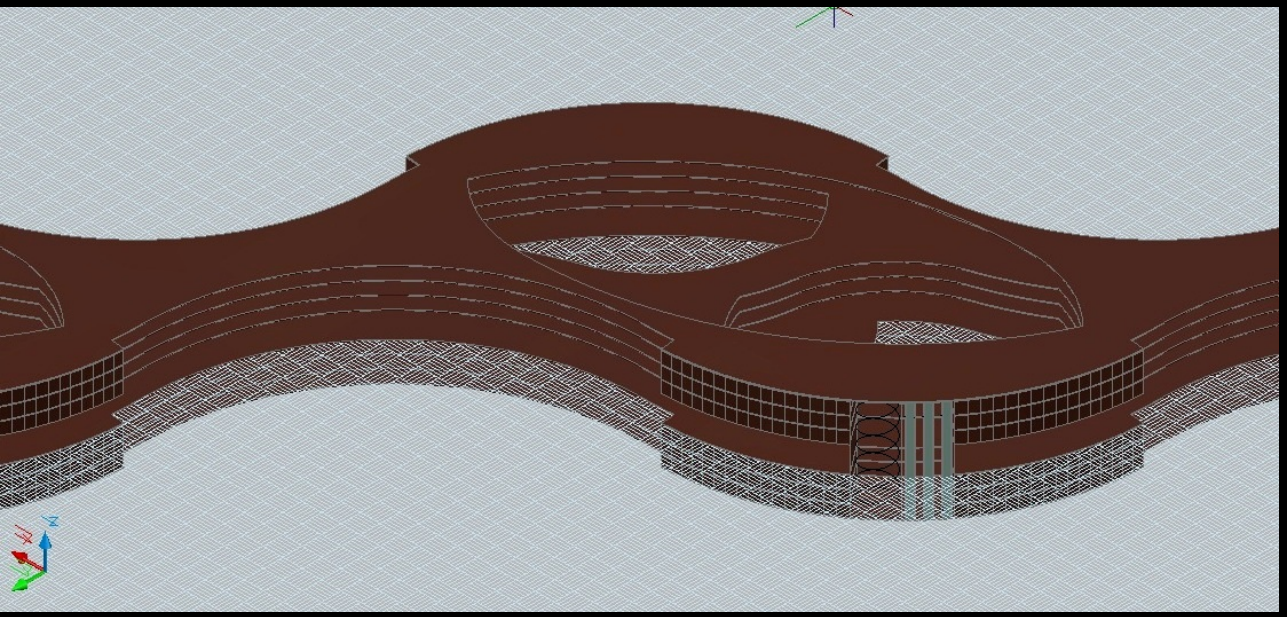


Section under water.. (carrier & dwellings)

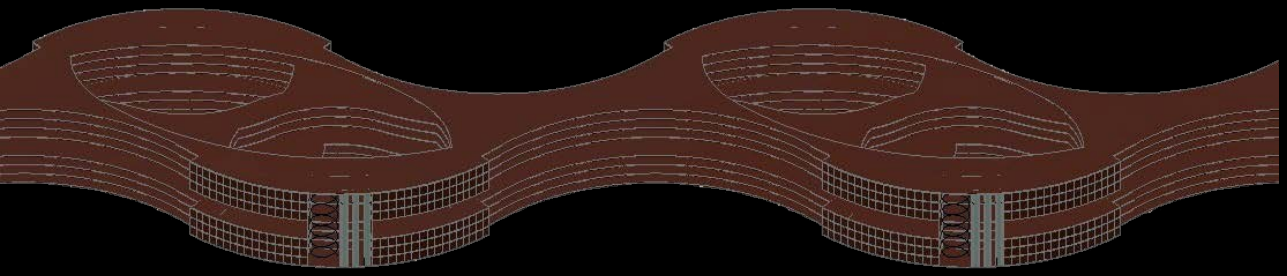
Floor plan at the sea level..



THE PROGRESS OF THE IDEA…



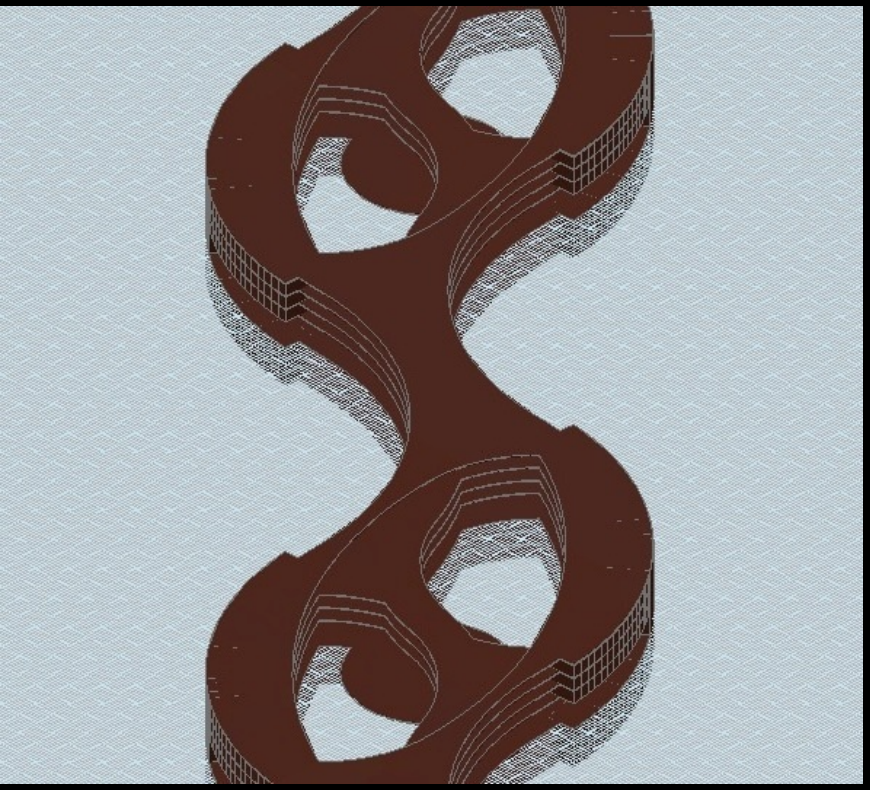
AXONOMETRIC (WITH WATER)



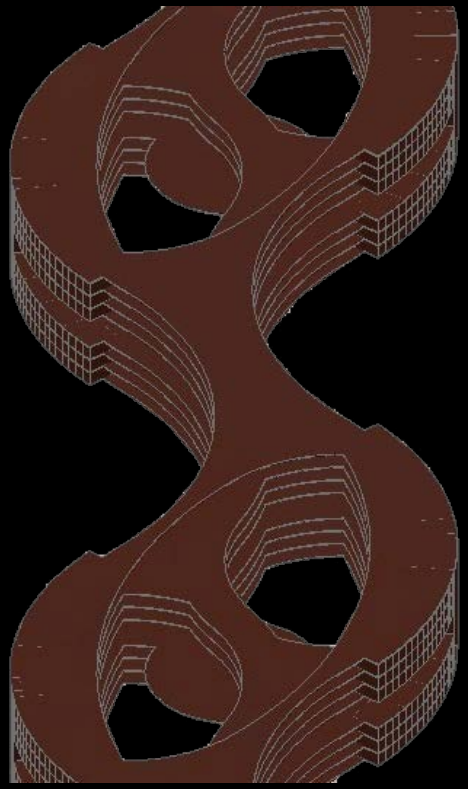
AXONOMETRIC (WITHOUT WATER)

THE PROGRESS OF THE IDEA…

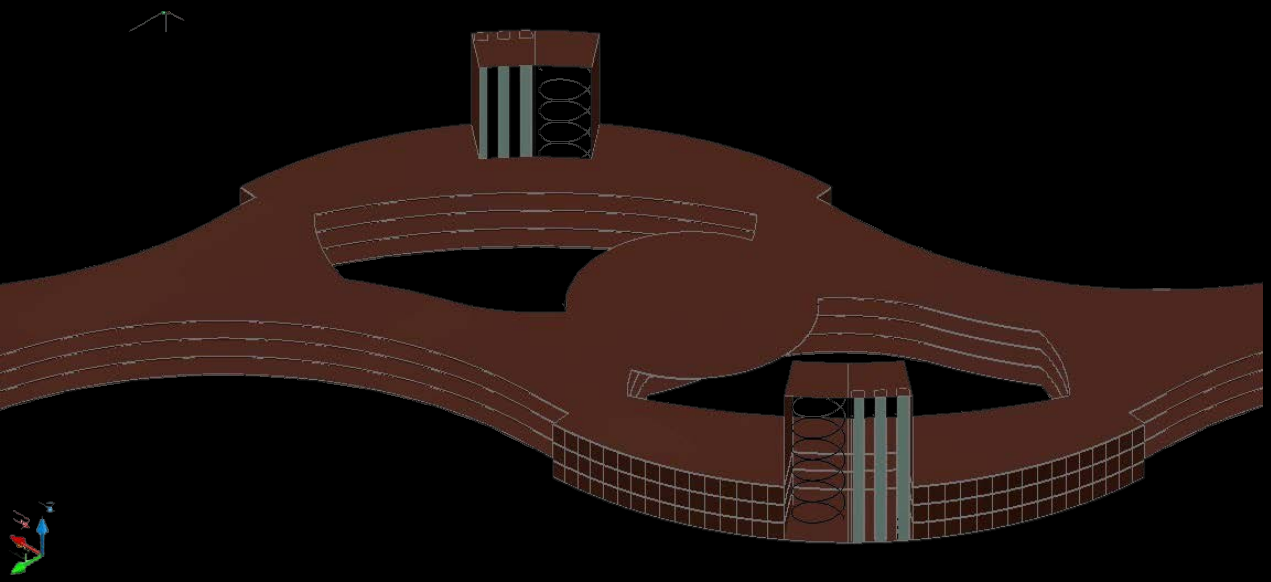
AXONOMETRIC – VIEW FROM ABOVE (WITH WATER)



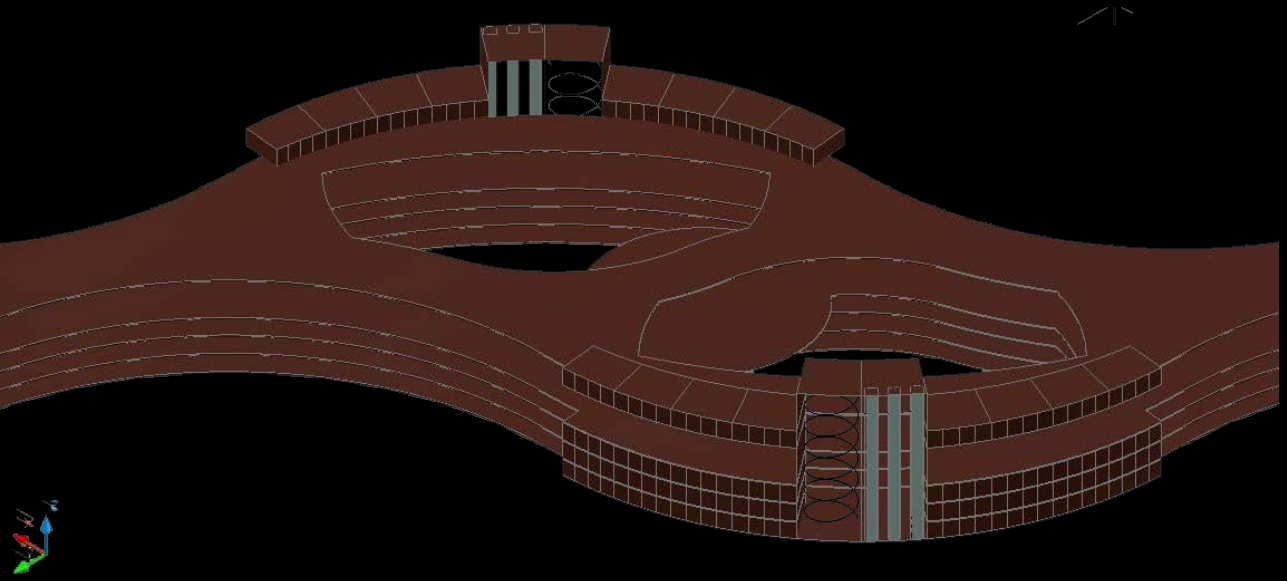
AXONOMETRIC – VIEW FROM ABOVE (WITHOUT WATER)



THE PROGRESS OF THE IDEA…

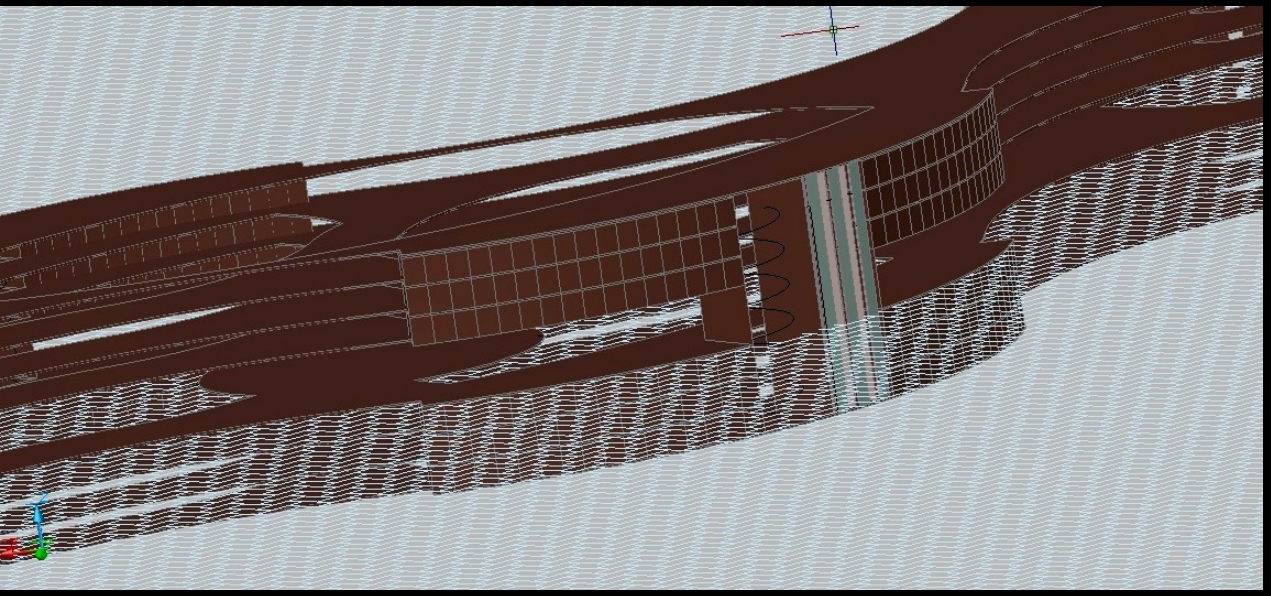


AXONOMETRIC – AS FAR AS THE ‘GROUND FLOOR’

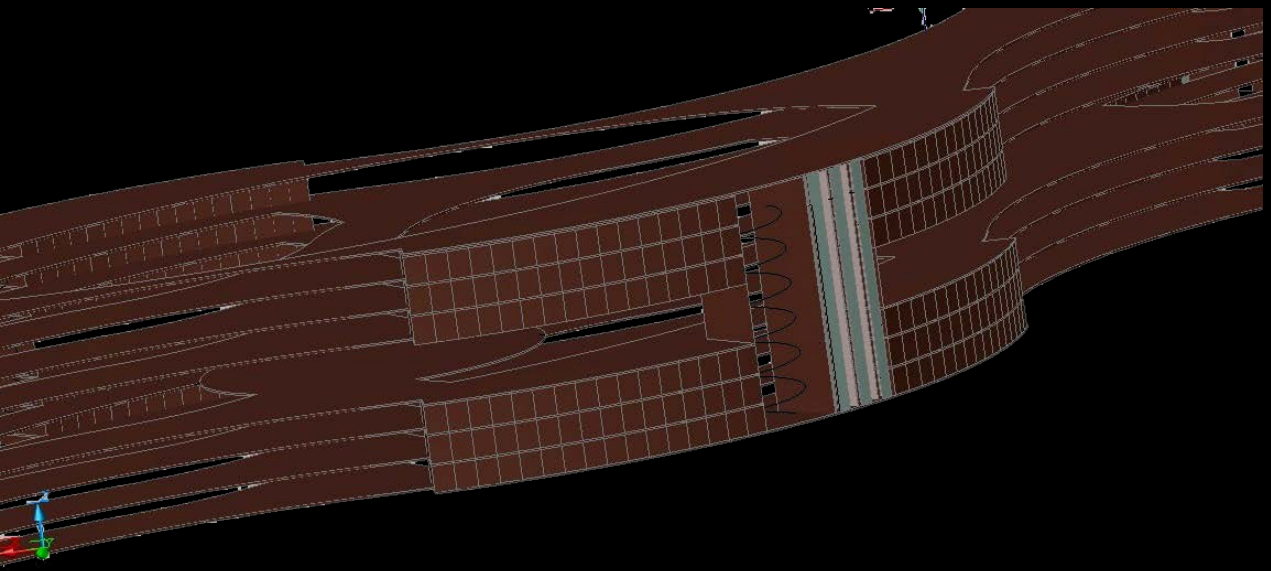


AXONOMETRIC – AS FAR AS THE 1ST FLOOR

THE PROGRESS OF THE IDEA…

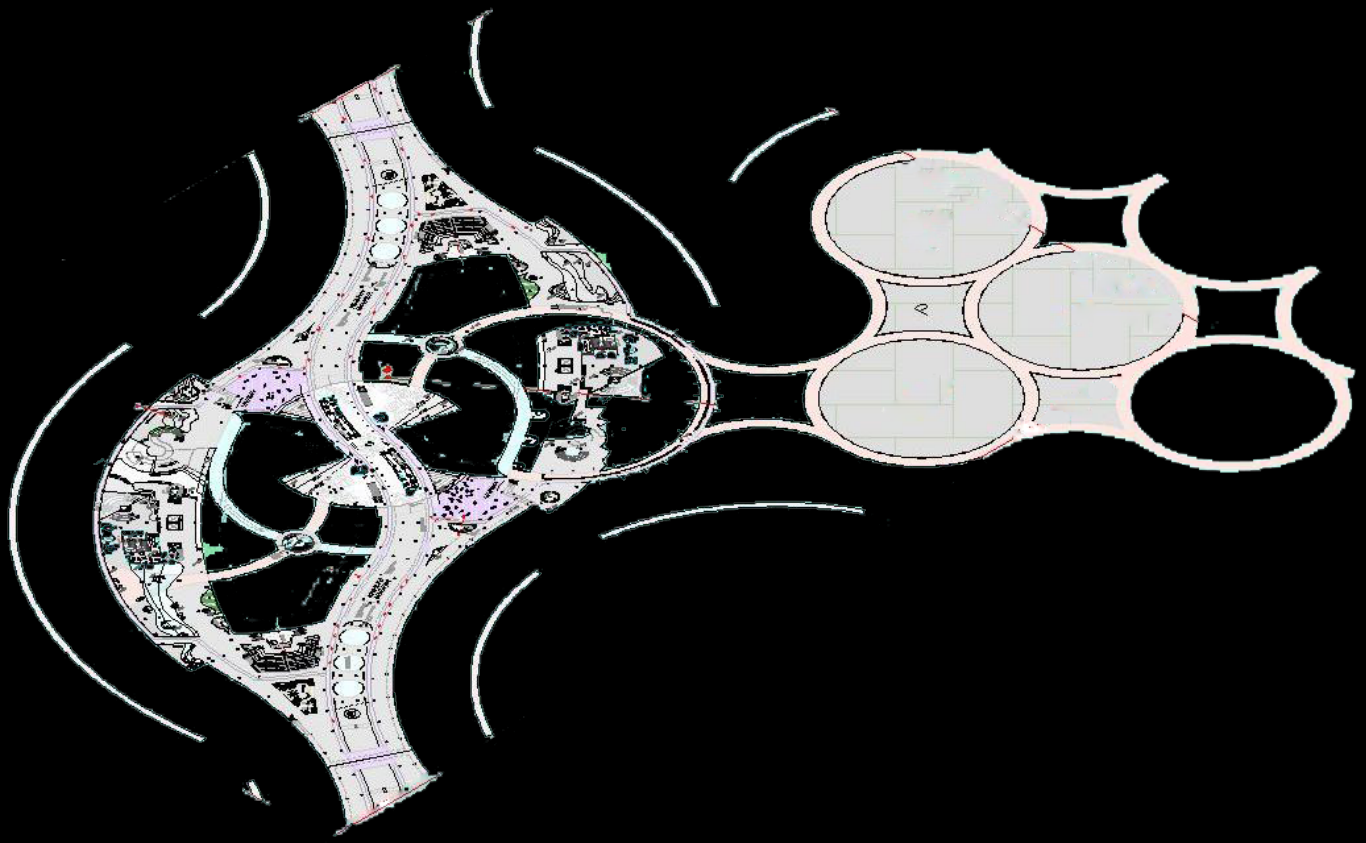


ZOOM – (WITH WATER)



ZOOM – (WITHOUT WATER)

FINAL VIEW OF 'GROUND' FLOOR



So suppose now, that someone begins to see a 'way of organization'.. The city though, beyond the rules that someone puts,
is joined with the mainland..

Is there a way the 'old' to be related with the 'new' *somehow.? If I consider the way of organization as an* ***tool*** *that sets the* ***form and the function****, surely I cannot ignore the old elements, whether they are* ***'memories',*** *or* ***needs****, or* ***general features*** *formatted over time and being the identity of each city.*

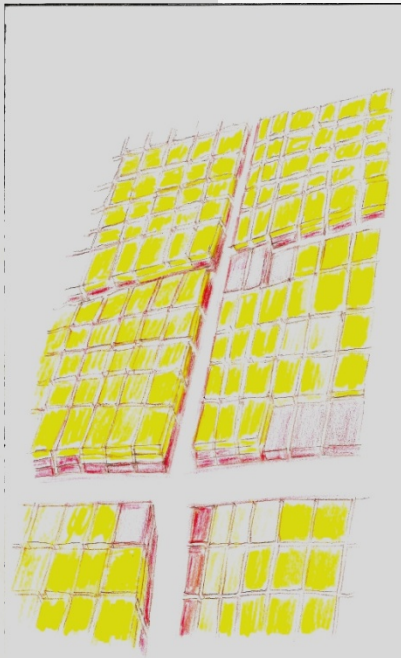
How could we keep this identity?

If someone would see the old city as a **'Lego - city'**

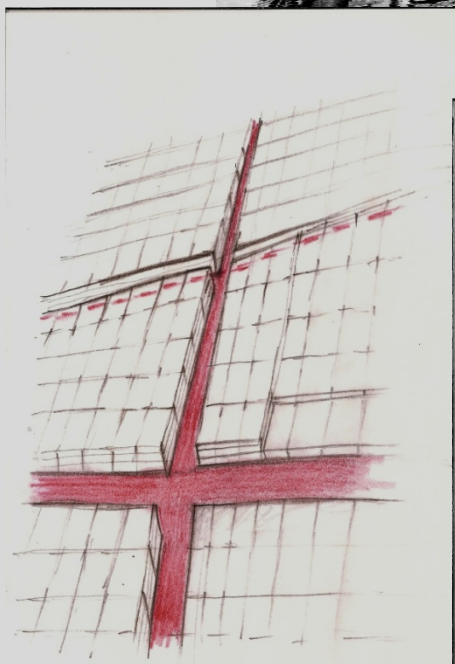
Then he could take **one by one** its pieces

And put it again in the new city

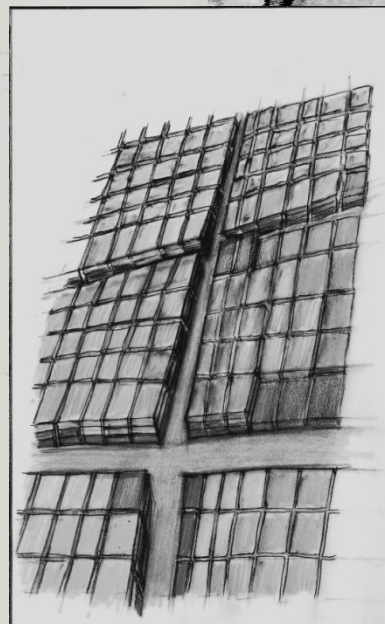
According with the rules that the tree city would dictate



What ratios
will be kept
in this way?



Is possible any
piece to find its

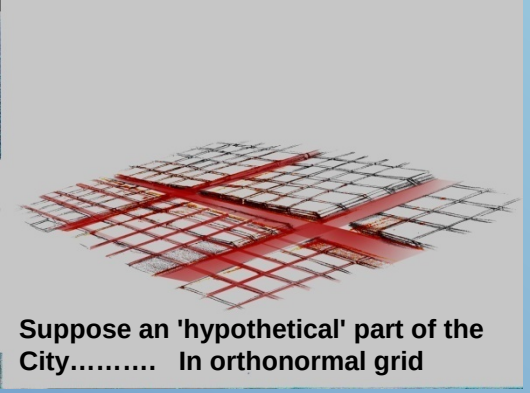


place without itself
to begin to negate
itself?

‘tree – city’ – an organization system..

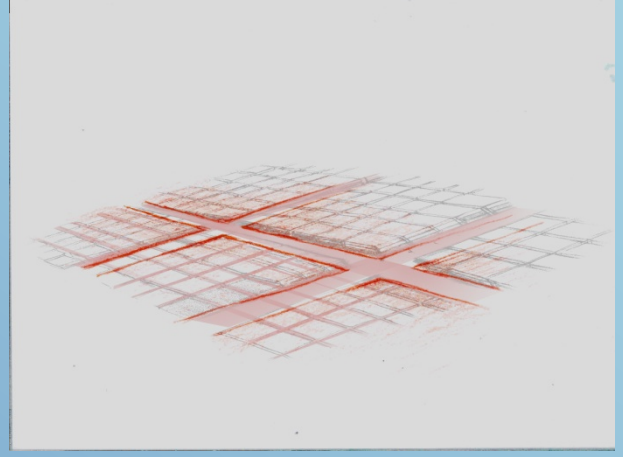
‘Lego’ city

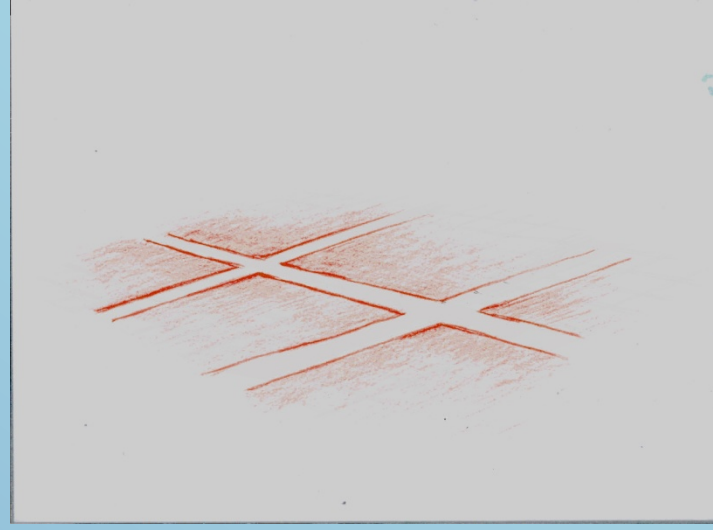
‘water city’



Suppose an 'hypothetical' part of the City……. In orthonormal grid

(where we have the central arteries and the smaller roads ..)

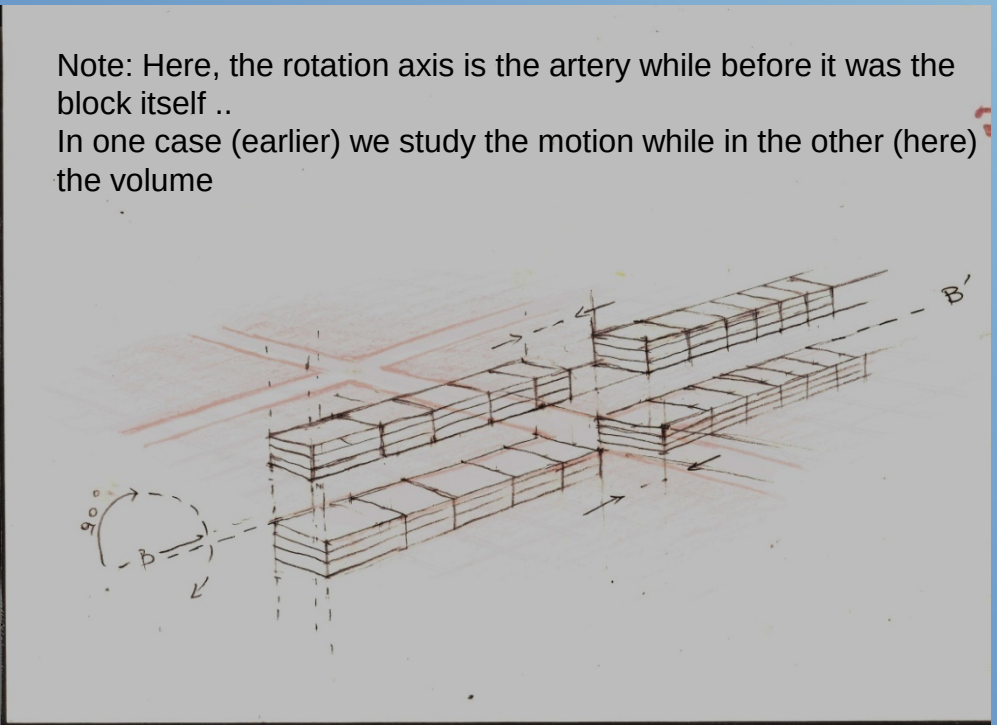


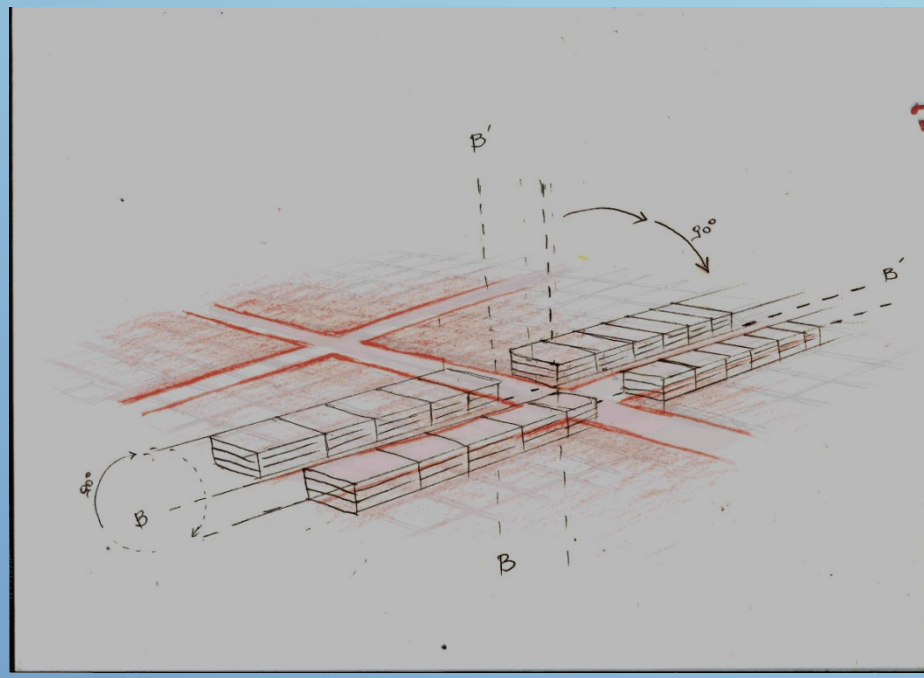


Consider the surrounding blocks in a central artery ..

And let's rotate by 90 degrees

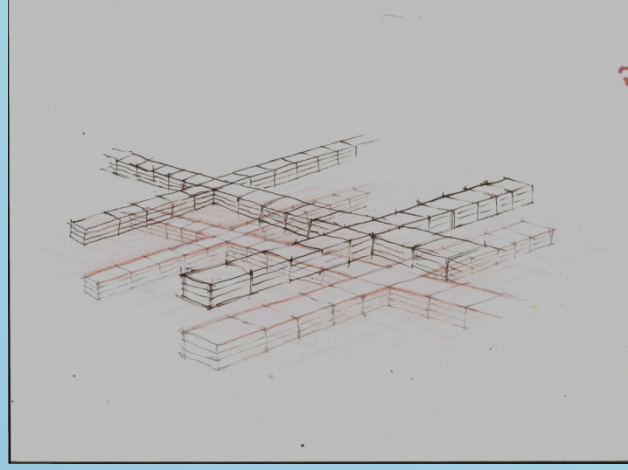
Note: Here, the rotation axis is the artery while before it was the block itself ..
In one case (earlier) we study the motion while in the other (here) the volume

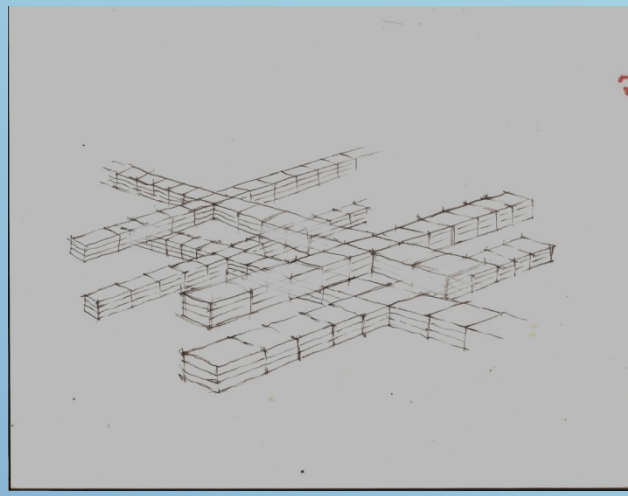


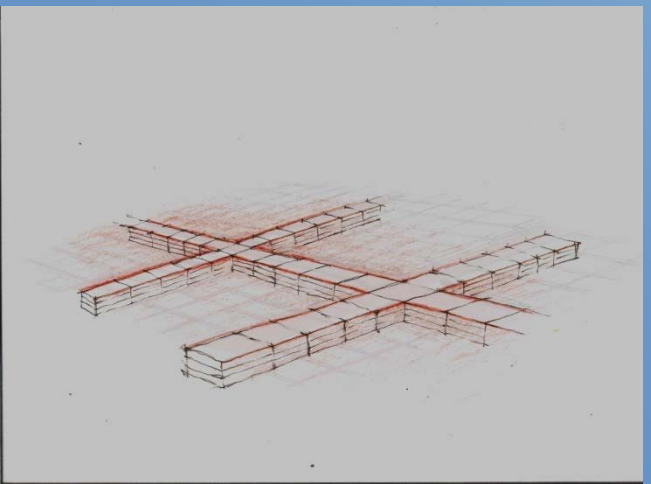


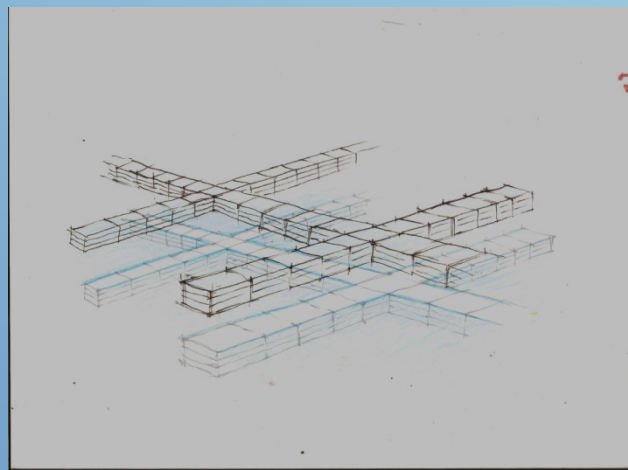
The result we get is the next, where one side intersects the other, in the vertical axis now and not in horizontal ..

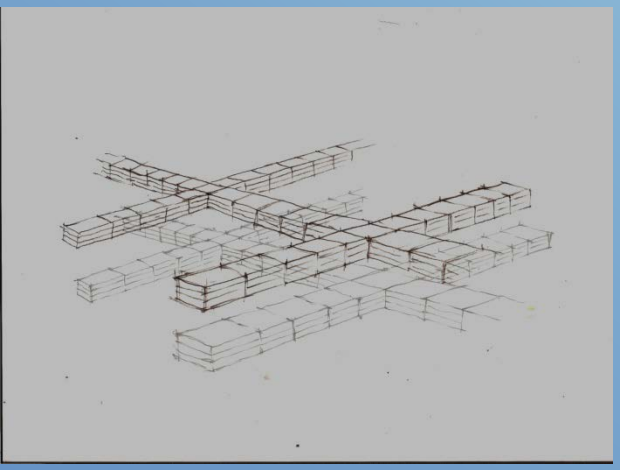
If we expand the thinking for ‘all’ central arteries suddenly we get over and under the artery the building blocks, materia lizing somehow the arteries and deconstru cting the ‘inter mediary’ of them ..

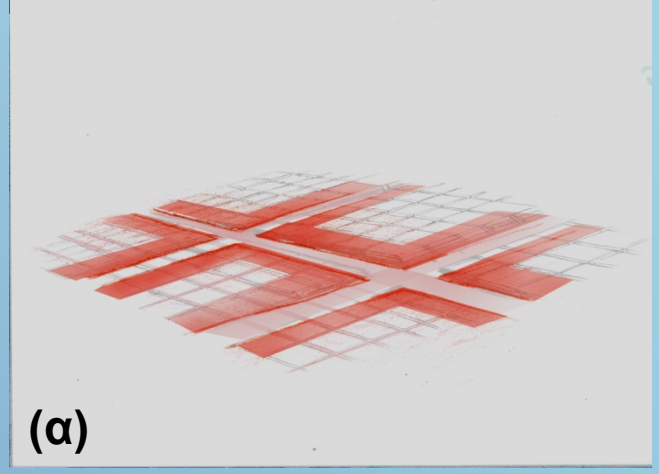


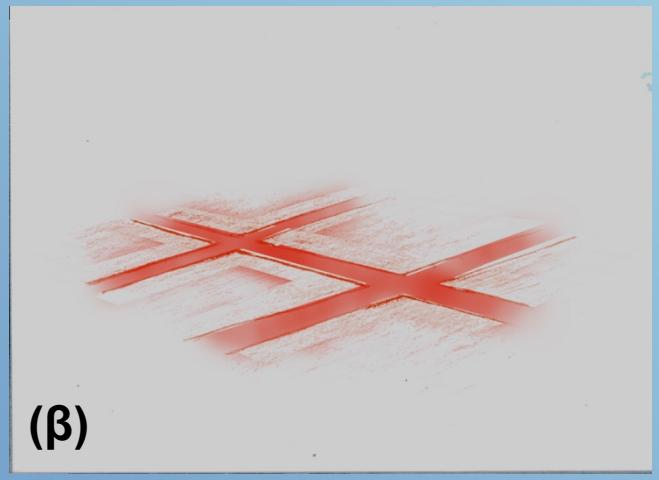


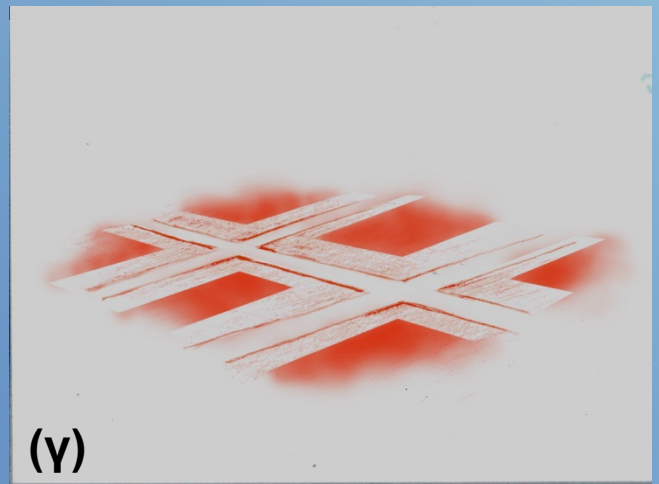






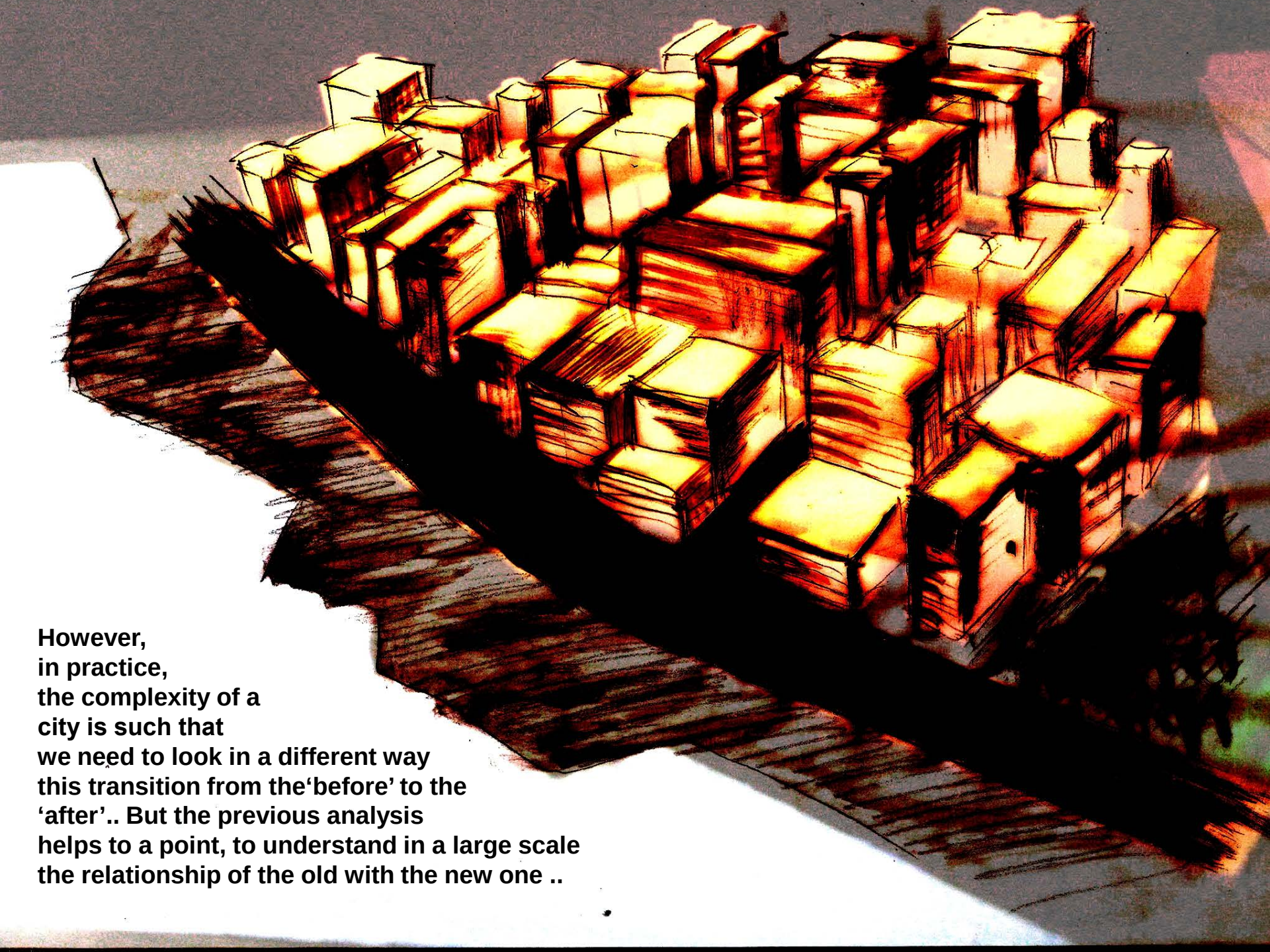






So, in theory (and schematically) somebody could say that from the initial part it's been removed an (a) and given about two (b) So, remaining a (c) .. Now, this will be organized in a similar way through 'extension'

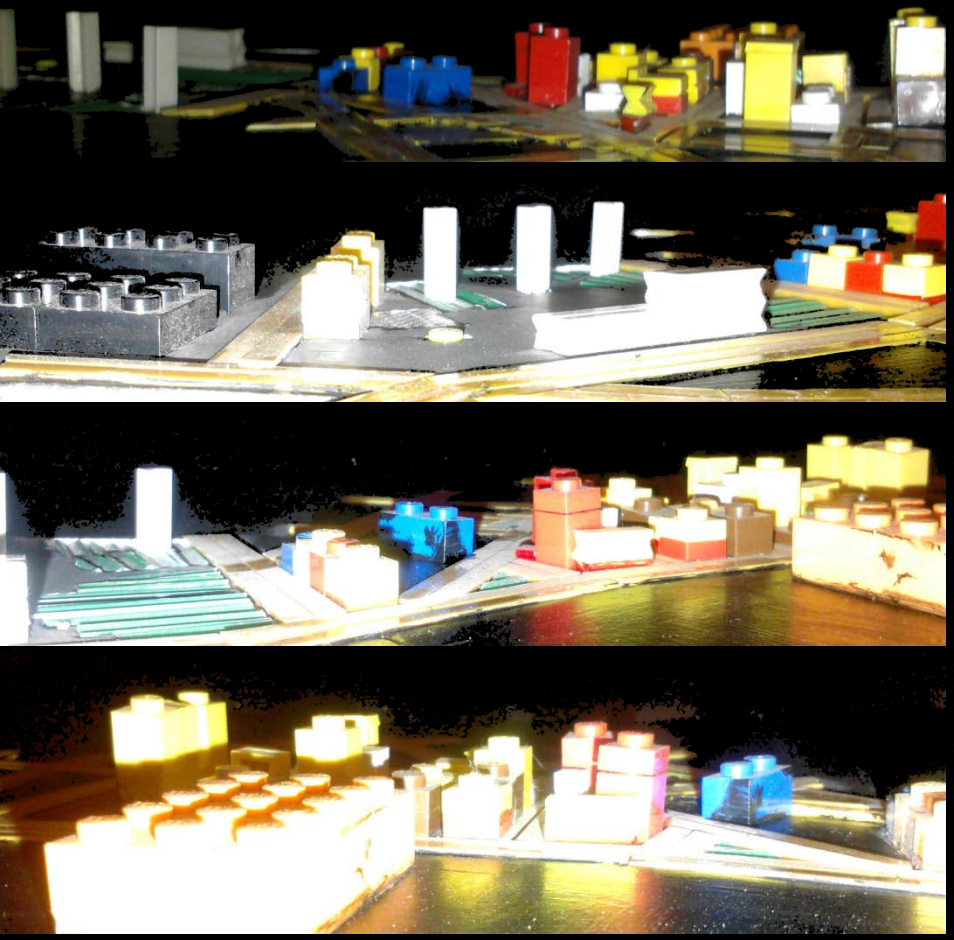
[of circulation axes]



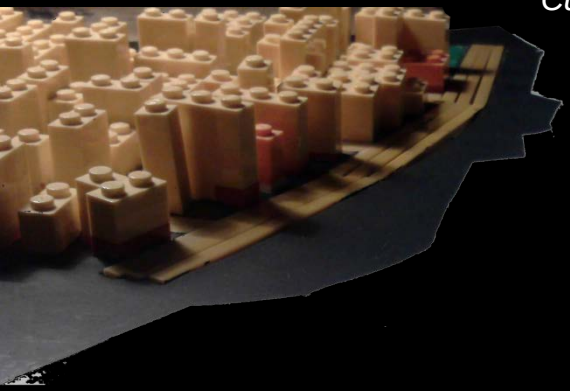
However,
in practice,
the complexity of a
city is such that
we need to look in a different way
this transition from the‘before’ to the
‘after’.. But the previous analysis
helps to a point, to understand in a large scale
the relationship of the old with the new one ..

For this transition, to be understood,
it was studied an example ..
There were selected some pieces from
the city of Piraeus and translated
into a model consisting of pieces of Lego.. The choice criterion was
the diversity as far as the functions are concerned ..

The aim was to reconstruct these pieces with the new rules
that tree – city would put.. The pieces to be the 'same' .. The same features to find their place elsewhere, to see if development is
feasible and sustainable ..
So, at the same time we could compare the 'old' with 'new' model ..

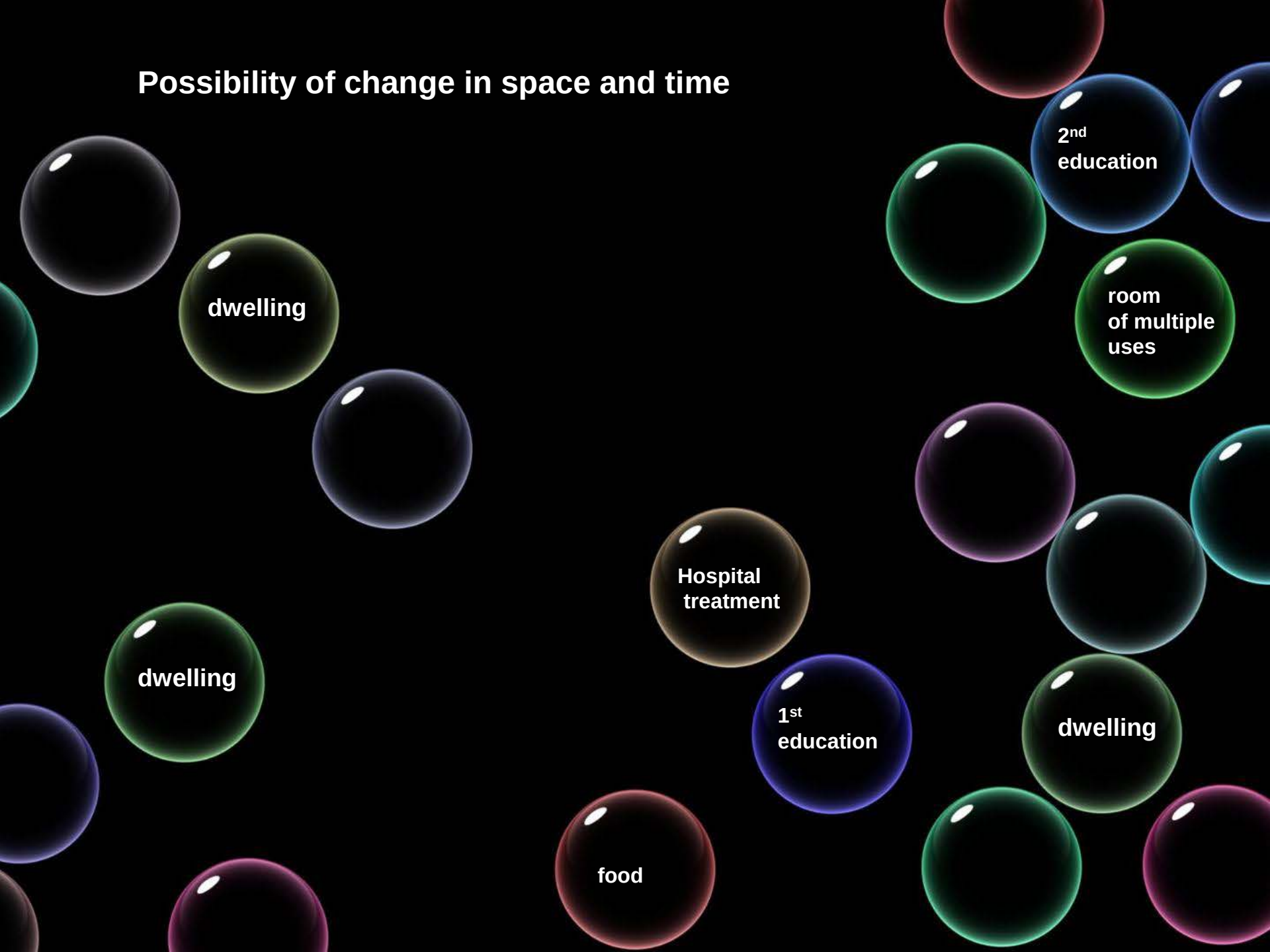


Current situation



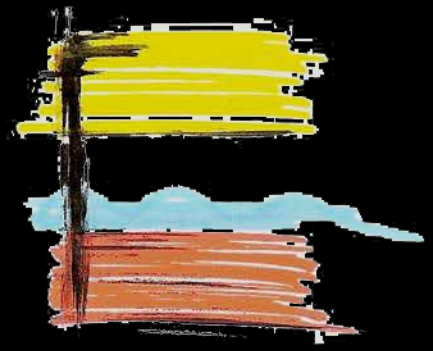
Eventually the route of this argument did not succeed .. On the one hand the completely different scale of the tree - city, on the other the fact that the current situation is governed by entirely different rules of development in space and time from it (*tree – city*) did not allow the translation of the selected area ..

Possibility of change in space and time



Why

..and not..



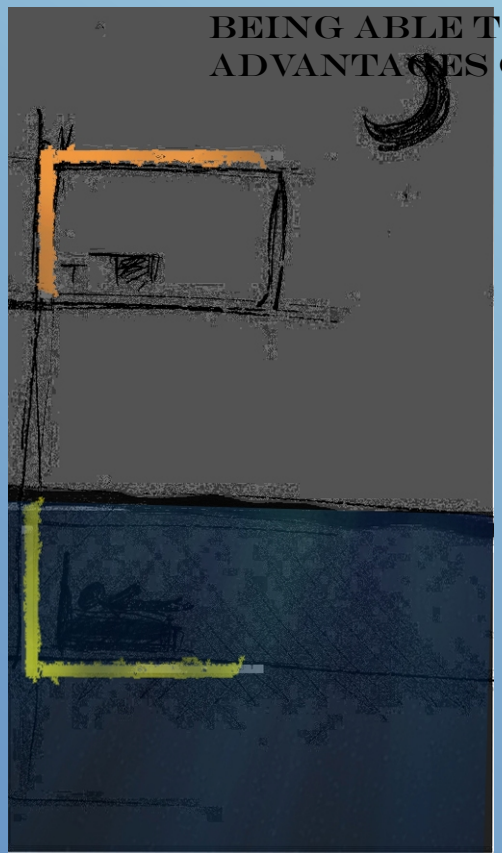
?

As far as the unit is concerned, someone can think, how could we reject so easy the ‘normal’…? e.g.. The seasons and the way that we perceive (because of course it is not something usual to live under water) ..
And why not vice versa for example?
Why not the dwellings over water and the services below?

A first answer
that may be given is related with factor

'light' ..

Services, trade and education functions are performed during the day (mostly). Certainly not directed in 100% of the population but let's take an example: one case is that, which the employee works at day and spends more time 'over water' ..



IN THE EVENING, ANYWAY, THE TIME OF SLEEPING AND RELAXATION WILL FIND MAN IN HOME, SO THE LACK OF LIGHT DUE TO 'UNDER WATER' WILL NOT COUNT AS A DISADVANTAGE .. CONVERSELY, IF THE FUNCTIONS WERE INVERSELY, THEN HE SHOULD SPENT THE MOST PART IN A SITUATION BY LESS LIGHTING AND AT NIGHT WHICH IN ANY CASE NIGHT FALLS HE SHOULD GO IN A HOUSE OVER WATER WITHOUT BEING ABLE TO EXPLOIT THE ADVANTAGES OF THE SUN ..

OF COURSE THE EXAMPLE IS INDICATIVE .. BUT IT IS GIVEN AS A RESPONSE TO WHICH IS THE CONDITION WITH MOST BENEFITS .. IN THE SAME LOGIC HAS BEEN ESTABLISHED WORLDWIDE AS A

IN THE ABOVE WILL COME TO BE ADDED ANOTHER FACTOR THAT SUPPORTS WATER AS AN OPTION FOR DWELLING AND IS RELATED TO THE OPERATING PRINCIPLES OF GEOTHERMY..

But what are these principles and how they related to the 'tree city' ..?

Function principle

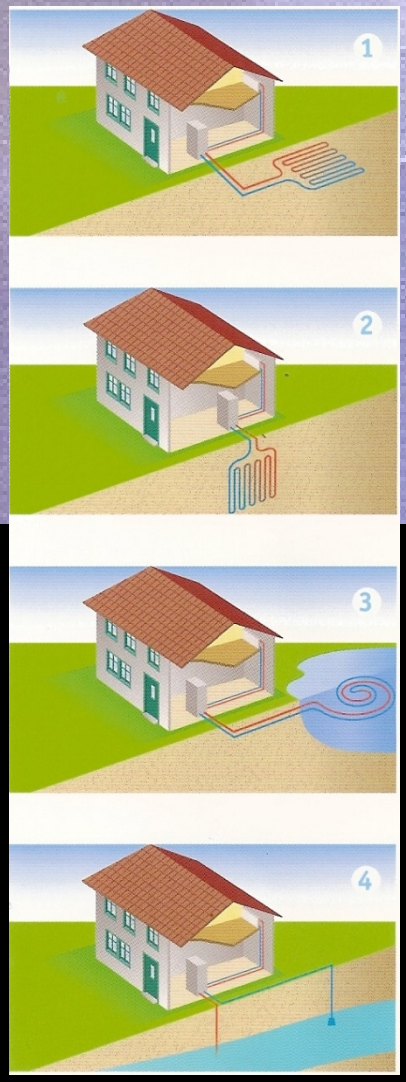
At the ground of the earth, some meters below our feet, is a huge store of anergy. It absorbs the 50% of solar energy and remains in almost constant temperature all year round.Therefore, 'burying' a pipe in the ground and circulating water through it, we can create a very useful heat inverter. In winter, the water in this geothermal heat inverter, absorbs heat from the earth and transfers it through an appropriate layout, the geothermal pump, at us to let us warm. In summertime, the same system very simply is reversed, absorbing heat from the conditioned space (ie by cooling) and tranferring back to the ‘store' of the earth.

In this way, by tranferring heat instead producing, manages to consume only 1/4 of the energy, that even the most modern system of boiler / radiator would waste.

Geothermy can be applied to any new building with the same benefits, in single-family homes, residential tourist blocks, hotels, office buildings, wherever they may located. The geothermal heat inverter is positioned vertically or horizontally on the ground and in some cases water can be used from a well or a neighboring sea / lake.

inverter

Types of geothermal



IN THE NEARBY EXAMPLES, SOMEONE CAN SEE THAT THE WATER IS USED IN SOME CASES, IF ANY AQUATIC HORIZON IS CLOSE TO HOME ..
FROM THE PHYSICS, WE KNOW THE INTERPRETATION OF THIS PHENOMENON, WHICH IS BASED

APACITY OF WATER

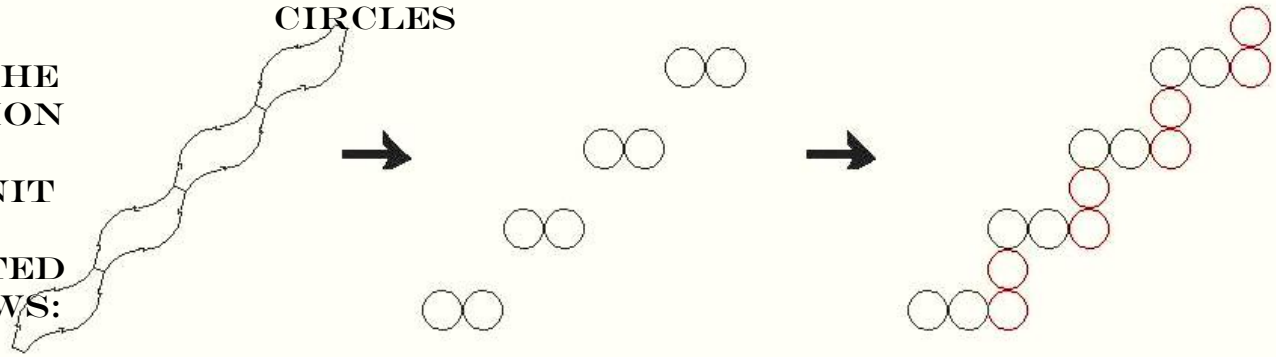
SO IN THE CASE OF THE CITY - TREE, THE HOUSE ITSELF IS IN THE WATER .. RELYING ON THE SAME PRINCIPLES , THE HOUSE MAY HAVE PERMANENT HEATING (OR HOT

Study of the node – producing the city..

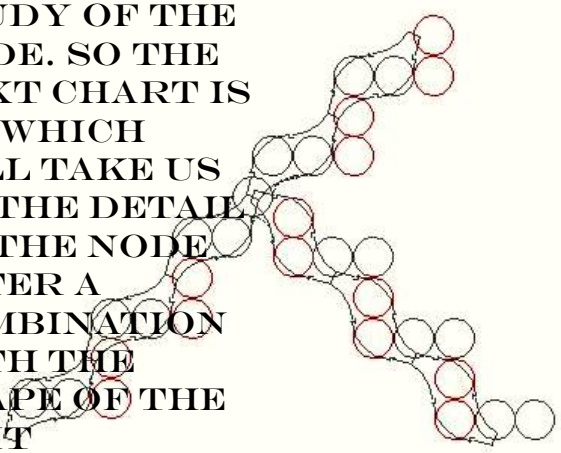
CONSIDER THE SIMPLIFIED UNIT OF THE CITY …

DUE TO THE GEOMETRY OF IT, WE IDENTIFY IT WITH TWO IDENTICAL CIRCLES

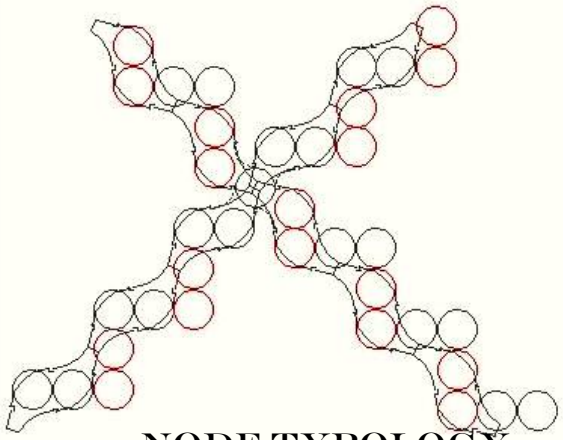
AND AS A RESULT, THE CONNECTION OF A UNIT WITH A UNIT COULD BE TRANSLATED AS FOLLOWS:



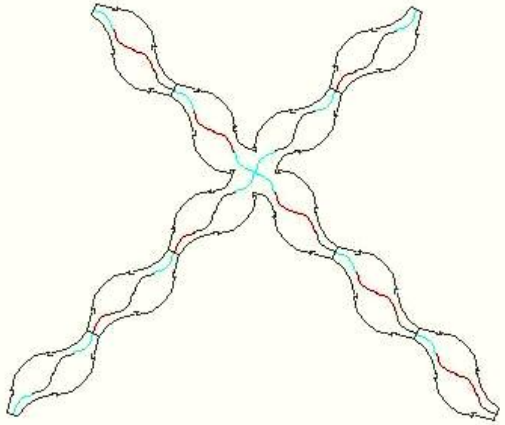
THE CYCLES HELP AT THE STUDY OF THE NODE. SO THE NEXT CHART IS UP, WHICH WILL TAKE US TO THE DETAIL OF THE NODE AFTER A COMBINATION WITH THE SHAPE OF THE UNIT



NODE TYPOLOGY WITH ONE JUNCTION

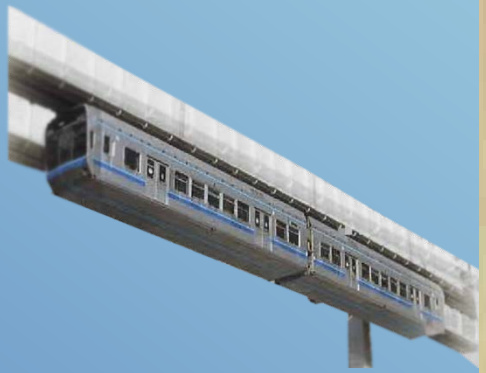


NODE TYPOLOGY WITH A DOUBLE JUNCTION



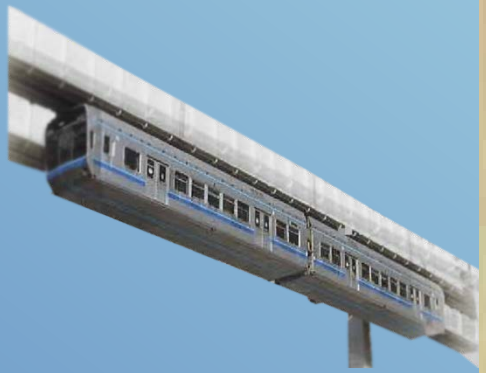
DEVELOPED NODE WITH A DOUBLE JUNCTION

Node detail –



Circulation axes–
Suspended metro

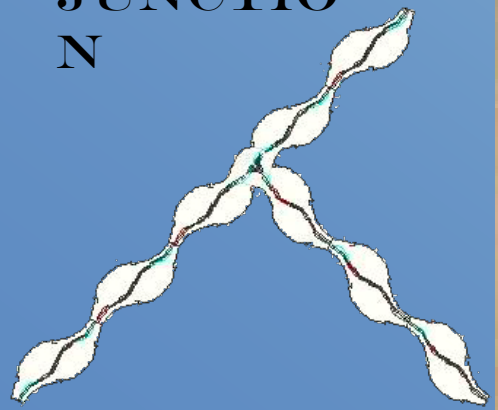
NODE BY A DOUBLE JUNCTION AND THE CIRCULATION AXES OF SUSPENDED METRO THAT IS BEEN PLACED ALL ALONG THE *'AXES–BRANCHES'* THAT ARE CREATED BY THE REPEAT OF THE UNIT. A

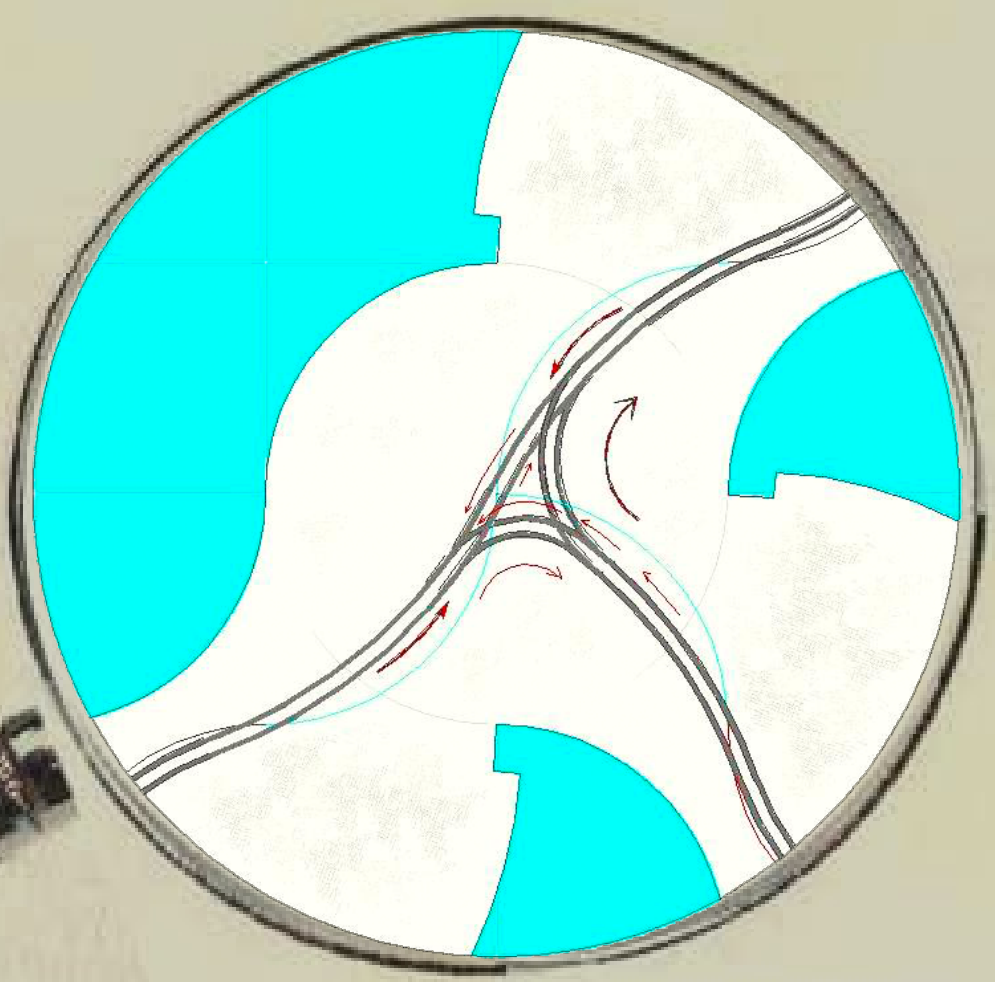


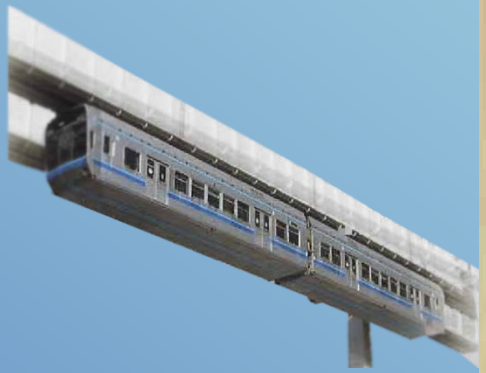
Node detail–

Circulation axes–
Suspended metro

NODE BY A SIMPLE JUNCTION



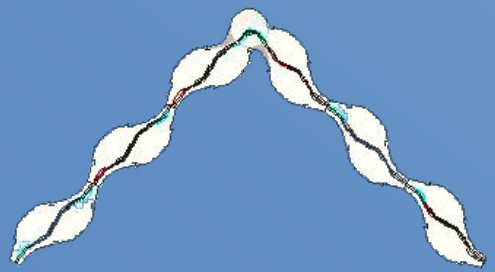


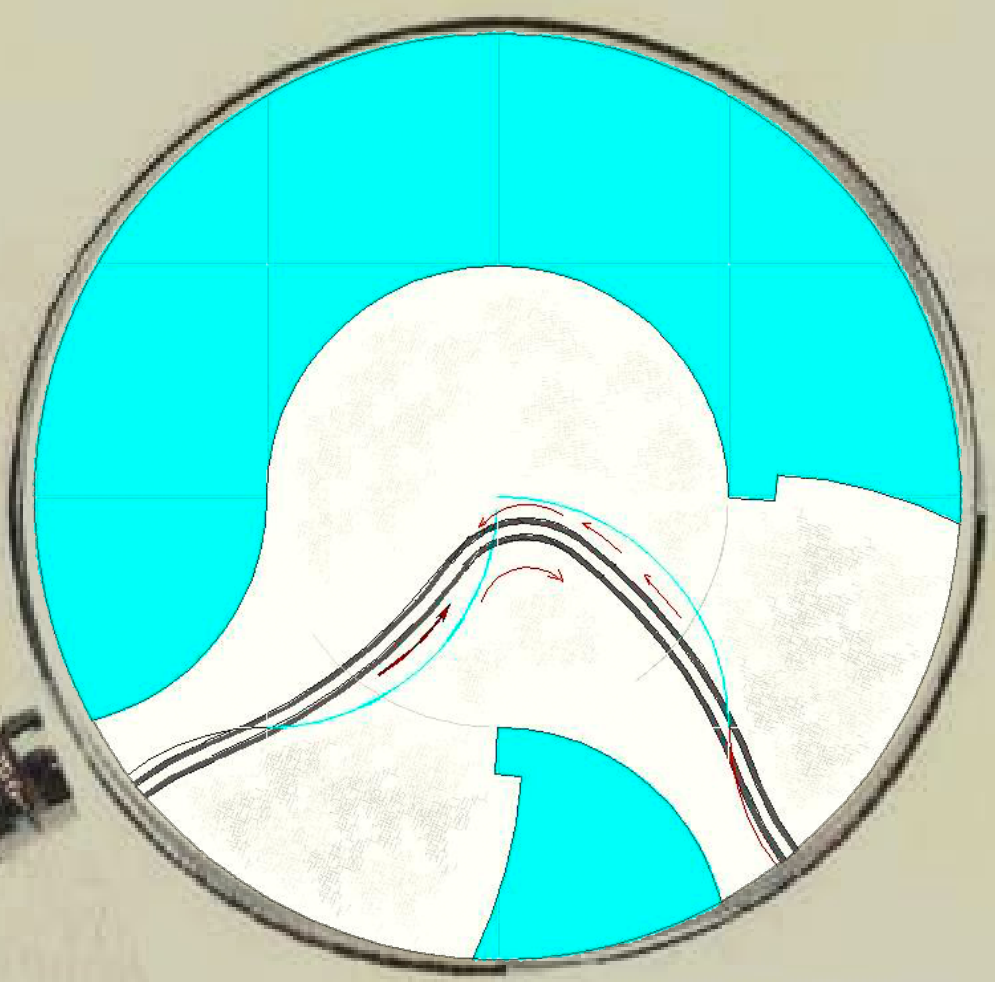


Node detail–

Circulation axes–
Suspended metro

NODE JUNCTION – 'TURN'






Shonan

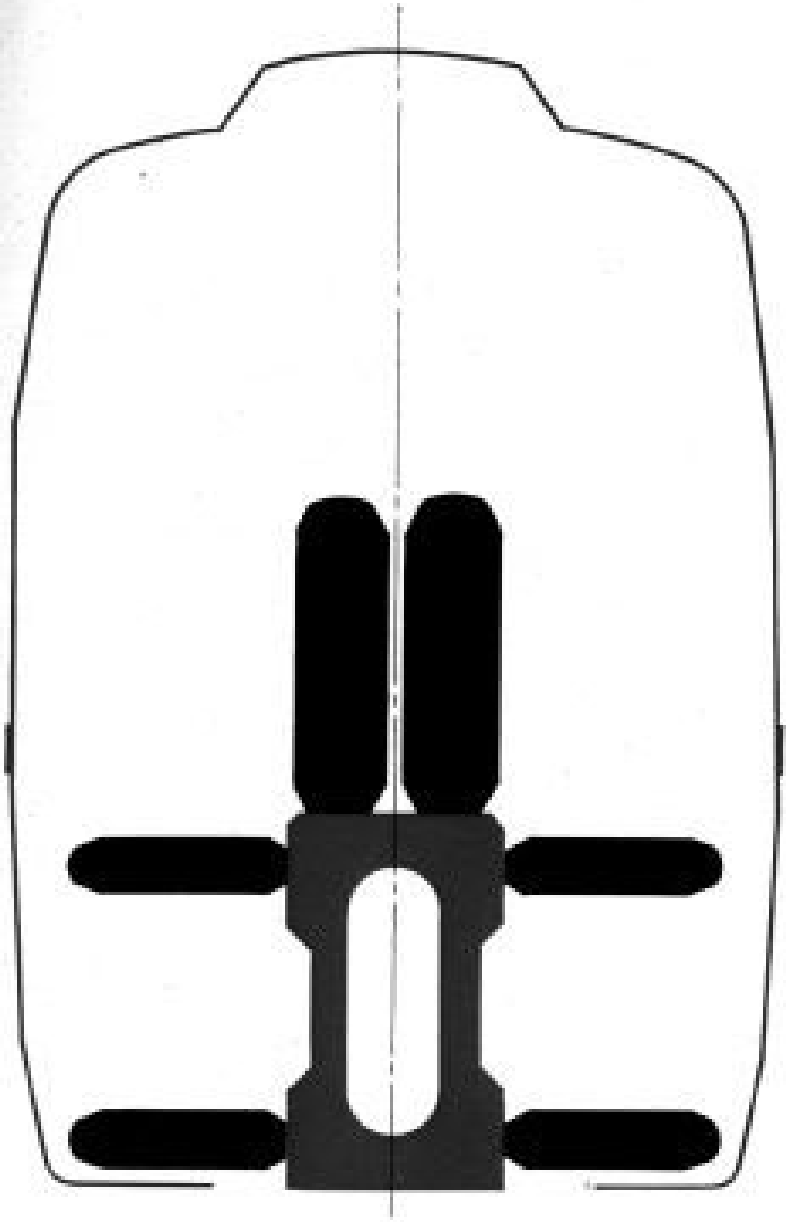
Shonan -- Monorail

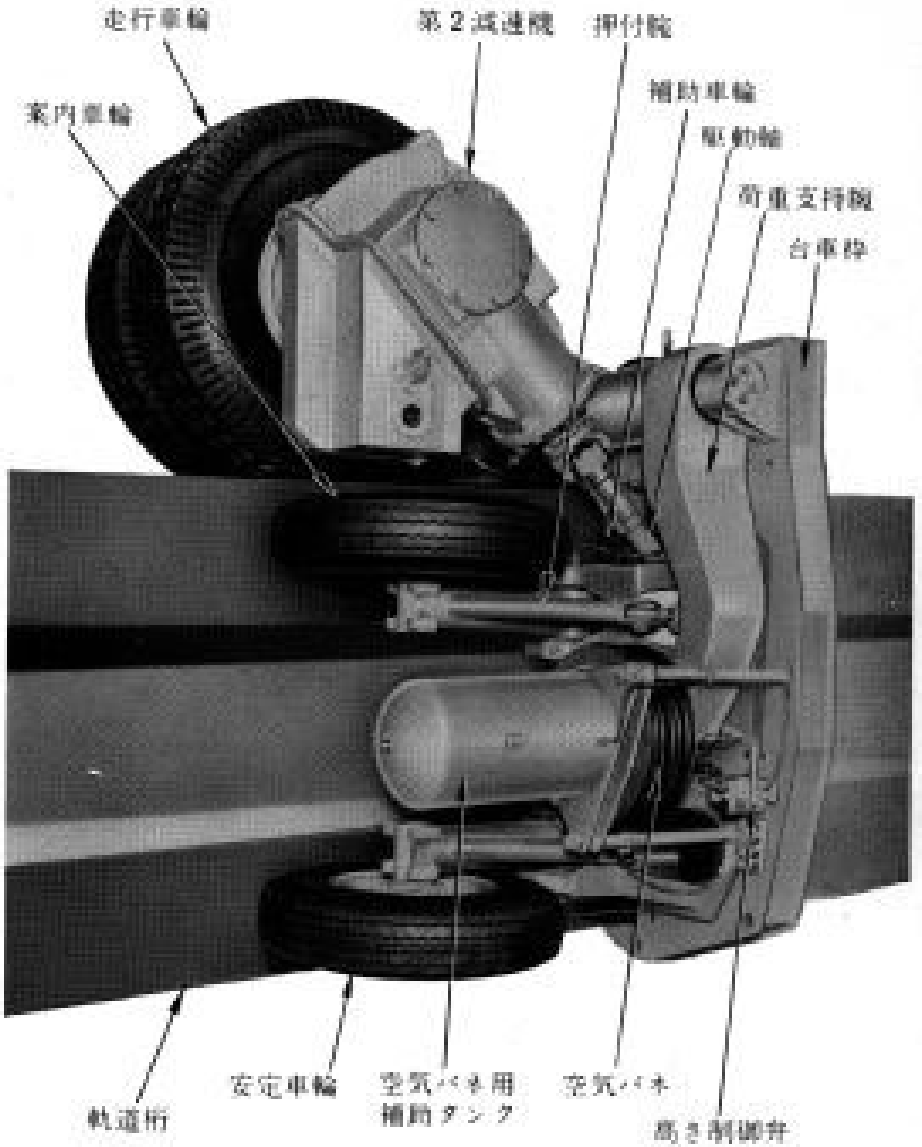

かたせやま


専用2


PALAZZO
大宮
1
2
APIX
GAMECITY


3.2m





SECTION ..... **Rolling detail**

路線

毎年多くの人が訪れる犬山ラインパークは急峻な山上にあり，普通の鉄道で結ぶ事はできませんでしたが，モノレールはこれを解決しました。

犬山モノレールは名鉄犬山線電車と直結してラインパーク内の動物園まで人々を快適，迅速に運んでくれます。

途中 97‰ と云う急勾配を登り，さらに地上 15m の景観はすばらしく，壮観です。

路線名	犬山ラインパークモノレール線
延長	単線 1399 m
最急勾配	97‰
最小曲線半径	150 m
軌道高さ(最高)	地上約 15 m

● 線路縦断面図

● ラインパークモノレール線

(線路平面図)

運転計画

最大6両編成，通常時は3両編成で約 12 分間隔で運転し，6両編成1列車当り定員乗車で 390 人，最大 600 人を運ぶ事ができます。

これはモノレールの輸送規模として，現在世界最大のものであります。

● モノレールカー
外形寸法図

Monorails of Japan

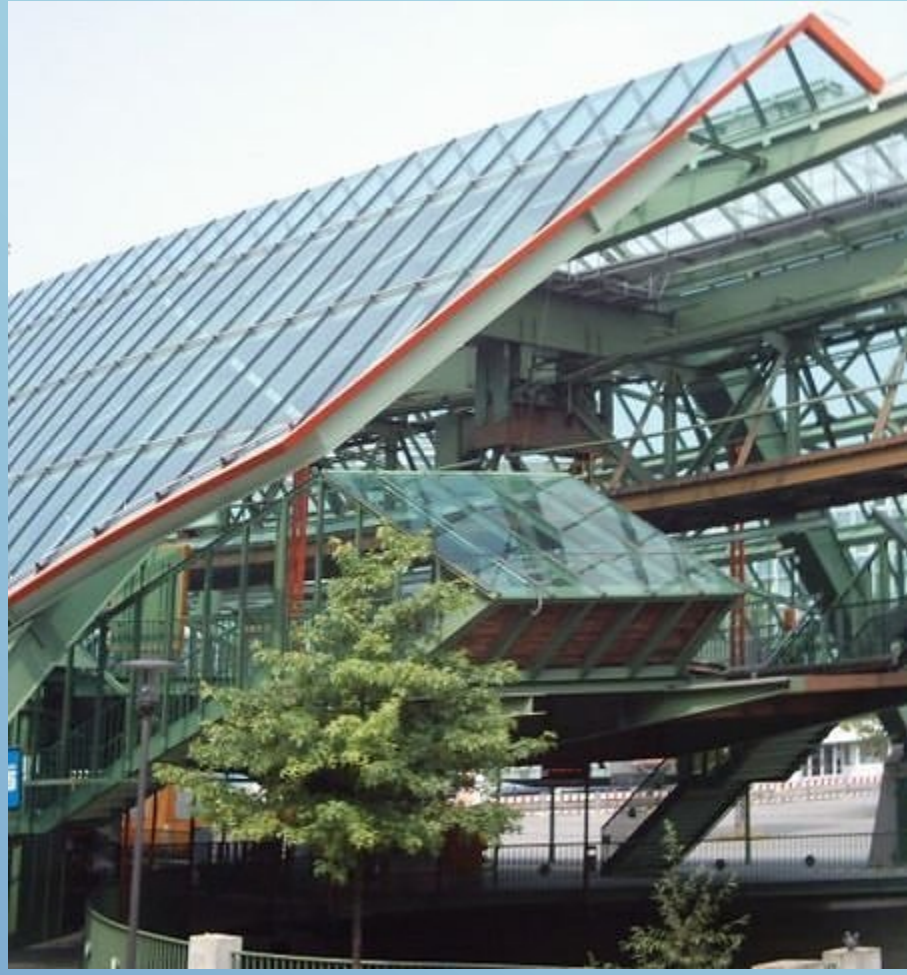

1
5301

… OTHER EXAMPLES OF SUSPENDED METPO..

First prototype tested in 1897

…in Wuppertal

(Germany)




5


11

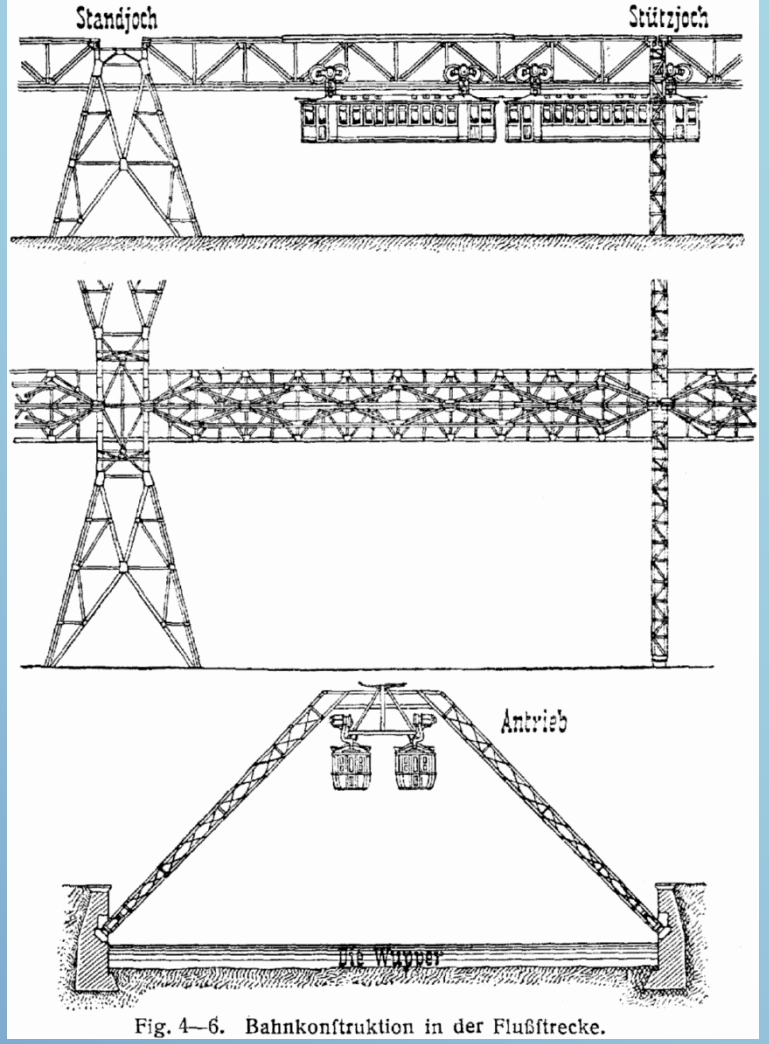
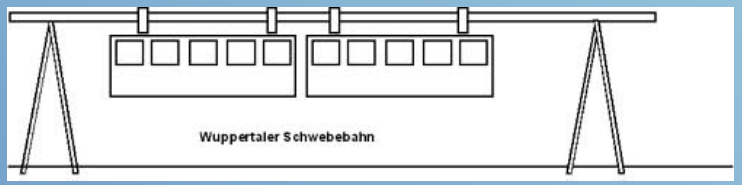
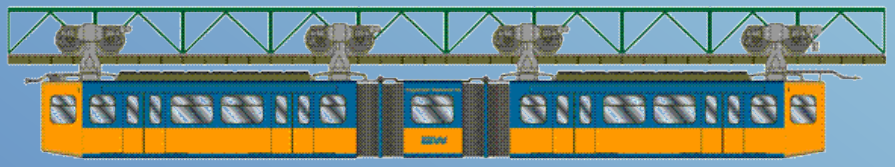


Fig. 4—6. Bahnkonstruktion in der Flußstrecke.






15
2
Telefonieren ohne telebel ist wie Wupper ohne Tal!
telebel


...die freundliche
Ecke Wuppertals
SCHUHE
SCHUHE

Panoramic view

OTHER TECHNICAL FEATURES…

As far as the construction of the unit is concerned..

BREAKWATERS

BENEFITS FROM USING FLOATING BREAKWATER

- **Easy and quick placing –opportunity of rearrangement.**
- **Economic solution for areas with big depths and bottoms with big inclination.**
- **Light environment interference, as the circulation of the streams won't be prevented and the morphology of the coast and the bottom won't be affected.**

Part of floating breakwater

Breakwater in the shape of reinforced concrete boxes–

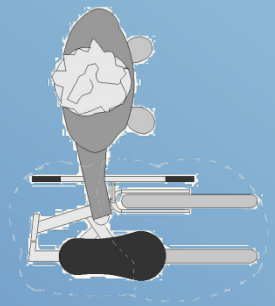
Embody mass of inflated polystyrene made in factory with special technology.

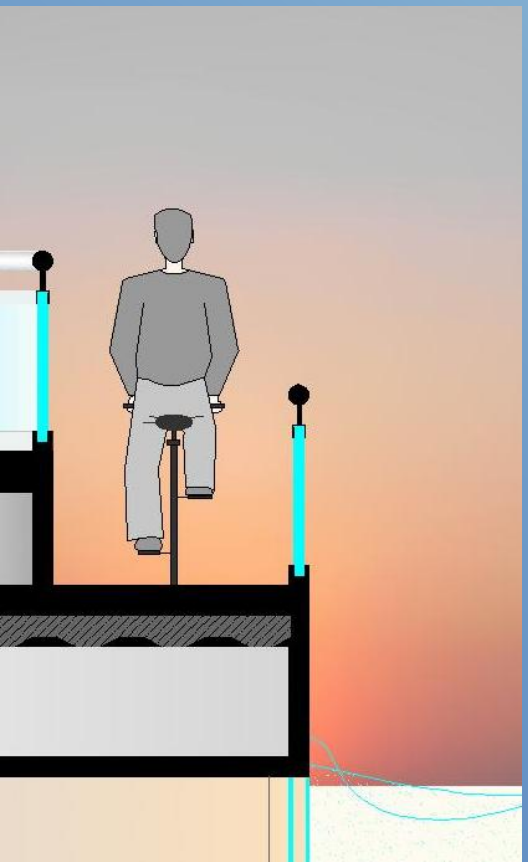
(practice of floating breakwater at Pirgadikia & at N. Marmara)

Floating breakwater

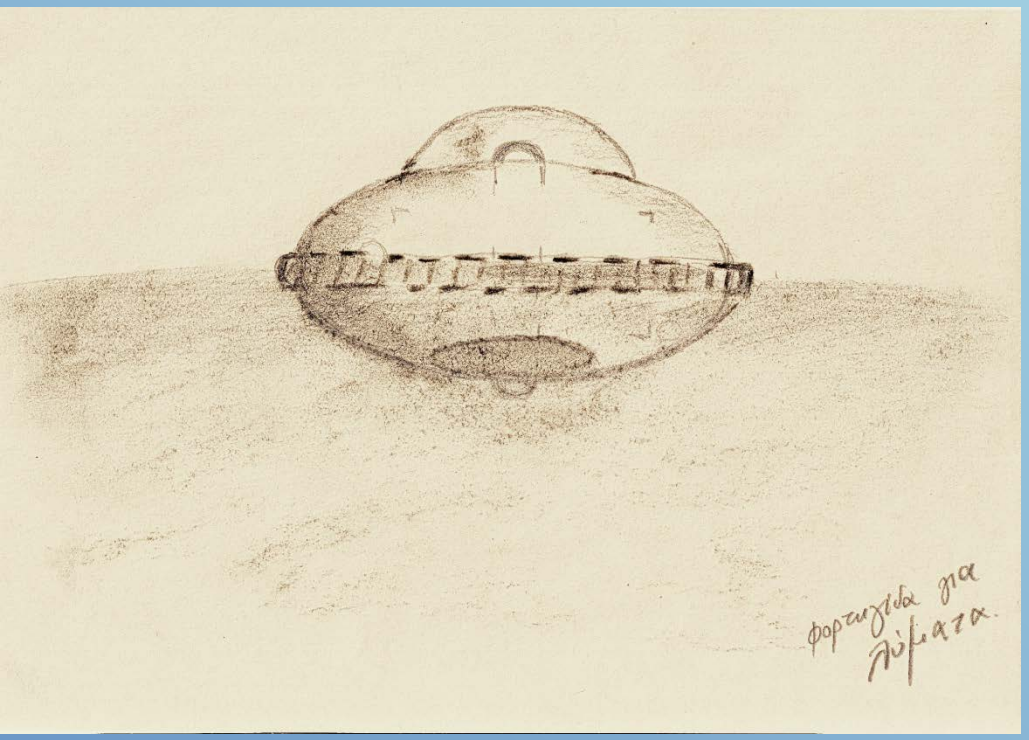
(at N. Marmara)

A CITY with BICYCLES…





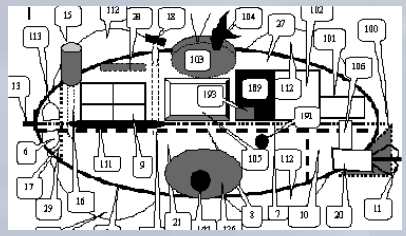
‘Withdrawn’ Bicycles , easy to carry



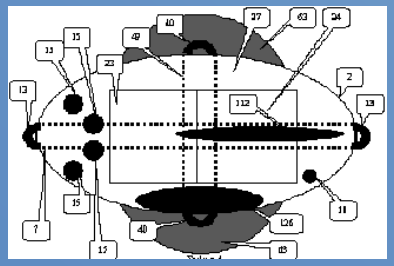
purification

Inspired design from a weapon EMP (electromagnetic pulse)

**Using here: additional purification,
Ability and underwater navigation**



Unmanned, transport operators of weapon which creates powerful electromagnetic pulse or explosives or other weapons, with potential for underwater navigation

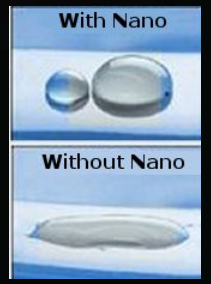


Unmanned, of self-transport operators on target, of two modern torpedoes, with capabilities of underwater navigation

***A similar though barge
exists in the Navy, too
(use on the sea)***

SELF – CLEANING AND PROTECTION OF GLASS

(only by rain) -- (*NOT FOR PERMANENT GLASS COMPONENTS IN THE WATER*)



PROBLEMS:

- DIFFICULTY OF CLEANING
- HUGE COST FOR CHEMICAL DETERGENTS
- PHENOMENON OF 'DROP' - REDUCING VISIBILITY

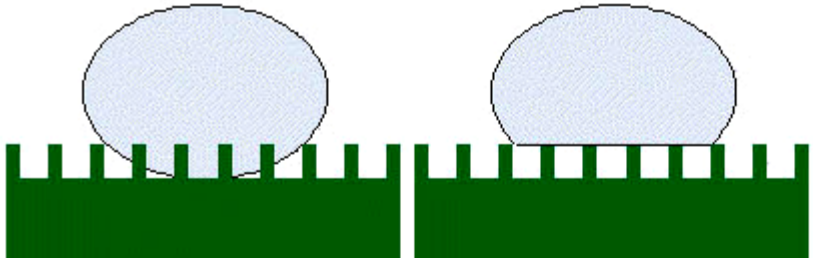
SOLUTION: a product with self-cleaning nano-coating (A special nano-photocatalytic coating of titanium dioxide TiO2, marrying Photocatalysis, Nanotechnology and the rain ..)

Spray the surface with a product and it comes in contact with sunlight (or technical). Then the contact angle of the photocatalytic surface with water, gradually decreases. After a while the surface reaches super-hydrophilicity. (or more simply becomes completely smooth, there is no obstacle), so when it rains the water molecules do not find space to be caught up, creating the phenomenon of 'drop' that we see in the windows, which reduces visibility, but spread over the surface and coupled with gravity sliding downward dragging with them every other particle of dust that was sitting on the surface, thus providing the basic trait of self cleaning, while visibility through the glass remains excellent. If it has rained the same outcome can be achieved by simply throwing water on the protected surface.

At the same time protects the users in the house from <u>UV rays</u>, while giving the glass a <u>special toughness, making it safer.</u> The product is <u>ecological</u>, is water based and environmental friendly. With this product on the glass, somebody can be saved from cleaning costs and work suffering , by using various detergents.

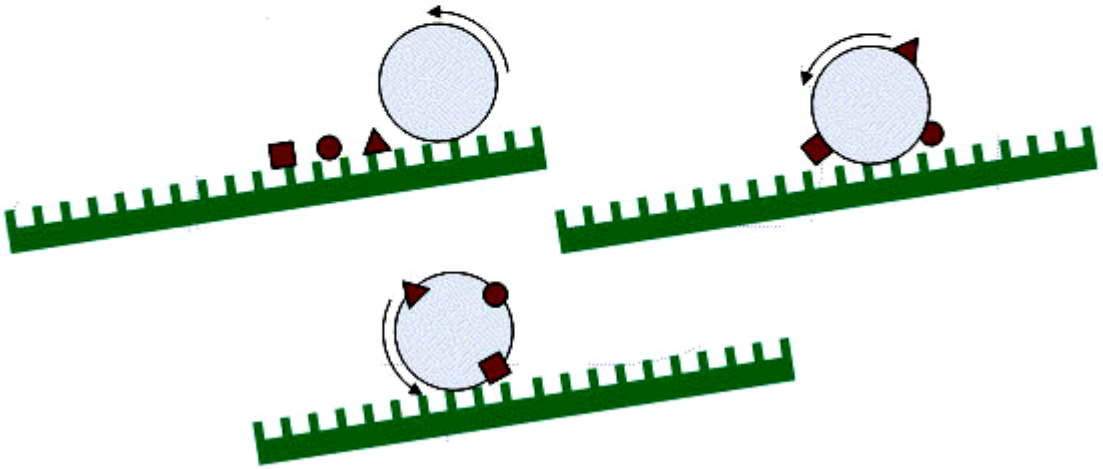
- *Auto cleaning , only with the rainwater or plain water*
- *Saving money by reducing the use of chemical detergents as far as 100%.*
- *Ecological use*
- *Prevent the alas to stuck on the surfaces - antiglow protection*
- *Antibacterial protection and protection from the glass wear*
- *Huge resistance to chemical, mechanical weariness and frictions - to high cleaning pressure with steam, to high temperature & to the frost*
- *The appearance of the surfaces won't be affected since it is completely invisible.*
- *Excellent efficiency (even with little amount) – easy practice*
- *Prevent from UV radiation*
- *Prevent the development of mould or seaweeds*

Duration:
The protection of the products can last 5 year long

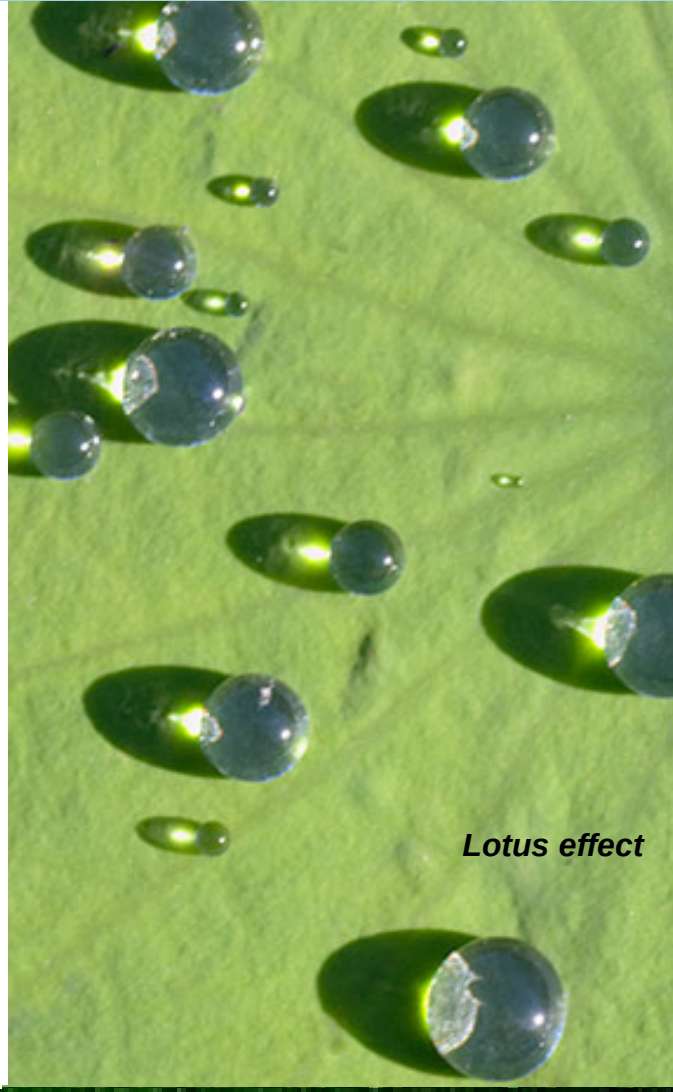


A droplet on a hydrophilous irregular surface is sinking into the spaces.

A droplet on a lightly hydrophilous surface is settled on the endings



A droplet as rolling in a inclined over-water-objectionable surface, is cleaning it.



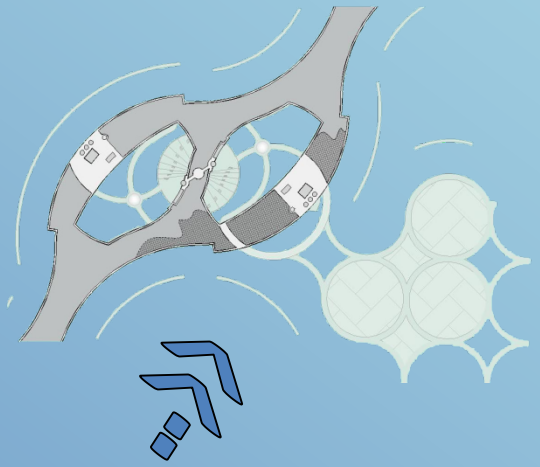
Lotus effect

A droplet on a inclined over-water-objectionable surface doesn't slide, but rolls. When the droplet rolls over a staining, the speck lapse from the surface if the strength of absorption of the speck is bigger of the strength of the static friction (between the speck and the surface). Usually the requisite strength for the lapse of the speck is too small due to the small surface of the contact between the speck and the surface. As a result, the speck cleans the glass while rolling over the surface. (See the pict. above)

PLACING PHOTOVOLTAIC ELEMENTS on a roof

[photovolt. waterproofing membranes]

The **photovoltaic systems** give the opportunity of an immediate transformation of the sun light into electricity, without using fuels. The roof as well as the view of the building are by all means, a huge unexploited source of energy and so they can –by the energy system of photovoltaic- produce electric power and heat from the sun, more effectively than ever.

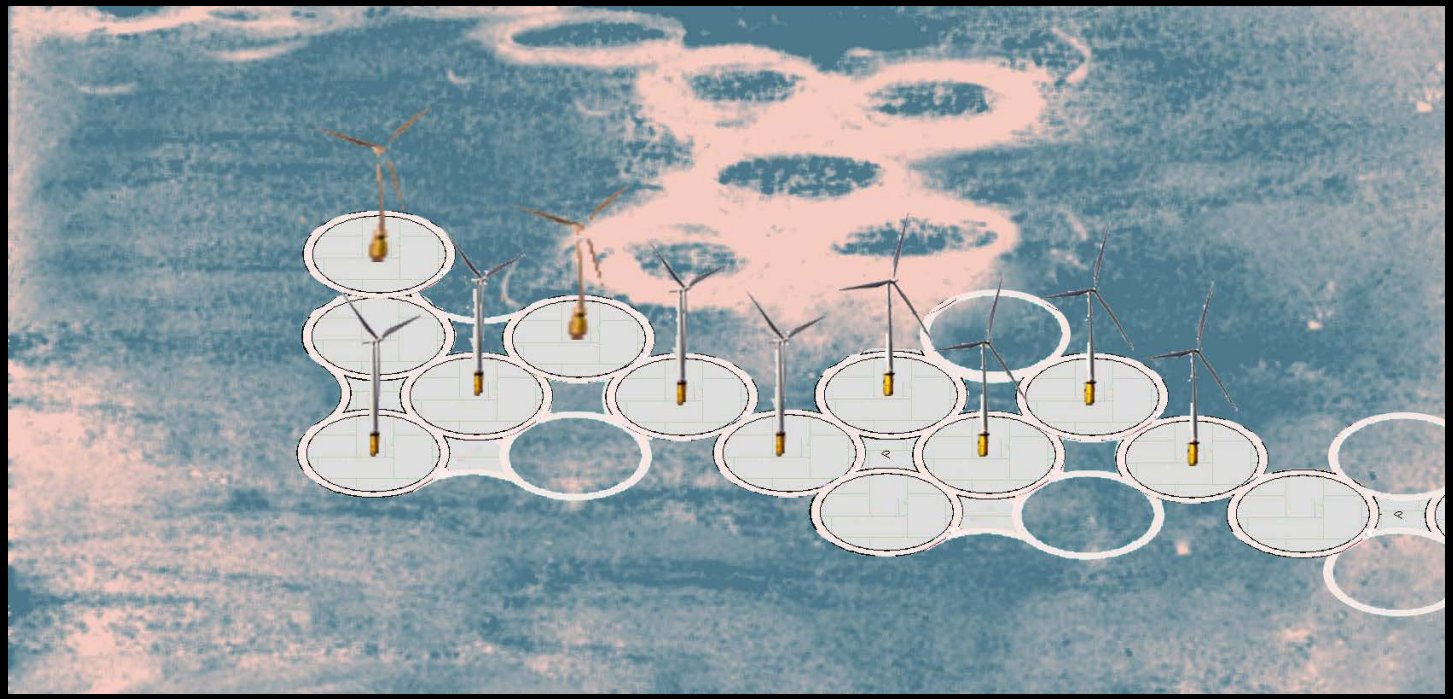


Photovoltaic glasses (BIVP)

They're consisted by a thin layer of shapeless silicon dioxide that is incorporated between two glasses. Beyond the exploitation of sun radiation so as to produce electric power, it is possible to have natural light and money can be saved from building materials.

In the market there are flexible p/v panels from shapeless silicon dioxide, that can be incorporated into curved surfaces. Their efficiency is higher of the traditional panels one, in a flat placing, as long as it is used almost double surface p/v.

Photovoltaic lights that store up sun energy into accumulators – batteries and afterwards they bring it in during the night. It is about an elegant lighting system, absolutely weather – proof and friendly to the environment.

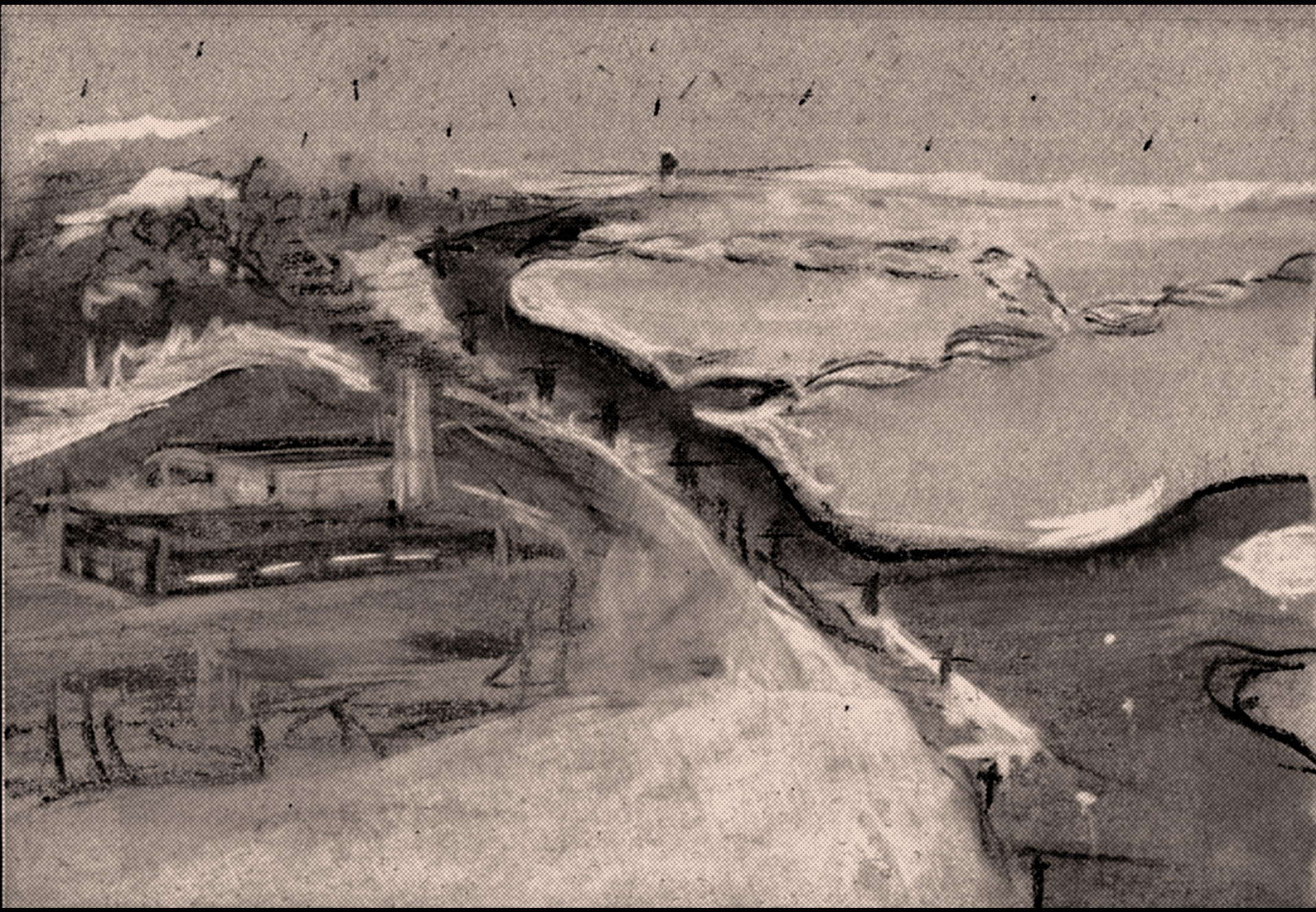


D inter. circle = 53.3μ
D exter. circle = 61.3μ

Energy villages

**Keeping distance from the habitable areas,
it could be possible to find energy villages that
would supply the city with electric energy. Wind generators
mostly, but possibly working on wave energy too..**

The biggest power that wind generator can produce in the sea is ***3MW with tendency of development as far as 5MW****. Every wind generator covers annual needs for about 2500 dwellings, while at the same time* ***it reduces the emission of the gas CO2 by 50.000 tons.*** *The height of such a wind generator ranges at 70m with length of blade 50m.*

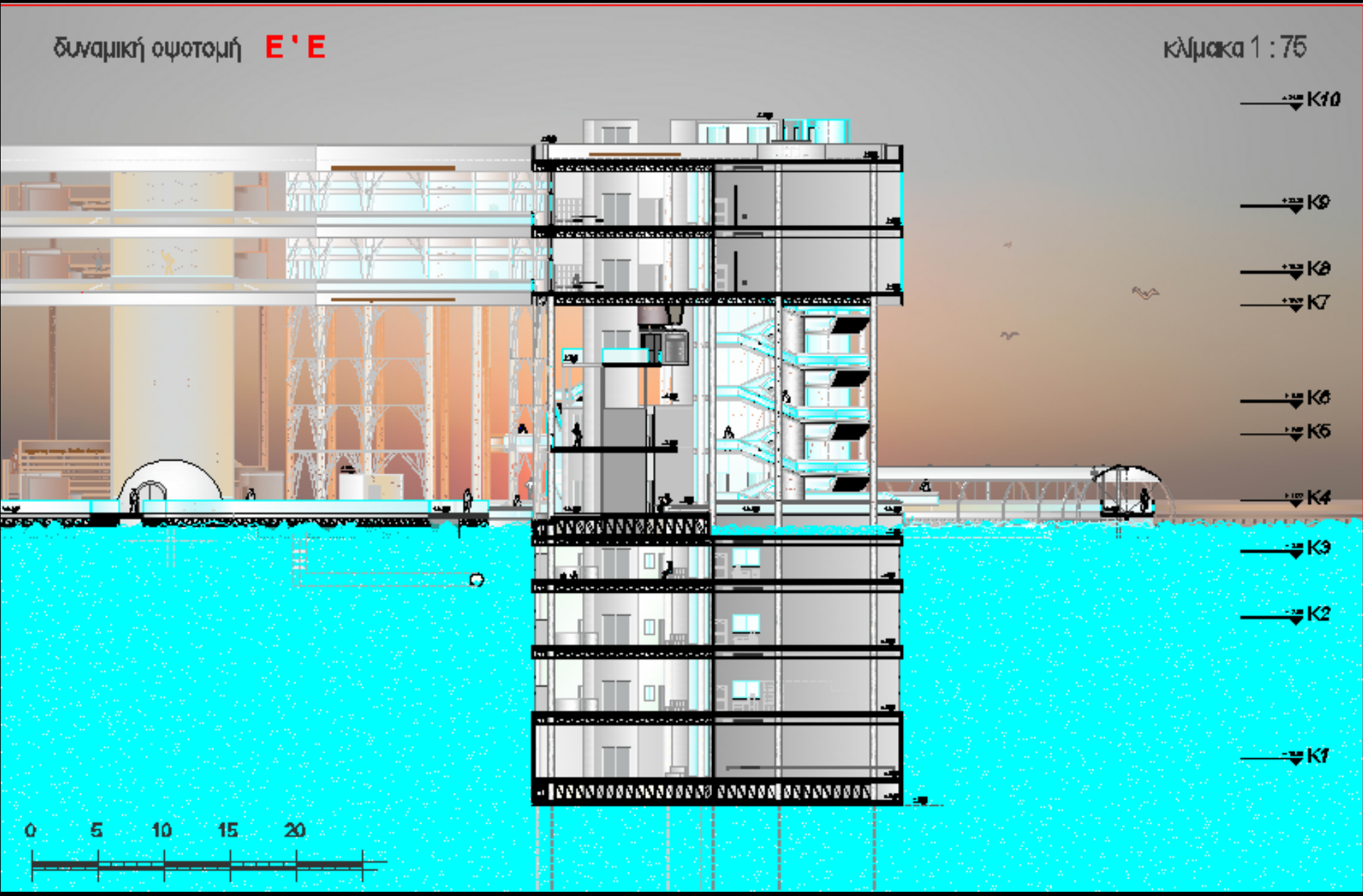


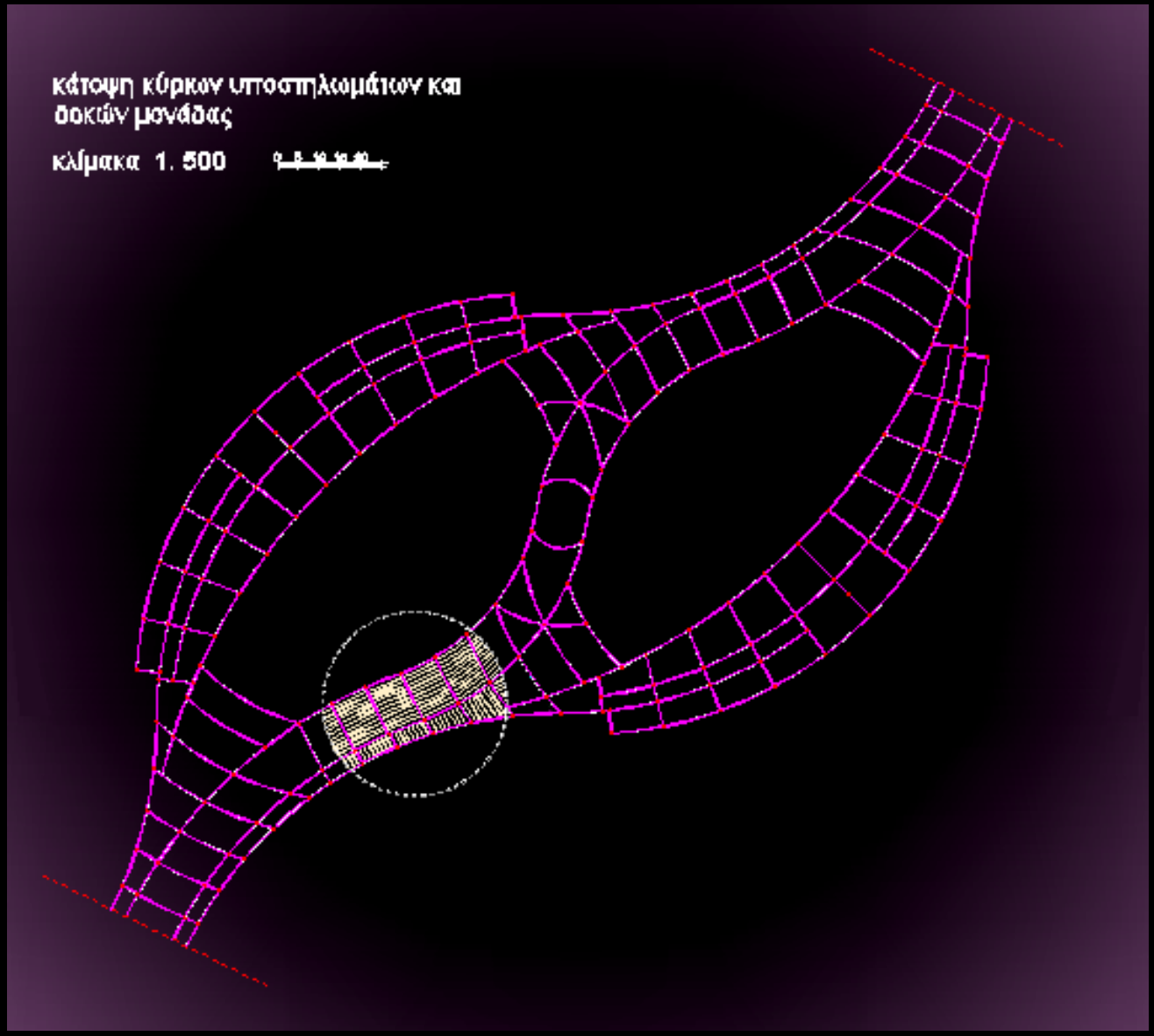
View from the land ***(union with it in different points)***

(some) final plans and the model…

Dynamic view – section E ‘ E

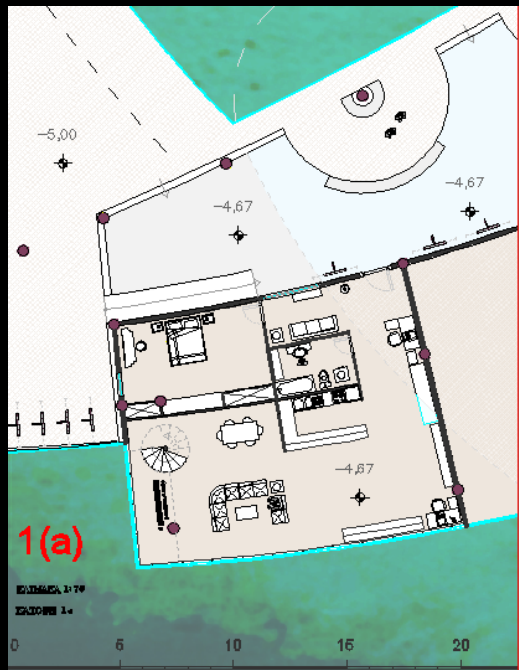
Scale 1 : 75



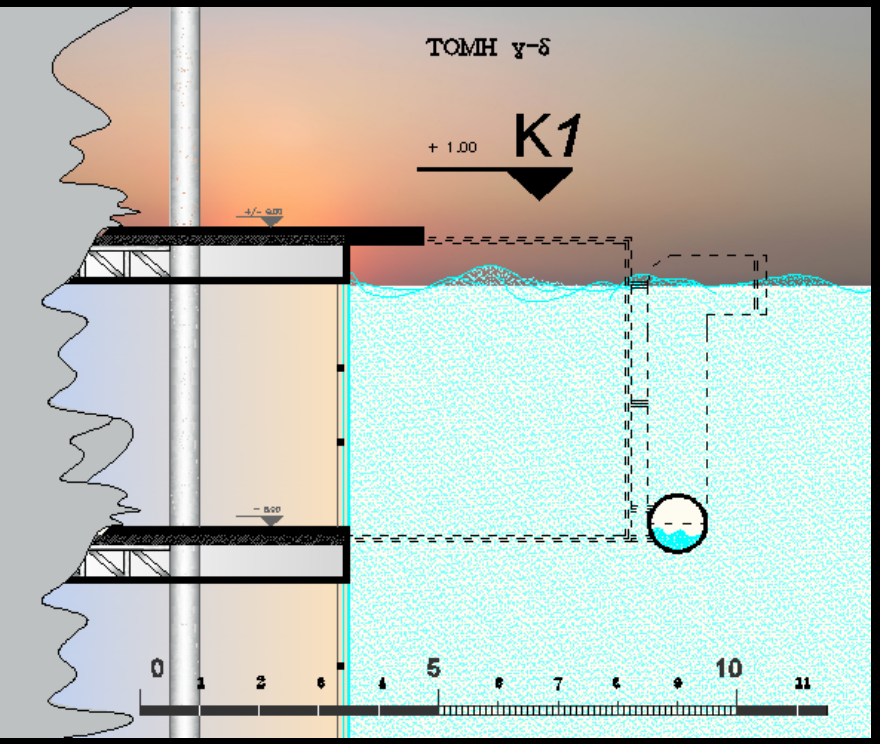


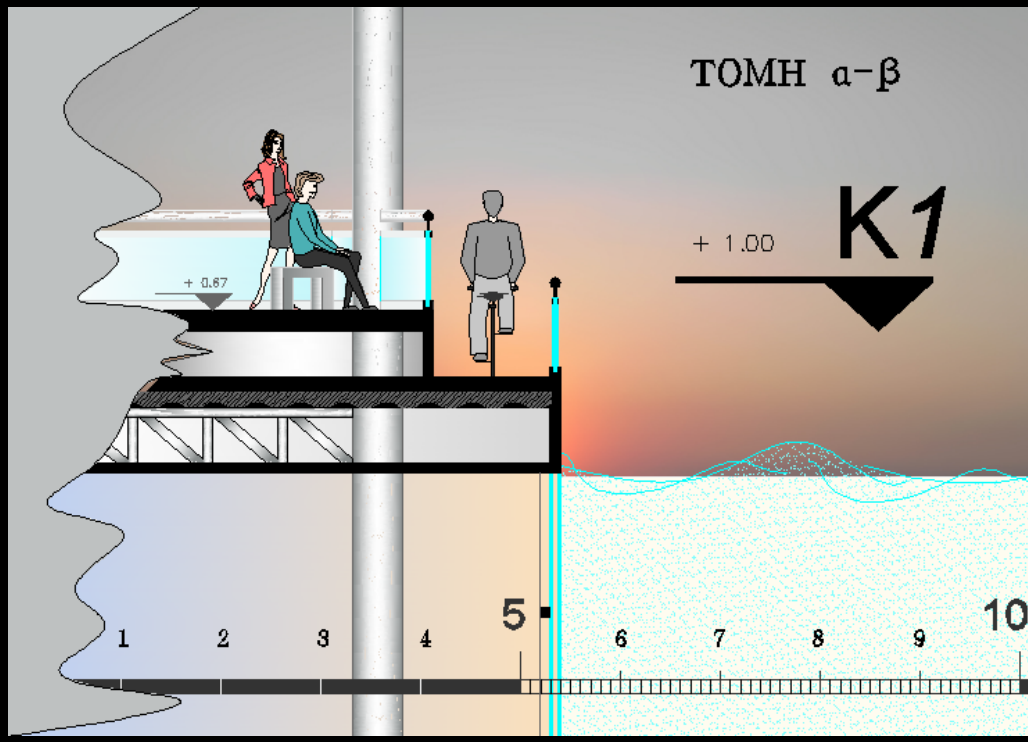
Floor plan of the main propping up and beams of the unit

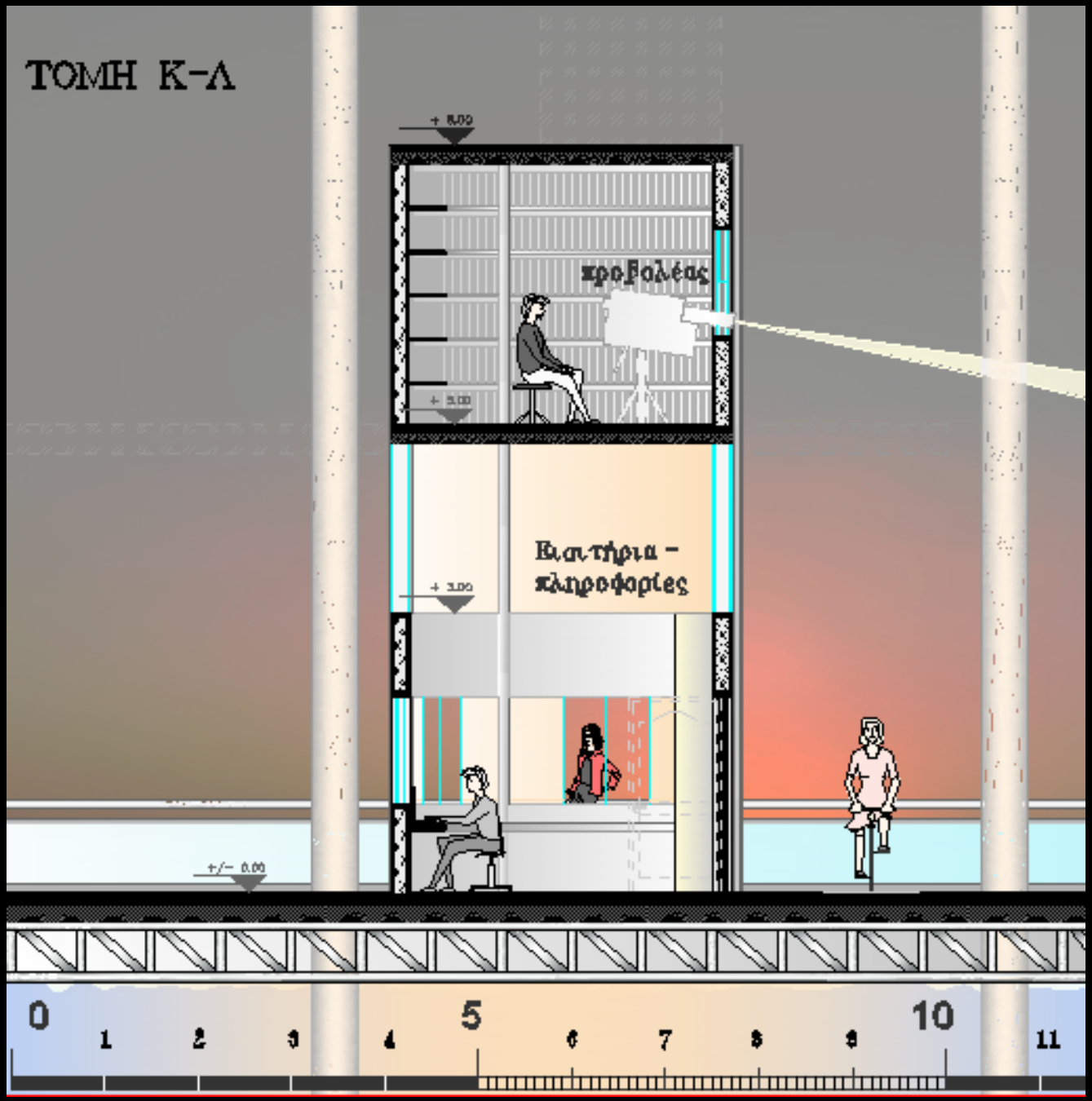
Suggestion of dwelling



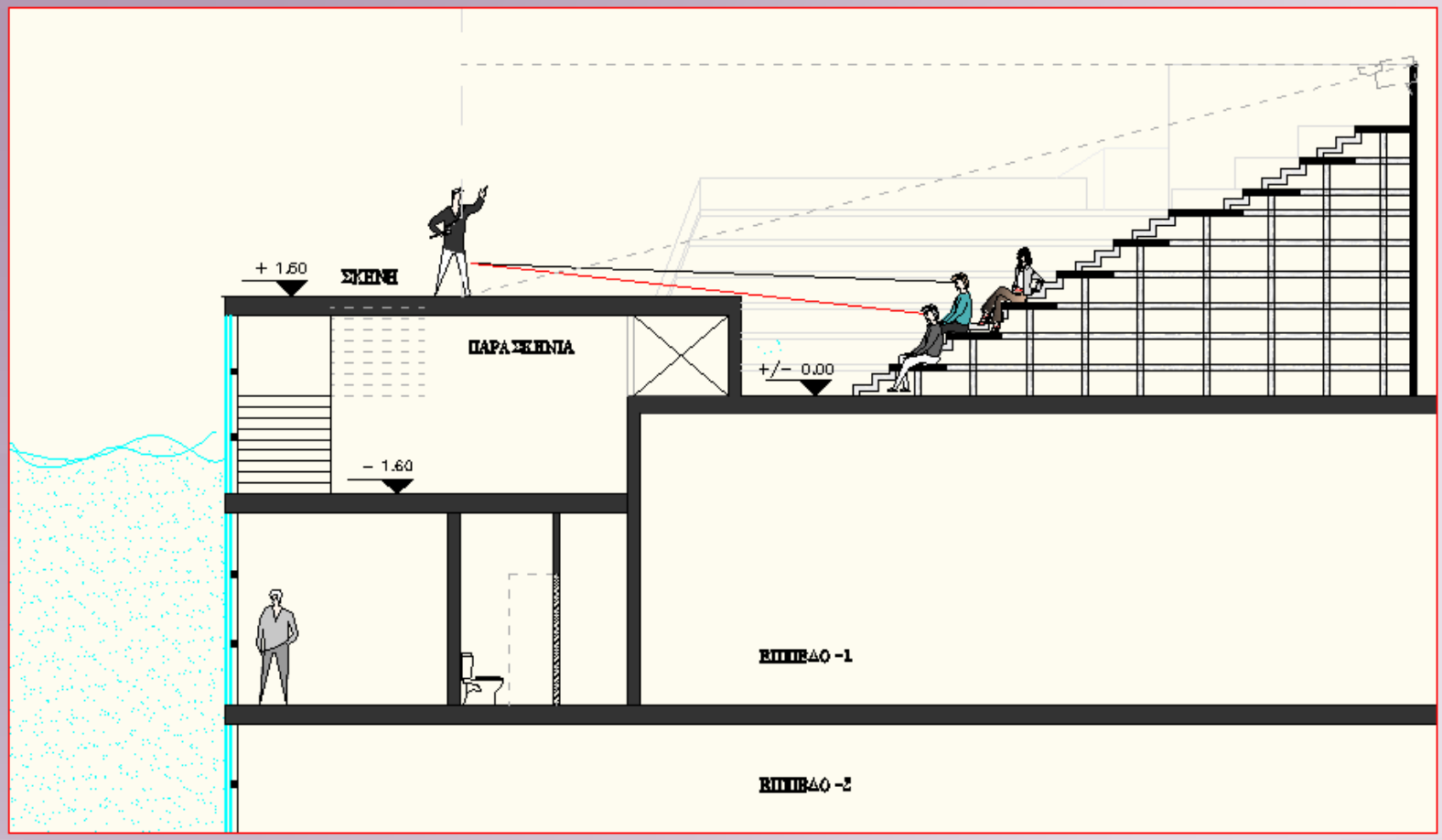
Indicative sections in the unit





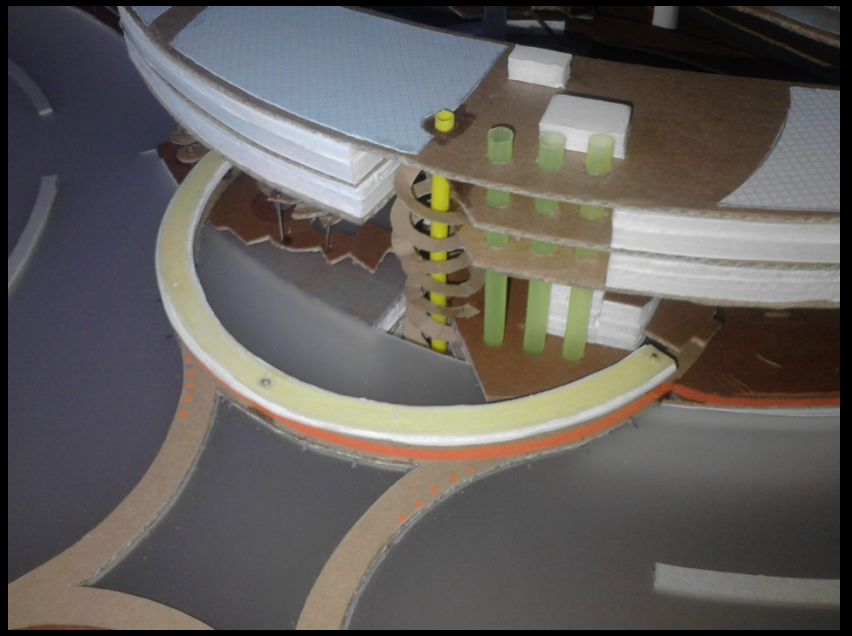


Indicative section in the unit



Schematic representation of the theatre

Views of the final model



View of the final model

Views of the final model