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The Hyperloop: Hypertext as a tool for navigation

Tala Bilal Farraj

BArch

Department of Design and Architecture

Faculty of Engineering and Architecture

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THE HYPERLOOP: HYPERTEXT AS A TOOL FOR NAVIGATION

by
TALA BILAL FARRAJ

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ADVISOR: Karim Najjar

Approved by Thesis Advisor:

Karim Najjar, Assistant Professor
AUB Department of Architecture and Design

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Hyper-megastructures

An interactive exploration of hypertext's non-linearity
as a key to true Bigness

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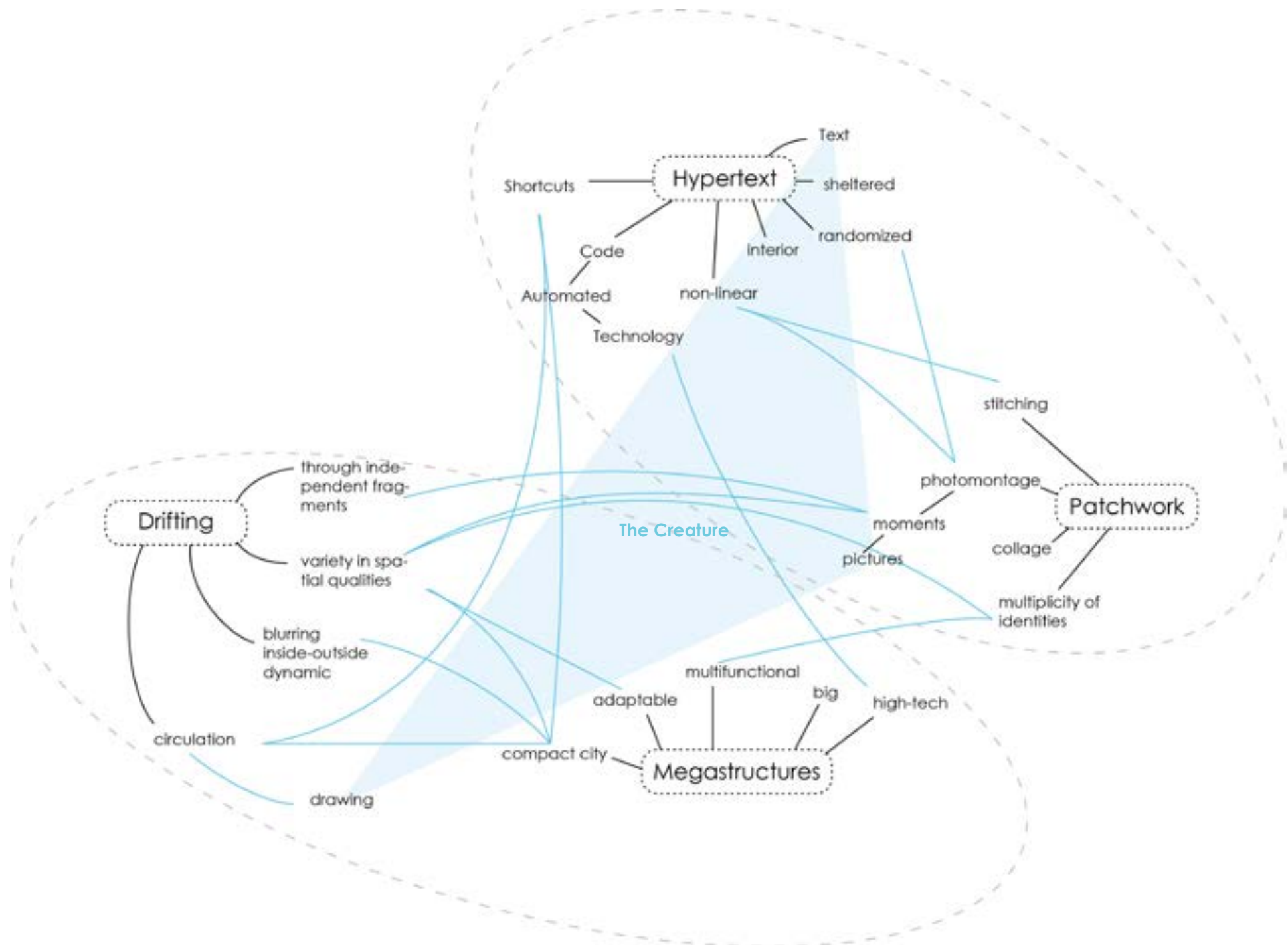
Hyper-megastructures

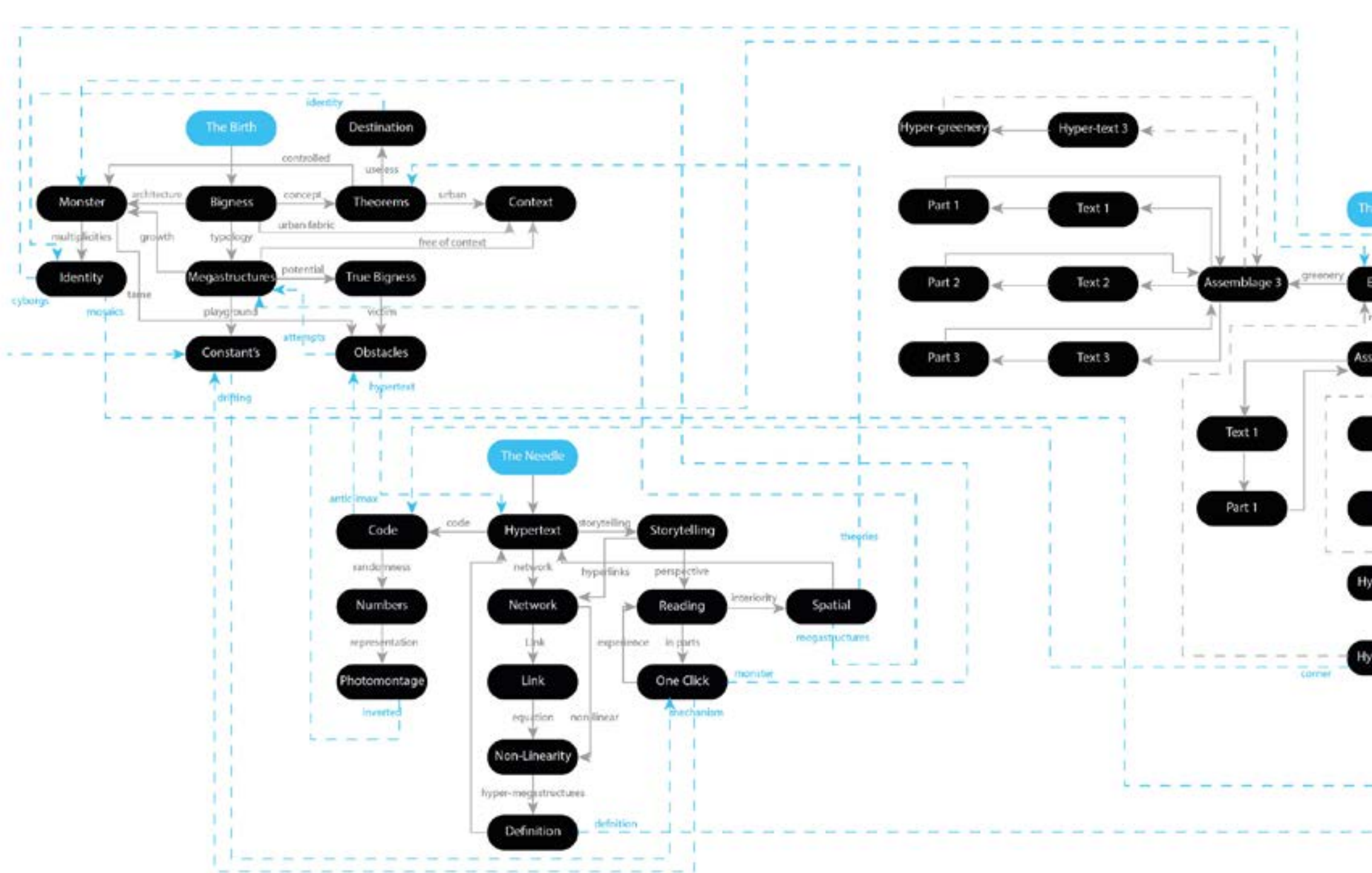
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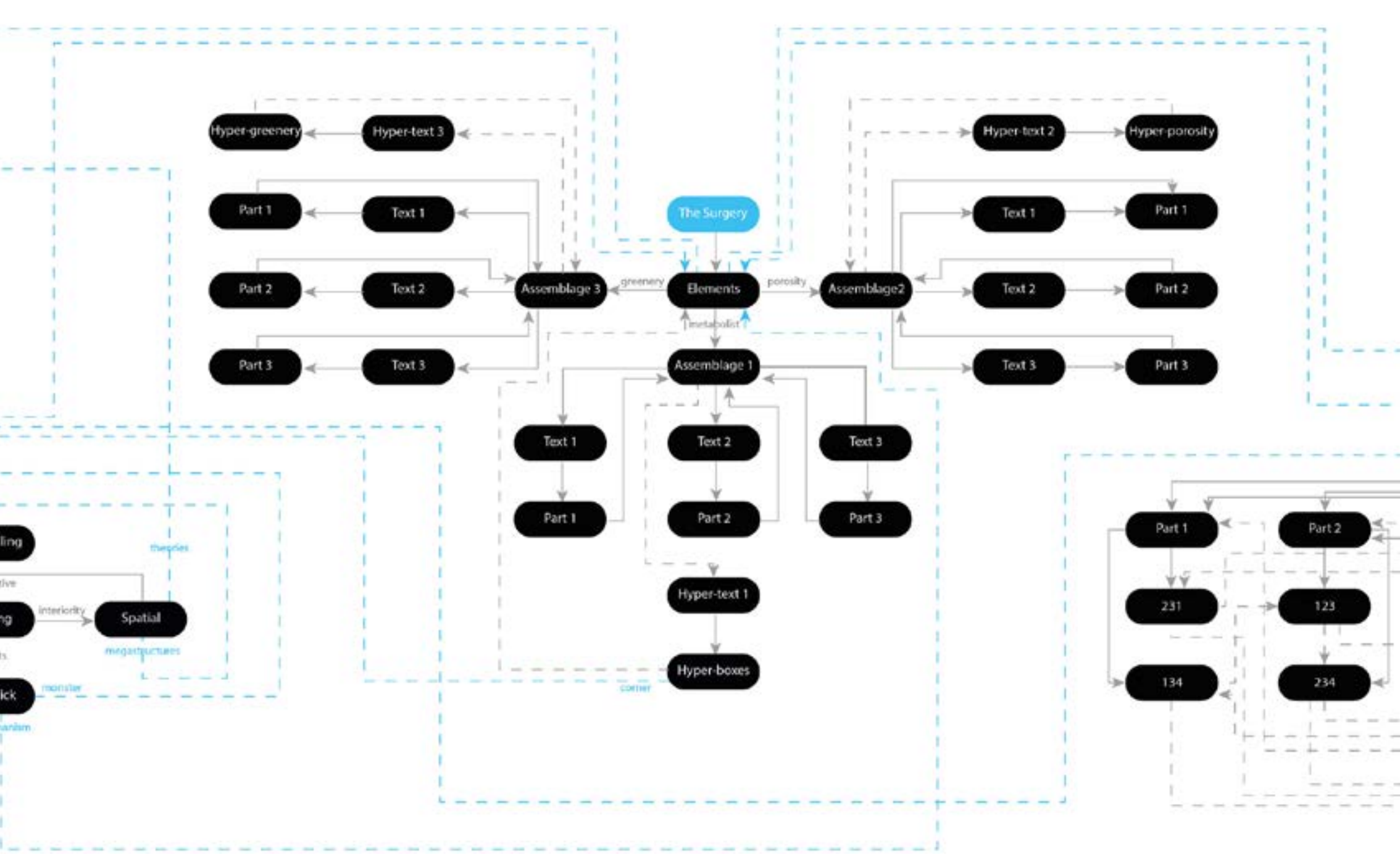


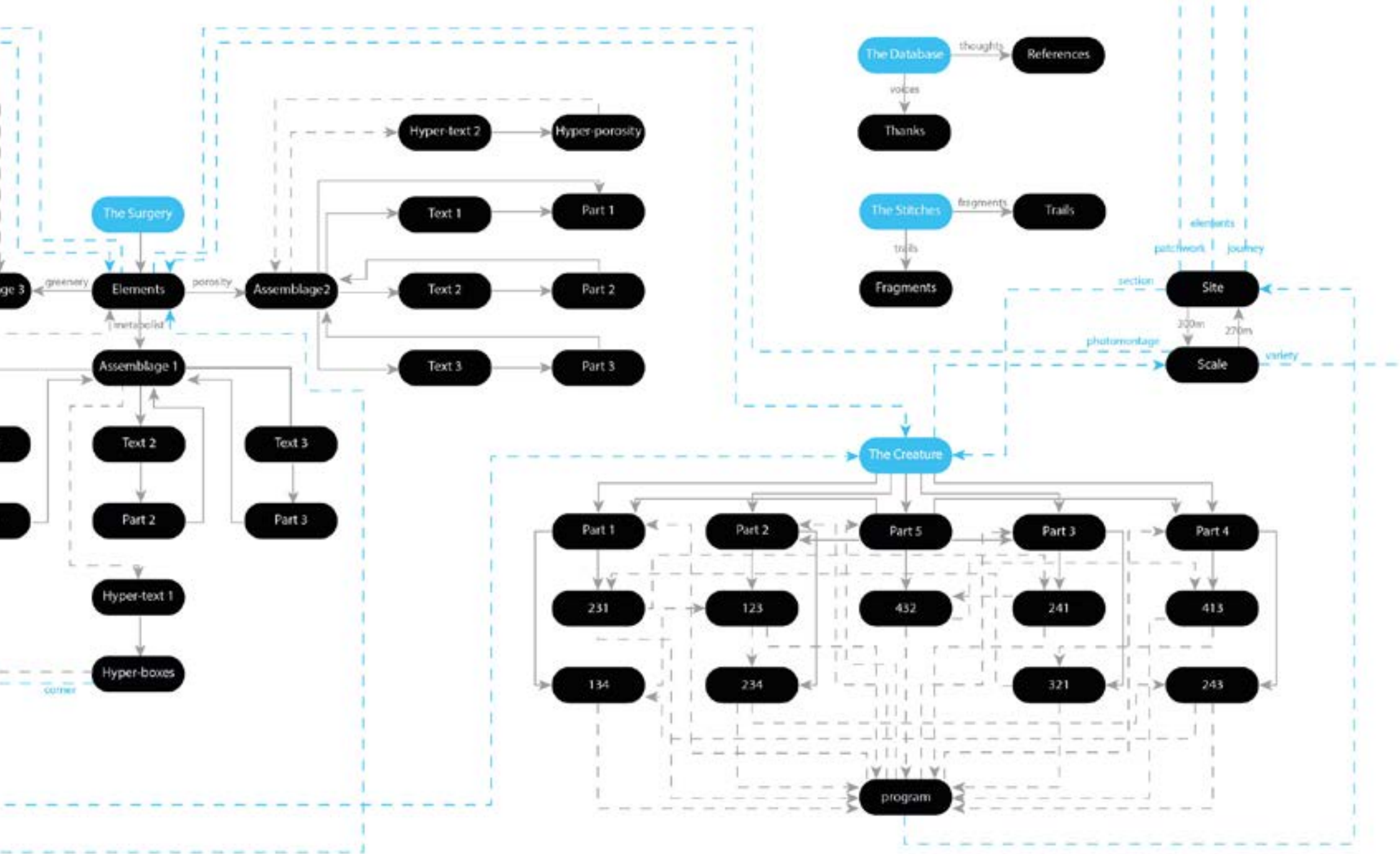
The Stitches

This thesis takes a cloud of simultaneous thought fragments and stitches them into a network of trails; each independant yet unfinished, its is itself the creature that creates the Creature - a Hypertext writing hypertext.









The Database

This book is, first and foremost, a hypertext in all its definitions; A patchwork of thoughts and voices without which none of this would have been possible.

Thanks

I would like to thank my friends and family for their constant moral backing and encouragement, for staying by my side through the ups and downs of the process and always pushing me to do better. Thank you for all your love and support.

I would also like to thank my instructor Sandra Al Richani, first for bearing with me and always being available for feedback; for always pushing me to new horizons without forcing me into them, but rather helping me see connections when my mind blocked everything out. Thank you for your valuable support.

References

S, M, L, XL

Megastructures Reloaded

Invisible cities

Patchwork Girl

O.M.A, Rem Koolhaas, Bruce Mau

Sabrina Ley, Markus Richter

Italo Calvino

Shelley Jackson

Bigness

Bigness has long been a subject of interest among architects, always trying to build bigger and constantly testing the limits of architecture. Believed to be the ultimate form of architecture, the concept of Bigness has been at the core of much experimentation, leading to the development of a new architectural typology.

Bigness is about more than just the size of the structure; its main interest is the effect of such a size on architecture itself, as well as its place within the urban fabric.

Theorems

S, M, L, XL

“1. Beyond a certain critical mass, a building becomes a Big Building. Such a mass can no longer be controlled by a single architectural gesture, or even by any combination of architectural gestures. This impossibility triggers the autonomy of its parts, but that is not the same as fragmentation: the parts remain committed to the whole.”

“2. The elevator – with its potential to establish mechanical rather than architectural connections – and its family of related inventions render null and void the classical repertoire of architecture. Issues of composition, scale, proportion, detail are now moot. The “art” of architecture is useless in Bigness.”

“3. In Bigness, the distance between core and envelope increases to the point where the façade can no longer reveal what happens inside. The humanist expectation of “honesty” is doomed: interior and exterior architectures become separate projects, one dealing with the instability of programming and iconographic needs, the other” [...] “offering the city the apparent stability of an object.”

“4. Through size alone, such buildings enter an amoral domain, beyond good or bad. Their impact is independent of their quality.”

“5. Together, all these breaks – with scale, with architectural composition, with tradition, with transparency, with ethics – imply the final, most radical break: bigness is no longer part of any urban tissue. It exists; at most, it coexists. Its subtext is *fuck* context.”

Context

The Bigness of a Big Building sets it apart from its immediate surroundings. Beyond a certain scale, the comparison is too ridiculous to make, and the immediate relation building-to-neighbor is obsolete.

However, this doesn't deny the context: as the building becomes bigger, its context has to shift in scale too. Whereas architectural scale deals with the immediate surroundings and peeks beyond, and the urban scale compares city-reactions and major transits, a Big Building's context sits somewhere in-between. The city and the structure affect each other; even though the city remains more affected than the shielded Big Building.

Destination

One main point would be the dilution of the destination, either through its absence or its multiplicity. The destination as a main attraction point ceases to exist, leaving an empty hole waiting to be filled to restore the balance. But is the whole really empty? The hole itself creates its own whole, where its cause becomes its new identity: multiplicity prevails and -appropriately- multiplies, spreading across different plains, creating by its nature a network that makes of the journey the primary destination.

Megastructures

Megastructures were created in response to the architectural pull toward Bigness. Described as “self-contained cities,” they offered a playground for an architecture free of context, focusing more on the relationships within. The definition of Megastructures kept changing ever since they were first made – how could such a free adaptable architecture be defined by one definition? – but the general consensus seems to define it as a large structure, where envelope is separate from interior, allowing for anything to happen under the shell.

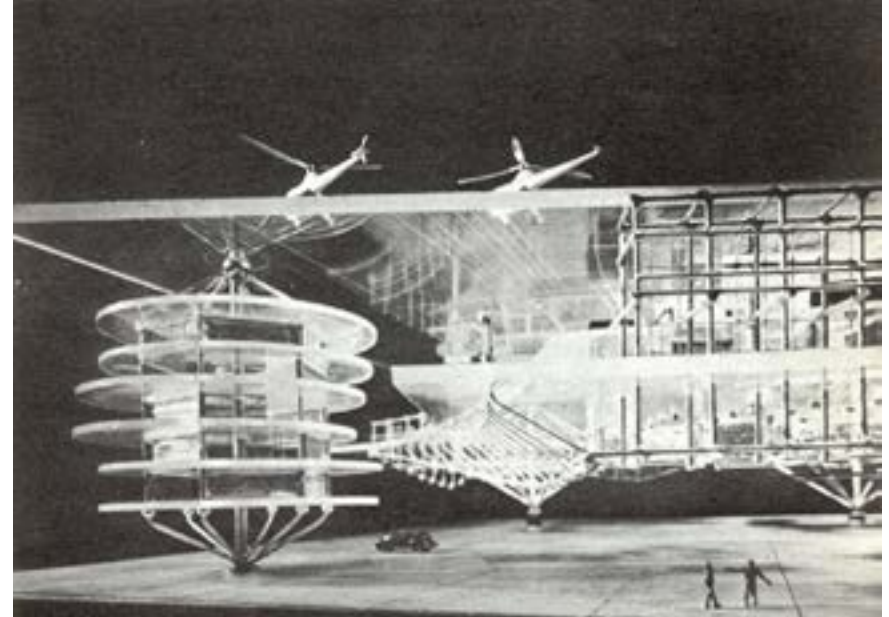
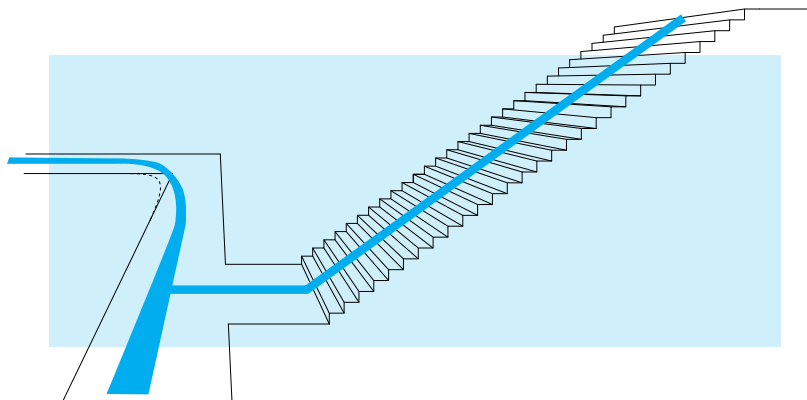
Douglas Murphy adds to this definition by describing their interiority, stating that megastructures are “massive disparate structures combining strict artificial forms with an organic growth of spaces within.” This organic growth refers back to the Metabolist architecture that not only offered a new style but a new system of building where each unit was movable and removable; structures were meant to be changed overtime depending on people's needs and demands. And this is where the megastructures failed: the structures remained stagnant and the playfulness of their adaptability was never put to use, leaving behind large and still, semi-complex shells that had great potential.

Case Study: Constant's New Babylon

One notable example of experimentation in Bigness and Megastructures is Constant's New Babylon: A city made of various megastructures for a future free of labor.

Constant designed a city where he couldn't anticipate the behavior of the inhabitants because of their hugely different lifestyle. Thus why he designed it as a platform that they could appropriate.

The inhabitants of the city live in a state of constant play. Accordingly, they navigate through the act of drifting: walking aimlessly, with no destination, attracted by various structures around; moving through paths of least resistance.



Monster

Bigness is achieved when a building reaches and goes beyond a certain scale; then it becomes its own living thing. It morphs into this monster of pure architectural - and mechanical - intelligence; it slips away from the architect's grasp and creates a life of its own.

Bigness can only be achieved through the loss of control, when architecture becomes unhinged and free to express its full power.

As long as architects tame their beasts, Bigness will remain theoretical, and the multiplicities and hyper-complexities of its programs, unreachable.

Identity

“The Madame’s ruminations spurred my own. If a person can have a phantom limb, cannot a phantom limb also have a phantom person? In fact, it seemed to me that each of my parts brought with it a trace of the whole person who was once attached to it. There was a crowd, a whole gaggle of persons, competing for the space limited by my one limited body...”

“Identities seem contradictory, partial, and strategic.”

“There is not even such a state as ‘being’ female, or ‘being’ monster, or ‘being’ angel.”

“We find ourselves to be cyborgs, hybrids, mosaics, chimeras.”

True Bigness

The quest for Bigness came to a halt with the failure of said megastructures, as some drifted toward sci-fi territory while others fell victim to simplification and efficiency. With the rise of new technologies, however, Bigness is making a comeback as architecture is getting larger, higher, deeper. As architects explore the limits of the new developments, it is easy to see this path circling back to giving megastructures a second chance – because it already is, to a certain extent.

But it circles back to it as its own species of architecture, separate from Bigness despite the clear interest in it. Superstructures take over: smaller, still large structures semi-open to the outside, containing one main program; nothing to do with the hyper-complexity of spaces and the rich interplay of possible programs within.

Obstacles

The exploration of architecture's Bigness has always been tricky for a few reasons, the main one being the mind's habit of simplifying to make sense of things.

There is mention of the “anticlimax of the diagram,” where all attempts at visually explaining such architecture takes away what made it special: the chaotic complexities of the multiplicities embedded in it. This makes the human mind itself an enemy of true bigness. Which is why I think it is time we learn from the machines: Hypertext, in all its definitions, as the key to achieving true Bigness.

Hypertext

Towards the redefinition of a successful megastructure

Hypertext appeared in the early 20s and can be defined in a few different ways:

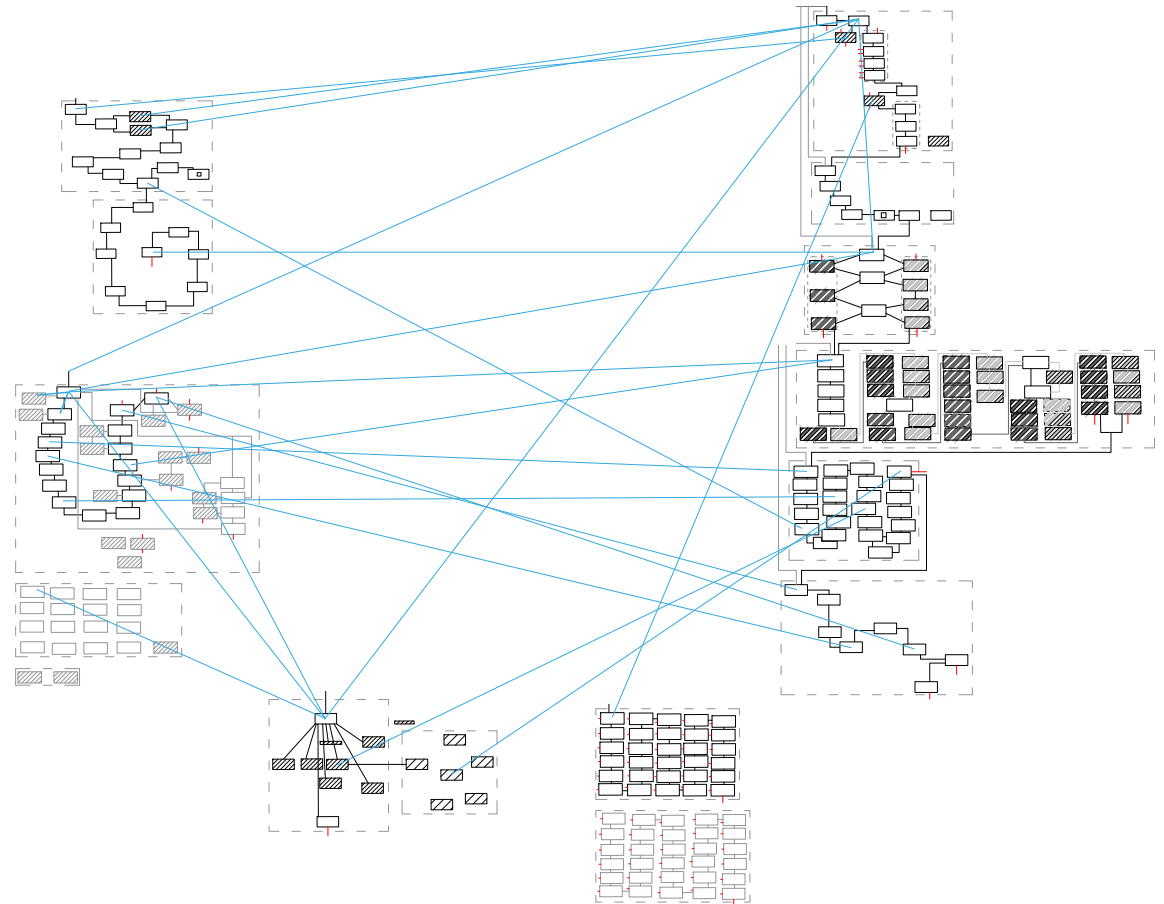
Hypertext as storytelling format

Hypertext as information network

Hypertext as code

Hypertext as storytelling format

Hypertext is a digital storytelling format where, instead of consecutive chapters, the story is divided into parts interconnected with hyperlinks. From the reader's perspective, the story is built piece by piece depending on the choices made, a digital patchwork of events/ moments.



In "Patchwork Girl,"
Shelley Jackson
describes the
experience of reading
hypertext almost
spatially, revealing a
sense of interiority...

"Assembling these patched words in an electronic space, I feel half-blind, as if the entire text is within reach, but because of some myopic condition I am only familiar with from dreams, **I can only see that part most immediately before me, and I have no sense of how that part relates to the rest.** When I open a book I know where I am, which is restful. *My reading is spatial and even volumetric.* I tell myself, I am a third of the way through a rectangular solid, I am a quarter of the way down the page, I am here on the page, here on this line, here, here, here. But where am I now? I am in a here and a present moment that has no history and no expectations for the future.

Or rather, history is only a haphazard hopscotch through other present moments. **How I got from one to the other is unclear. Though I could list my past moments, they would remain discrete (and recombinant in potential, if not in fact), hence without shape, without end, without story. Or with as many stories as I care to put together."**

- *Patchwork Girl*, Broken Accents section, "this writing"

... A chaotic interiority
where the whole is
vague and unknown.
The story is always
experienced in parts;
the big picture remains
hidden.

The reading experience feels similar to making a patchwork, as the different fragments of the story are sewn together, rewriting the narrative as one would assemble body parts to create a monster.

“Assembling these patched words in an electronic space, I feel half-blind, as if the entire text is within reach, but because of some myopic condition I am only familiar with from dreams, I can only see that part most immediately before me, and I have no sense of how that part relates to the rest. When I open a book I know where I am, which is restful. My reading is spatial and even volumetric. I tell myself, I am a third of the way through a rectangular solid, I am a quarter of the way down the page, I am here on the page, here on this line, here, here, here. But where am I now? I am in a here and a present moment that has no history and no expectations for the future.

Or rather, history is only a haphazard hopscotch through other present moments. How I got from one to the other is unclear. Though I could list my past moments, they would remain discrete (and recombinant in potential, if not in fact), hence without shape, without end, without story. Or with as many stories as I care to put together.”

Hop - Broken Accents

American Narrative - Story

Headstone - Graveyard

Dream - Broken Accents

With one click, the reader is transported to a different section of the story, following a train of thought or a theme. It's the sentence-thought mechanism.

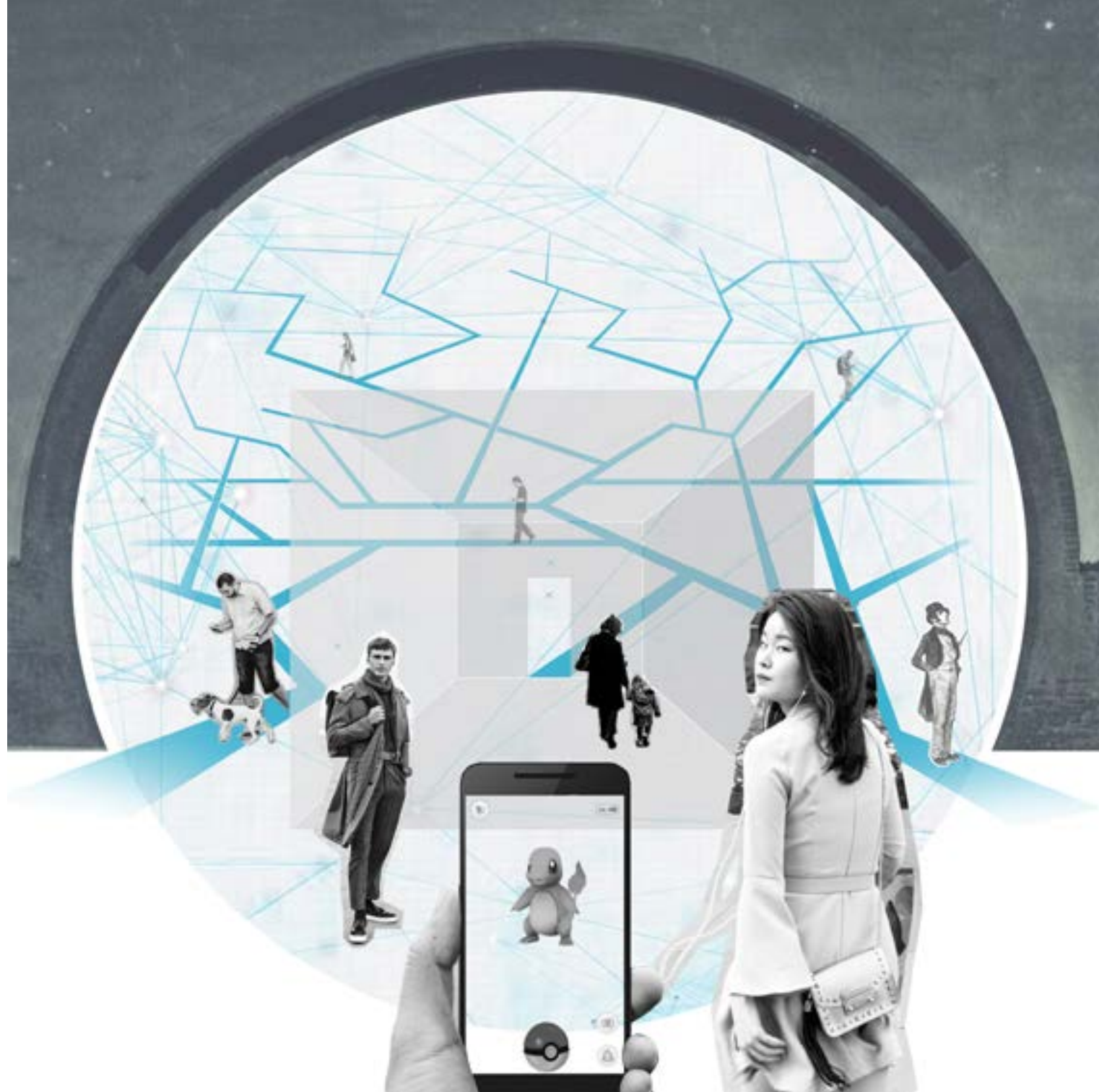
First Definition

Spatial implications

Translating these qualities into a physical space, hypertext shows the following characteristics:

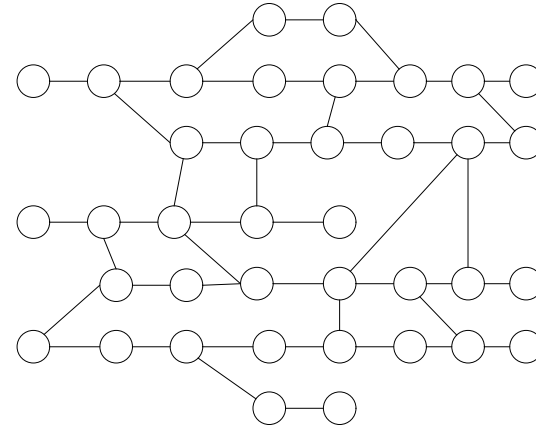
- Sheltered
- Experienced from inside
- Decentralized
- Multiple entries/exits
- Focus on journey, not destination

This first re-definition brings megastructures back to their origin as many of these characteristics can also be found in the early theoretical work, as well as in theories of Bigness.



Hypertext as information network

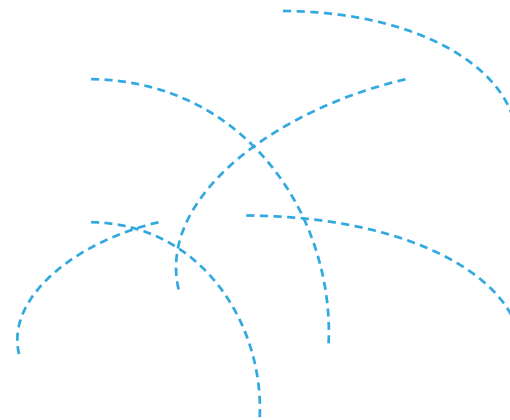
A Link is a connection / relationship between two consecutive points.



Hyperlink

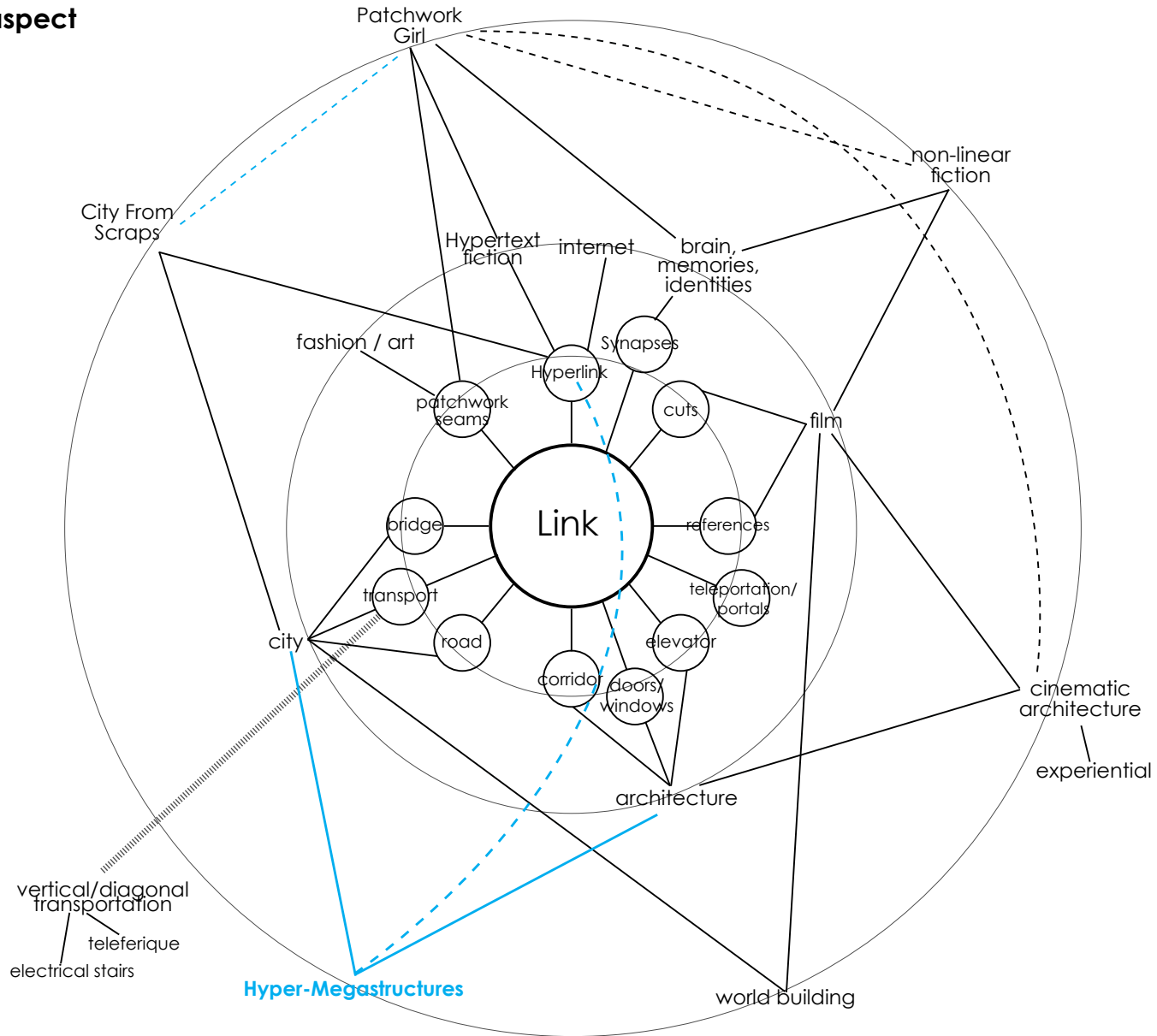
A Hyperlink is a connection / Relationship between two non-consecutive points; a shortcut.

This allows for a non-linear reading.

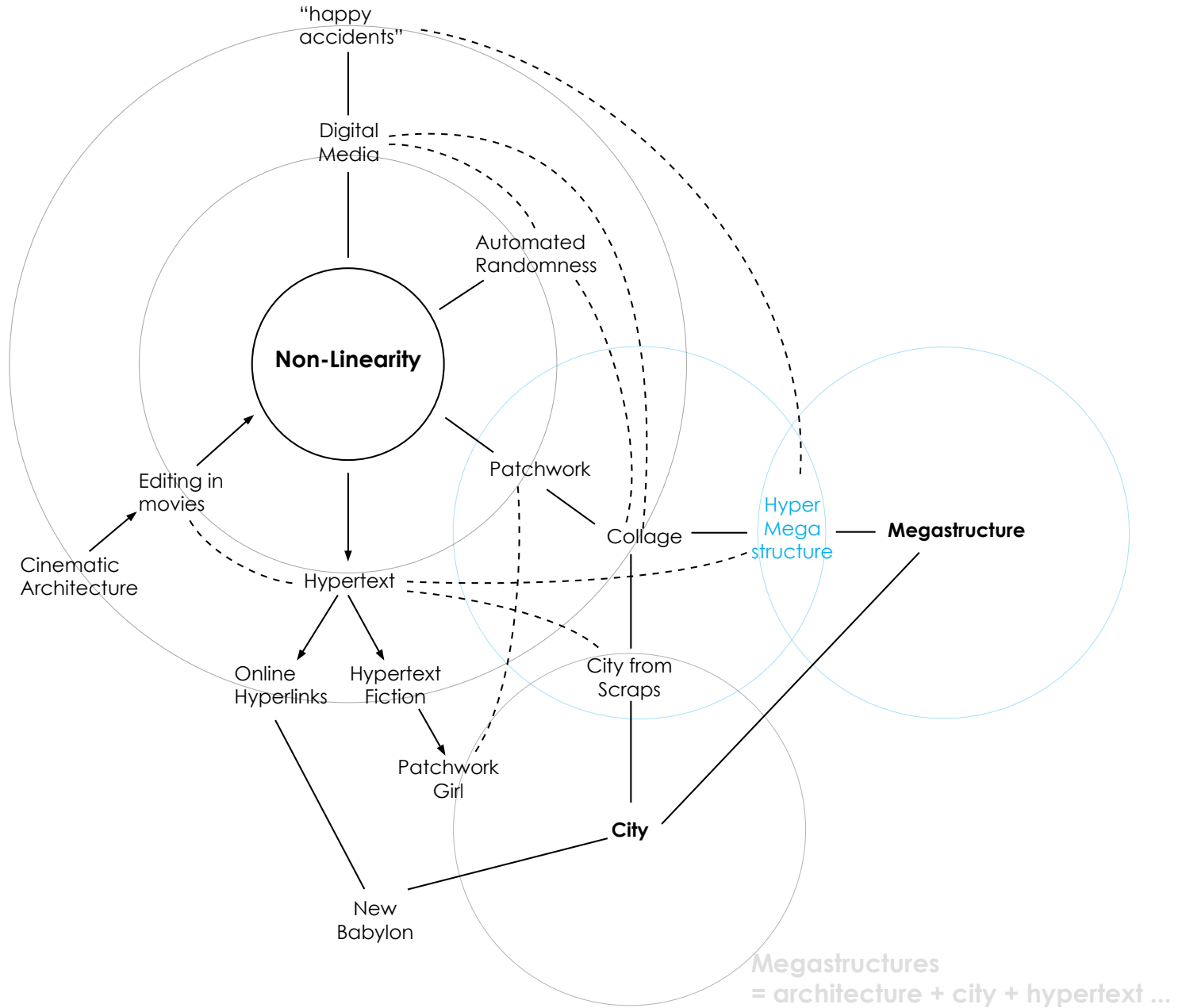


Links, the technical aspect

What are *links*?



Non-Linearity, the functional aspect



Second Definition

Hyper-Megastructures as a hyper-connected, self-contained city built through patchwork and represented through collage

Hypertext as code

The core of hypertext is in its code.

It removes the human reflex of simplification and finding patterns and letting order take over. In other words, it allows for complexity by removing the agent that was restricting it.

Hypertext as code, as a tool to combat the “anticlimax of the diagram”

Complexity, Automated Randomness, Chaos

input  output

Hypertext here acts as a neutral agent that assembles images and creates collages out of visual input from said images using automated randomness.

Representations of architecture:

- Text
- Drawings
- Images

Code creating architecture,
A hypertext made by Hypertext.

```
fork < .run > share < + new repl < < fork <
main.cpp
12 }
13
14 // Function to find the permutations
15 void findPermutations(int a[], int n)
16 {
17     // Sort the given array
18     sort(a, a + n);
19
20     // Find all possible permutations
21     cout << "Possible permutations are:\n";
22     do {
23         display(a, n);
24     } while (next_permutation(a, a + n));
25 }
26
27 // Driver code
28 int main()
29 {
30     int a[] = { 1, 2, 3, 4 };
31     int n = 4;
32
33     findPermutations(a, n);
34
35     return 0;
36 }
```

```
clang version 7.0.0-3-ubuntu0.18.04.1 (tags/RELEASE_700/final)
> clang++-7 -pthread -o main main.cpp
> ./main
Possible permutations are:
1 2 3 4
1 2 4 3
1 3 2 4
1 3 4 2
1 4 2 3
1 4 3 2
2 1 3 4
2 1 4 3
2 2 1 4
2 3 4 1
2 4 3 1
3 1 2 4
3 1 4 2
3 2 1 4
3 2 4 1
3 4 1 2
3 4 2 1
4 1 2 3
4 1 3 2
4 2 1 3
4 2 3 1
4 3 1 2
4 3 2 1
```



photomerge →



Randomly chosen images from file

Code reads
images, fragments,
and reconstructs

Image Patchwork

Text

Constructed from 354 identical and completely prefabricated modules (referred to as "boxes") stacked in various combinations and connected by steel cables, the apartment rows in shape and size, since they are formed by a group of one to four of the 400 square-foot "boxes" in different configurations. Each apartment is reached through a series of pedestrian stairs and bridges, along with three vertical cores of elevators for the top floors. Service and parking facilities are separated from the tenant's circulation routes, located on the ground floor.

In stacking concrete "boxes" in various geometrical configurations, Lurie was able to break the traditional form of orthogonal high-rises, locating each box a step back from its immediate neighbor. This rigorous method provided each apartment with a roof garden, a constant flow of fresh air and a measure of natural light qualities which were unprecedented for a twelve-story apartment complex.

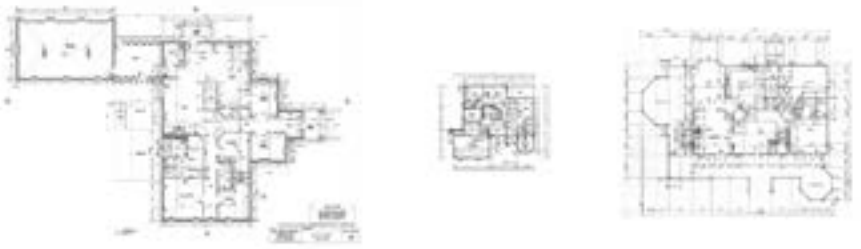
The prefabrication process of the 10-ton boxes took place on site. The basic modular shape was molded in a reinforced steel cage, which measured 30 x 17 feet. Once cured, the concrete box was transferred to an assembly line for the insertion of electrical and mechanical systems, up and in its kitchen and windows. To finalize the production, modular kitchens and bathrooms were installed, and finally a crane lifted each unit to its designated position.

photomerge



Constructed from 354 identical and completely prefabricated modules, each 30 feet square, the building's form is a complex, irregular shape. The modules are stacked in various configurations, creating a stepped, terraced effect. Each apartment is reached through a series of pedestrian stairs and bridges, along with three vertical cores of elevators for the top floors. Service and parking facilities are separated from the tenant's circulation routes, located on the ground floor.

Drawing



photomerge



invert



Pictures



photomerge



invert



Elements for drifting, playfulness, interactivity

After numerous observations of many megastructures, I was able to extract three main elements that I could use to make my own hyper-megastructure.

These elements are carefully picked out to create a comfortable interactive space representing true Bigness, following the new definition of a successful megastructure.

Metabolist Architecture

Referring back to the failed attempts.

Independence of each unit and its role within the whole.

Chaotic aspect;
meandering/drifting.

Porosity

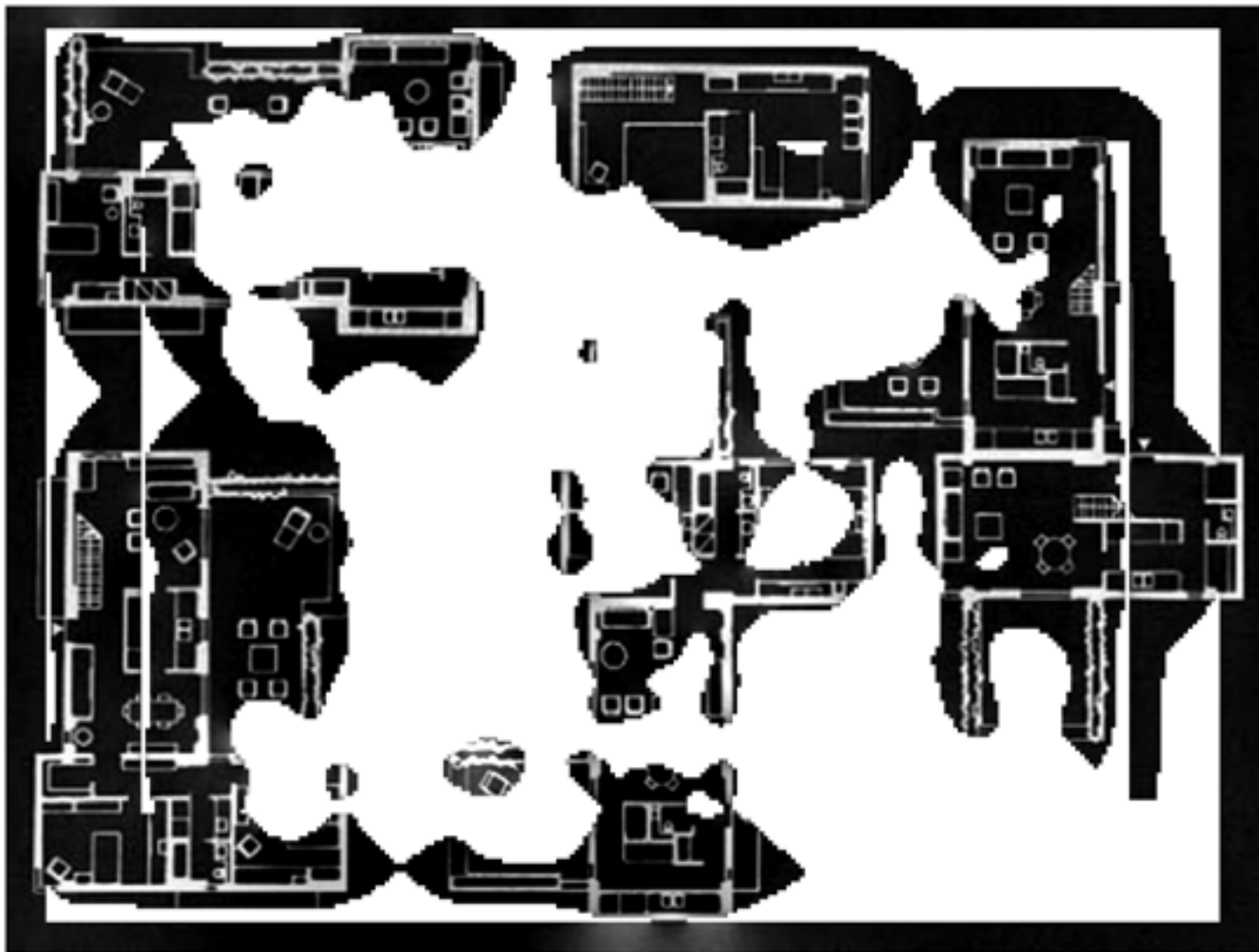
From MVRDV's PoroCity: porosity in an urban context and how it increases interactivity.

Variety of scales makes for playful spaces.

Greenery

Blurring the lines between exterior and interior by bringing the outside in.

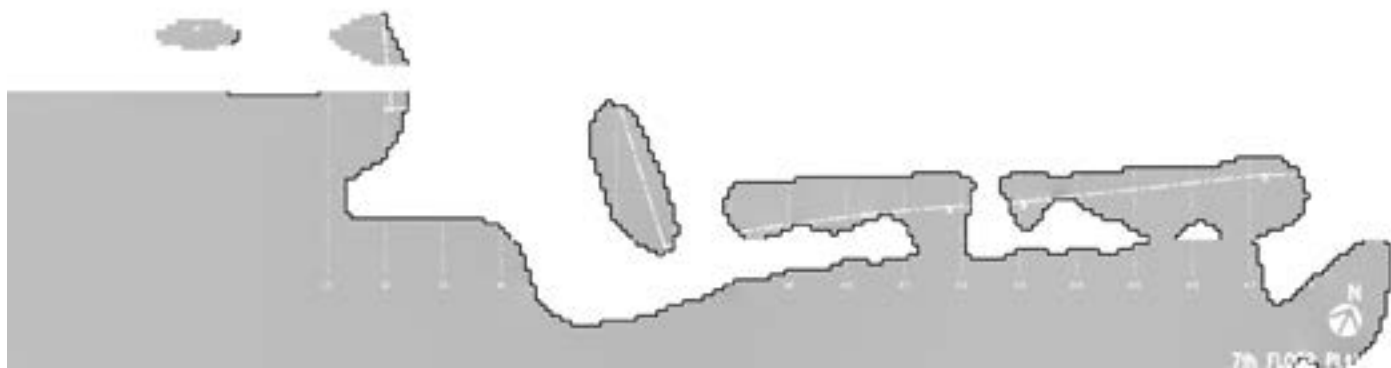
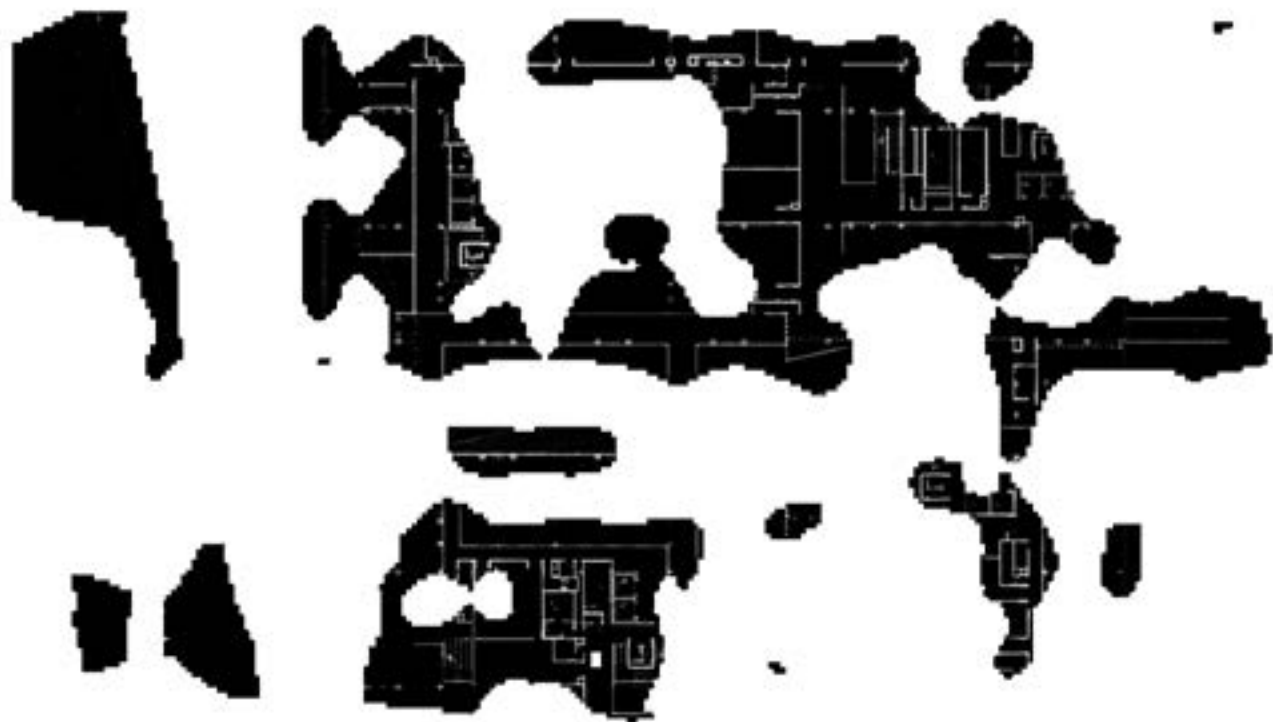
Create a better environment for living.

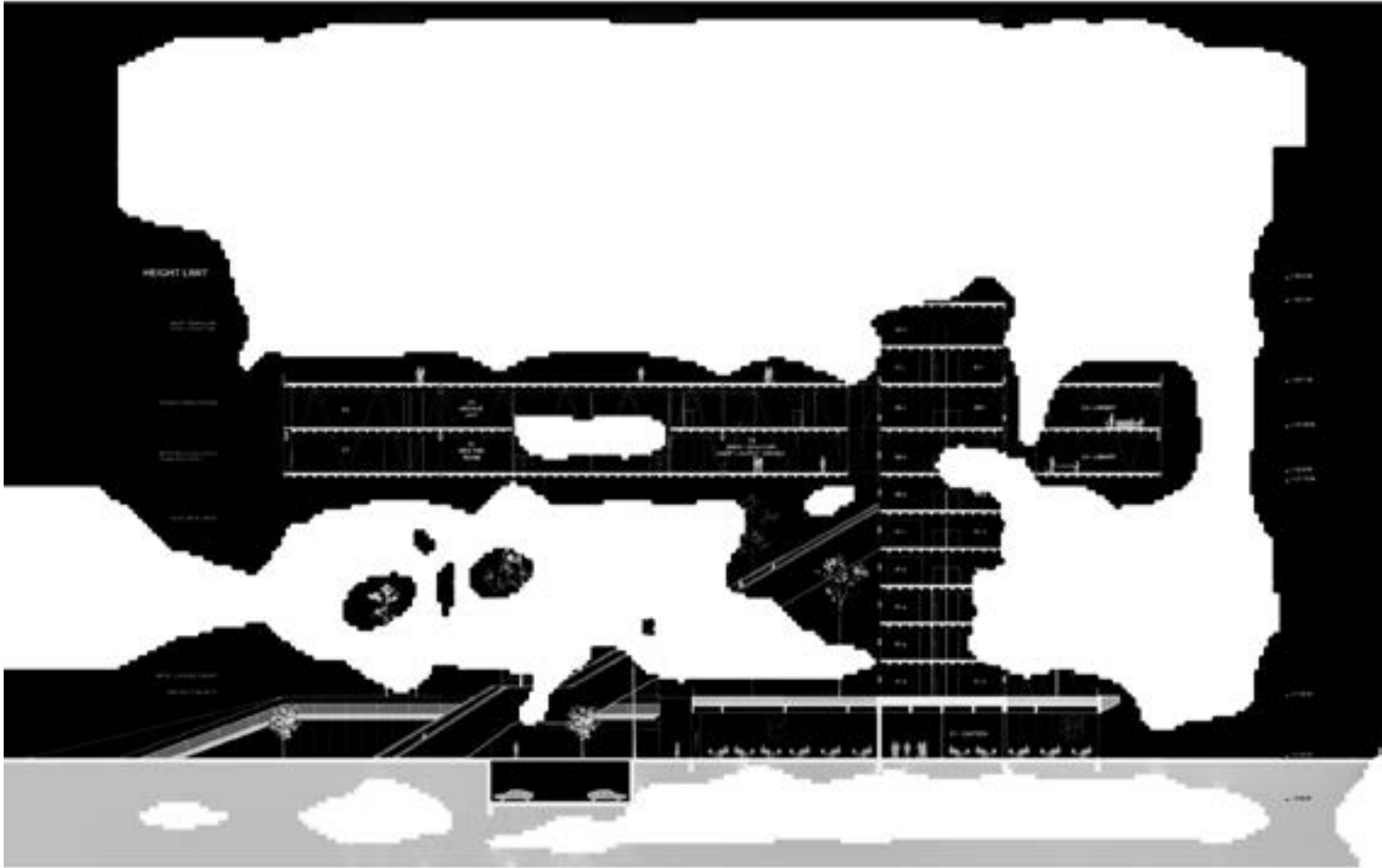


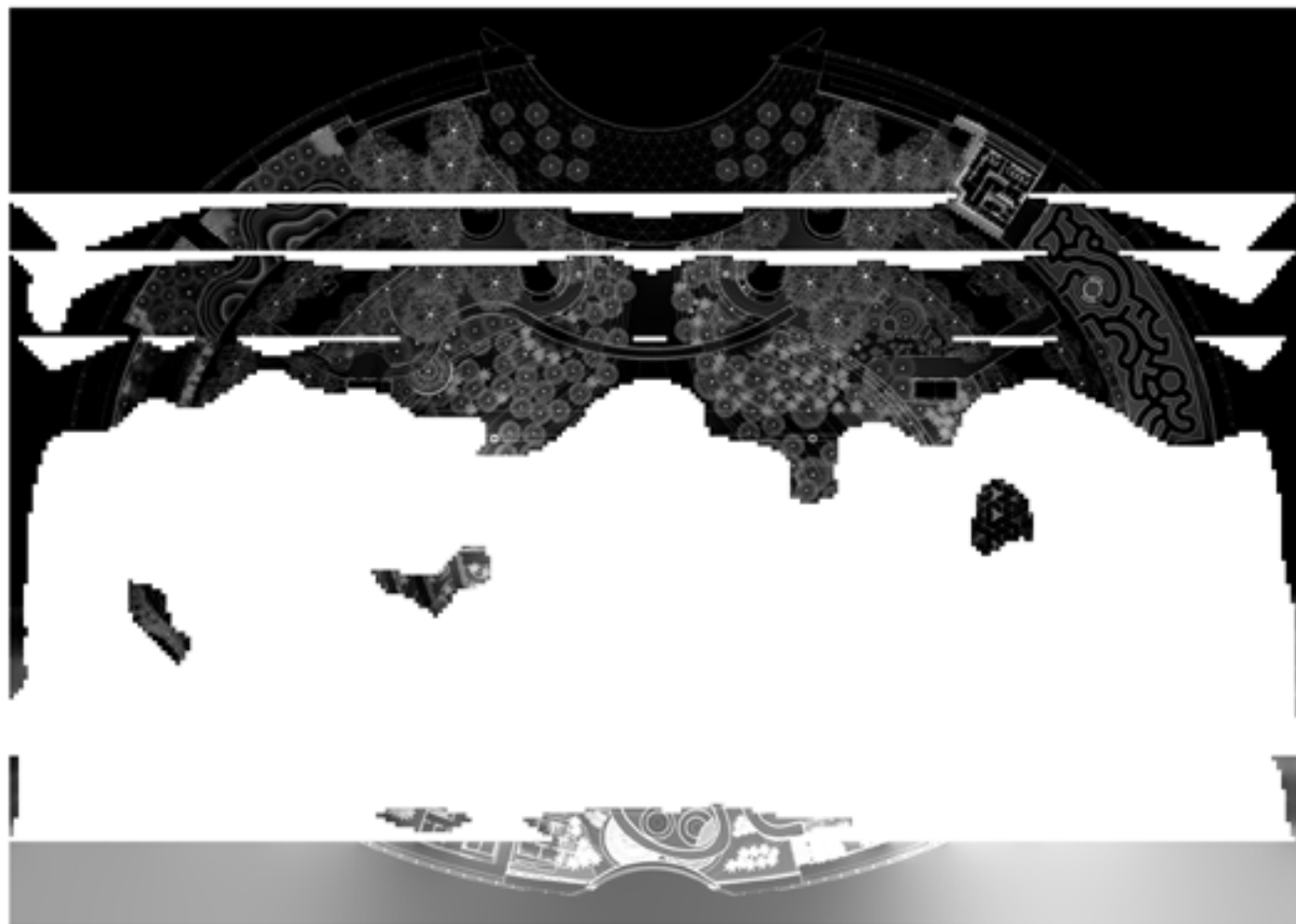


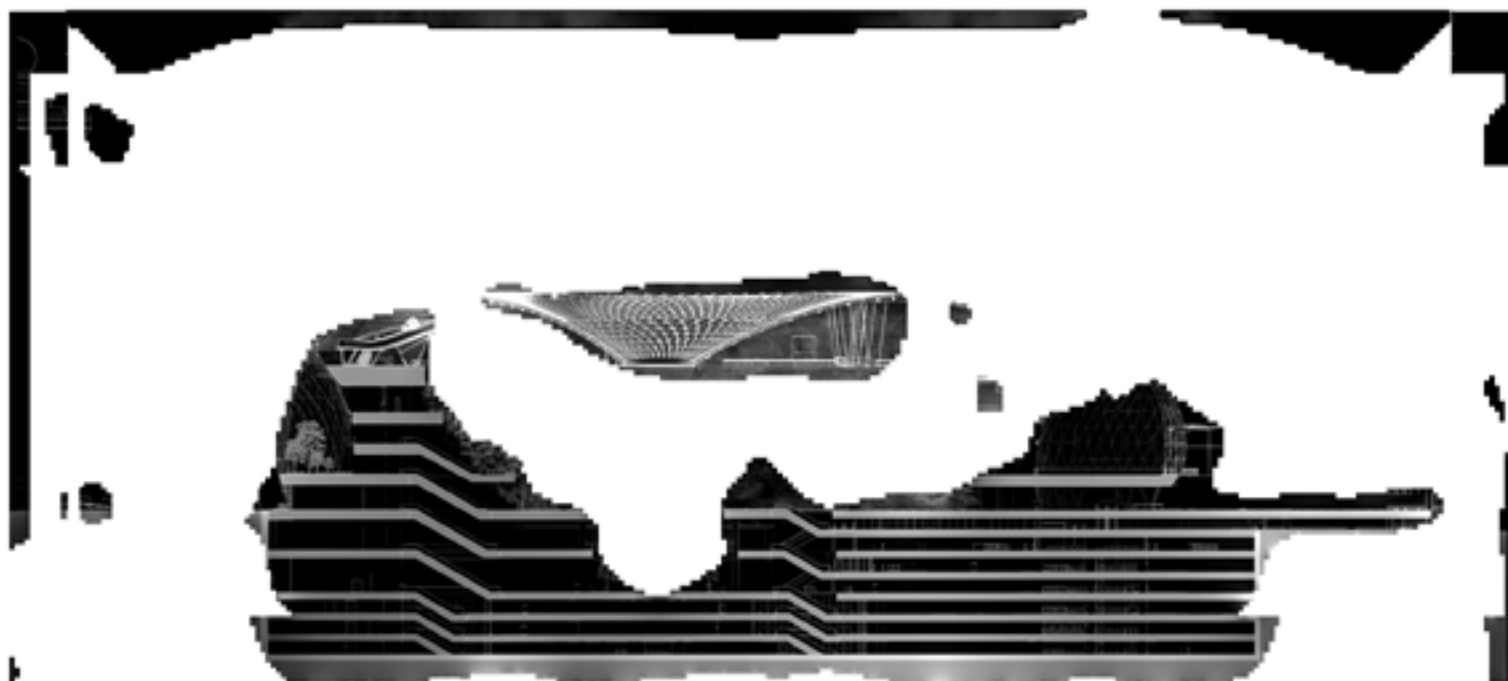










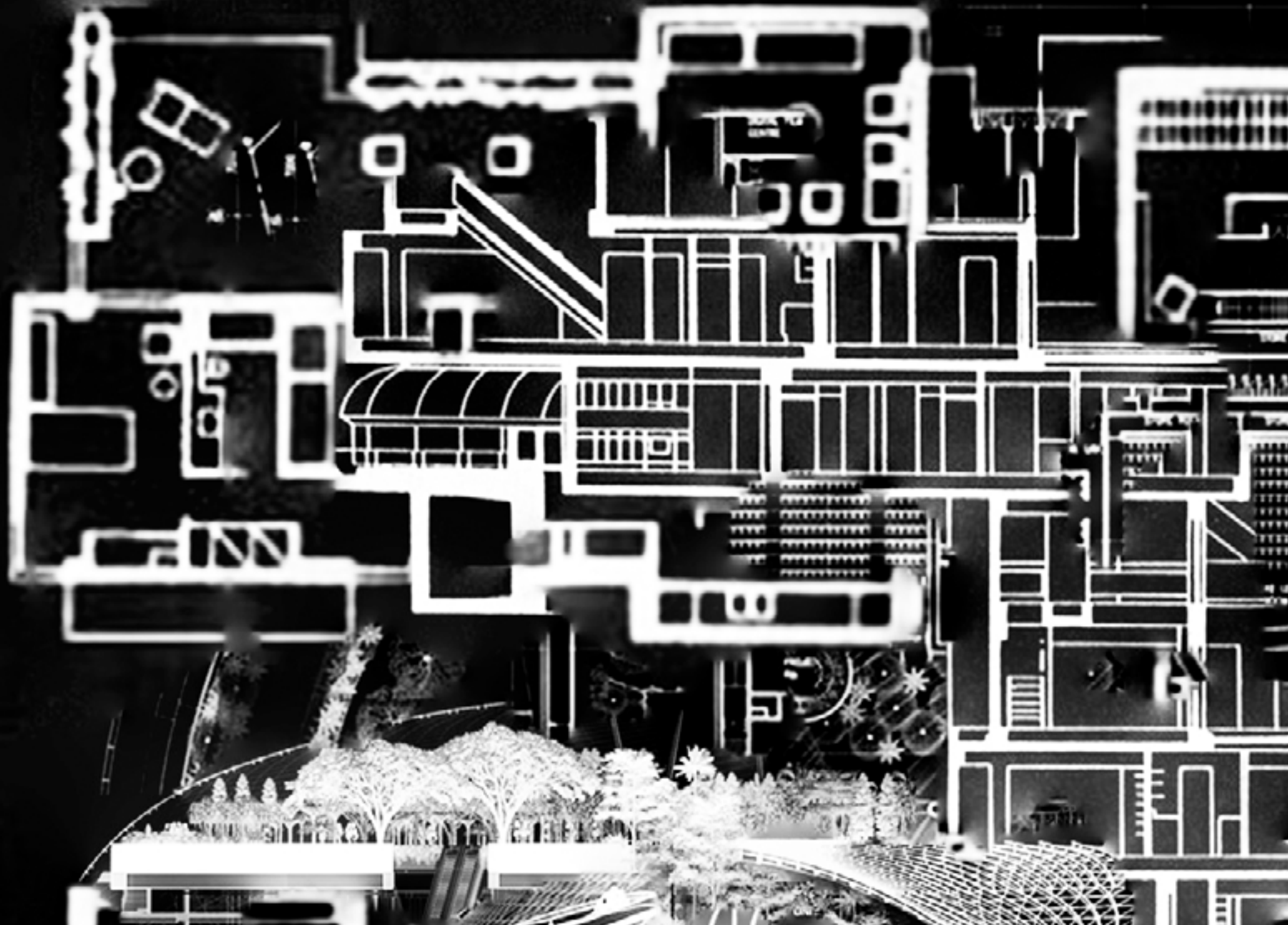




The Creature

- “ By stacking concrete “boxes” in variant geometrical configurations, Safdie was able to break the traditional form of orthogonal high rises, locating each box a step back from its immediate neighbor. This ingenious method provided each apartment with a roof garden, a constant flow of fresh air and a maximum of natural light: qualities which were unprecedented for a twelve story apartment complex. ”
- “ Each functional element, first decomposed, amalgamates and interpenetrates or cuts itself off, by offering the project an immediate clarity from the outside which is very resonant in the city. The flexible and evolutionary plan allows one to envisage future liaisons with the neighbouring campus. The base of the building, the giant “ urban lounge “ favours meetings and exchanges, whilst taking advantage of internal and external green spaces and views of the countryside, thus fulfilling the liaison with the city. ”
- “ The geometry of Jewel is based on a semi-inverted toroidal dome roof. Measuring 200 meters across at the longest span, and supported only intermittently along the rim of the garden, the integrated structure, and the façade system allows for a near column-free interior. Achieving a level of comfort for the diversity of activities, as well as to sustain the vast array of plant life within adequate sunlight, required an integrated system of glazing, static and dynamic shading, and an innovative and efficient displacement ventilation system. ”

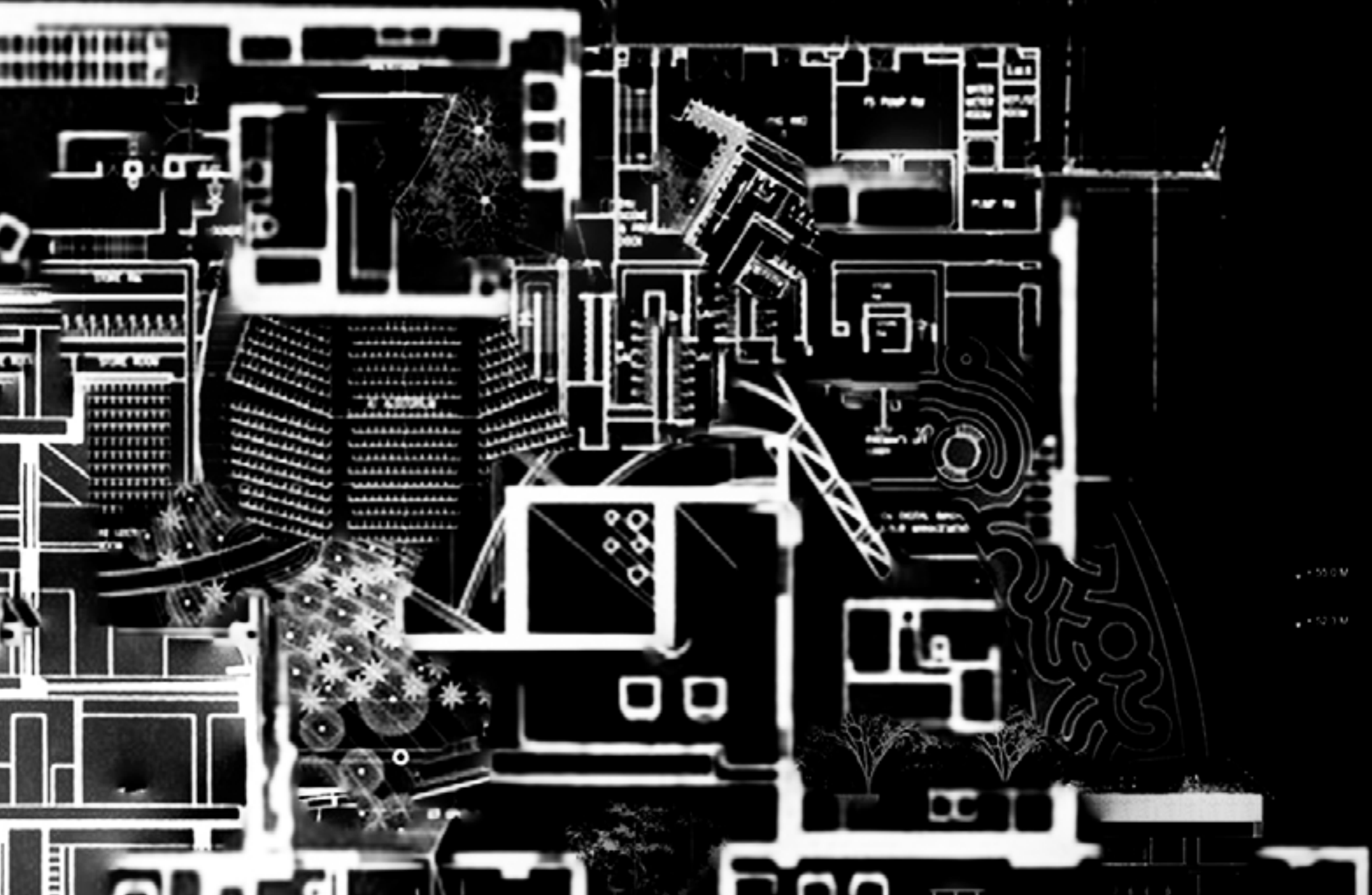




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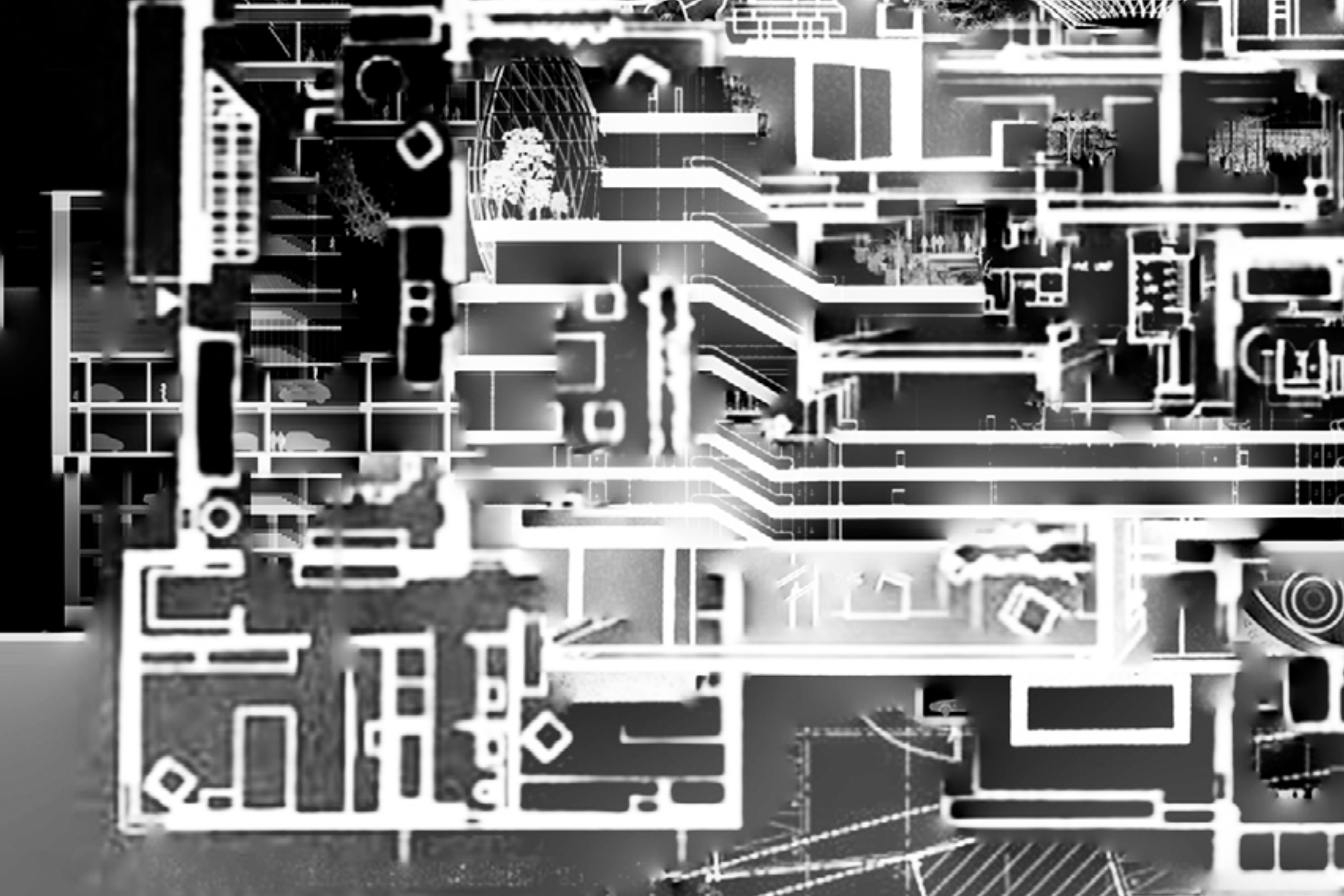
LANDSCAPE AREA
WITH 2.0 METER STRIP

INDEX

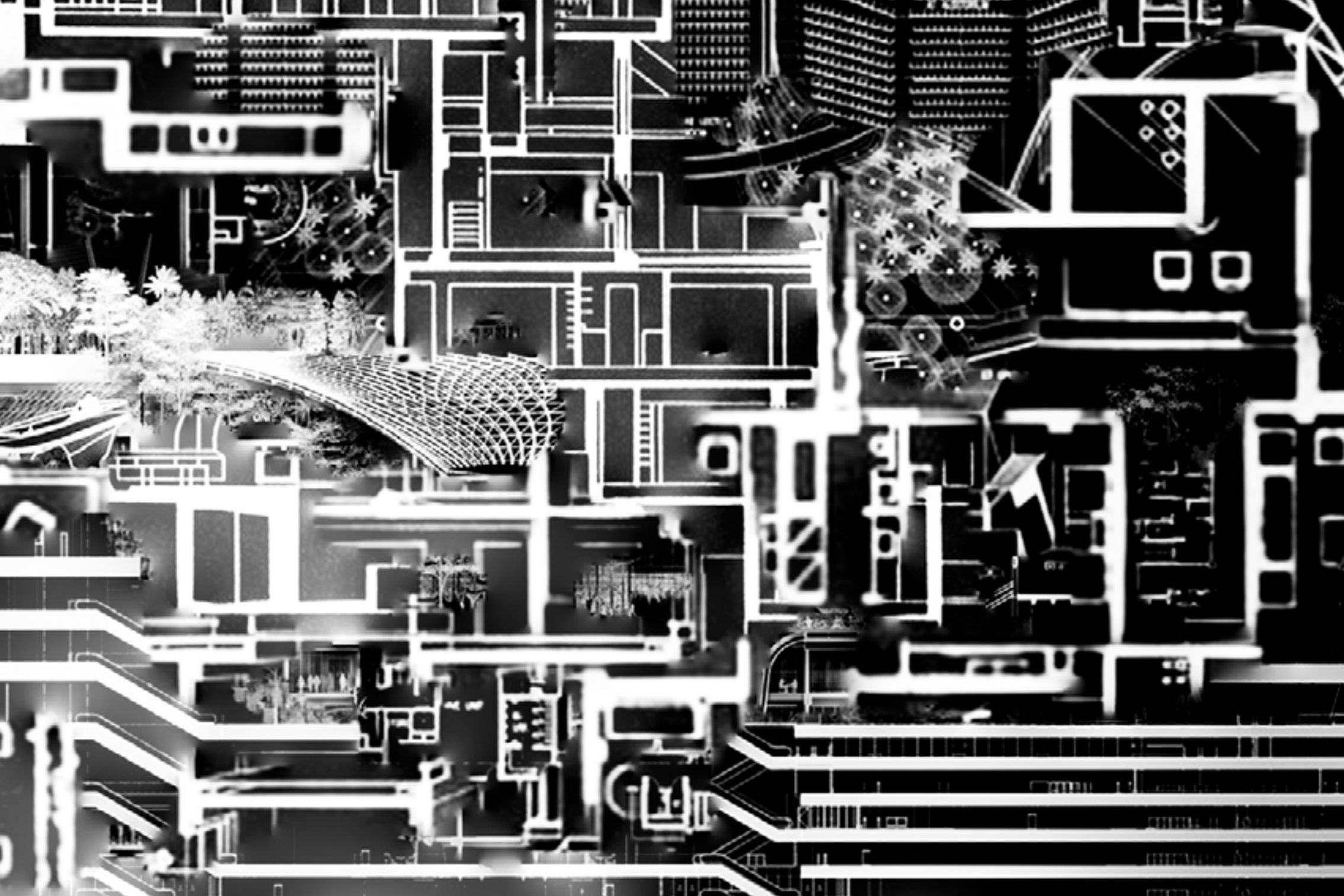


+50.00

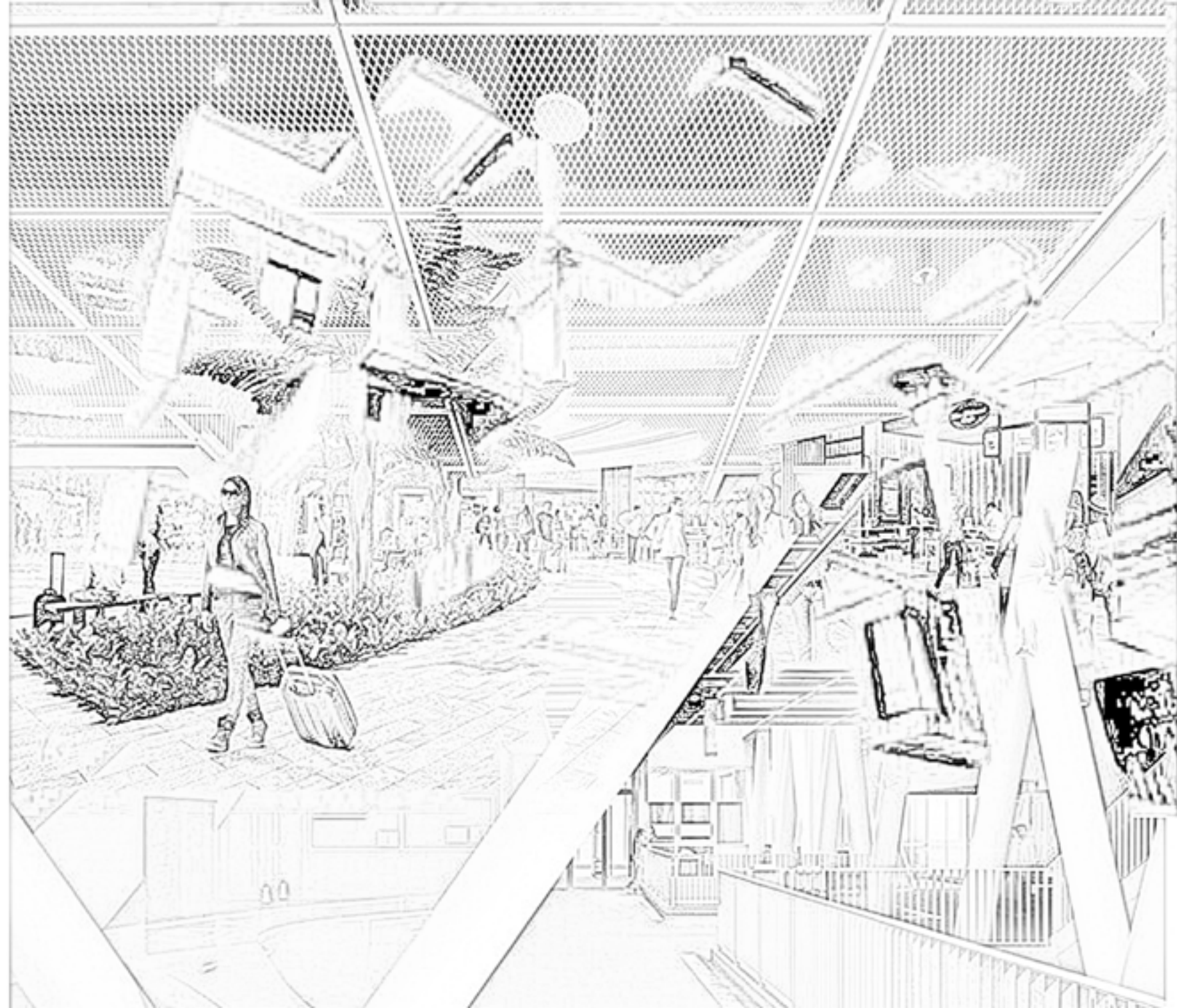
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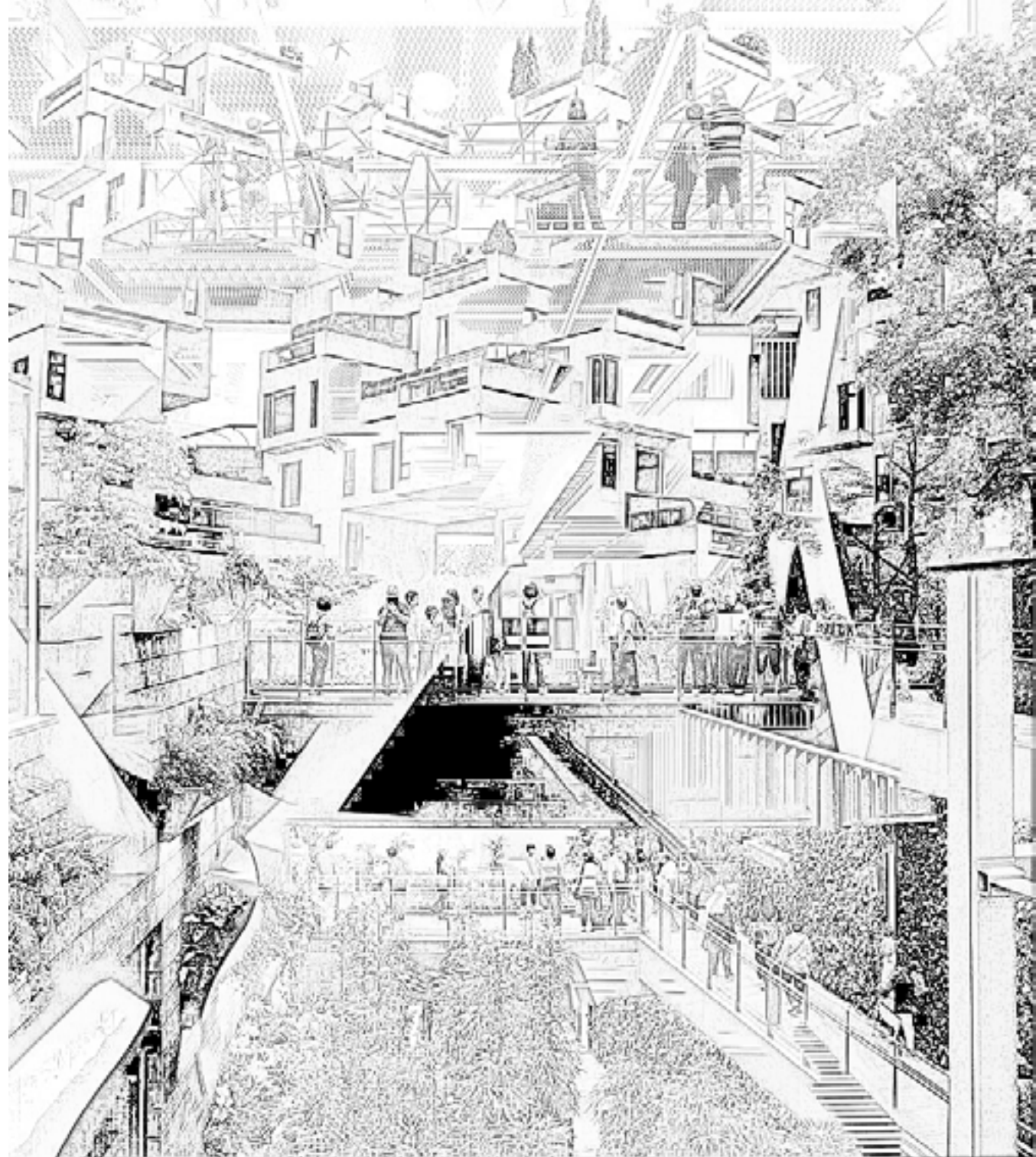


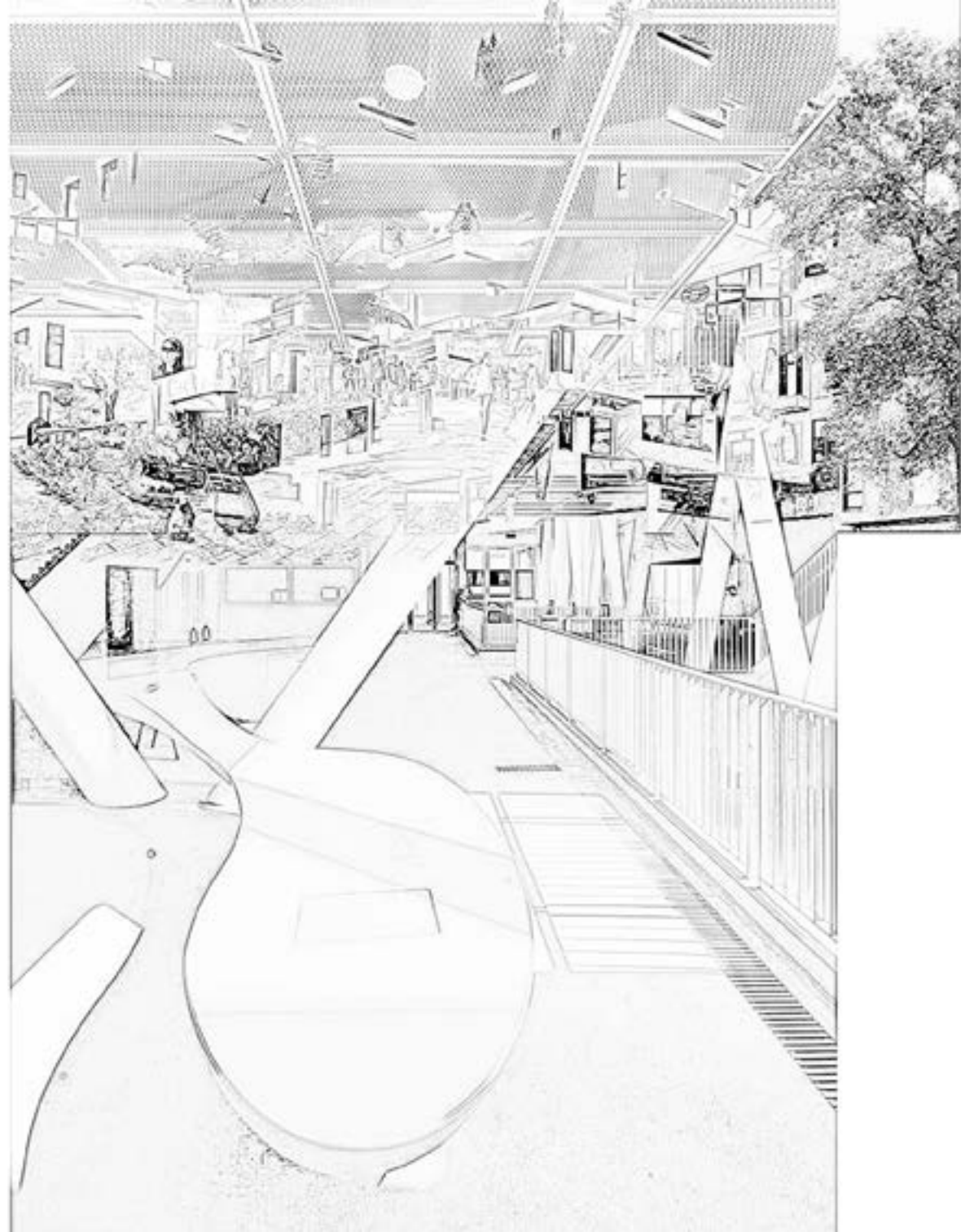


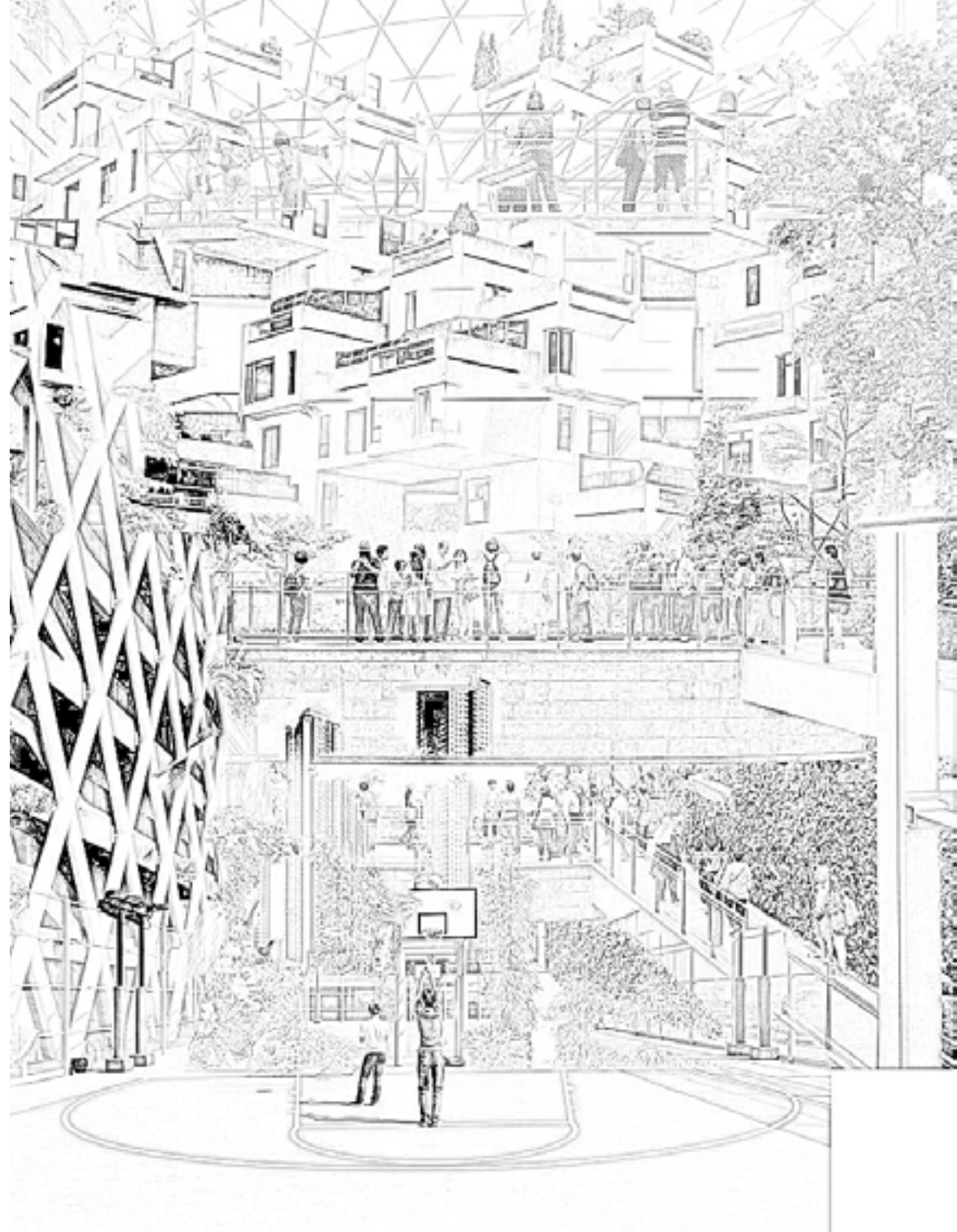


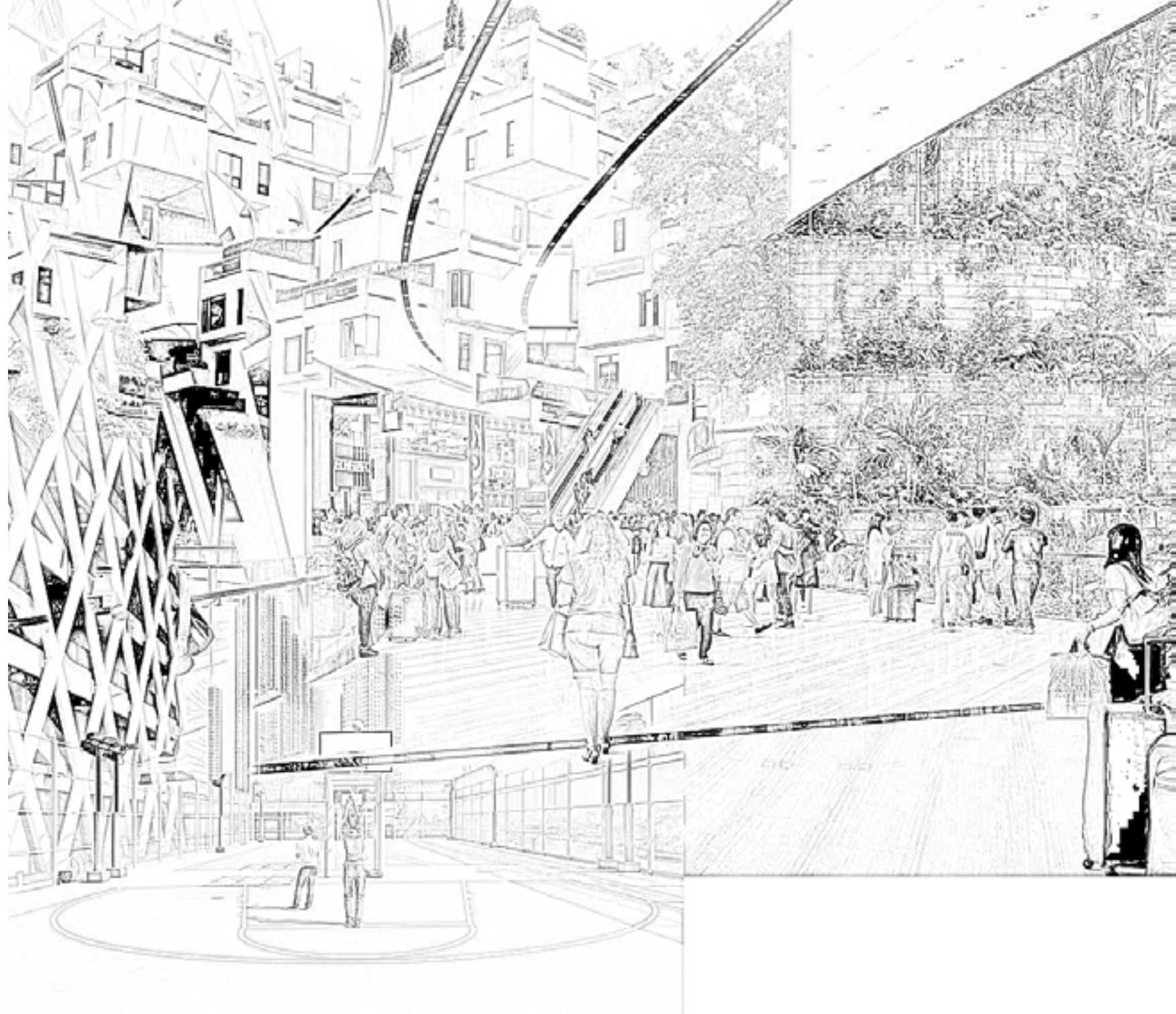






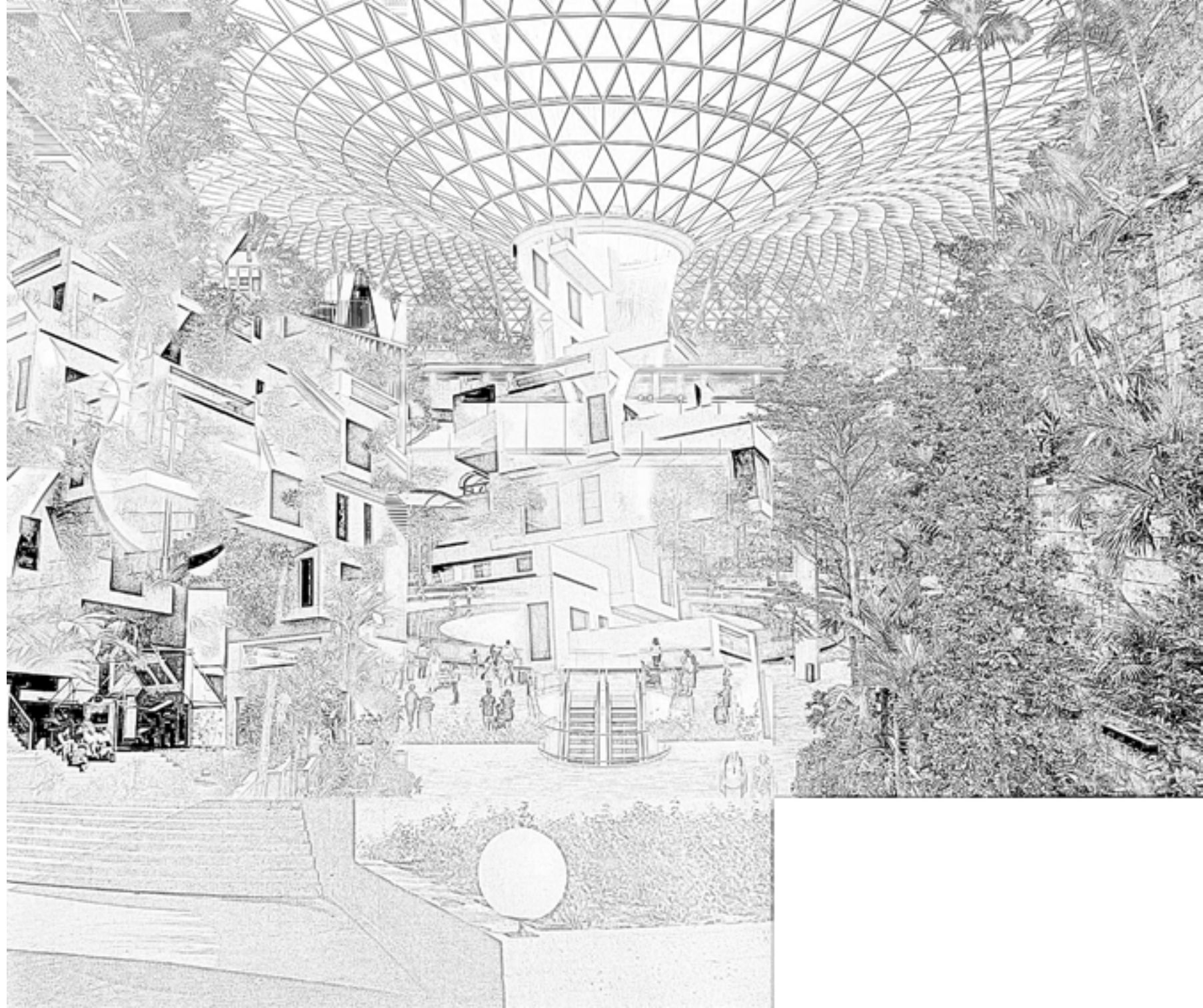










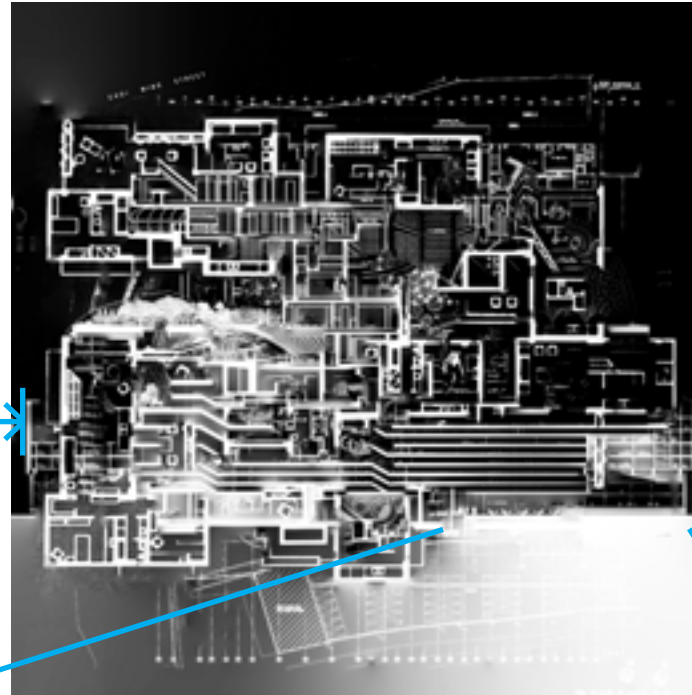




Big, but How Big?

The photomontage resulted in two different scales, which lead to two different sizes.

Taking the smaller figures as reference allows the whole section to be accessible and creates a wider variety of spaces.



120m



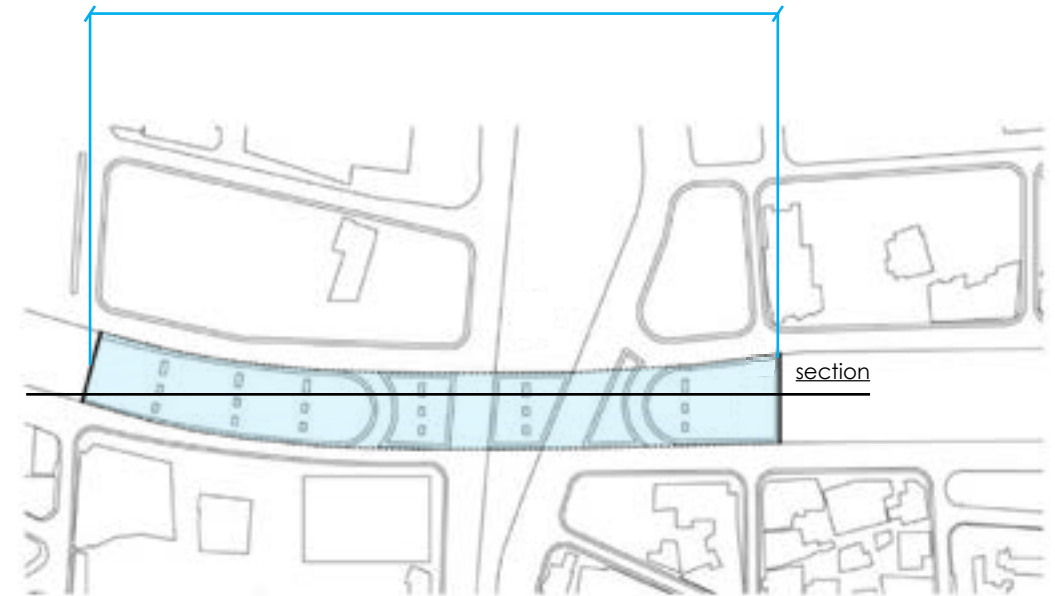
Site and Proposal

The Ring, empty transient space reclaimed by the people

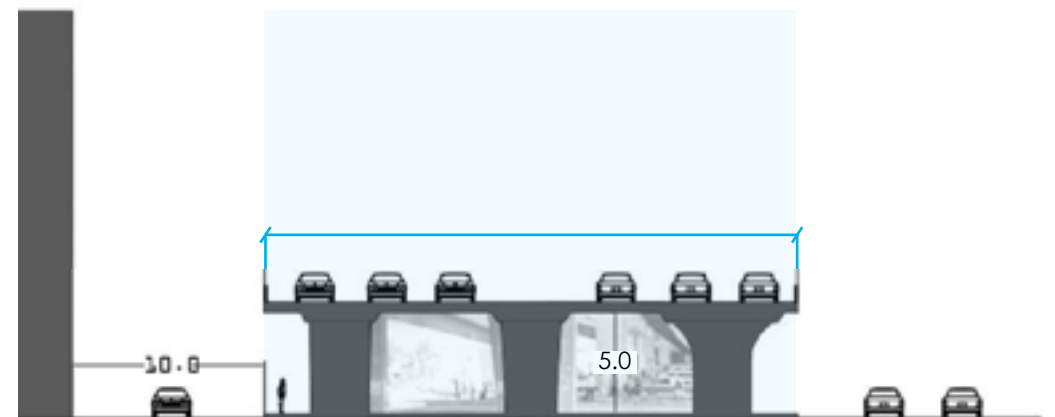
Because of its location in-between communities and the lack of activity around it, the Ring Bridge has been labeled a no-man's land up until the Lebanese revolution reclaimed it.

By turning it into a public space, people transformed the bridge from what was initially a tool of separation between Beirut Central District and the Bachoura area, into a place of unity and self expression. This new wave of people, a patchwork of individuals with different backgrounds, are demanding a space that represents them, independent from politics yet a part of Lebanon.

Vivarium claims the bridge as one of its fragments and builds upon it a network of activity. The megastructure, a spatial patchwork of the optimal elements of interactivity and hyperconnection, offers a space simultaneously free and personal: An open-ended journey where each person can find their story and extends into the area's veins, reconnecting its discarded fragments.



The Ring (under)bridge plan



The Ring (under)bridge plan