

DWELLING HAPPENS

A Study of Urban Living in 21st Century



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Dwelling Happens

The Human Act of Dwelling in the 21st Century

By Brian Patrick Gafney

This book submitted to the faculty of Virginia Polytechnic Institute and State University
in partial fulfillment of the requirements for the degree of

Masters of Architecture
In
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ABSTRACT

It is the responsibility of the discipline of architecture to enhance and compliment the human act of dwelling. One must engage the sun, moon and the changing seasons, provide spatial efficiency to lifestyle, purpose, and need, and harmoniously embed the contextually harmonious mechanics required to aid in modern dwelling.

There are three underlying axes in this thesis in an effort to provide a perspective to reflect upon the entire body of work from the precedent studies, the process work and the final presentation. First, are the Hiedeggerian thoughts pertaining to the human act of dwelling. He states "We do not dwell because we have built, but we build and have built because we dwell that is, because we as dwellers." Simply, architects build to satisfy a specific need of a particular person, family, organization or society. We do not build arbitrarily but require a need to build or change the built environment to satisfy a perpetually evolving act of dwelling. Buildings protect, preserve and cherish dwelling and the evolution of dwelling facilitates the need to build. Architecture responds to this need. Second is the city as the built canvas of society. The perpetual building, rebuilding, unbuilding and modifications illustrate and identify the grain and subtle contextual geometries of city. Lastly is the role of technology in architecture. Sustainable technology, engineered building materials, digital communication and computer controlled systems all aid in making the act of living easier but are not the reason for life itself. Therefore, technology cannot be the concept of an architectural project but only assist the idea.

The Site

Employing the idea of working with the grain of the city, I chose to begin examining one city block on the island of Manhattan in New York City. Understanding what has been built, unbuilt, rebuilt and modified on this site throughout history enabled me to understand the grain and internal geometries of it; allowing my interpretation of the history of the site to direct my design. The site is the triangular block bordered by Edgecombe Avenue, Bradhurst Avenue and 145th street in Harlem. Both Edgecombe Avenue and Bradhurst Avenue are secondary streets mainly occupied with 3 -6 story apartment houses and single-family row houses. 145th Street is one of the large commercial boulevards of the area. The natural and social geography of the site was my initial attraction. It is one of only a few areas where two drastically different neighborhoods, known to the locals as the hilltop and the flats, connect. These neighborhoods are separated by a series of linear parks that were set-aside during the initial planning of the city because they were considered unbuildable land. They are literally shear rock cliffs with elevation changes of twenty-five feet to over sixty feet. The separation provided by the natural geography greatly contributed to the social separation between the two neighborhoods. This site is situated on one of four areas where the city fabric spans the separation and links "the hilltop" with "the flats".

The Program

The project I chose to pursue is a mixed-use urban infill project with four distinct building programs executed with one architectural expression. The programs are two types of urban housing, office/work/retail space, civic/public space, all aligning with the information-driven society and the extension of an urban park interlacing itself with the city fabric and reconnecting the fractured linear parks.

The Thesis

By using the urban context and a conglomerate program, my goal is to realize the architectural possibilities while reflecting on the human act of dwelling. Furthermore, I hope to gain insight and direction for my own career as an architect on how to engage an existing urban context. The method allows the built history to remain and work within the existing context to further adapt and modify the urban fabric.

The Design

I began my design with a typology study. Understanding the existing site axes and geometries, solid verses void, hierarchy of buildings, solar orientation, building types and the construction method used in their making. Using the program I established and the site studies, I began laying out in plan, section and elevation the various architectural elements. The goal is to provide architectural generosity in space, volume and natural light. This was a three dimensional applied program to the site. Through my precedent study, I interpreted forms in nature and especially the complexity and elegance of the human body. My interpretation of the structure of the human spine, shoulder and arm and the interplay of muscles, tendons, ligaments and bones aided in the development of the structural form of my buildings. Repeating the forms and structural idea generated from my interpretations, I used the variation in the scale and program of the buildings to provide variation within a repetitious design. This approach enables the complex of building types and sizes to be part of one architectural expression.

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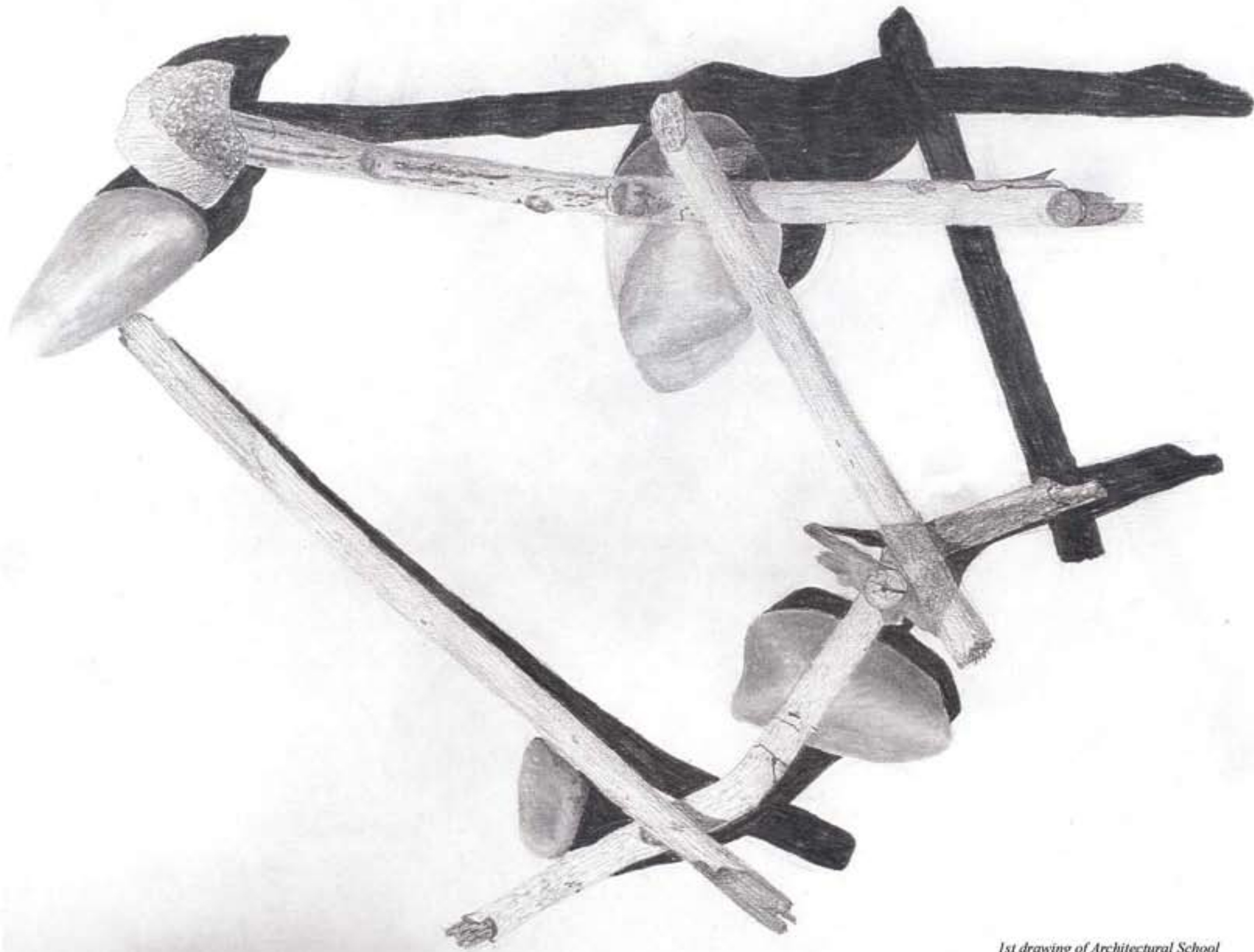
Dedicated to

My Family,
Whose ceaseless inquiry
And unconditional support
Never let me forget

To all those at the WAAC
Who always welcomed
And believed in me
Throughout my atypical
Path in education

And finally, to all those
I have met along the way

Thank You



1st drawing of Architectural School

TABLE OF CONTENTS

INTRODUCTION	Title Page	i	FINAL DRAWINGS & MODEL	Context Plan	27
	Abstract	iii		Site Plan / Ground Plain Plan	29
	Dedication	v		Grading Plan	31
	Table of Contents	vii		Roof Terrace / Canopy Plan	33
THOUGHTS	Dwelling	1		Tower Plans	35
	The City	3		Tower Elevation / Structural Isometric	37
	The Role of Technology	4		Tower Section / Detail	39
PRECEDENT & PROCESS	Initial Precedent	5		Rowhouse - Plan / Section / Elevation	41
	Site Study / Site Plan 1	8		Model Photos	43 - 52
	Urban Photography Collage	11		Bibliography & Image List	53
	Site Plan 1	13			
	Tower Section 1	17			
	Tower Plan 1	21			
	Rowhouse Section 1	23			

DWELLING

What does it mean architecturally to dwell? Furthermore, How does the human need to dwell contribute to the design and production of architecture? I began the pursuit of the affects of the human need to dwell with the quote by Martin Heidegger which states "We do not dwell because we have built, but we build and have built because we dwell that is, because we as dwellers." Simply, architects build to satisfy a specific desire of a particular person, family, organization or society. We do not build arbitrarily but require a need to build or change the built environment to satisfy a perpetually evolving act of dwelling. Buildings protect, preserve and cherish dwelling and the evolution of dwelling facilitates the need to build. Architecture responds to this need.

The act of human dwelling is individual to the person, street, city, region, continent and country. Heidegger questions whether the act of building and indirectly architecture, still responds to this basic need. According to Heidegger, dwelling is simply recognizing the act of protecting, preserving and cherishing life within a specific social context. He discusses in Poetry, language and thought now when we build, we have displaced the idea that dwelling is the generator of building and that building is not the generator of dwelling. I disagree with Heidegger's claim that building is no longer generated from the act of being. In my opinion everything that humans build is to, in some way, to protect and preserve their being which in turn preserves the act of dwelling. Whether the language of building does not embody that thought, it is still present in the action. The act of dwelling and being is no longer embedded in the meaning of the word "build" but that does not mean that it is not present in the act itself. The act of dwelling, in some views, may be masked, distorted and misguided by all the elaborate styles, applied technology, and economic constraints but that is only a change in culture, lifestyle, and trends. The human act of dwelling, if it is innate, will not be affected and will remain. Dwelling at the core of society remains intact and the shell like skin of it is ever changing and evolving. (Reference Adolf Loos, Ornament and crime..)

So how does an architect engage the act of human dwelling? It is an intangible individual, social and cultural based idea, but the idea itself requires a built context to exist. An Architect cannot control people with his/her architecture but can only control the architecture itself. One cannot prescribe dwelling but only provide for it. Dwelling happens. It is a product of living and not of architecture.



Image 1 - Christian Norberg, The Concept of Dwelling, Rizzoli: International Publication, Inc. page 33



Image 2 - Christian Norberg, The Concept of Dwelling, Rizzoli: International Publication, Inc. page 53

If the shell of dwelling is ever evolving but its core remains constant. The question I pose to myself is how does one engage an ever-evolving social skin that at its core remains constant? What central thought could an architect design with that will span the ever-changing society and allow the core of the work to remain? Built work that can evolve with society. In continuing my pursuit, I chose to examine buildings that have stood the test of time. There are two different types of buildings that fall into this category. First, are the building that have remained unchanged and in use throughout its life and second are the buildings that have remained but have been slowly modified, added to, unbuilt and re-built to accommodate for the change or addition of built need. I found myself drawn to the latter for its congruency with my interpretation of dwelling. The inhabitants of these buildings allowed the core building to remain, at some level and added as the needs were added or modified. From driving in the country and observing the additions to family farm homes as the family expanded, driving through Levittown and trying to find an original Levitt home, inner city industrial areas being modified to provide housing, infill projects where the rich existing context remains and projects are built "in-between".

My thoughts and explorations have led me to a simple and universal fact common to all these examples. The core building and subsequent additions provided an architectural generosity. Giving the building the appropriate amount of "wiggle room" to adapt as time and society moves forward. This generosity was present with regards to natural day lighting, orientation, volume of space, program, circulation, and overall efficiency. Architecture's contribution to the human need to dwell is in the making of a generous place.

THE CITY

The city is the built canvas of society. More specifically, the city's architecture is a physical reflection of regional culture. If a city's social and cultural attributes reflects the act of dwelling, than a city is the physical product of the need to dwell. If society, and therefore culture changes, the way we dwell changes. If the way we dwell is changing than architecture and subsequently the built environment must adjust.

Presently we find ourselves on the threshold of social/cultural change between the former industrial based society and the newly conceived information driven society. If you look back in history, these changes in the social construct do not happen abruptly but rather gradual and are only evident when looking back at the history of building. A change to the built environment due to social change has occurred in the recent past when the American society changed from an agricultural society to and industrial based society. The architectural product was modernism. The change in the architectural product of the information driven society will not be as brutal as modernism but it dwells in the subtleties. The change is not a distinct abandonment of one way of life for a new one but instead it is an addition to the existing society/culture. Likewise, a city evolves over time through the act of building, rebuilding, adding and modifying. Cities have embedded in them, a rich history of culture and is a dynamic representation of our society. Exemplifying our perpetually changing concept of dwelling. The expansion of the society/culture dissolves the unnecessary and leaves what still functions or is sacred. The remnant becomes our history and tradition. Even within the root of the word tradition, from the Greek word tradere, which means to carry forward or to transfer, indicates how our society does not abandon but builds upon and carries what is still needed and useful forward. Working within an existing context to gradually modify itself, instead of eliminating it and starting over. Intelligent ulterior motives to re-urbanizing the existing city structure.

So what is the architectural response to the addition of information driven culture? What needs to be modified to adequately respond to the addition? My method of answering these questions is to choose a small piece of a city, on the fringe, a place with existing builds that have felt the affects of neglect and being forgotten. I have chosen a portion of a city block in Harlem New York City to adapt for dwelling.

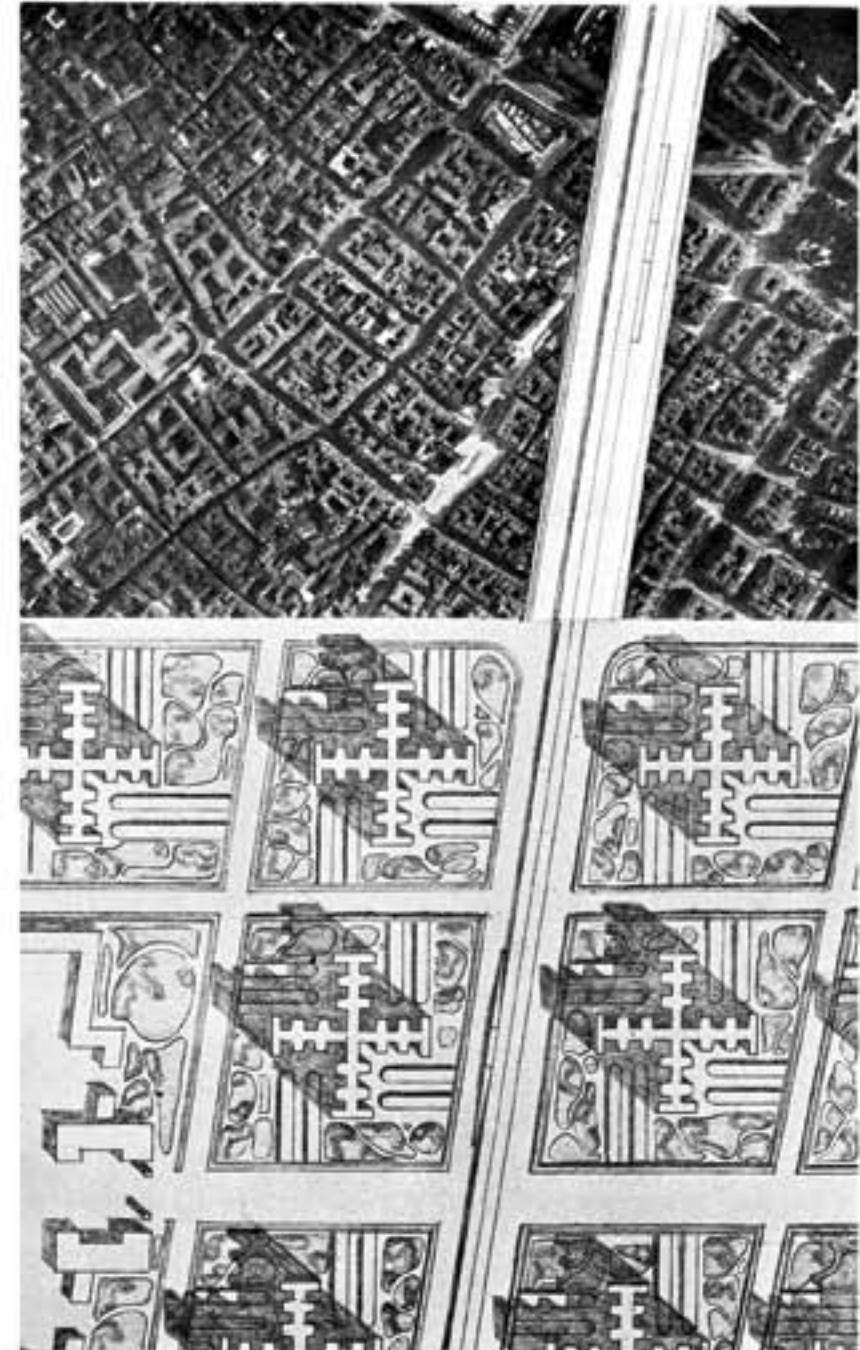


Image 3 - Le Corbusier, *The City of Tomorrow and its Planning*, Dover Publications, Inc, New York, page 289

THE ROLE OF TECHNOLOGY

Technology's presence in our daily lives is growing at an exponential rate. How does the city advance, grow and modify itself when applying technology without losing a sense of itself? How can it move forward without forgetting its origins and its own social foundations? During my pursuit in this phase of my thesis, I stumbled across the Greek word *tradere*, which means to carry forward or transfer. It is the root of the modern word tradition. This thought began to shed light on my question of technology and the evolution of the city. The ideas of carrying forward the applicable traditions of culture relevant to the culture's relationship with dwelling and subsequently the relationship to the built environment established a metaphor to begin my thought. The relationship justified my desire to allow what exists on the site to remain. Considering the existing context as tradition and allowing the applicable parts of it to be carried forward.

The addition or modifier to the city has always been technology. The application of technology is not new to architecture or culture. I am not focusing on the particular application of a specific technology in a piece of architecture but more specifically the way and motives used in applying it. Technology is the element that will advance a city, from energy efficiency, green strategies and building materials to bandwidth computerization and automation of once manual and mechanical functions. My interpretation of Hiedegger's statements in *Building, Dwelling Thinking*, is the course of society has been derailed and the emphasis is no longer on how we dwell or to indirectly improve the society but rather where can we use technology. Dalibor Vesely responded to the question of the effects of technology on modern life: "Technology is the capacity to create not only a reality but also a delusion of culture. It is a defensive operation which can postpone confrontation with the problem of reality. The possibility of living in a delusion that looks like reality is one of those things one feels when coming to the US from Europe. Other countries cannot do this as extensively because there is greater cultural resistance." Other cultures with a longer history and sense of tradition resist technology. A well developed society that functions on a strong sense of tradition and does not need to mask its inadequacies with technology would naturally not immediately embrace any new technology that comes along. Instead it uses technology only as an addition to society and reflects its social values through it. Hassan Fathy stated, "Technology should be subservient to social values."

Architecturally this translates to the idea of preserving the parts of the built environment that still function. To work within an existing built environment, allowing what exists to be carried forward, while adding and modifying it to efficiently work with modern society instead of eradicating all record of it and starting over. Enabling architecture to evolve with the city while acknowledging its history.

On the topic of technology specifically, as Vesley states the uninhibited application of technology is a "defensive operation which can postpone confrontation with the problem of reality". We need to be more critical of our application of technology. We need not apply technology for the sake of it being technology but recognize how it will aid in society.



Image 4 - Leonardo DiVinci, Deluge, Benoit B. Mandelbrot, The Fractal Geometry of Nature, W. H. Freeman and Company, New York, 1977, page C3

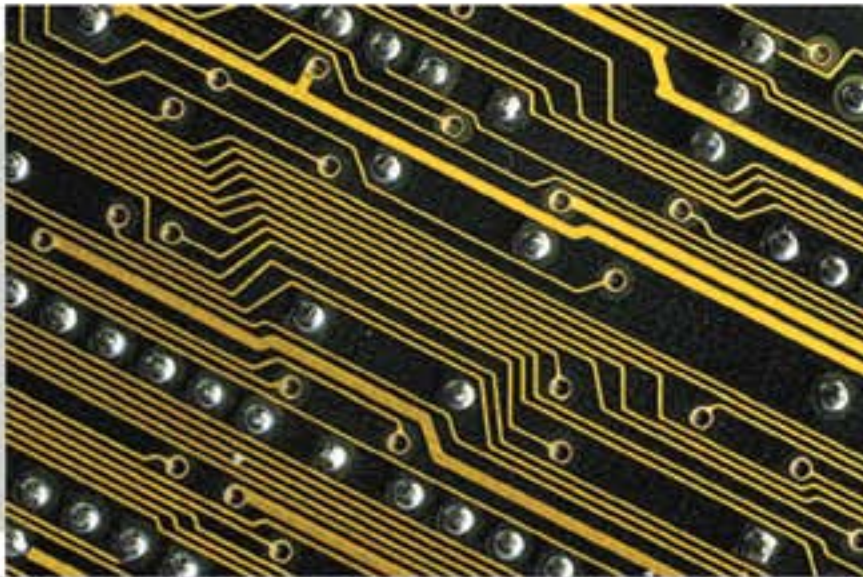


GEOMETRY OF NATURE

All my work's initial inspiration is derived from the natural environment. It acts as the lens in which I see my design. The beauty of its infinite variation of forms, its ability to adapt and work within its surrounding context and the infinite ways it structures itself as per its surrounding environment.

A-1

Image 5 - www.fredfoto.com/, Ian Britton, Tree, Sunrise, Northumberland



SCALES OF CURCULATION

I have always been fascinated with the complexity of modern circuitry. A set of parallel and perpendicular geometric pathways all designed to perform a specific set of complex operations. A complex hierarchical geometry designed to move, stop, store and release energy.

B-1

Image 7 - circuit board photo, <http://www.flickr.com/photos/craigjewell/>



Image 8 - 2008 Travel Guide Road Guide, GeoNova Publishing, Inc, map 94, New York City



NATURAL FORMS

The forms, textures and apparent resistance of material and environments subject to sun, wind and water over long periods of time can provide insight not only to the resistance of material but with the forms themselves. Describing the actions and product of the natural elements of a specific context in material.

C-1

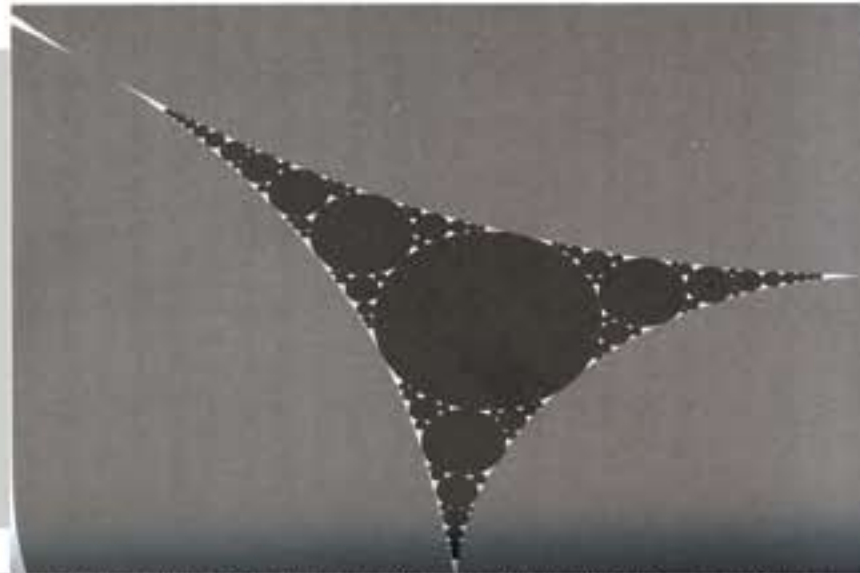
Image 10 - www.wadil-ghasoubi.com/Nature/2/index.html



Image 11 - Waterfall, <http://www.flickr.com/photos/konsumitsyon/>

Thinking of any context like the grain of a piece of wood, there is an established geometry that enables one to determine how to work with or within it. Similar to material, the context provides resistance, defines its strengths and weaknesses and its beauty and potential. By understanding the "grain" of a context, the architect can determine with greater accuracy where it required additional strength or where to subtract from it without destroying its underlying integrity.

A-2



Geometry cannot be the governing idea of architecture but instead enables the architect to order an idea. As stated in Benoit Mandelbrot's book on the fractal geometry of nature, "nature exhibits not simply a higher degree but an altogether different level of complexity. The number of distinct scales of length of natural patterns is for all practical purposes infinite." The natural environment organizes itself with a specific geometry of self-similarity throughout and infinite set of scales. Providing variation within repetition.

A-3

Image 6 - Benoit B. Mandelbrot, *The Fractal Geometry of Nature*, W. H. Freeman and Company, New York, 1977, page 170

Similar to the circuitry board, the city has a complex hierarchical geometry designed to move, stop, store and release people. It is a geometrical system more complex than that of the circuitry board because it must have built into it a generosity to adapt, change and provide minimal resistance to the inhabitants circulating through it.

B-2



The super highway, to the local streets, to the circulation within a building is the natural geometry of the city. Self-similarity throughout scales. As the city grows, it adjusts its hierarchical geometry and works with the resistance of the context to accommodate for the growth.

B-3

Image 9 - USGS, *New York City*, <http://www.usgs.gov/>

The infinite geometries of nature are modified by the forces of the natural elements and slowly change the natural context, displaying the resistance of the material and in turn, its potential.

C-2



My appreciation/admiration of the human form. The complexity of the curves and the structure that supports it. The evolution of form. She was beautiful...

C-3

Image 12 - *Female Shoulder*, http://www.flickr.com/photos/ash_sphinx/

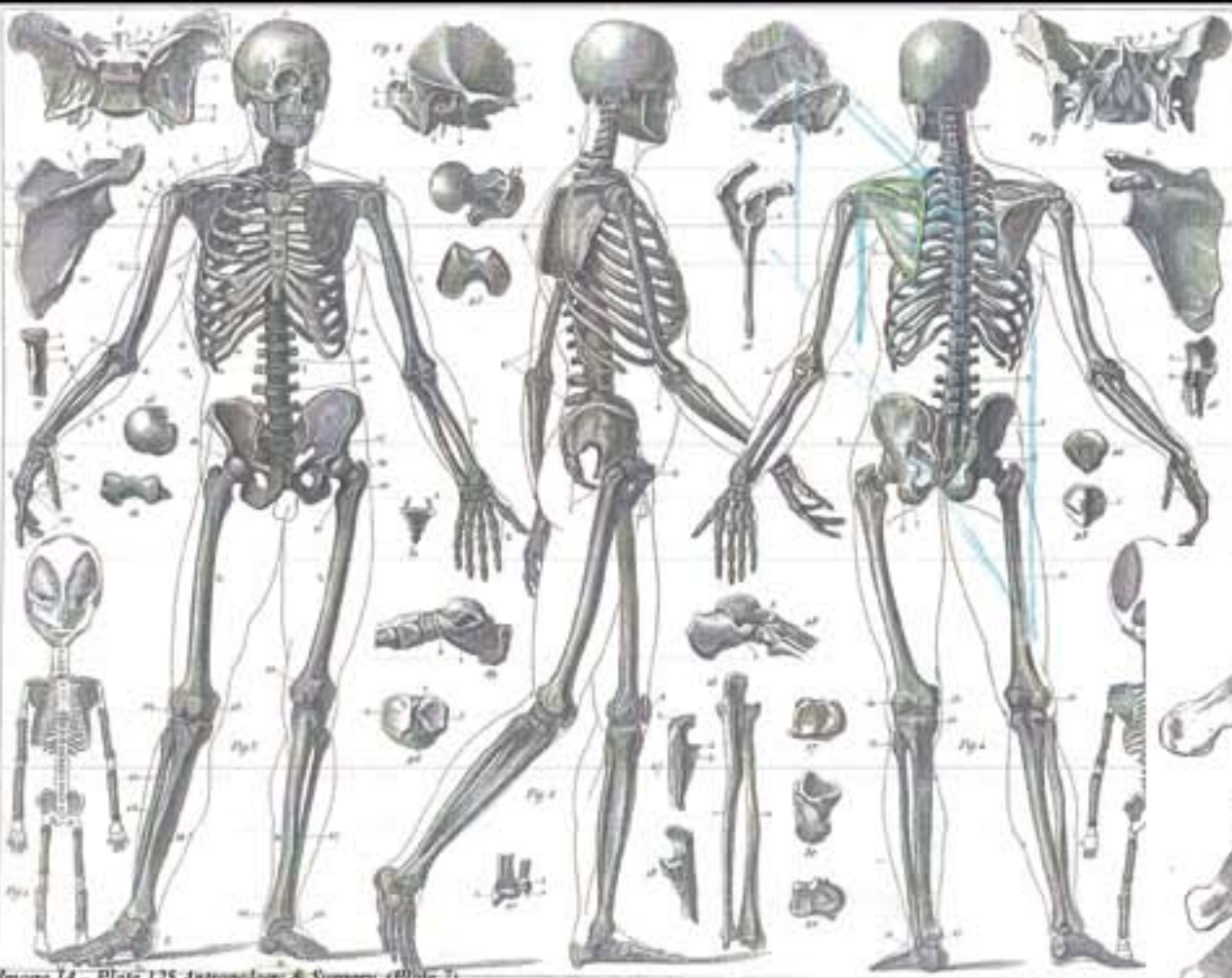


Image 14 - Plate 125 Anthropology & Surgery, (Plate 7)



Image 13 - Henry Gray F.R.S., Gray's Anatomy, Courage Books, 1974, page 44, fig. 14



Image 15 - Henry Gray F.R.S., Gray's Anatomy, Courage Books, 1974, page 40, fig. 6

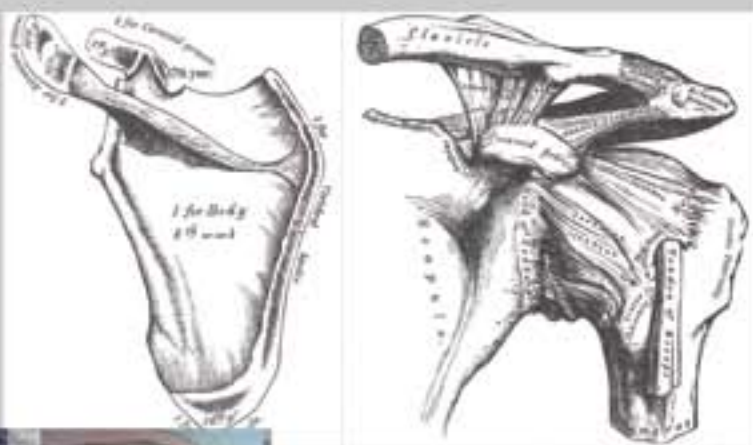
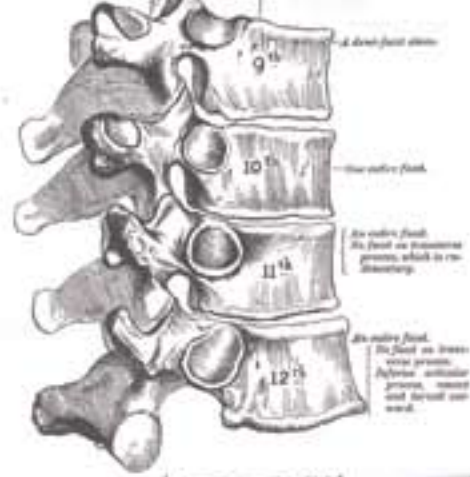


Image 16 - Henry Gray F.R.S., Gray's Anatomy, Courage Books, 1974, page 248, fig. 169



The human structure
The muscle, tendons, ligaments to assist and strengthen
The beauty and complexity of the structure.



18 - Henry Gray F.R.S., Gray's Anatomy, Courage Books, 1974, page 338, fig. 213



39

EDGECOMBE

BRADHURST

AVENUE

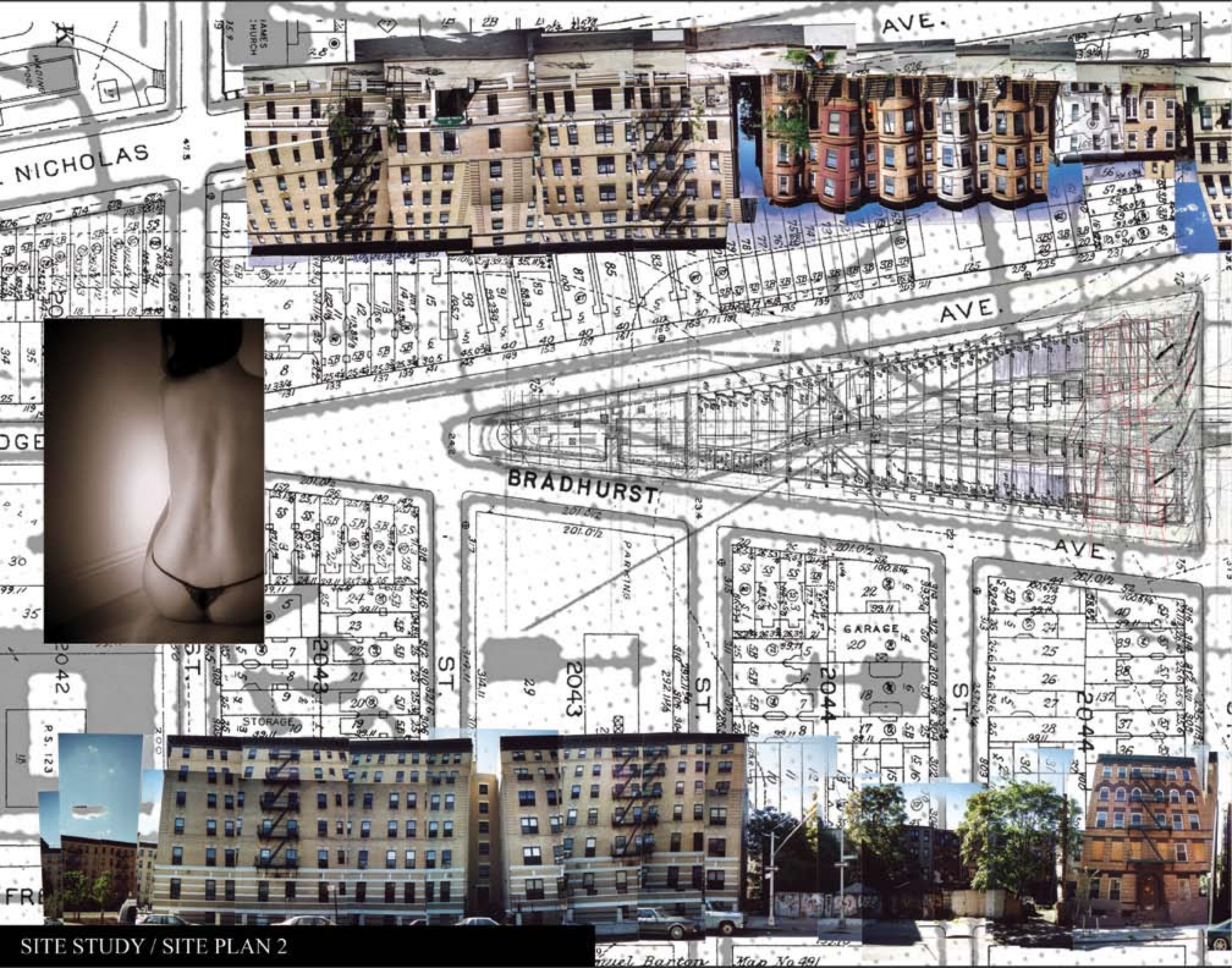
AVENUE

WEST

WEST

WEST





NICHOLAS

AVE.

AVE.

BRADHURST

AVE.

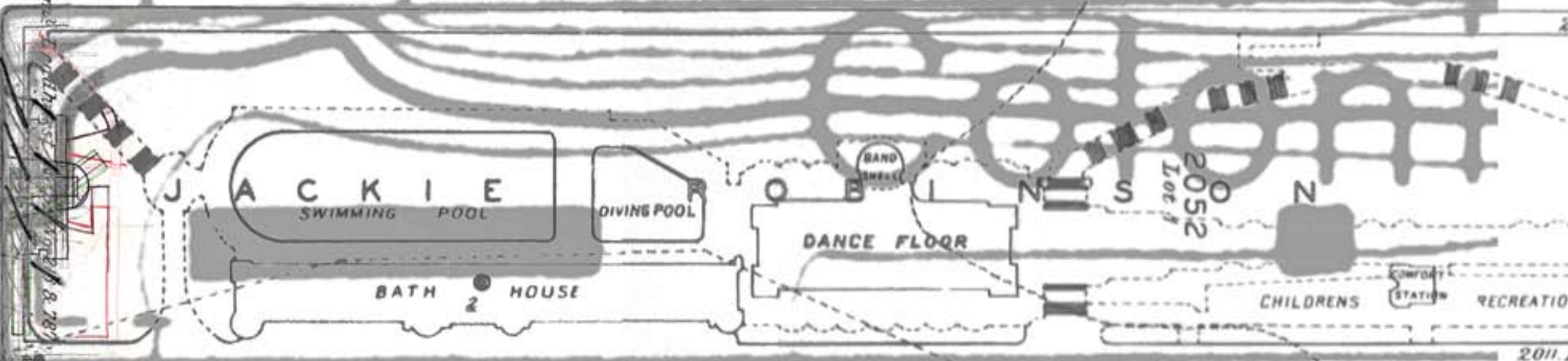
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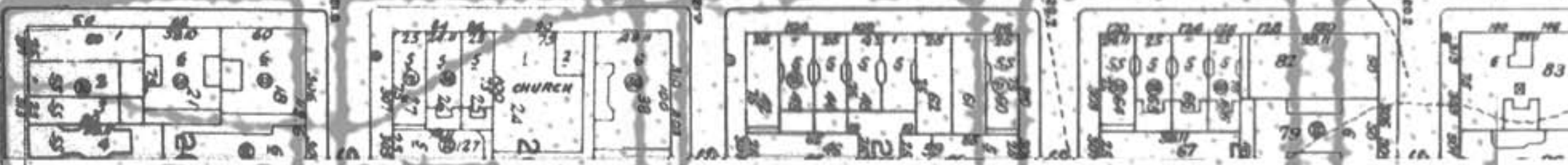
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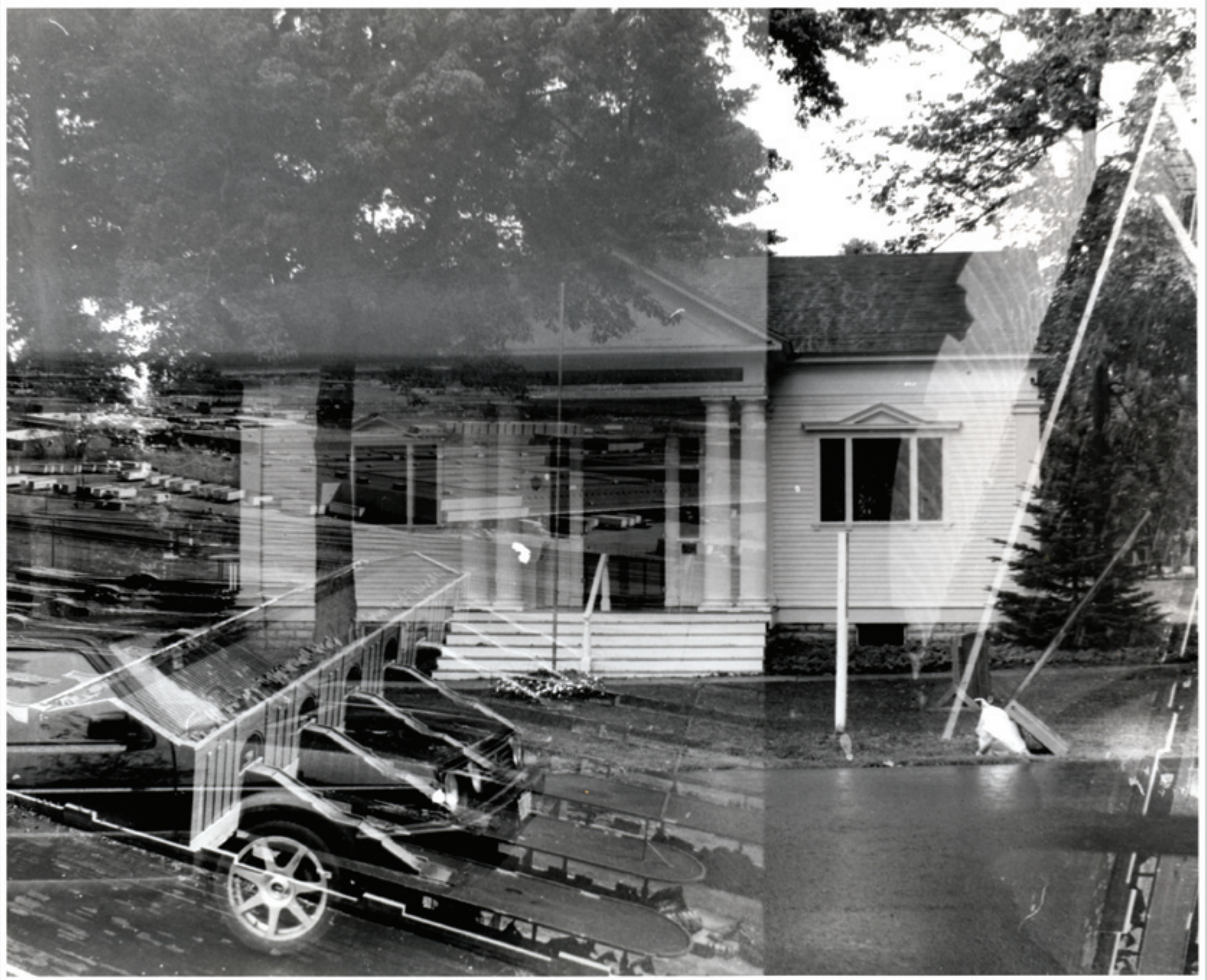
EDGE COMBE

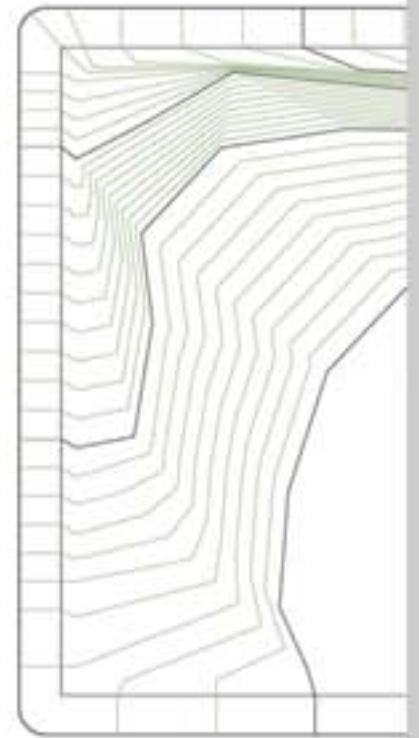
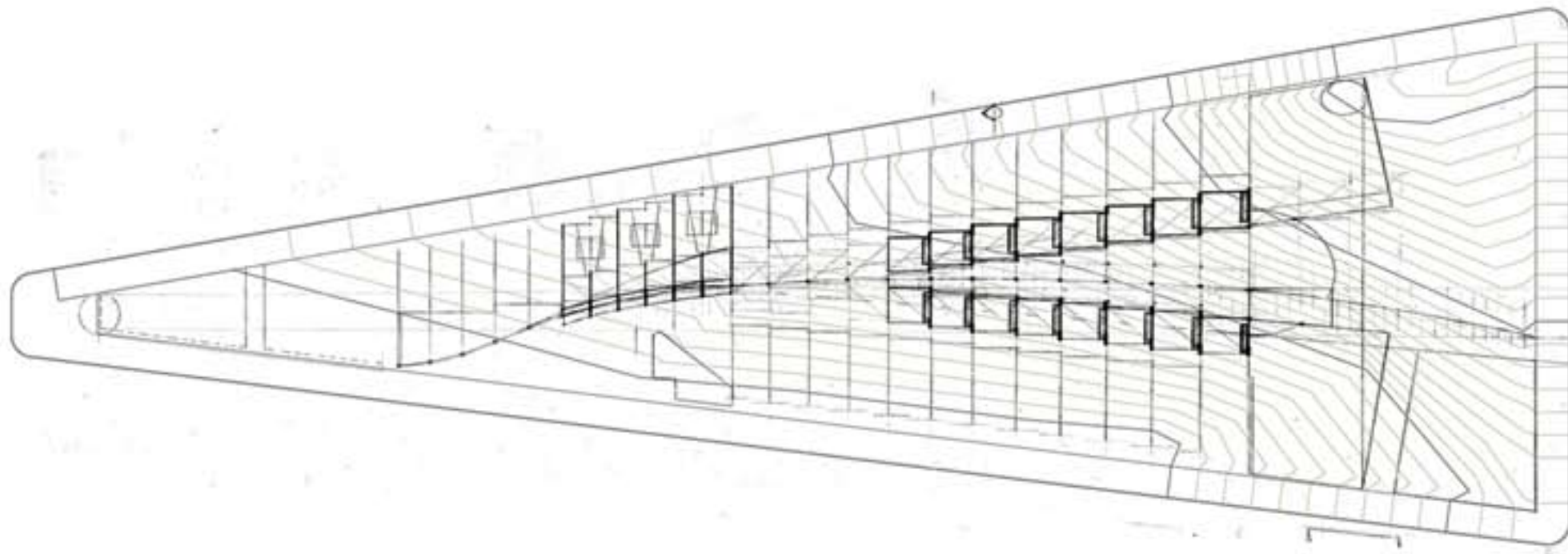


BRADHURST

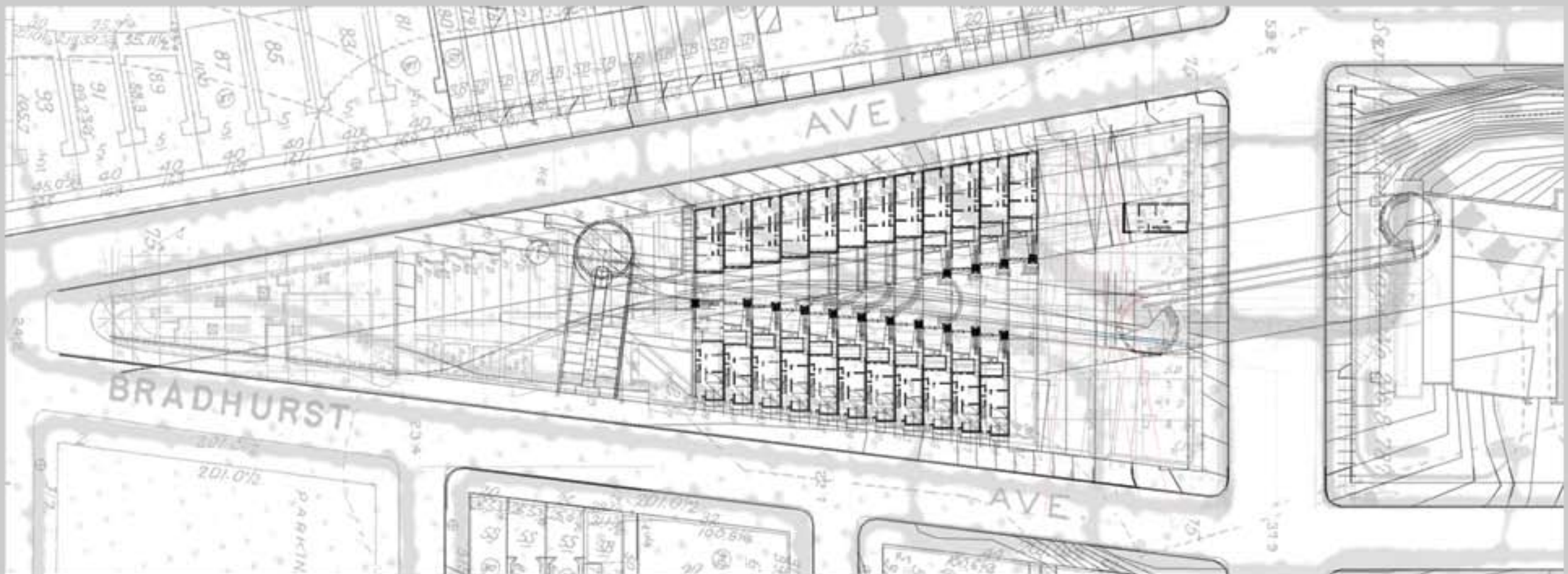




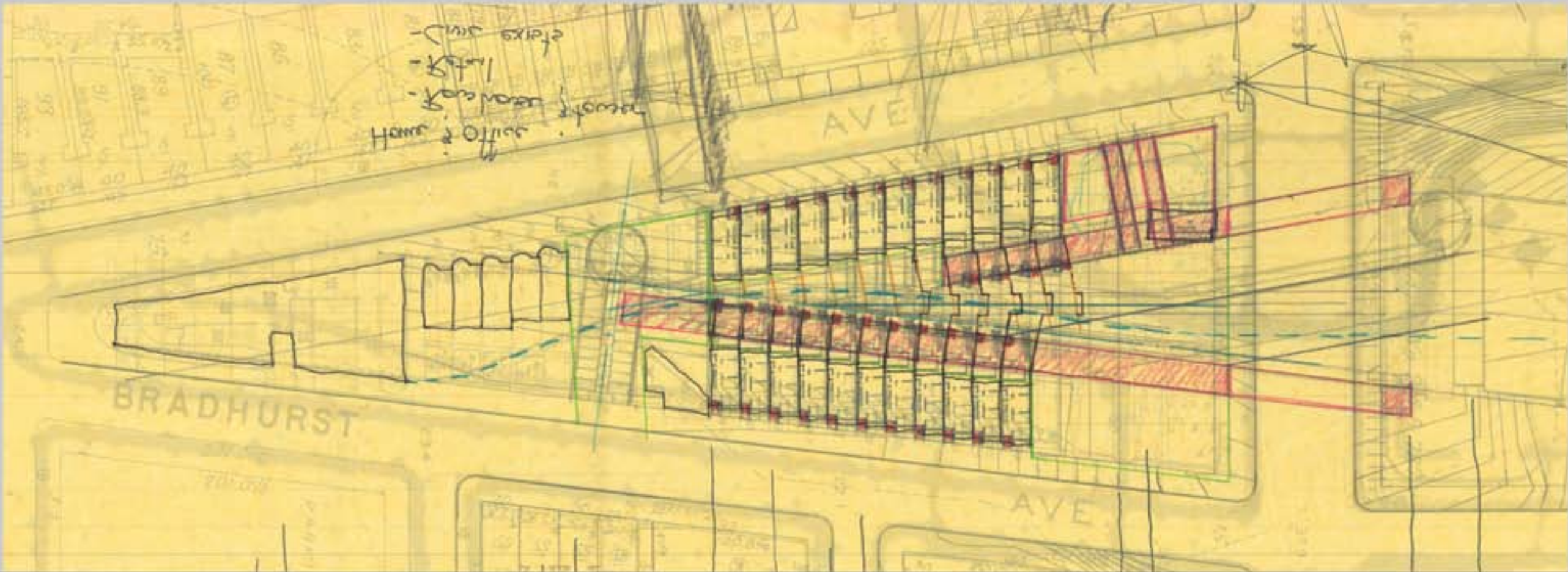




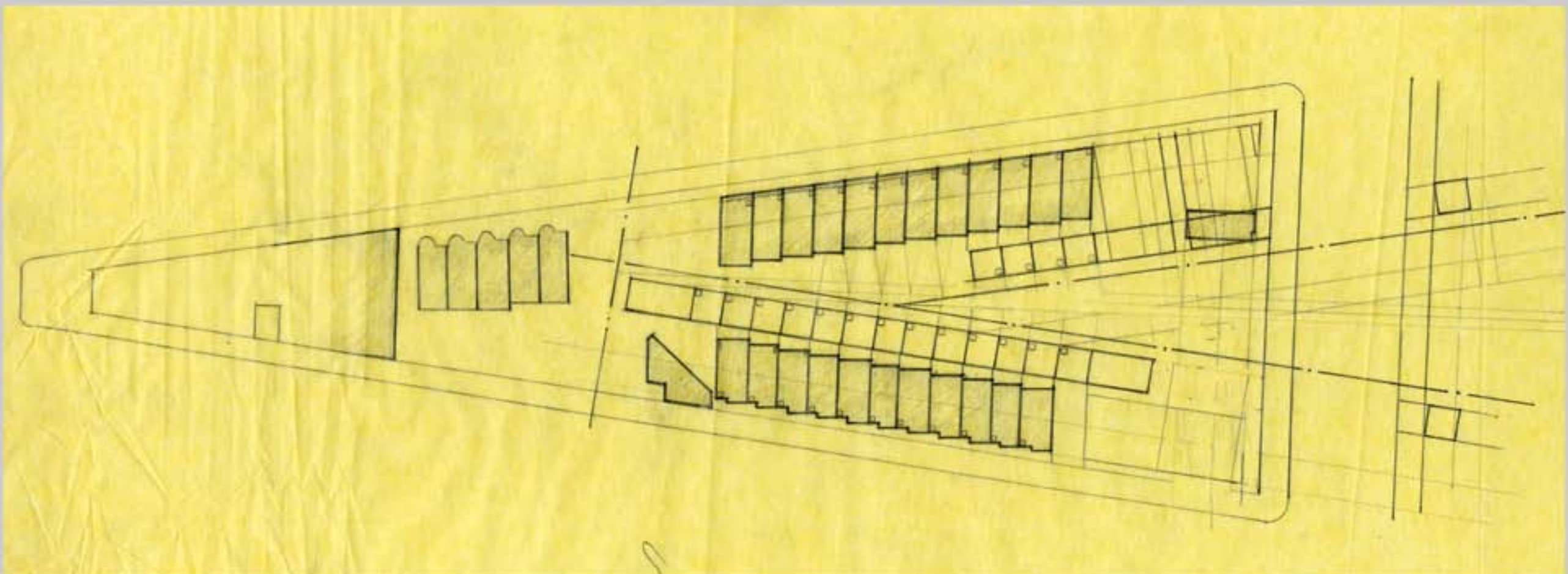
SITE PLAN 1



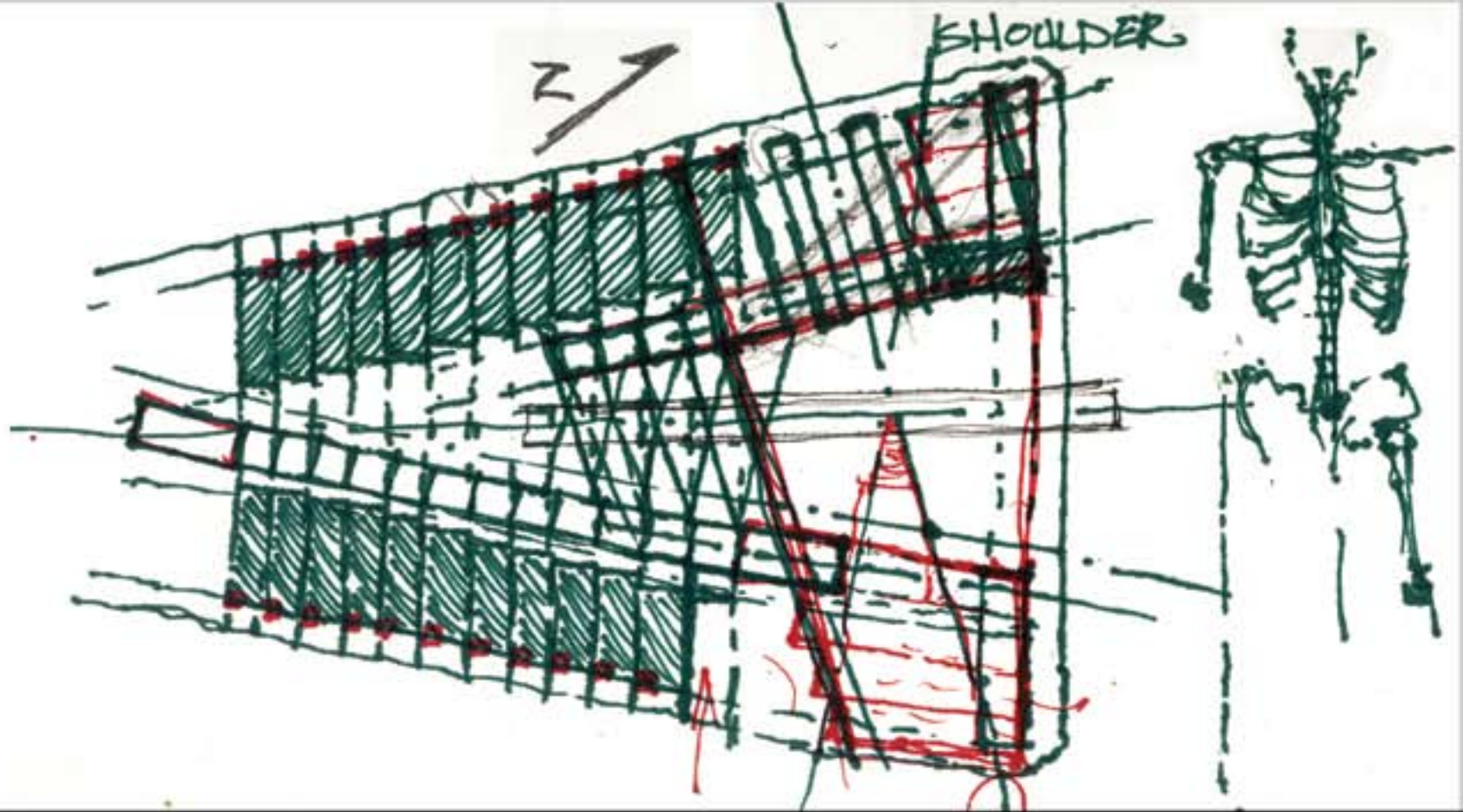
SITE PLAN 2



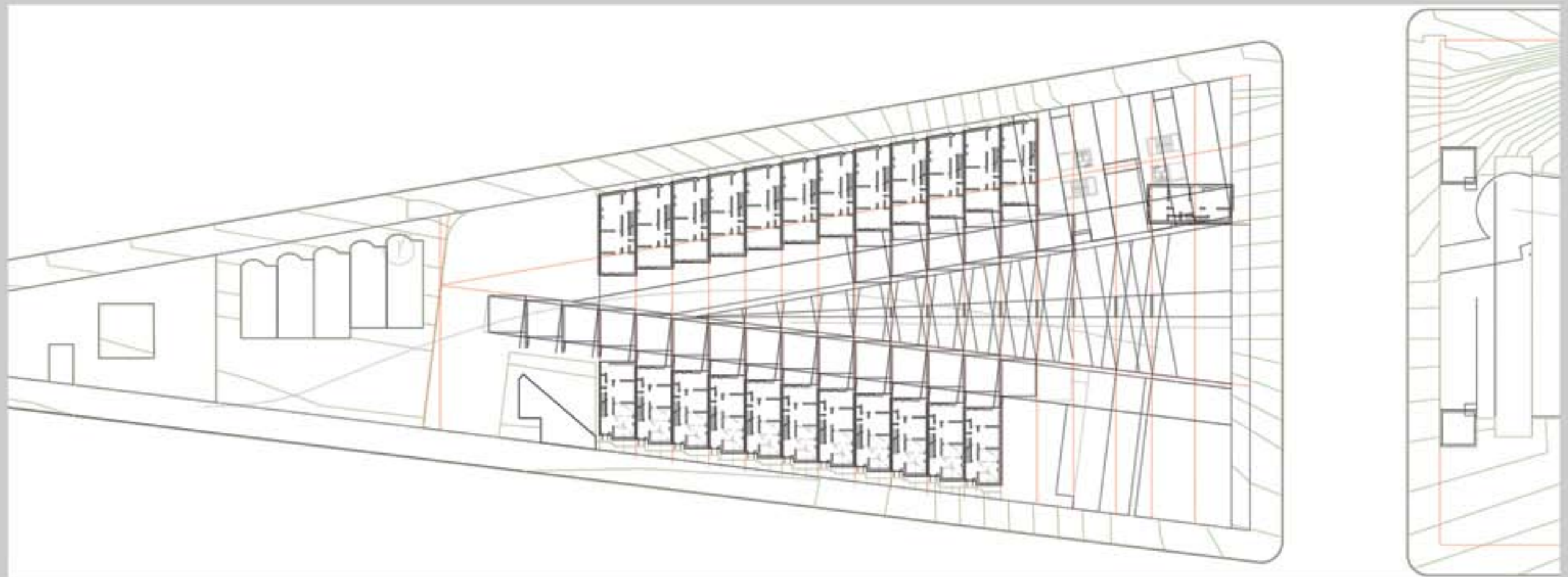
SITE PLAN 3



SITE PLAN 4



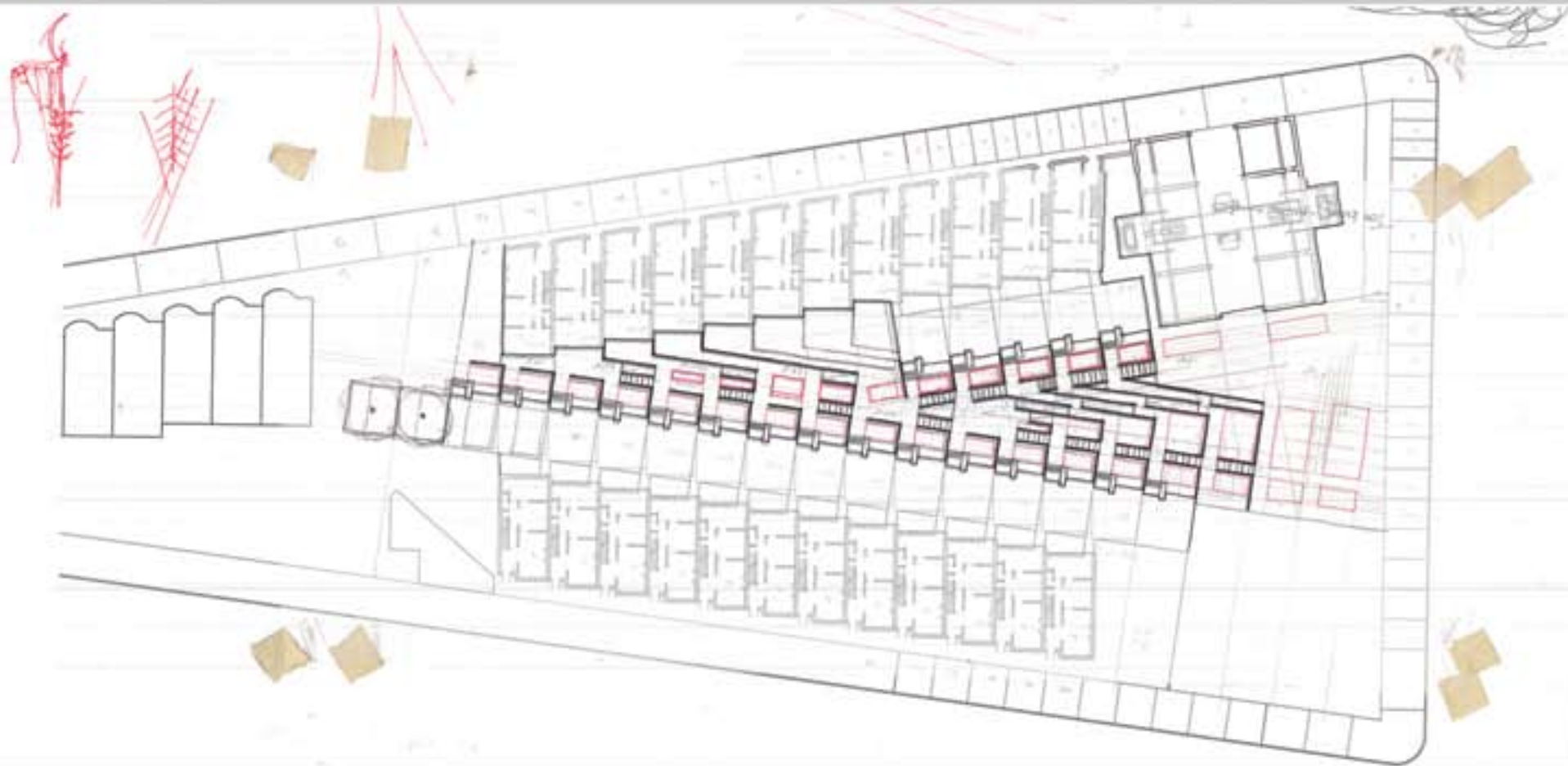
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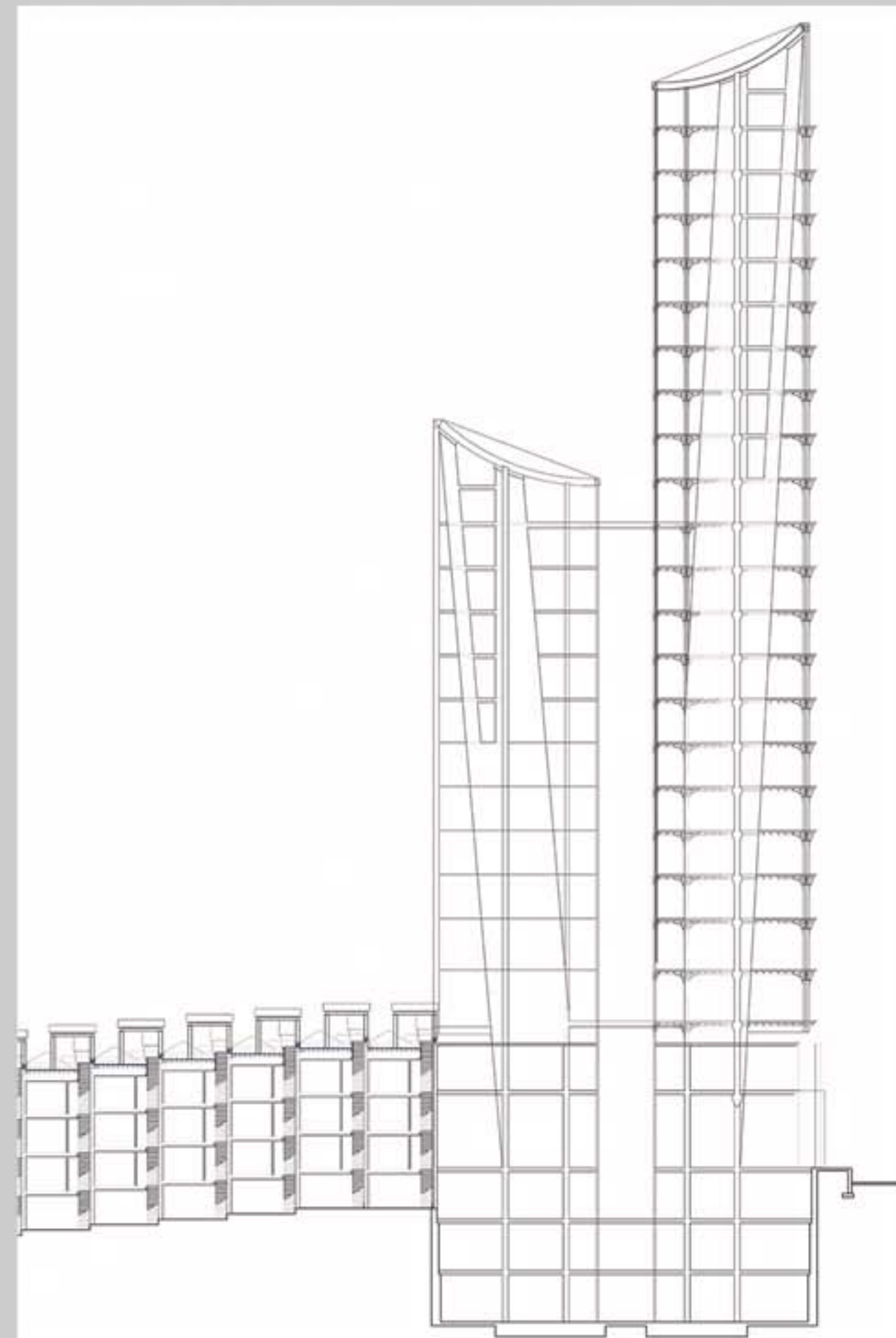
SITE PLAN 6



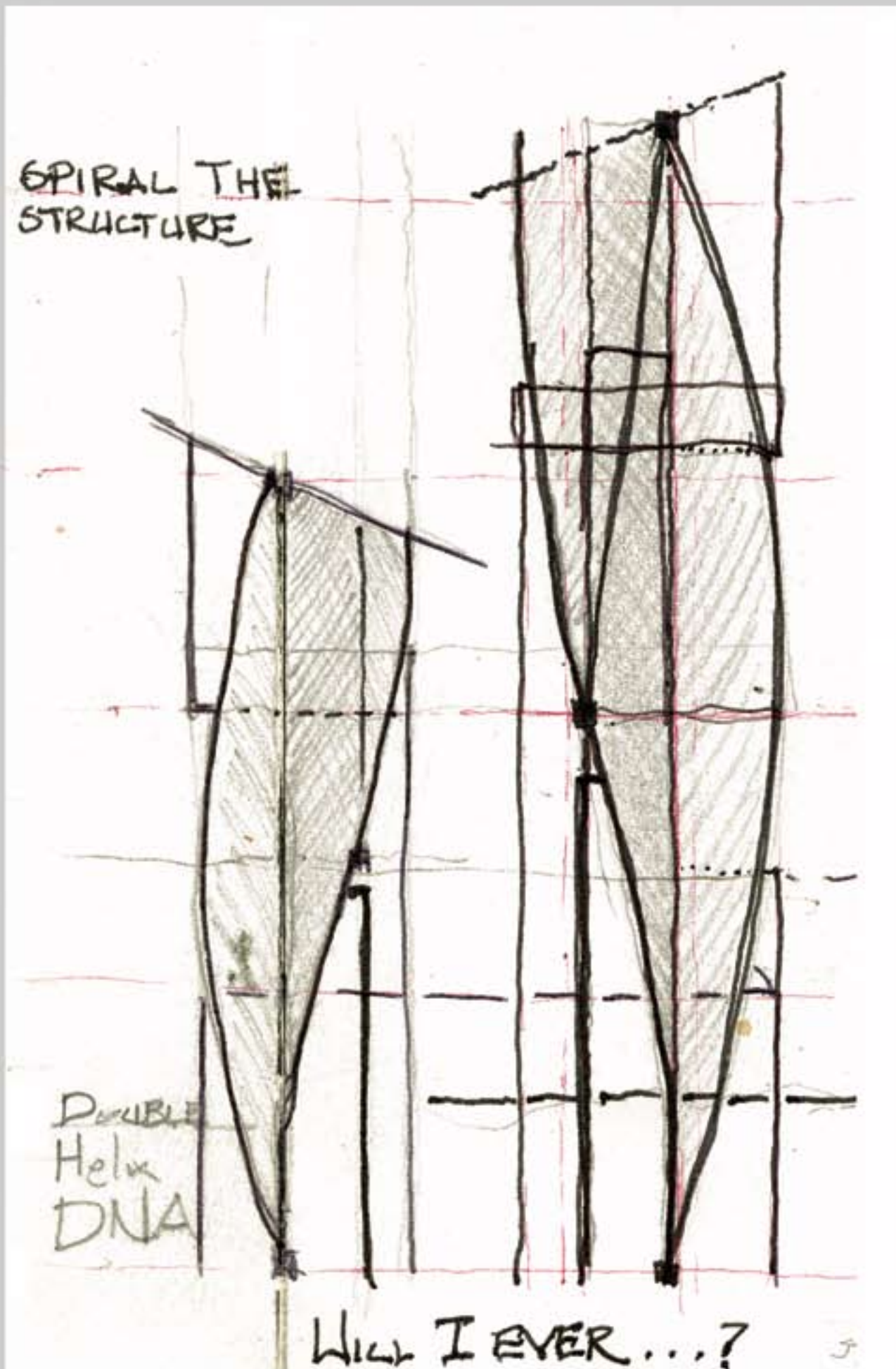
SITE PLAN 7



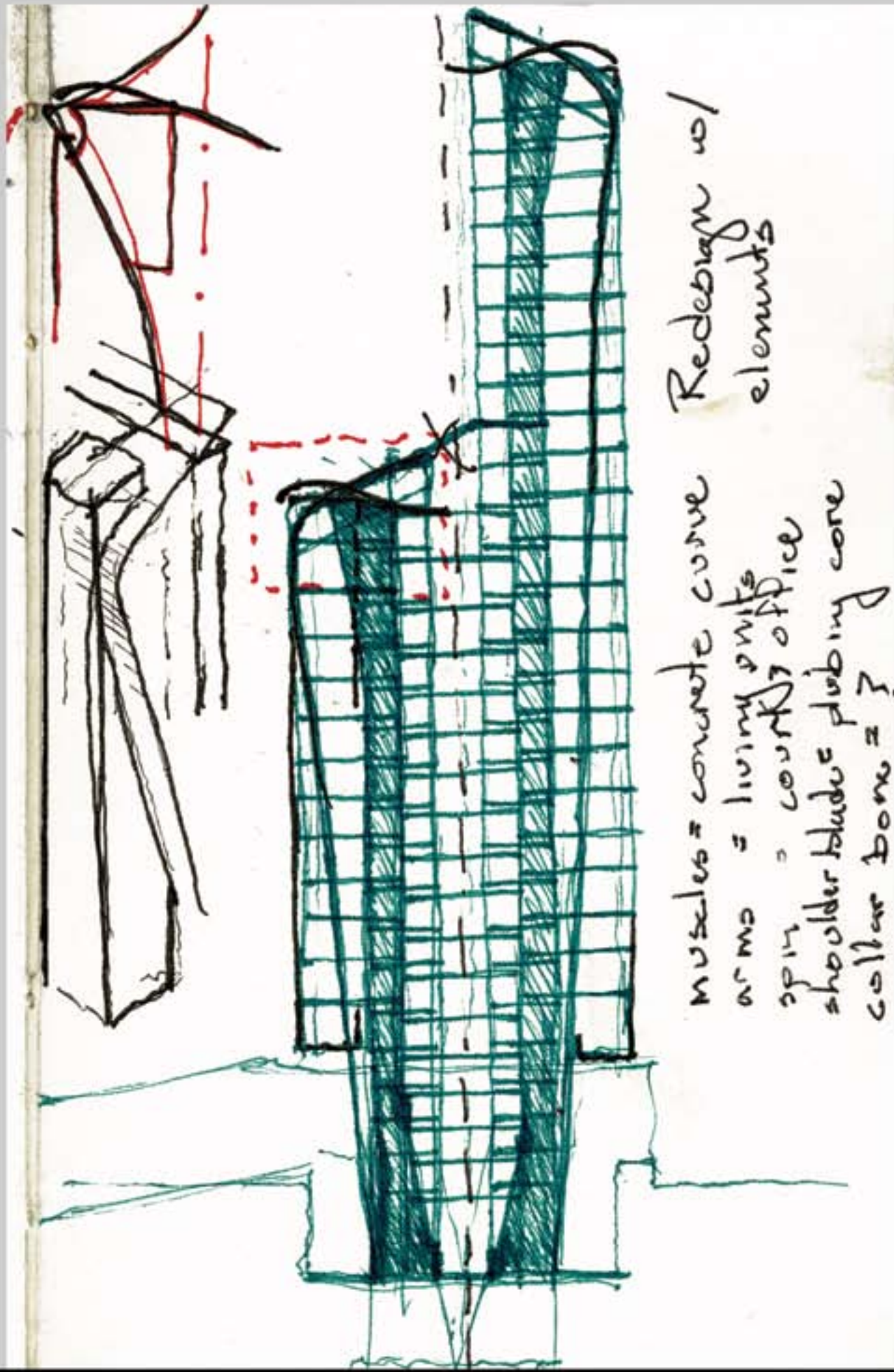
SITE PLAN 8



TOWER SECTION 1

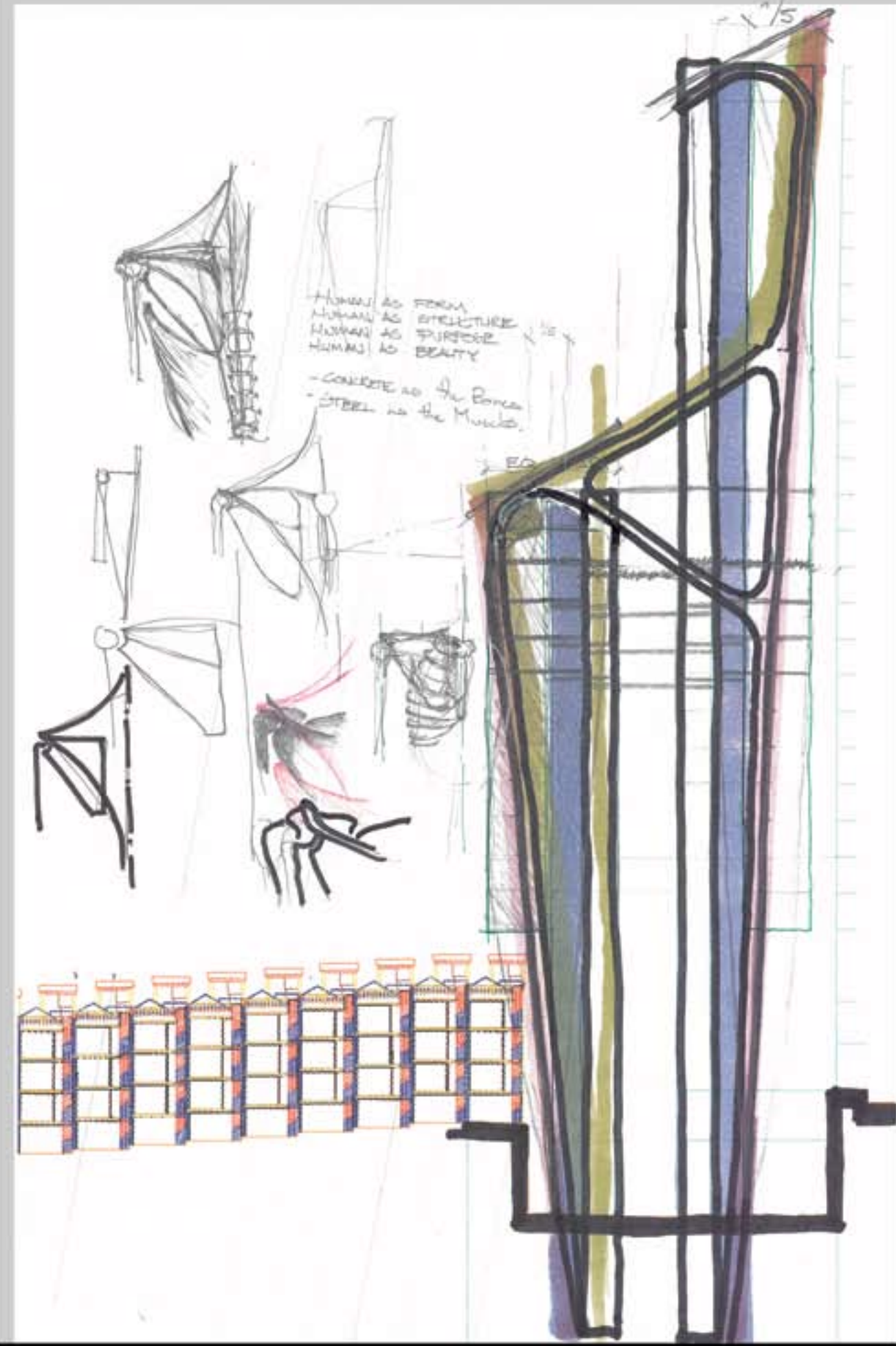


TOWER SECTION 2



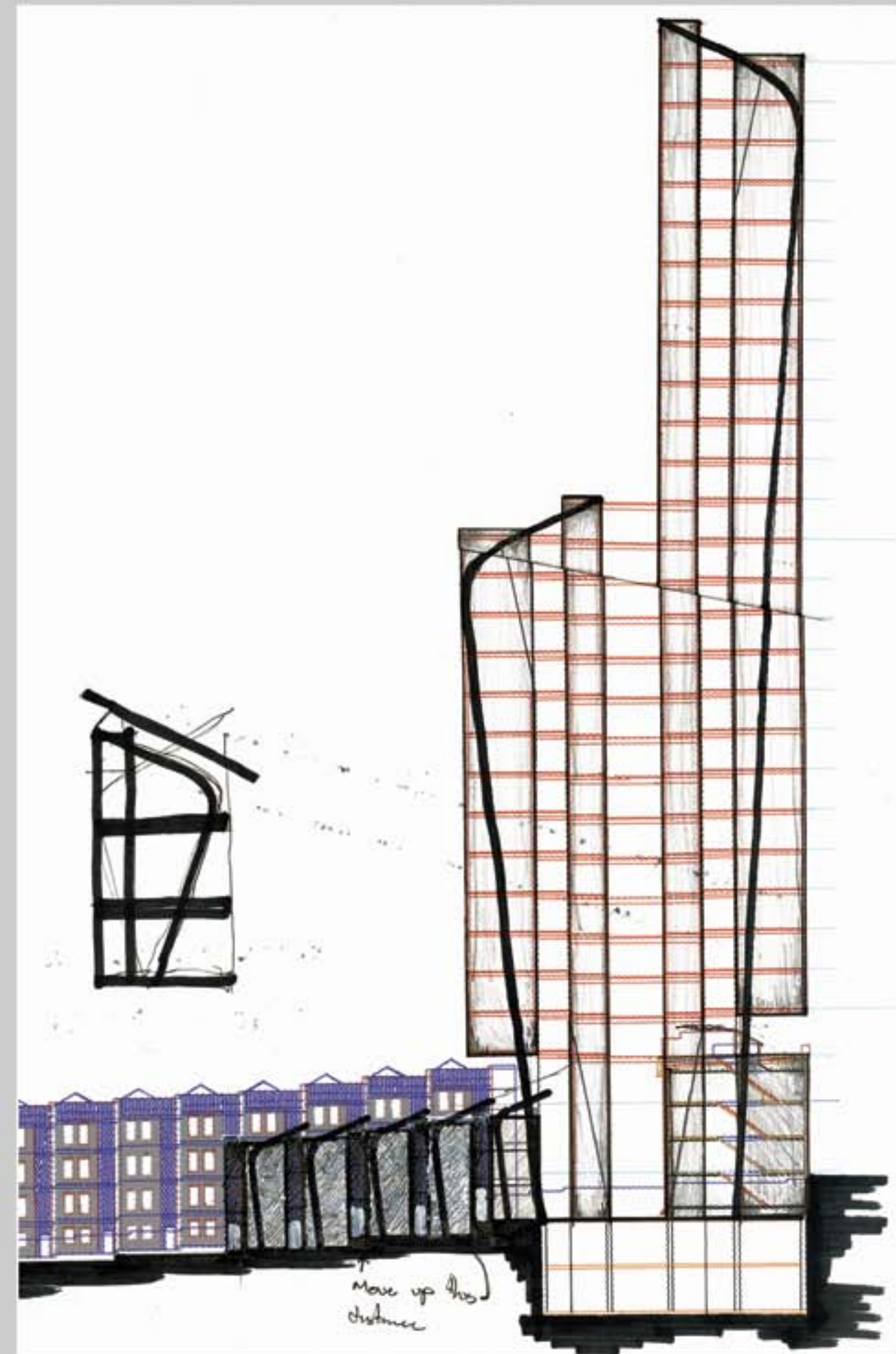
Redesign w/
elements

Muscles = concrete curve
 arms = living units
 spine = courts / office
 shoulder blades = parking core
 collar bone = ?

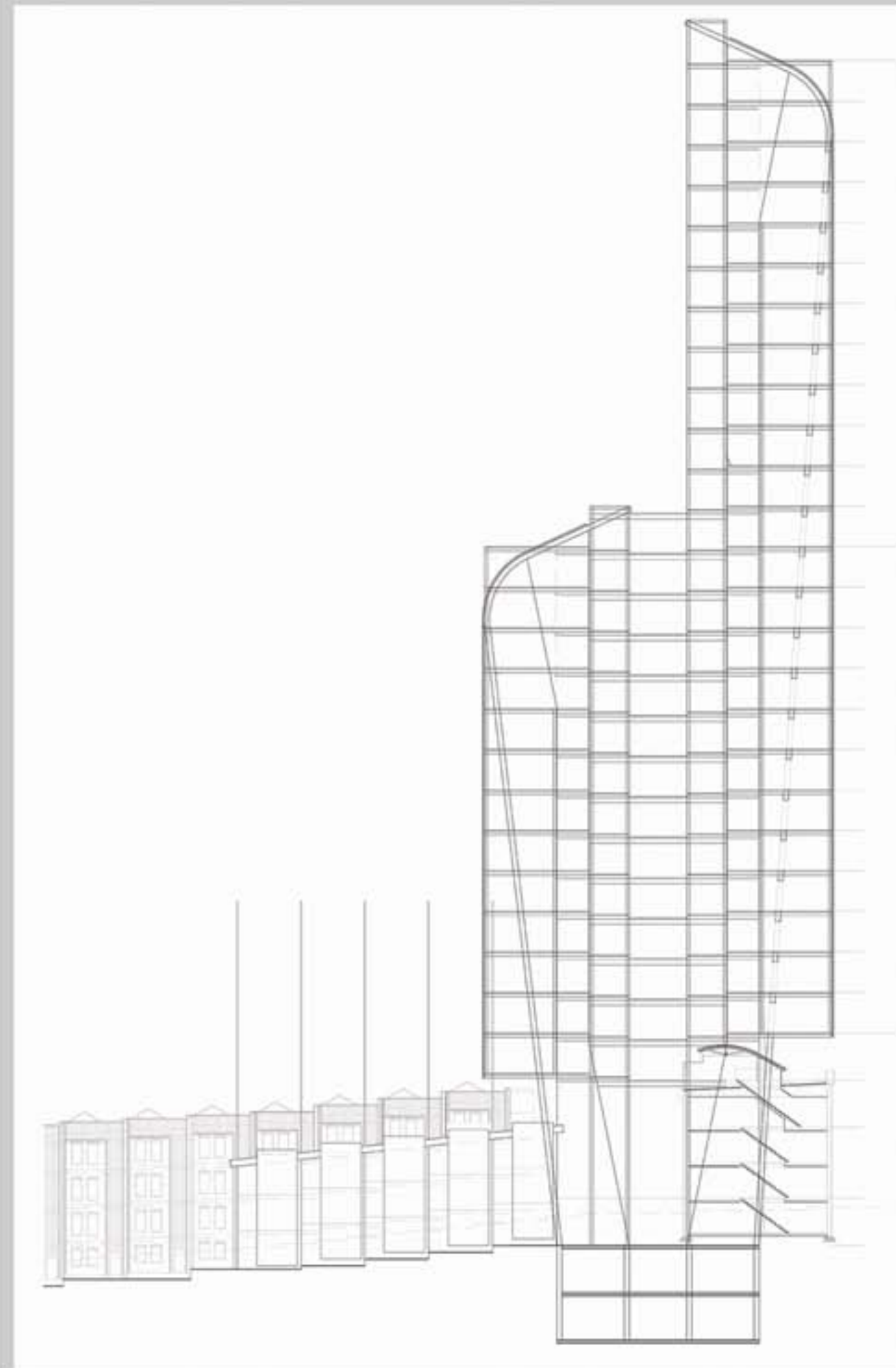


HUMAN AS FORM
 HUMAN AS STRUCTURE
 HUMAN AS PURPOSE
 HUMAN AS BEAUTY

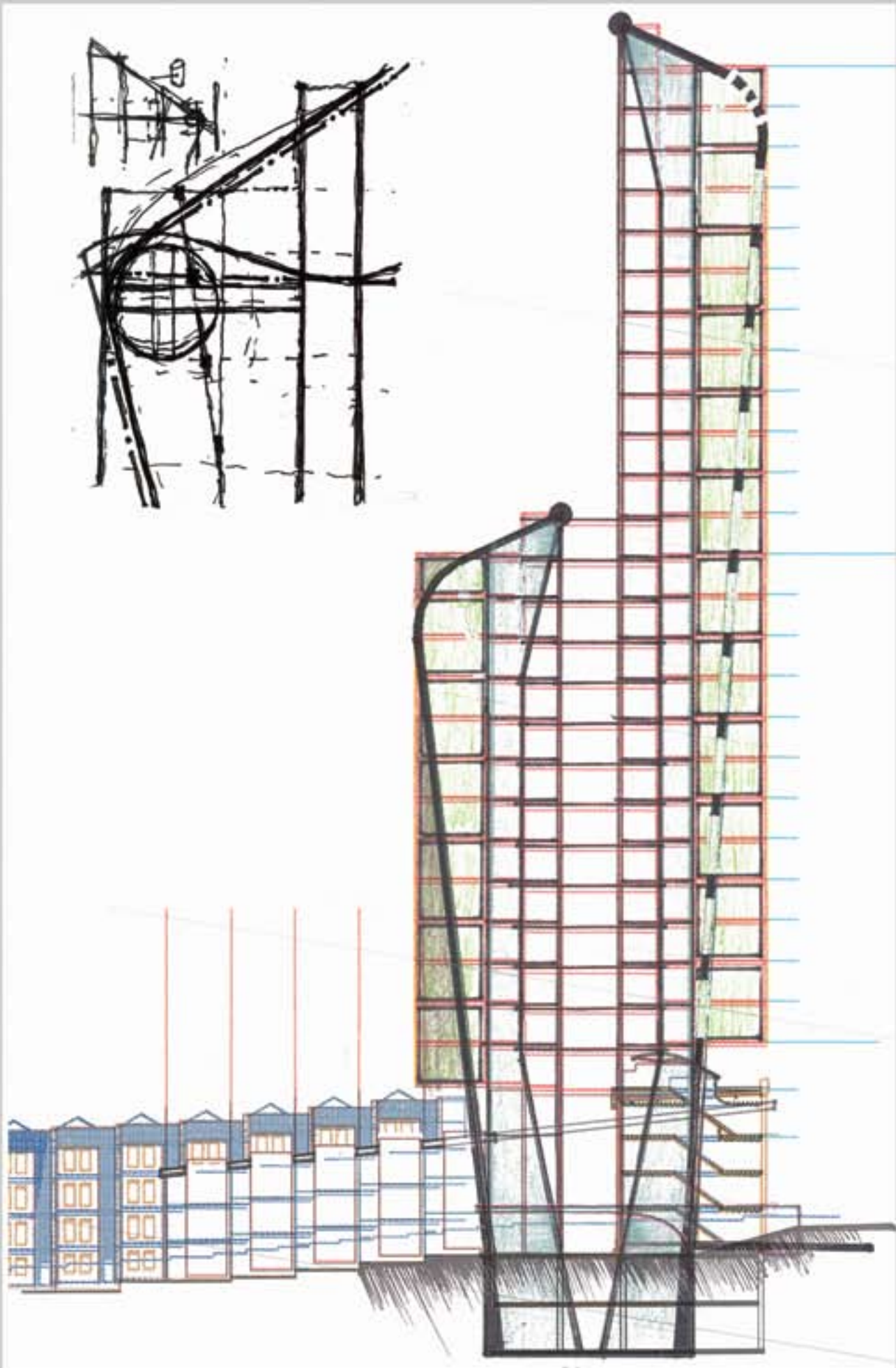
- CONCRETE AS THE BONE
 - STEEL AS THE MUSCLE



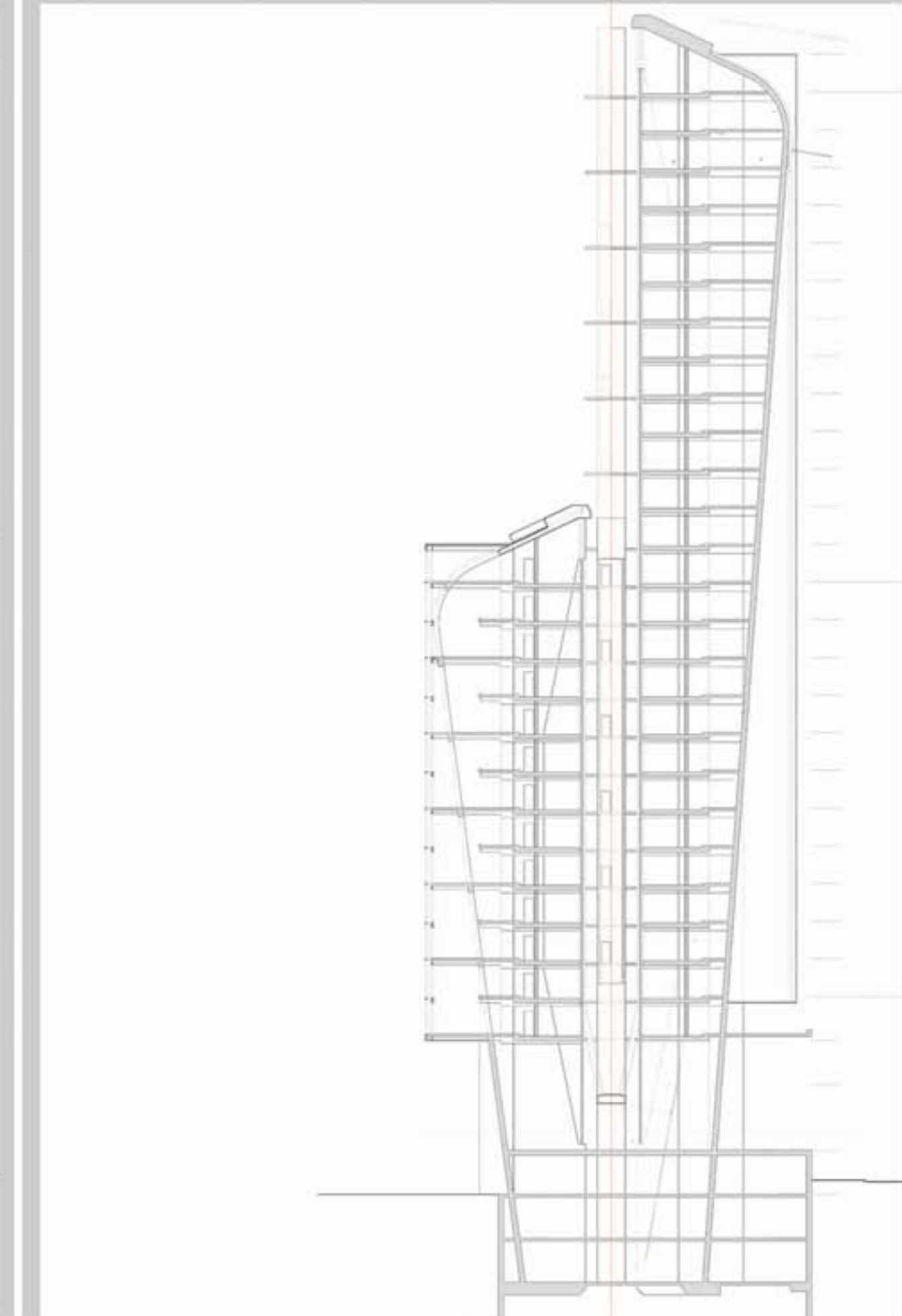
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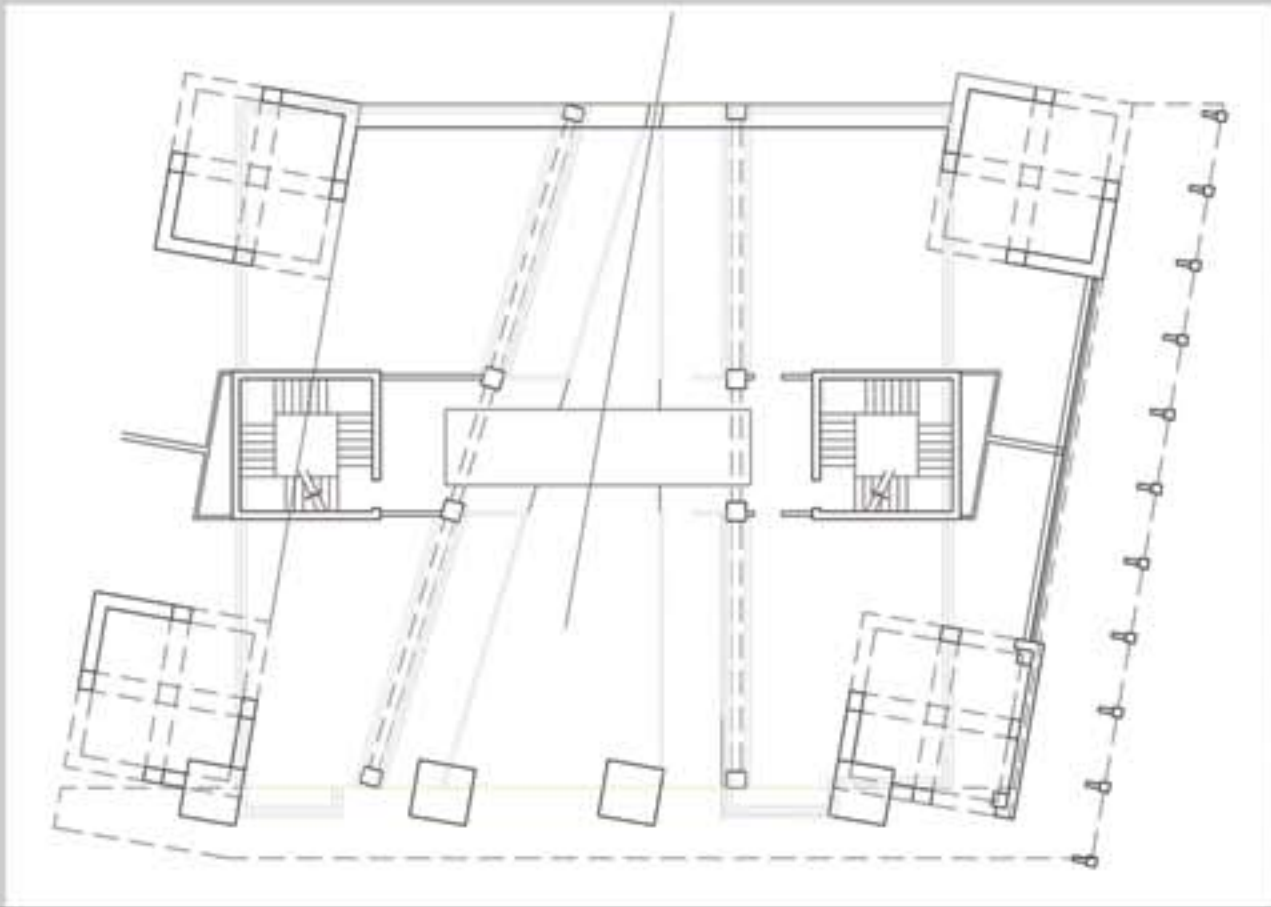
19 TOWER SECTION 6



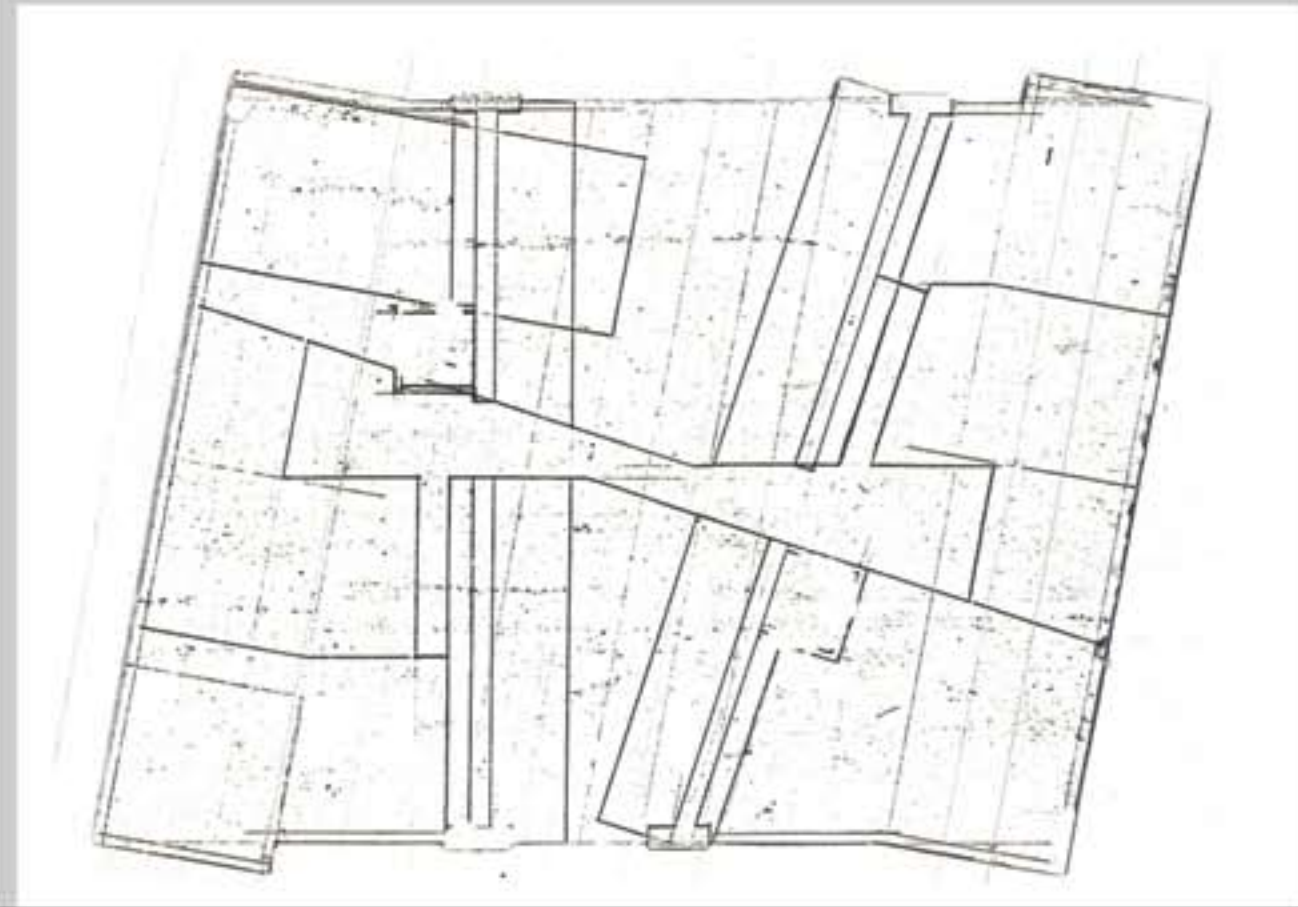
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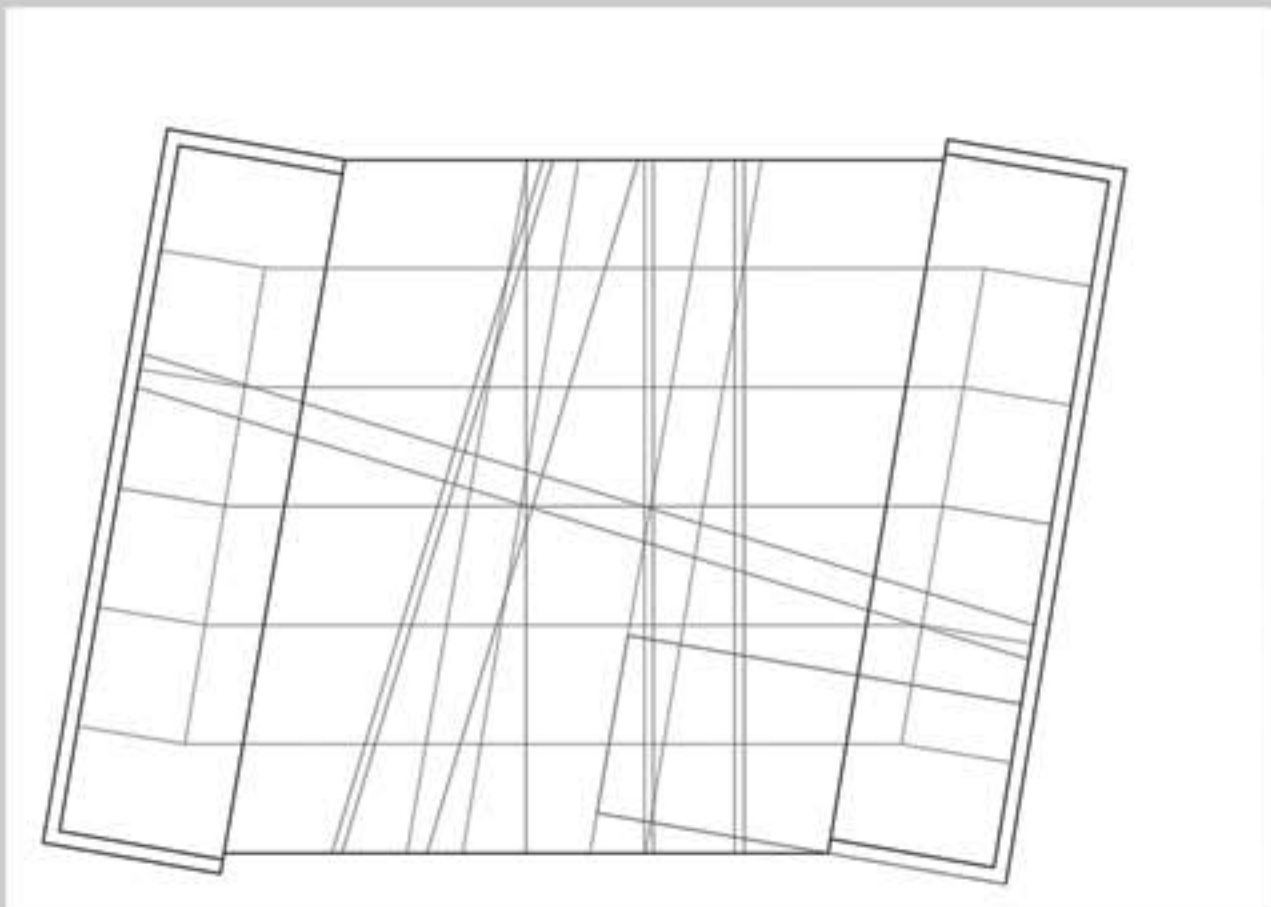
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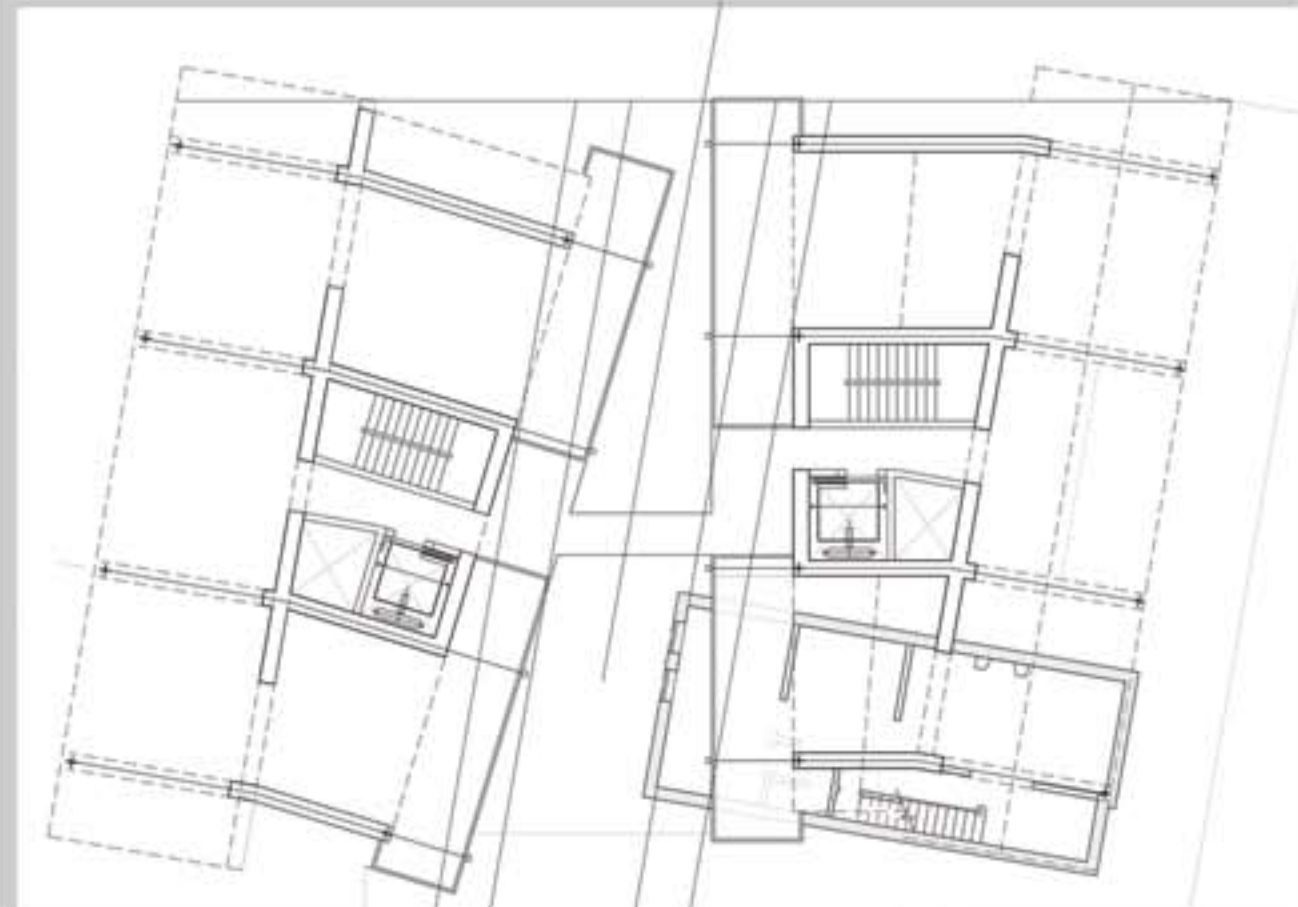
TOWER PLAN 1



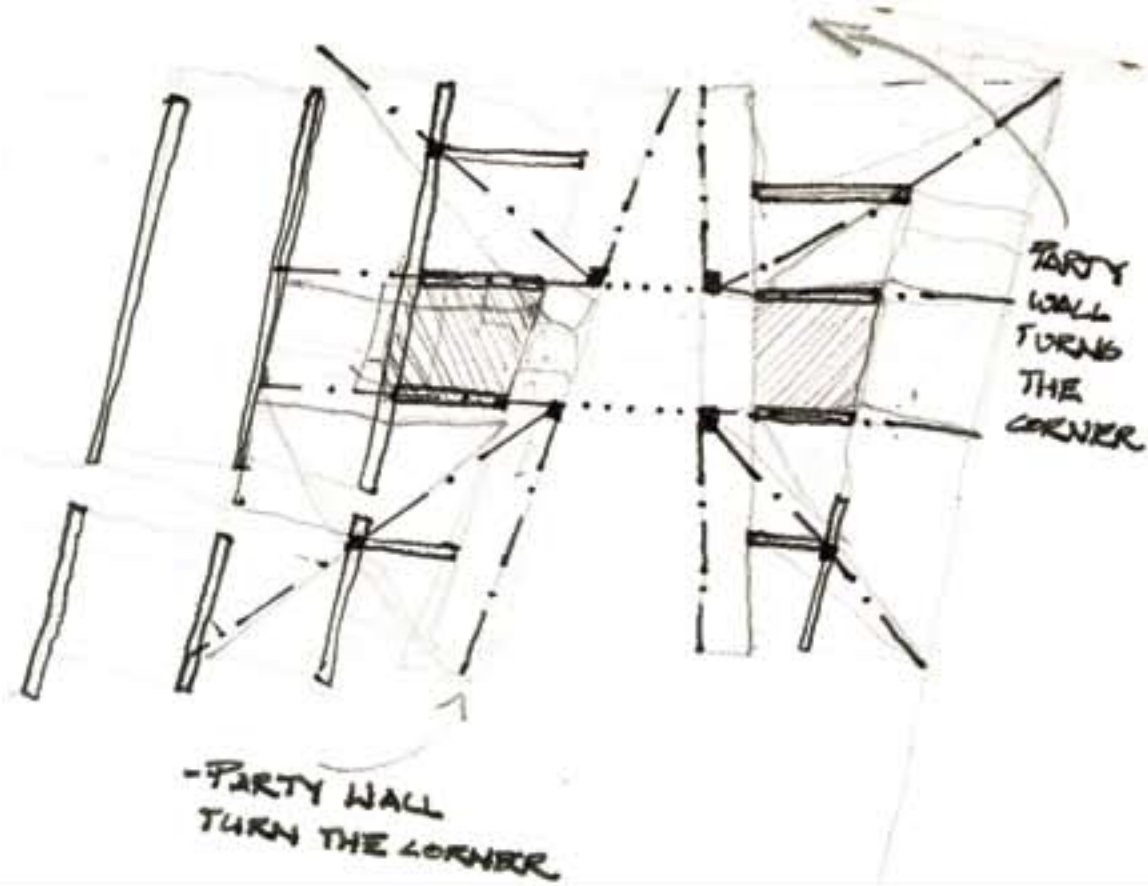
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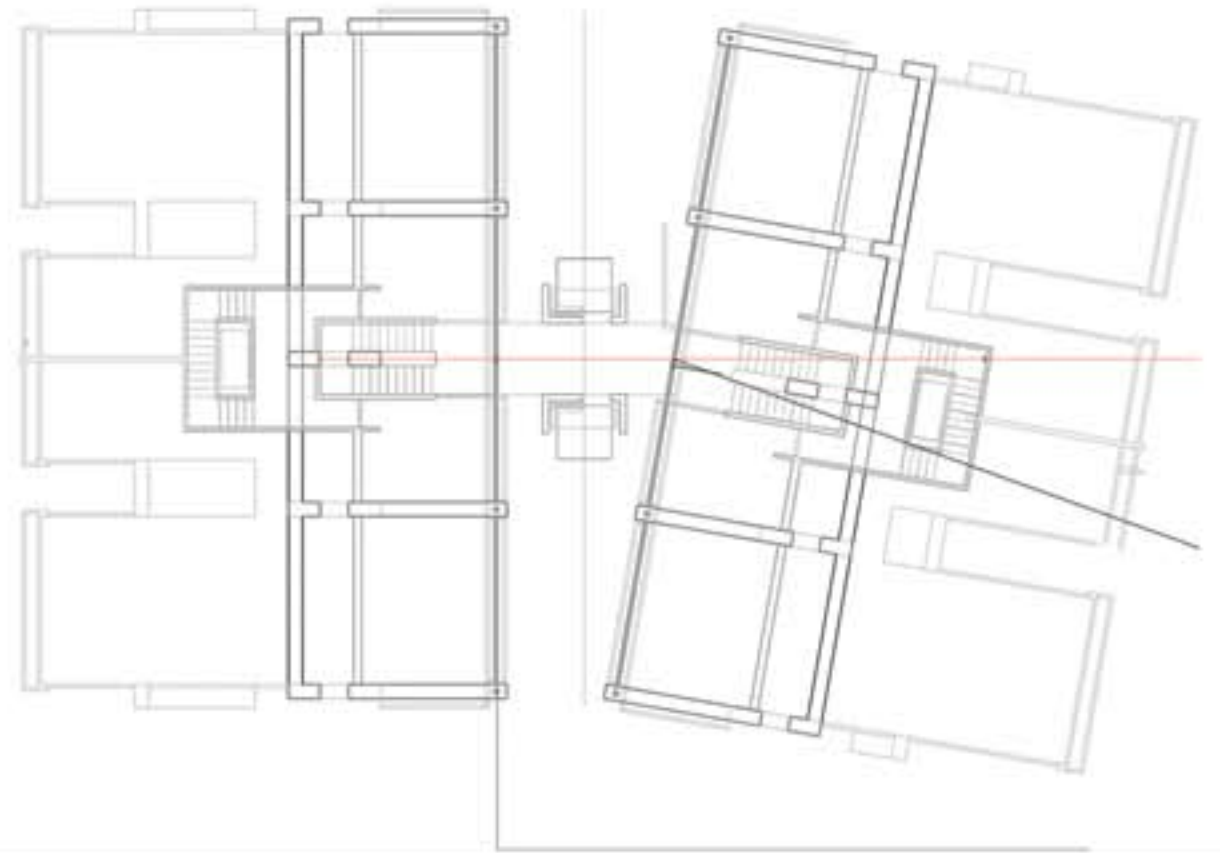
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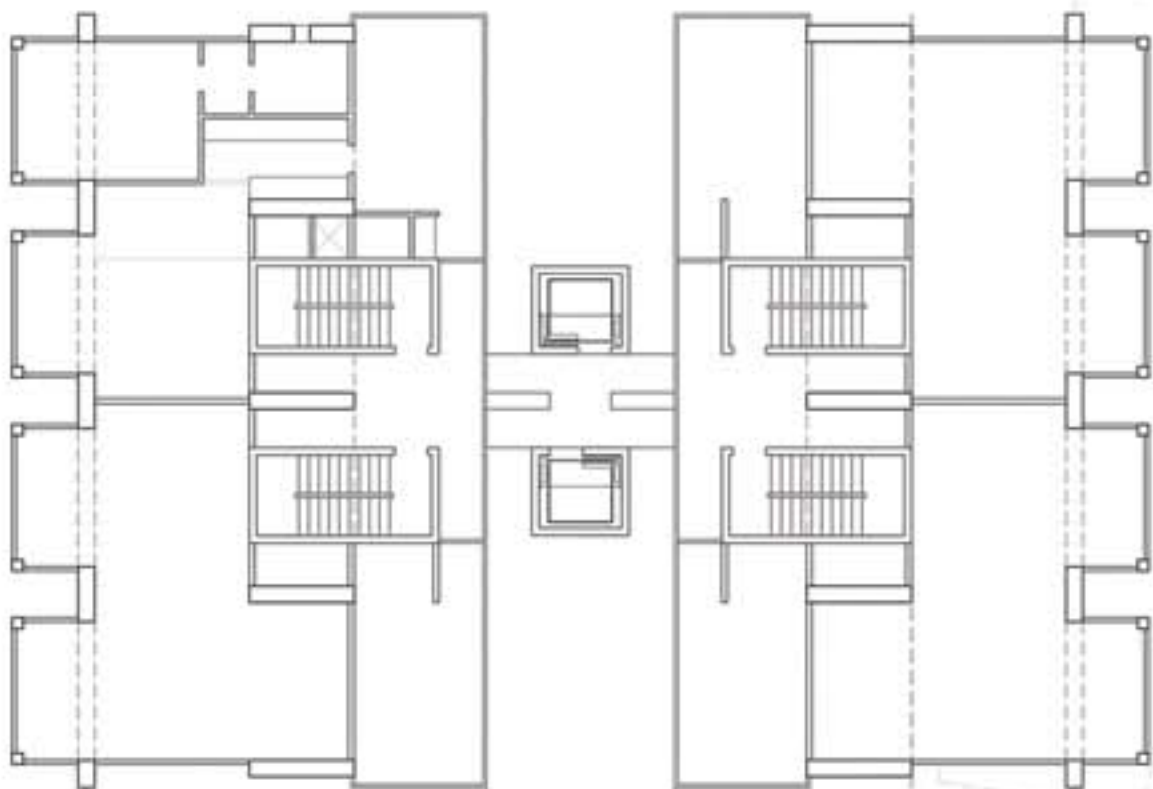
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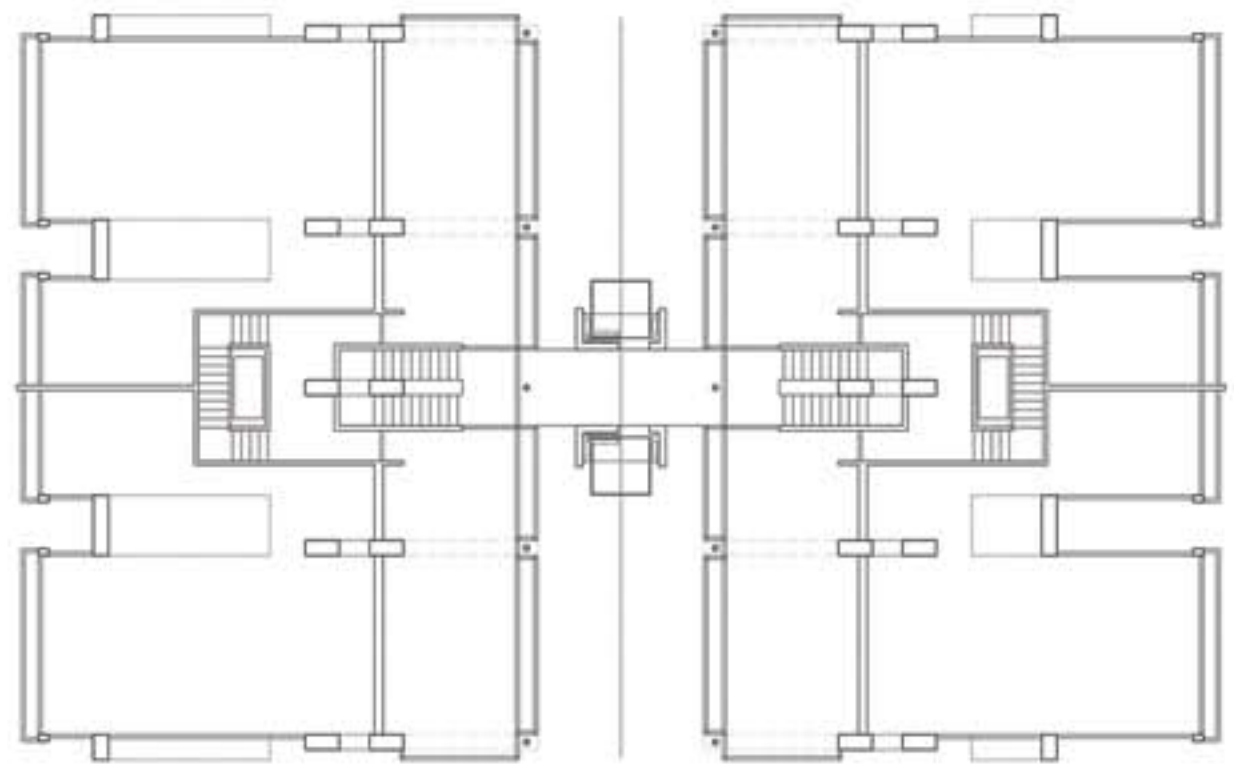
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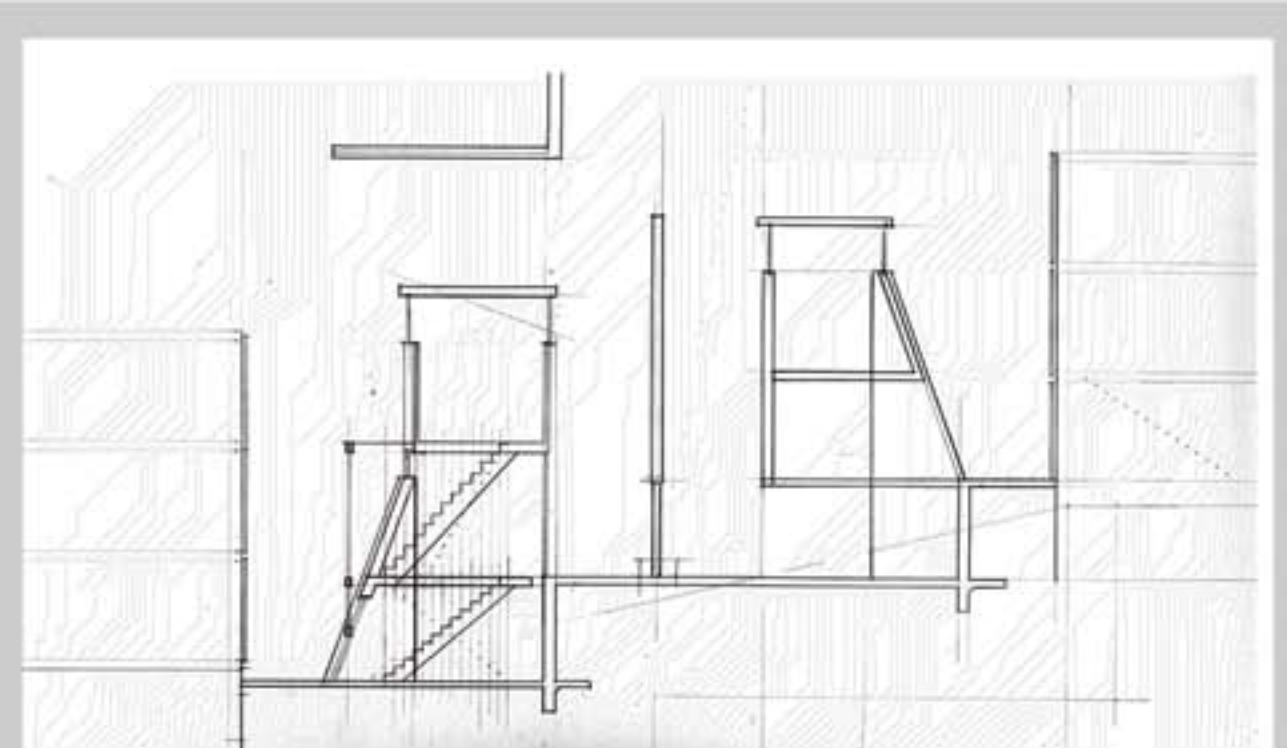
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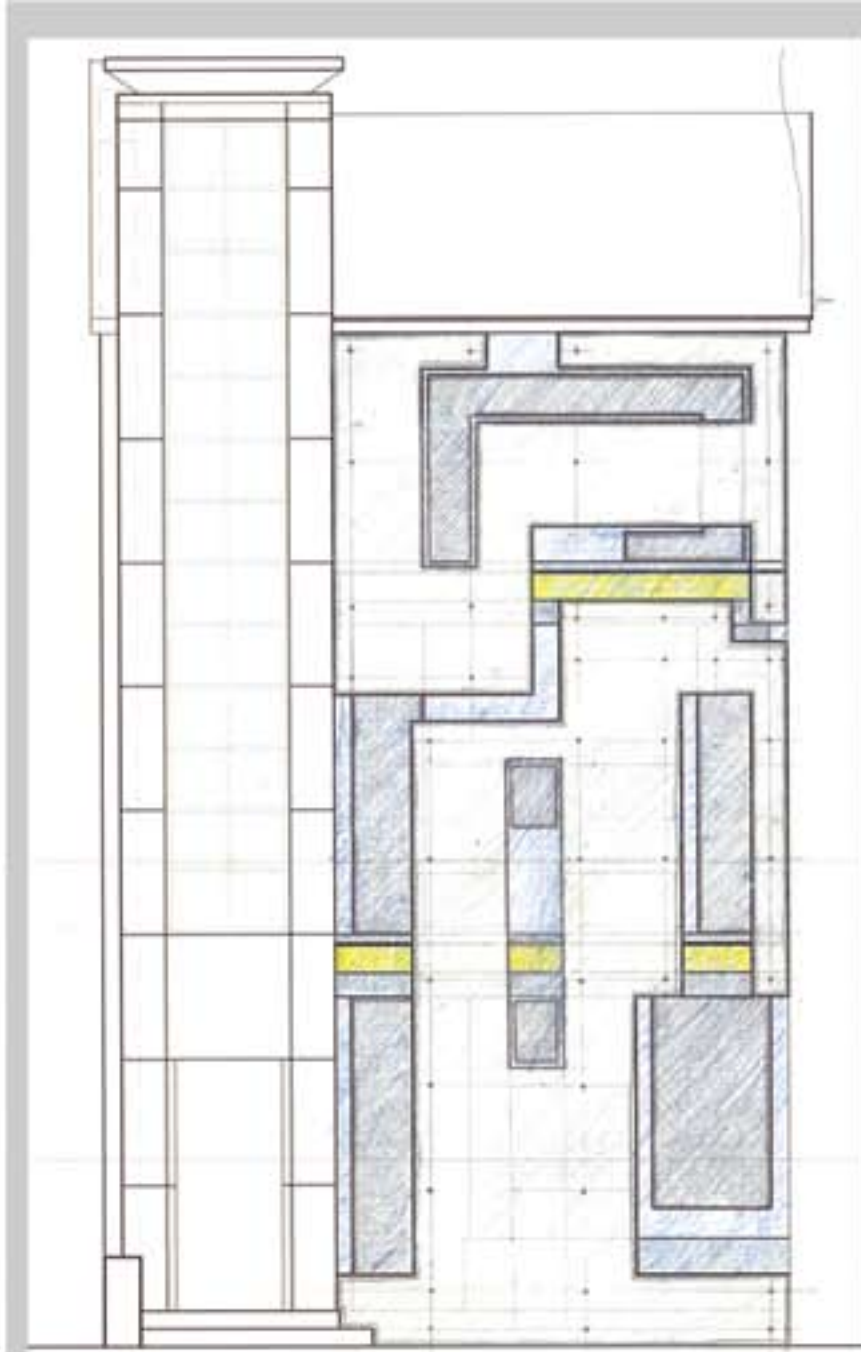
TOWER PLAN 6



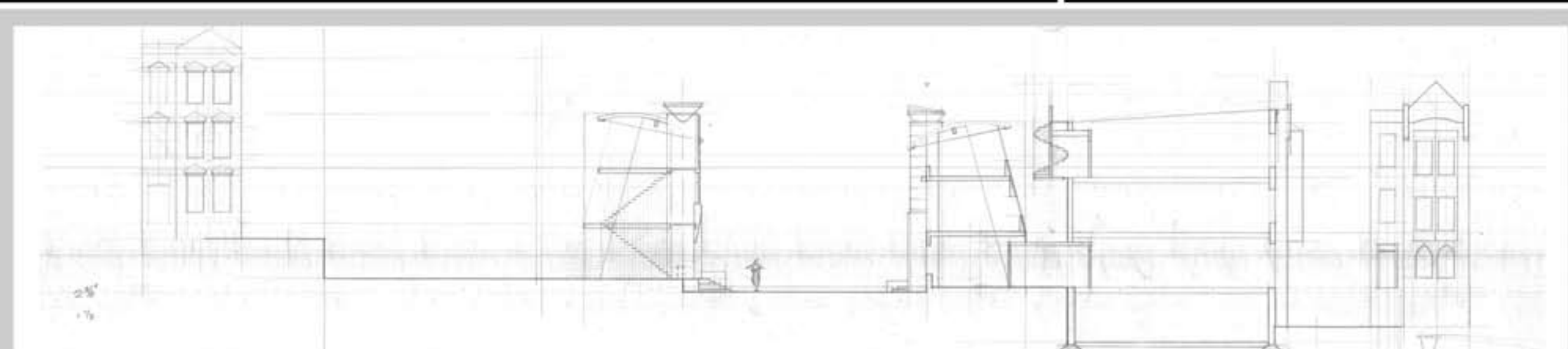
TOWER PLAN 8



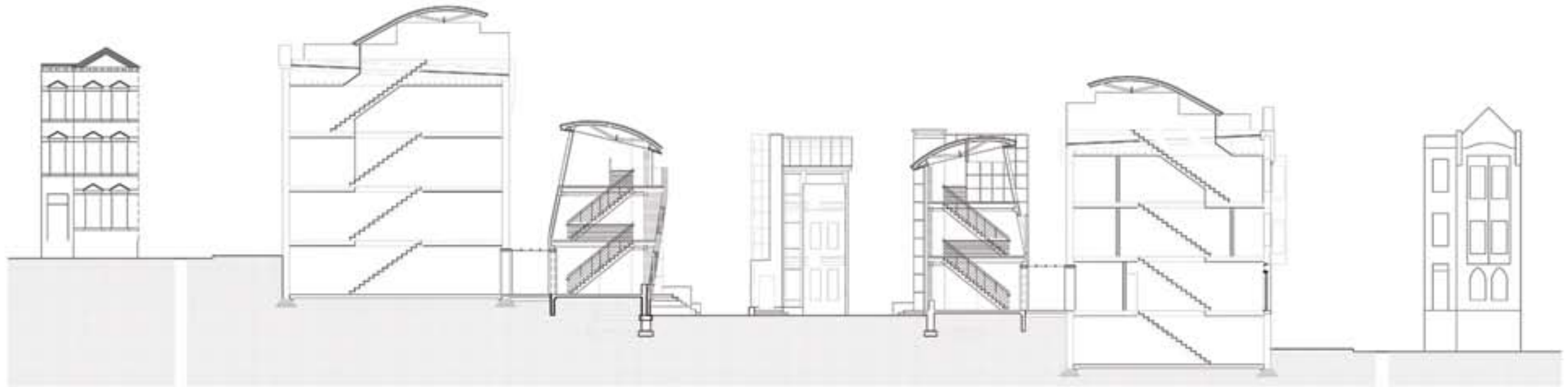
ROWHOUSE SECTION 1



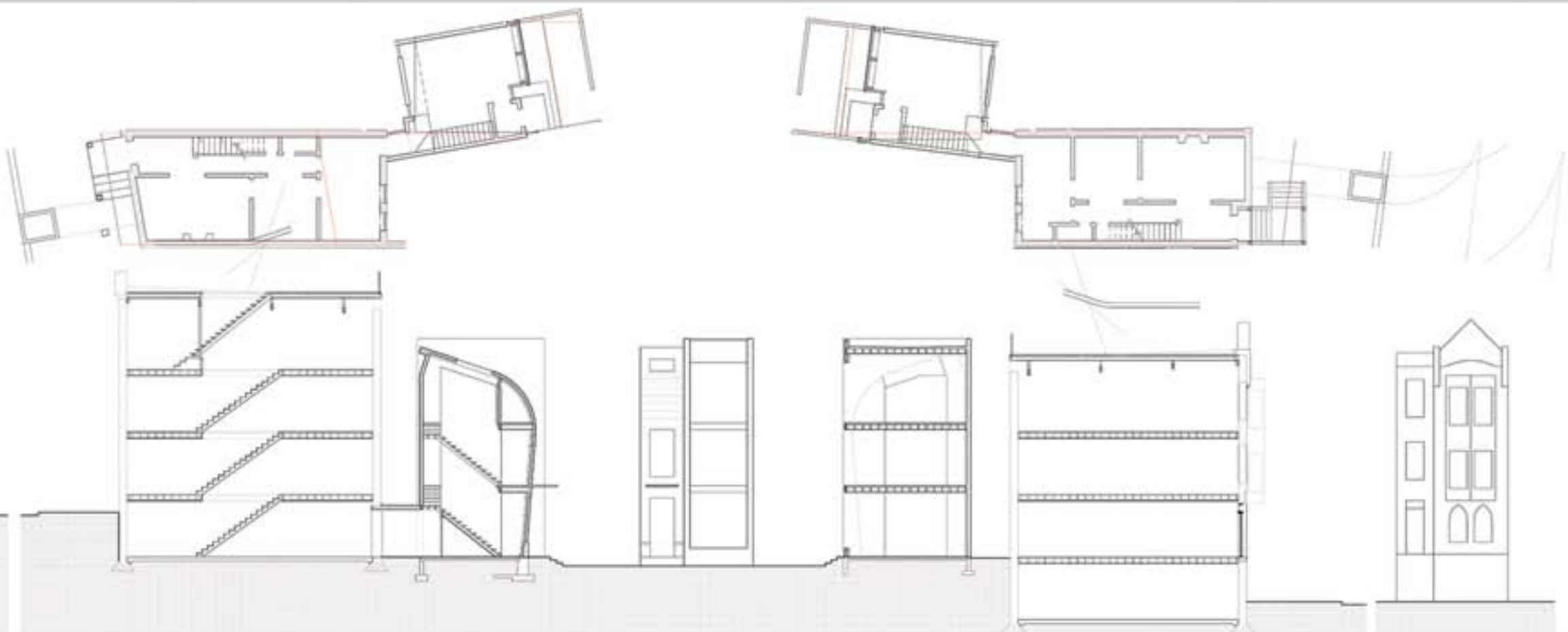
ROWHOUSE ELEVATIONS



ROWHOUSE SECTION 2



ROWHOUSE PLAN / SECTION 3



ROWHOUSE PLAN / SECTION 4



Image of final presentation

FINAL

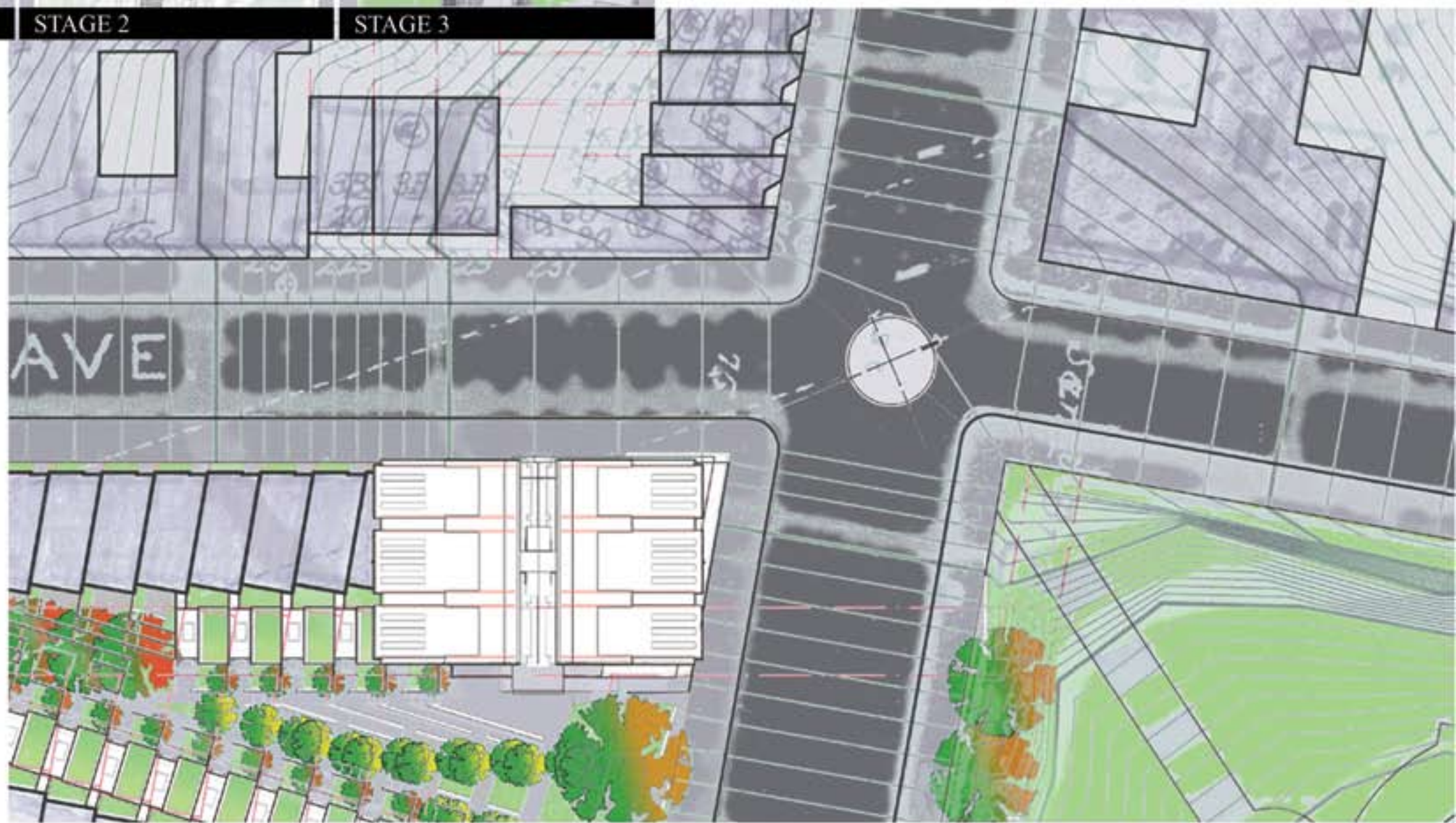
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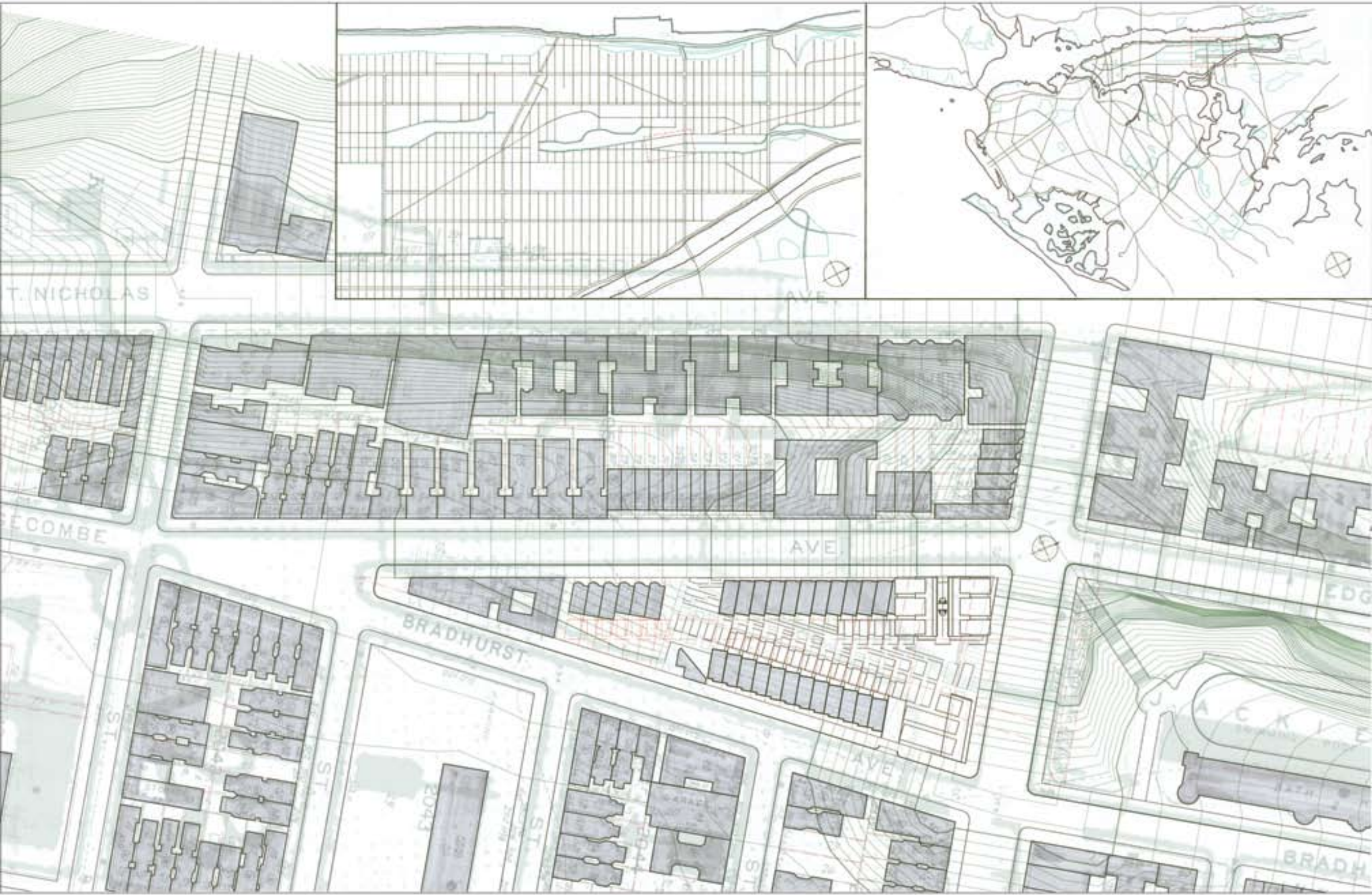
STAGE 1

STAGE 2

STAGE 3











STAGE 1



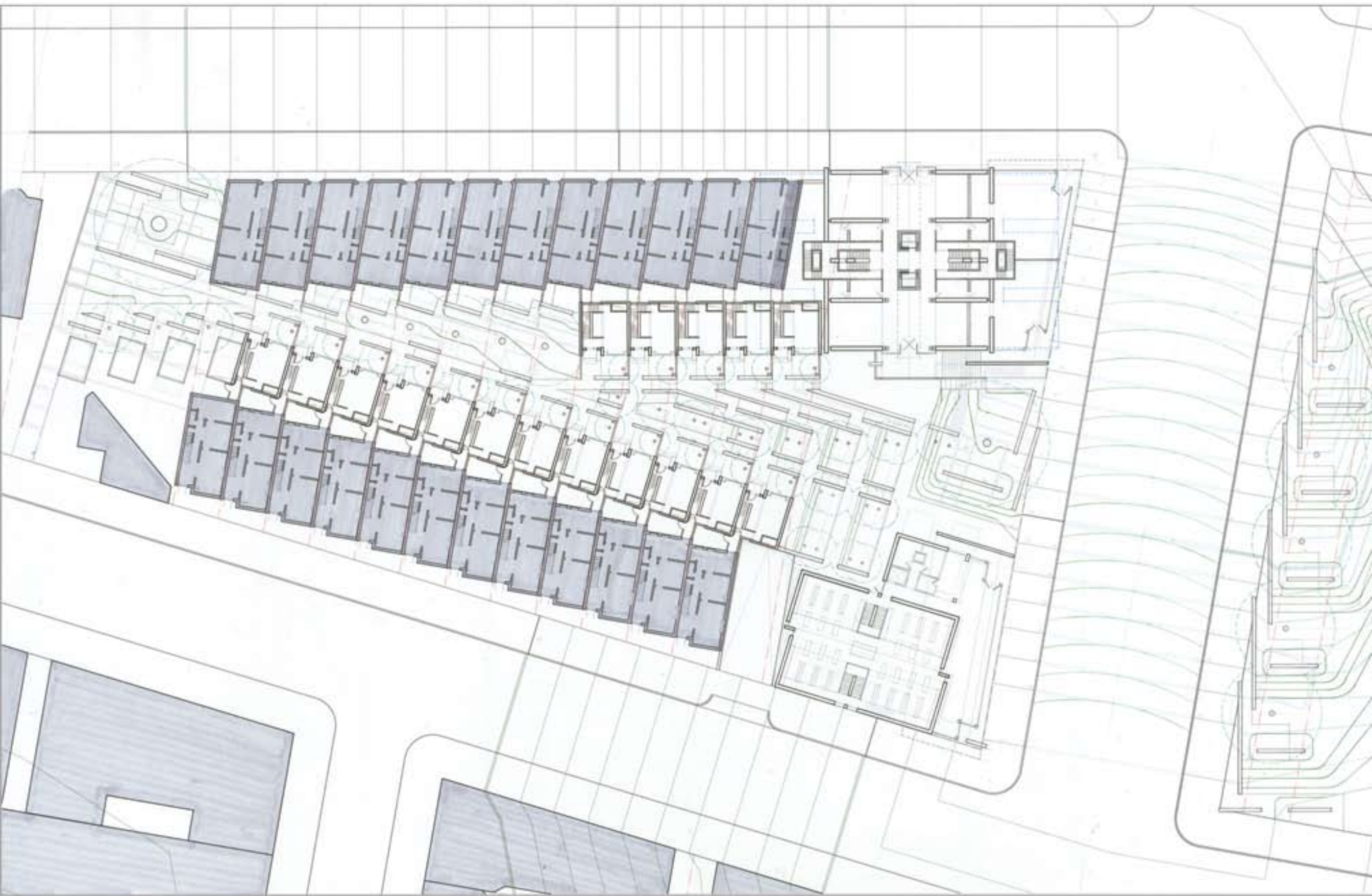
STAGE 2

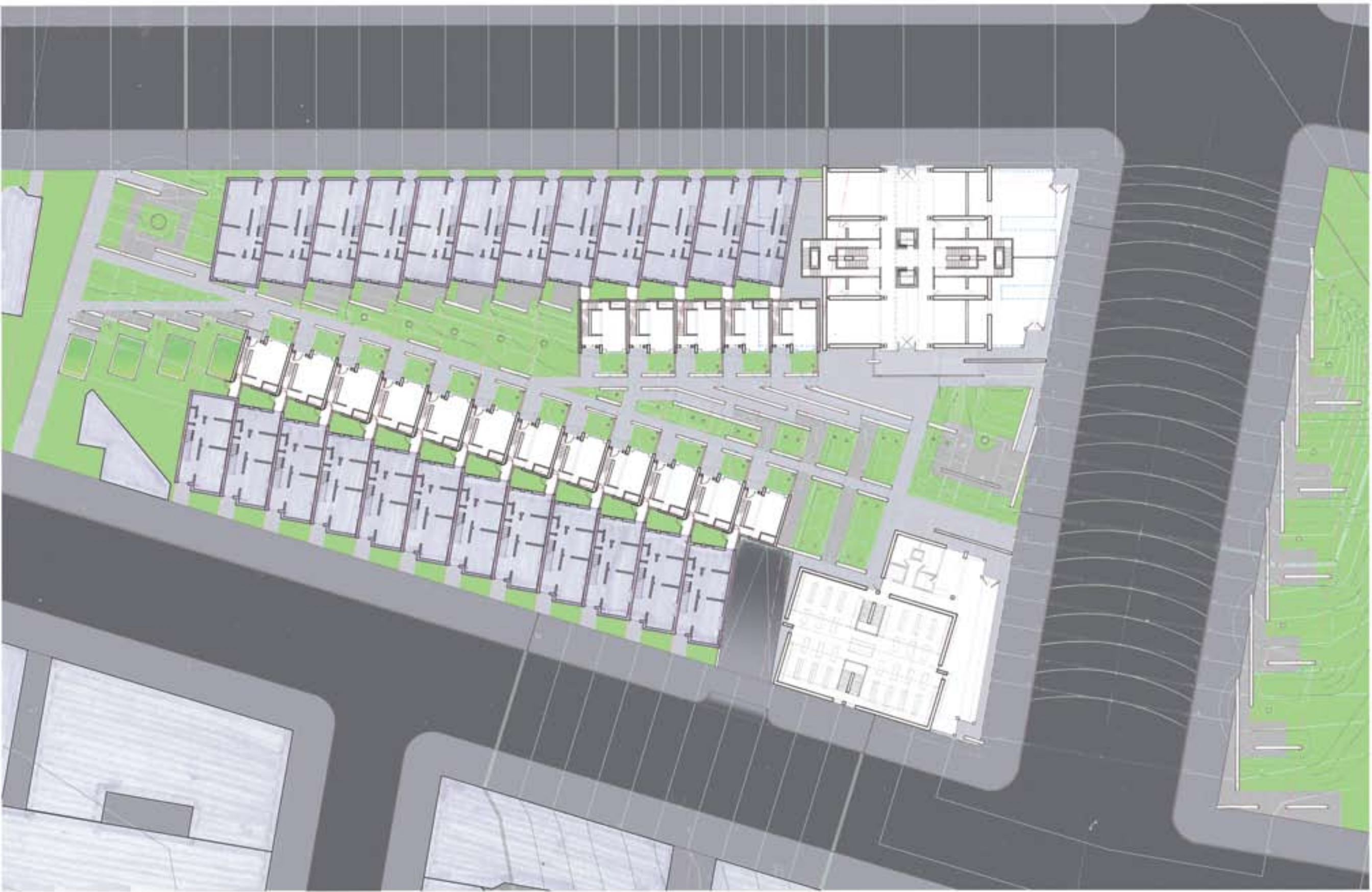


STAGE 3











STAGE 1

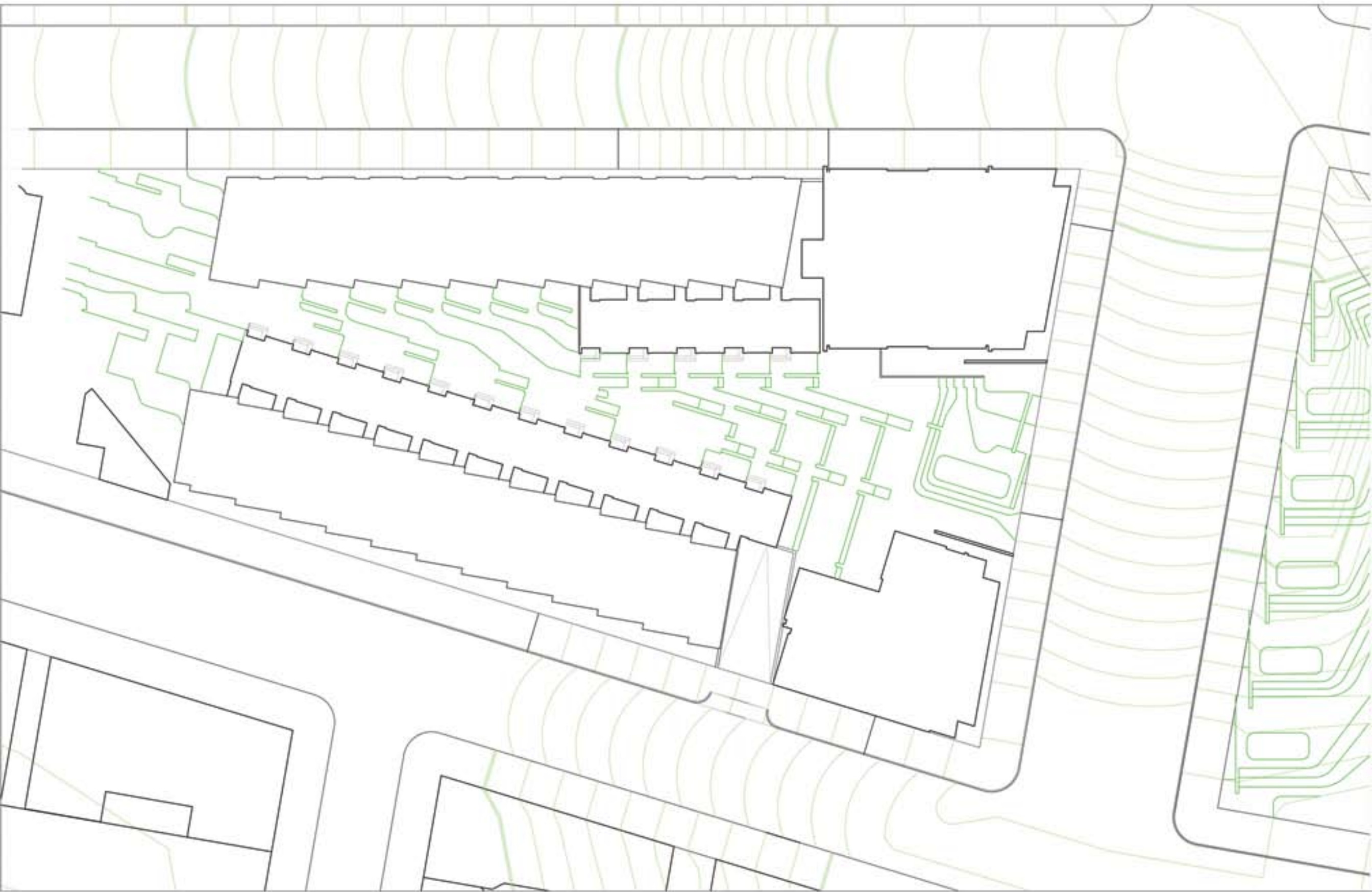


STAGE 2



STAGE 3









STAGE 1



STAGE 2



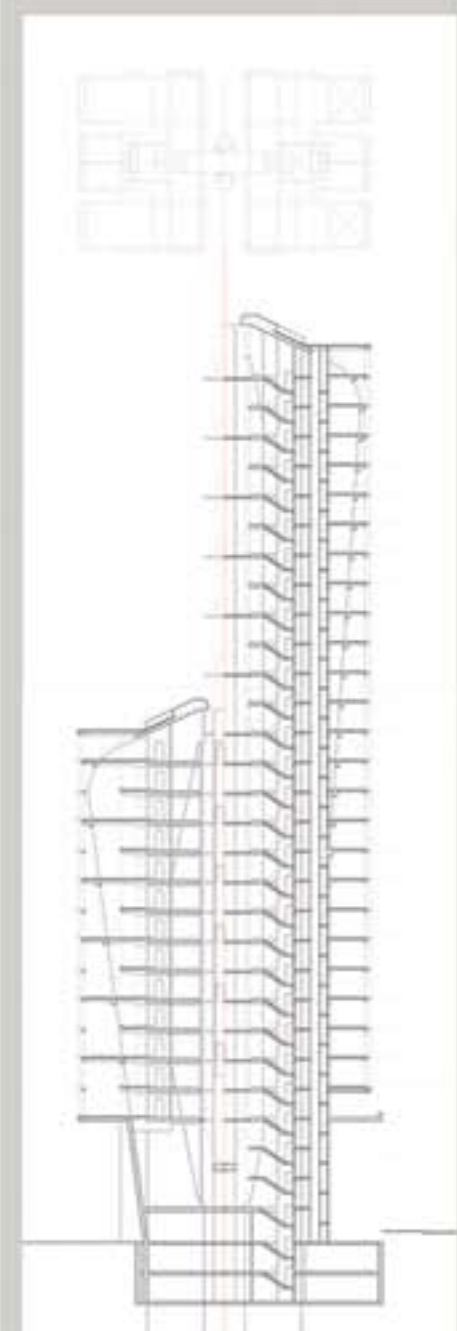
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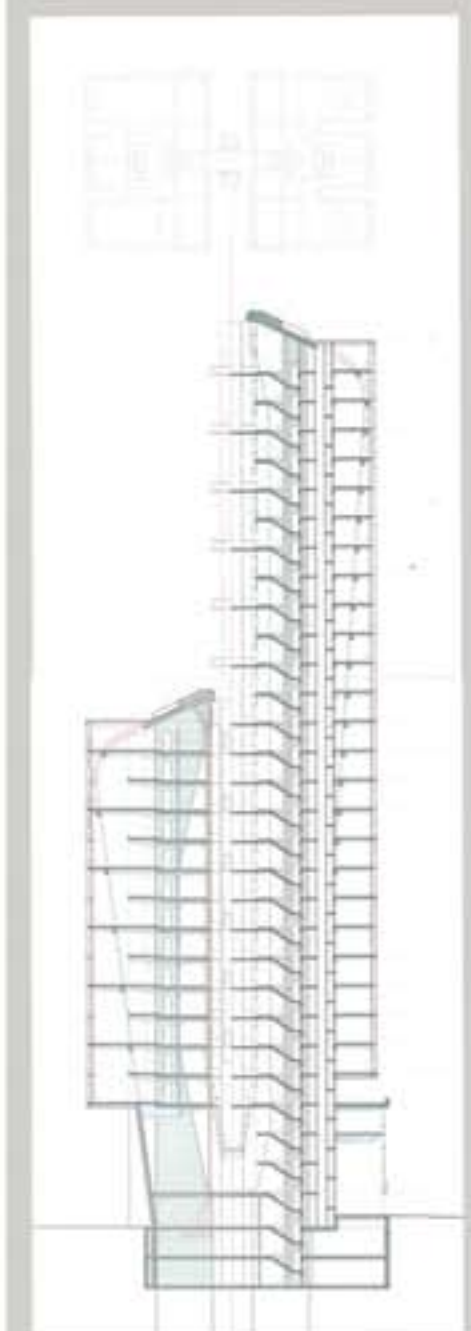








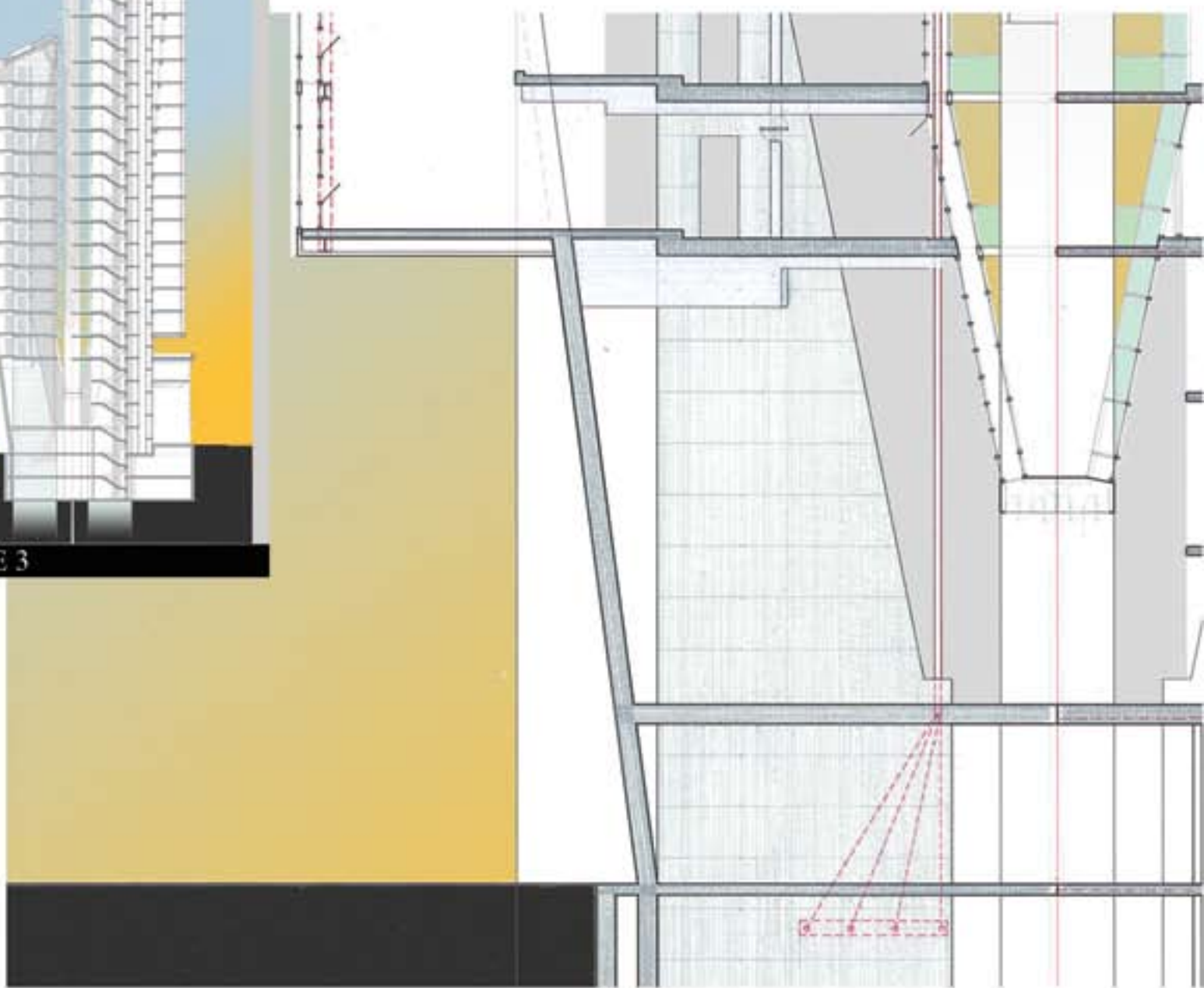
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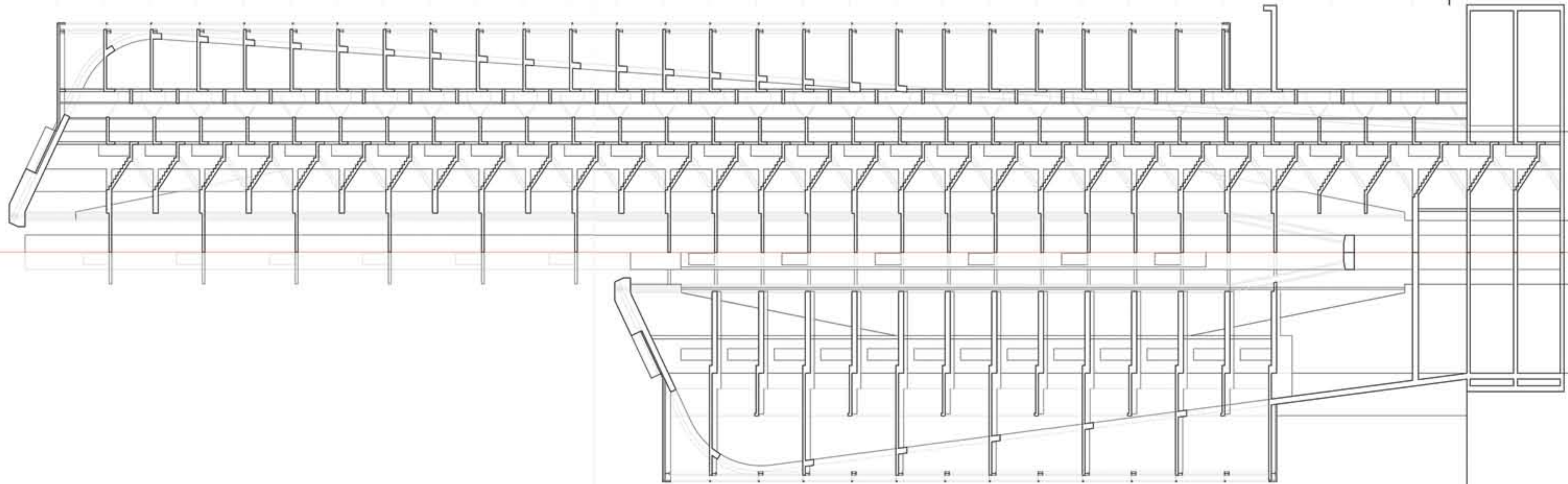
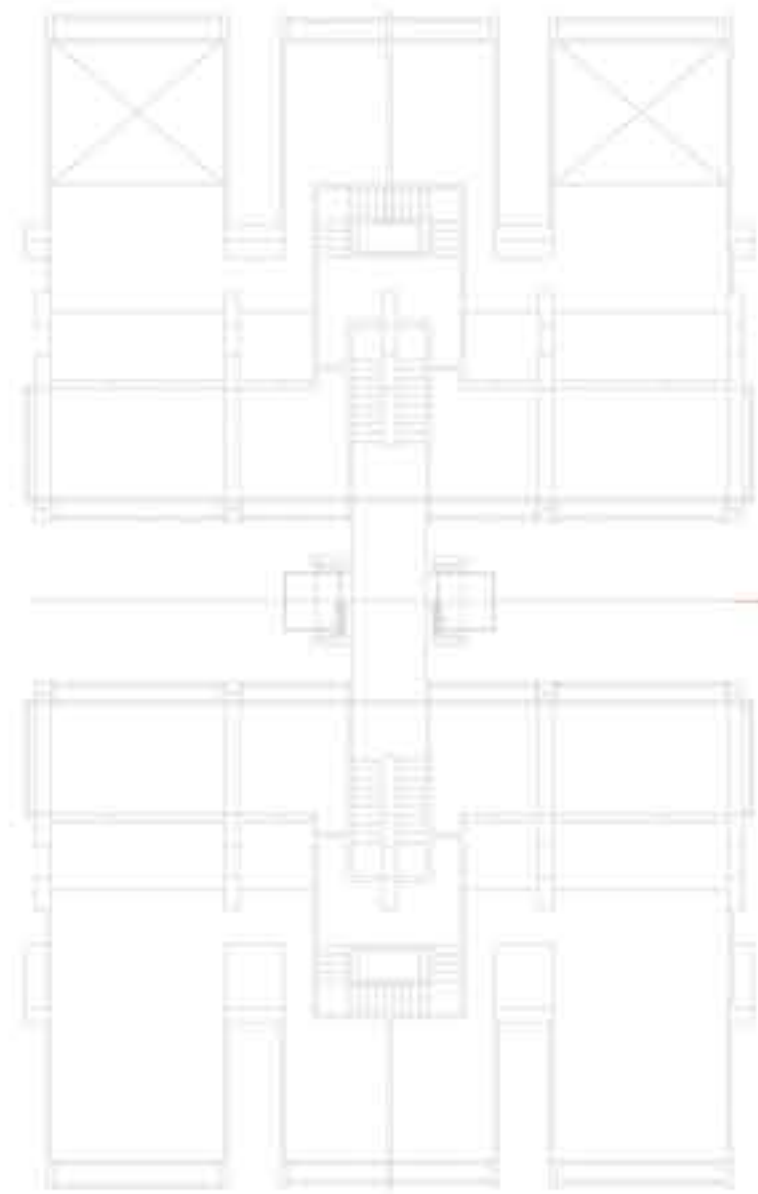


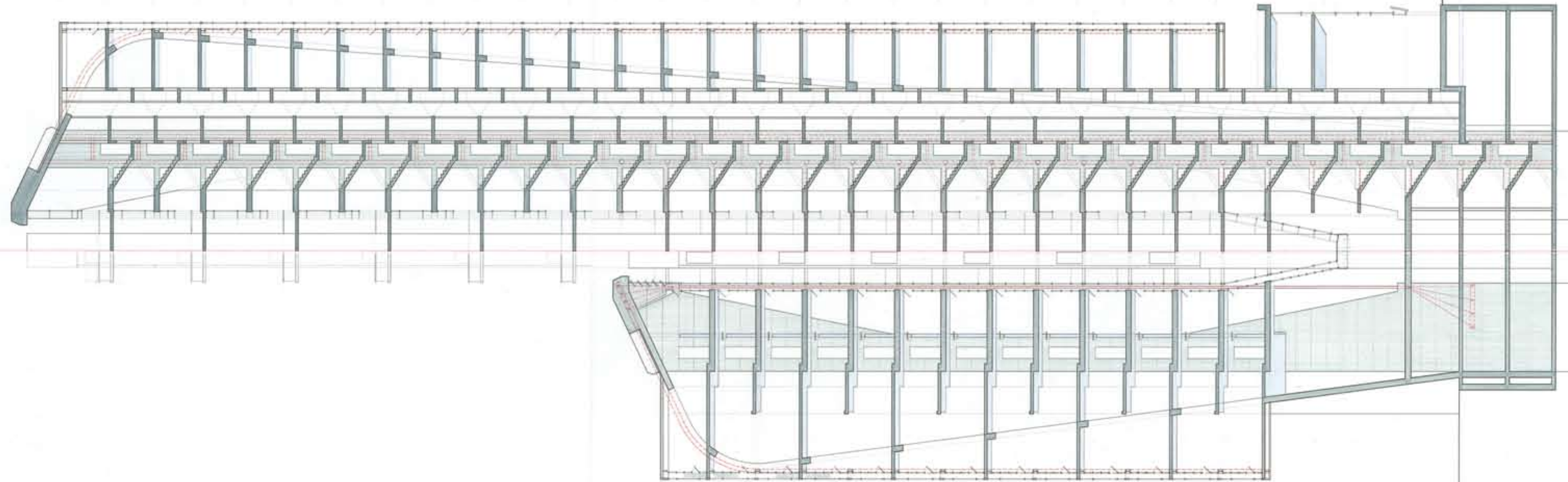
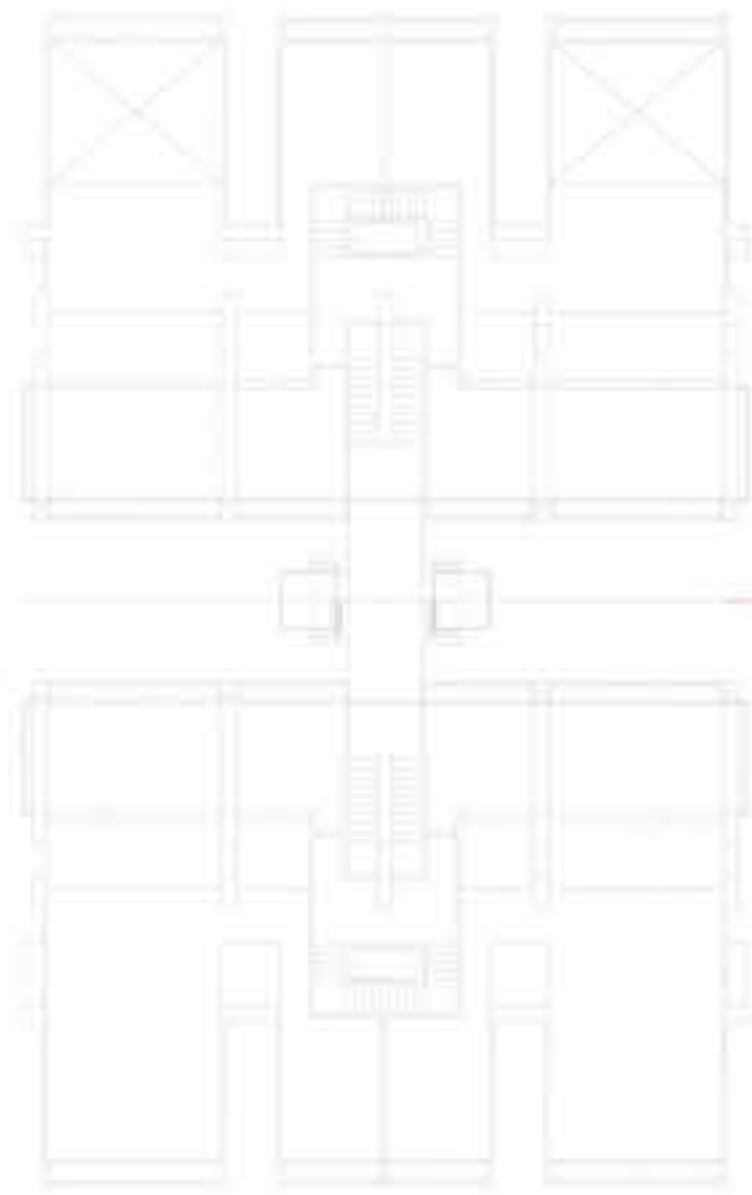
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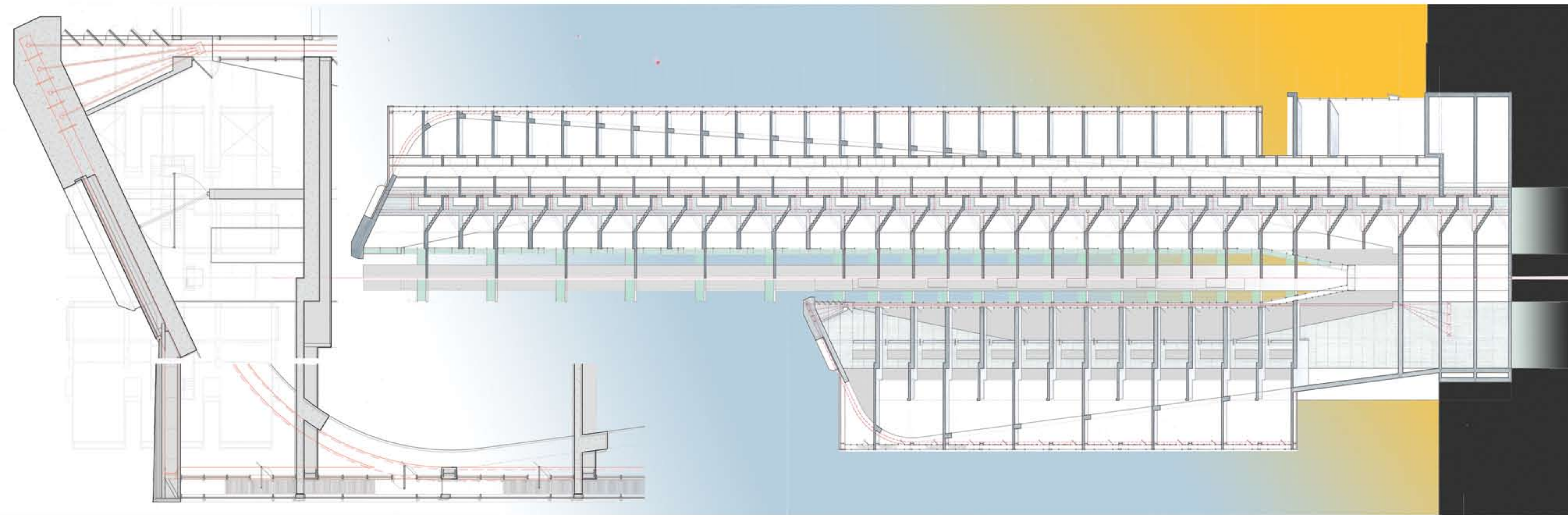


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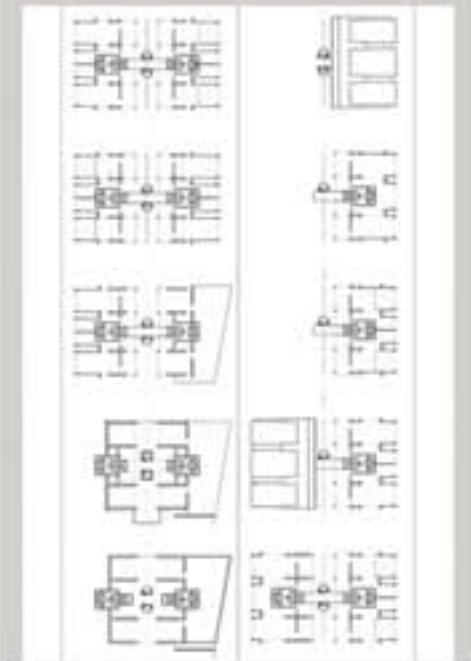




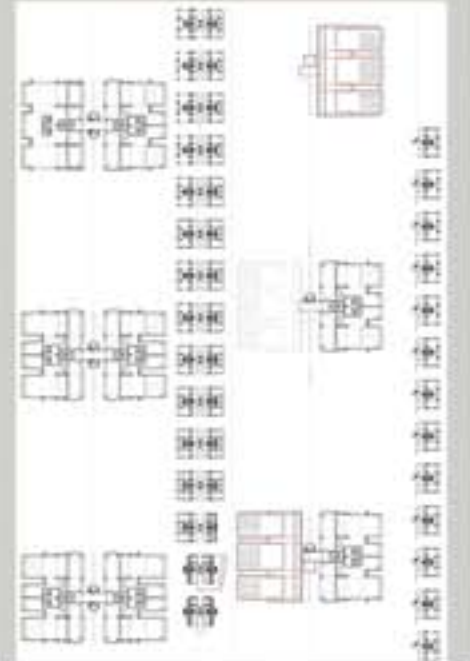




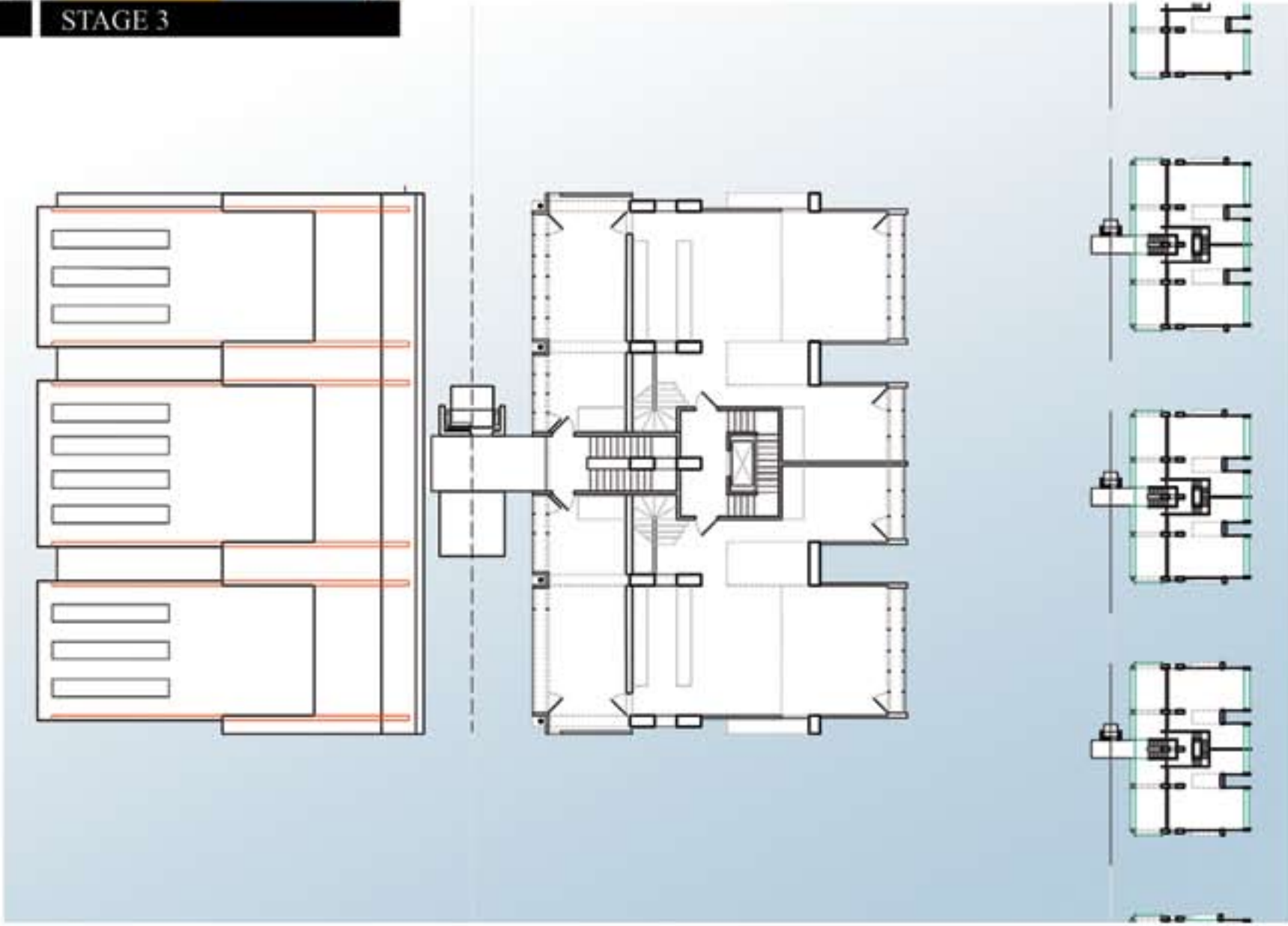
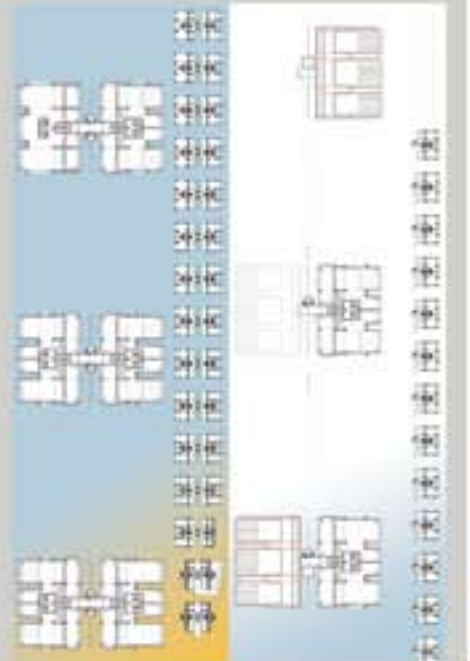
STAGE 1

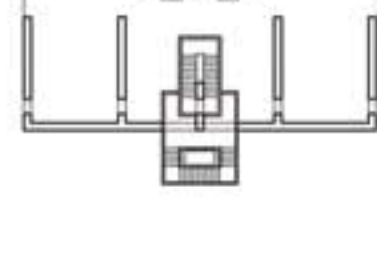
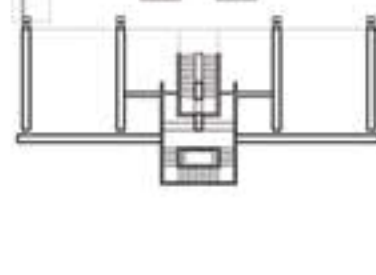
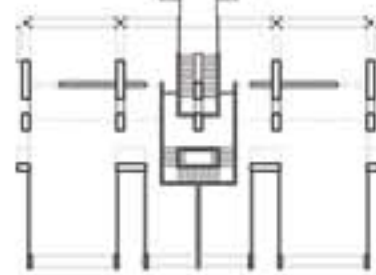
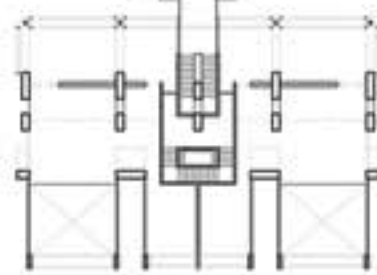
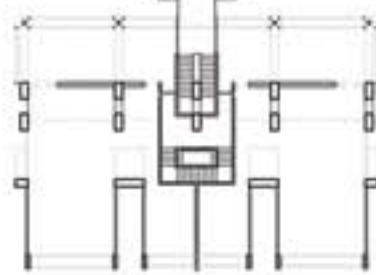
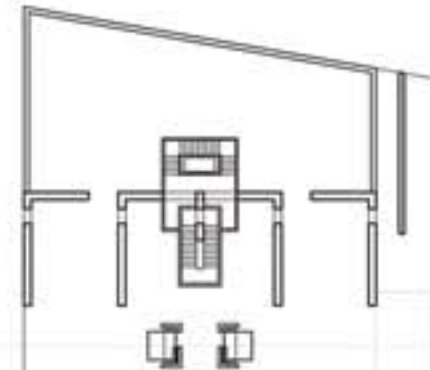
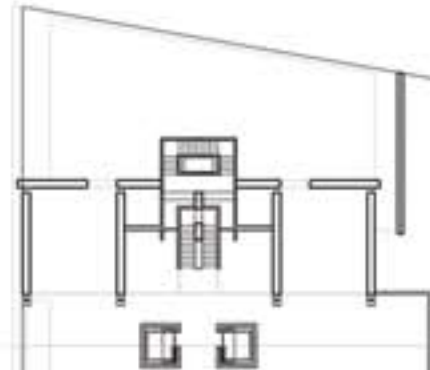
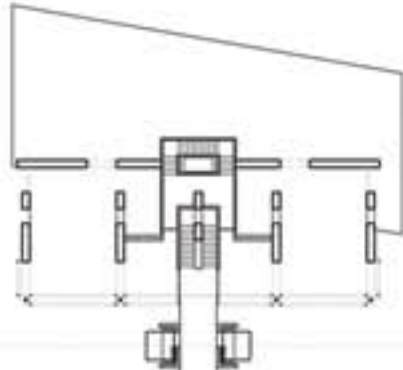
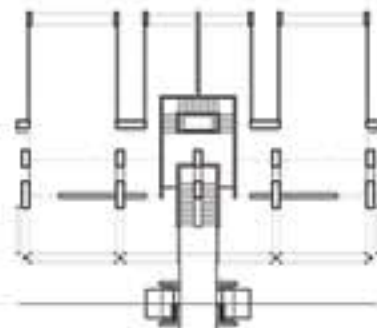
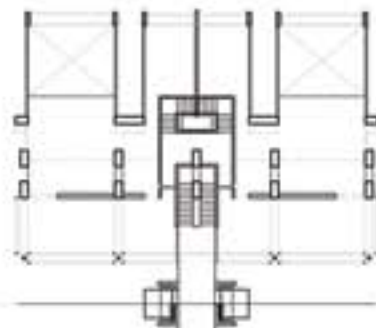
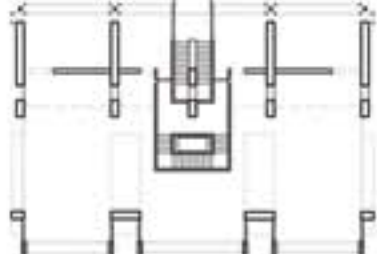
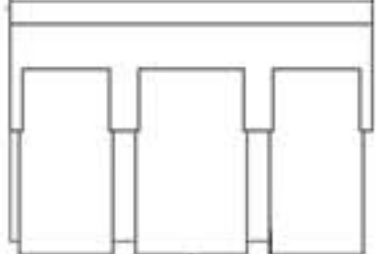
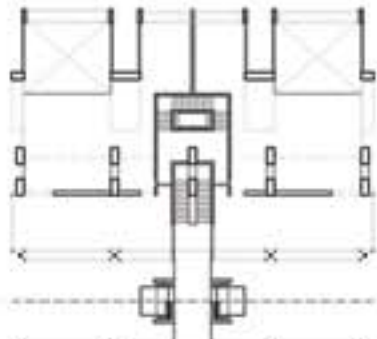
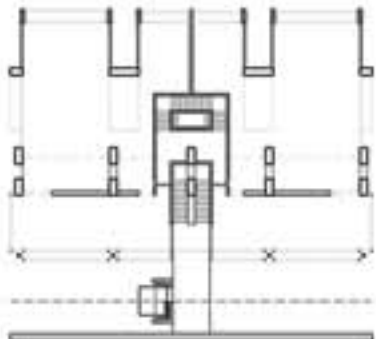
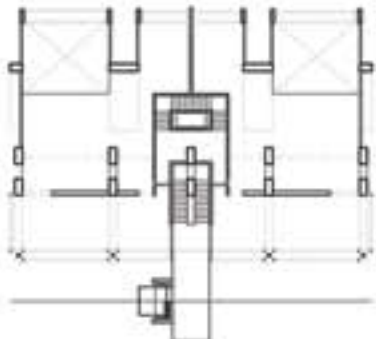
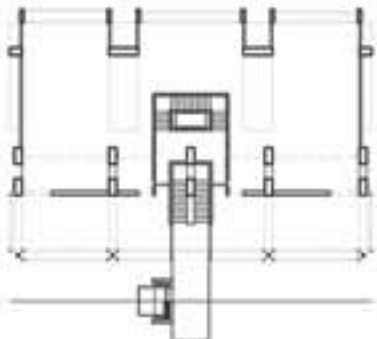
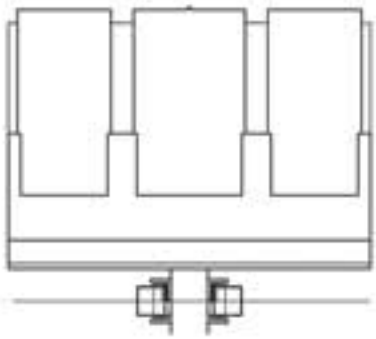


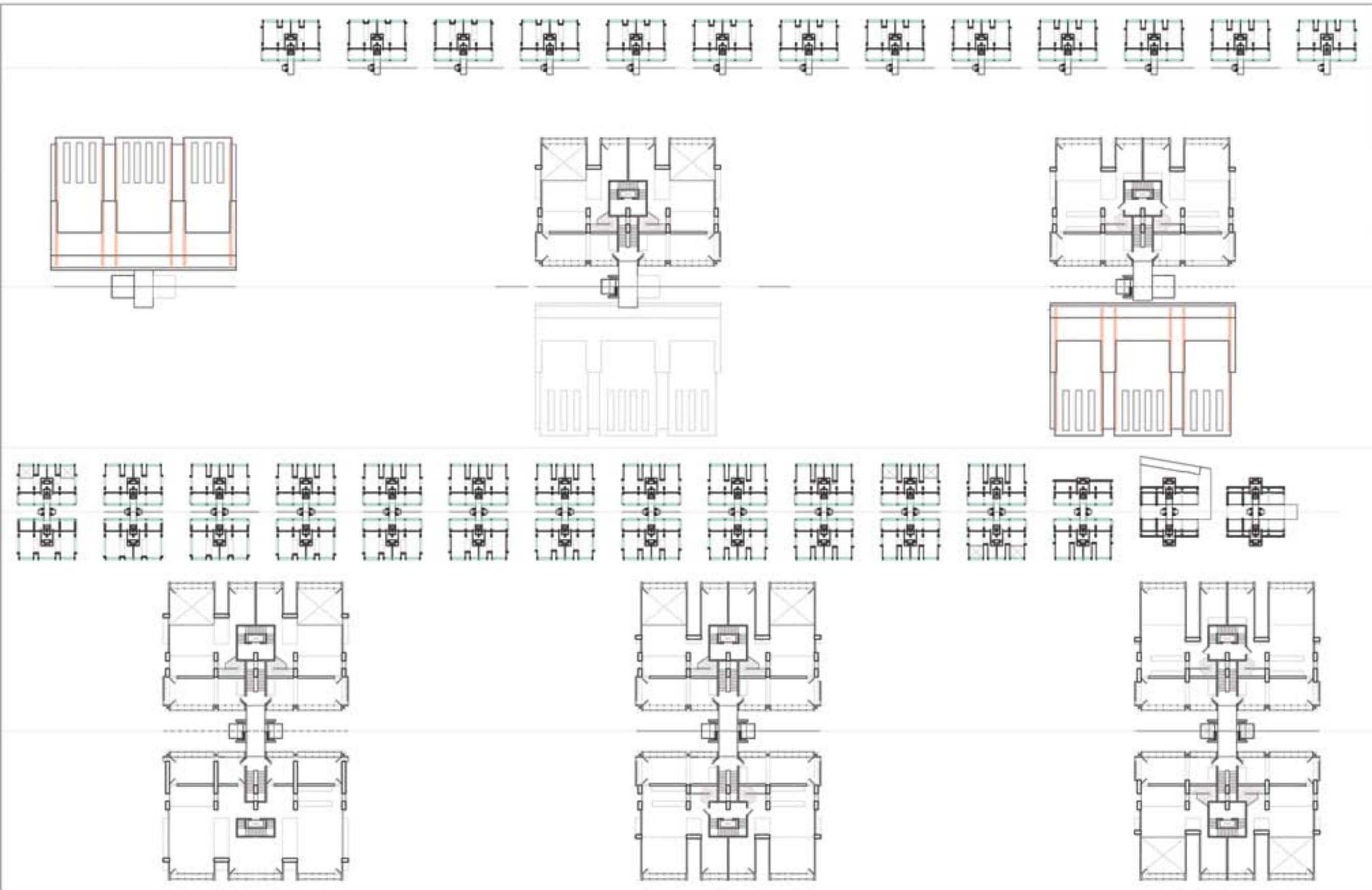
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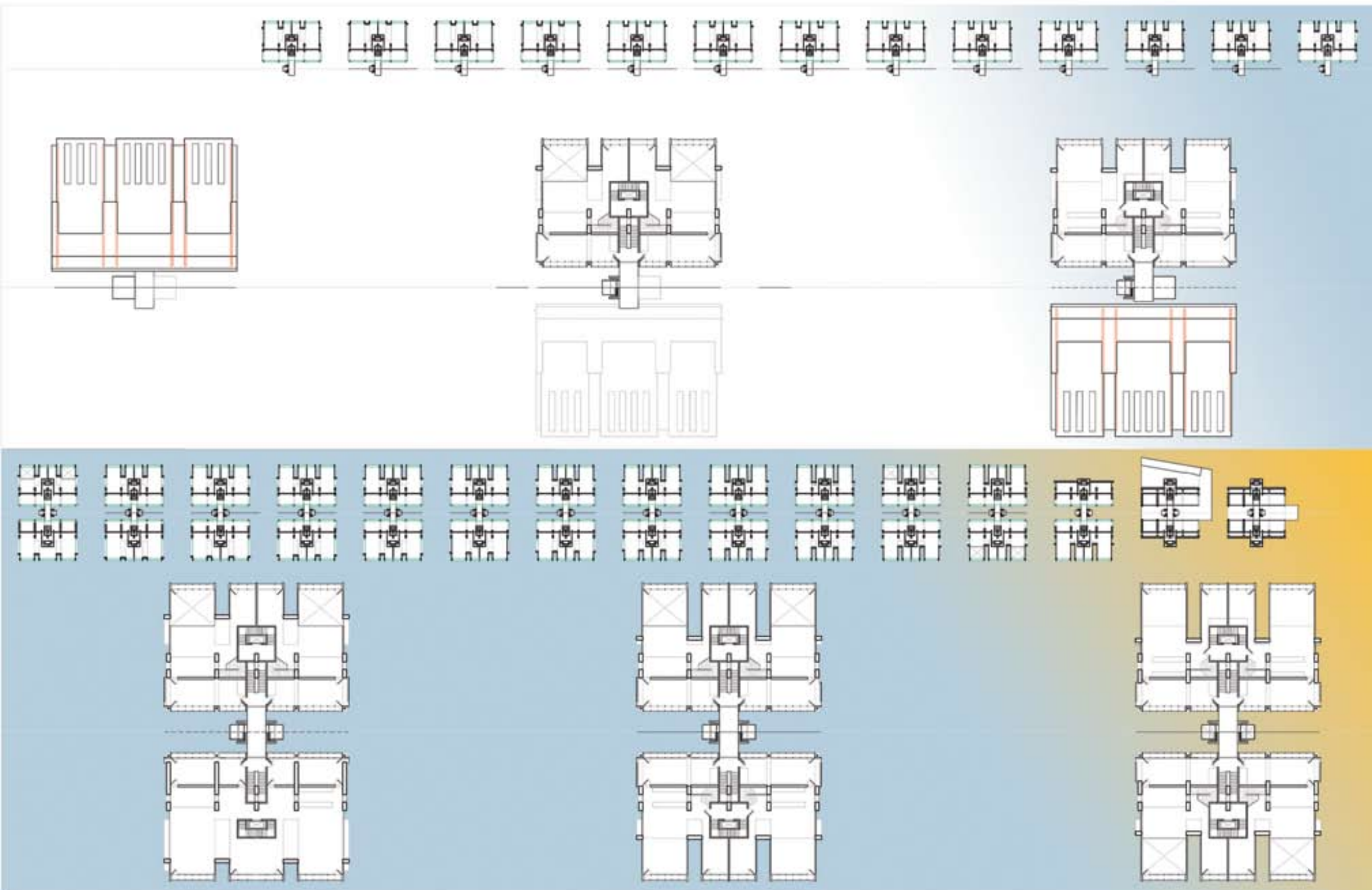


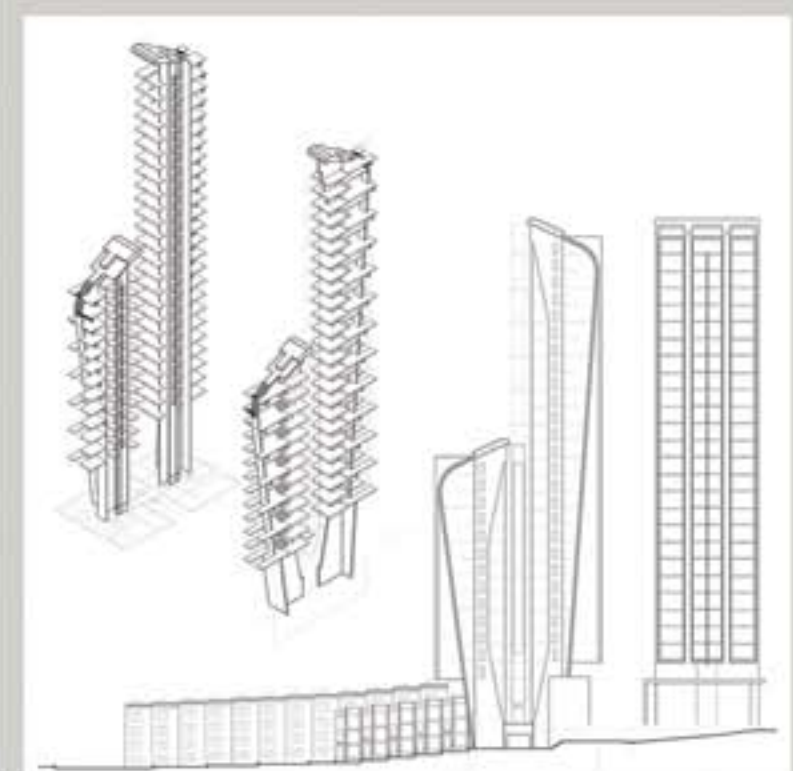
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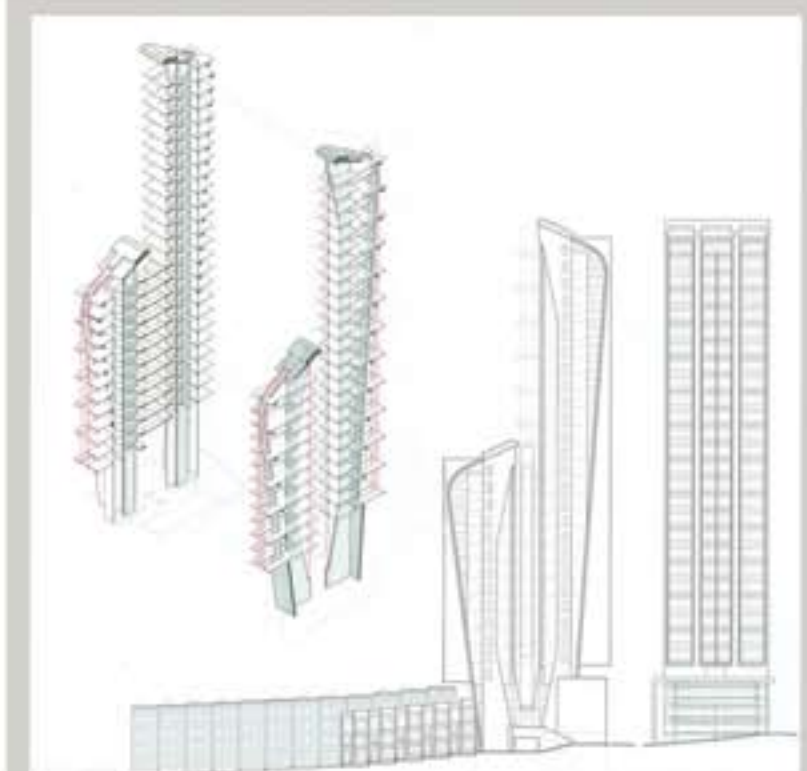




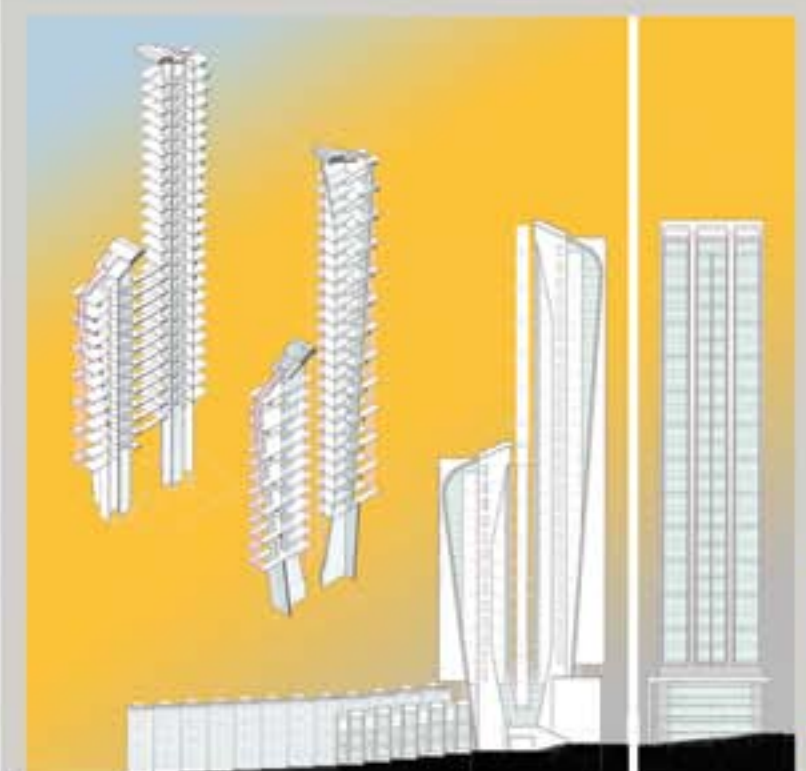




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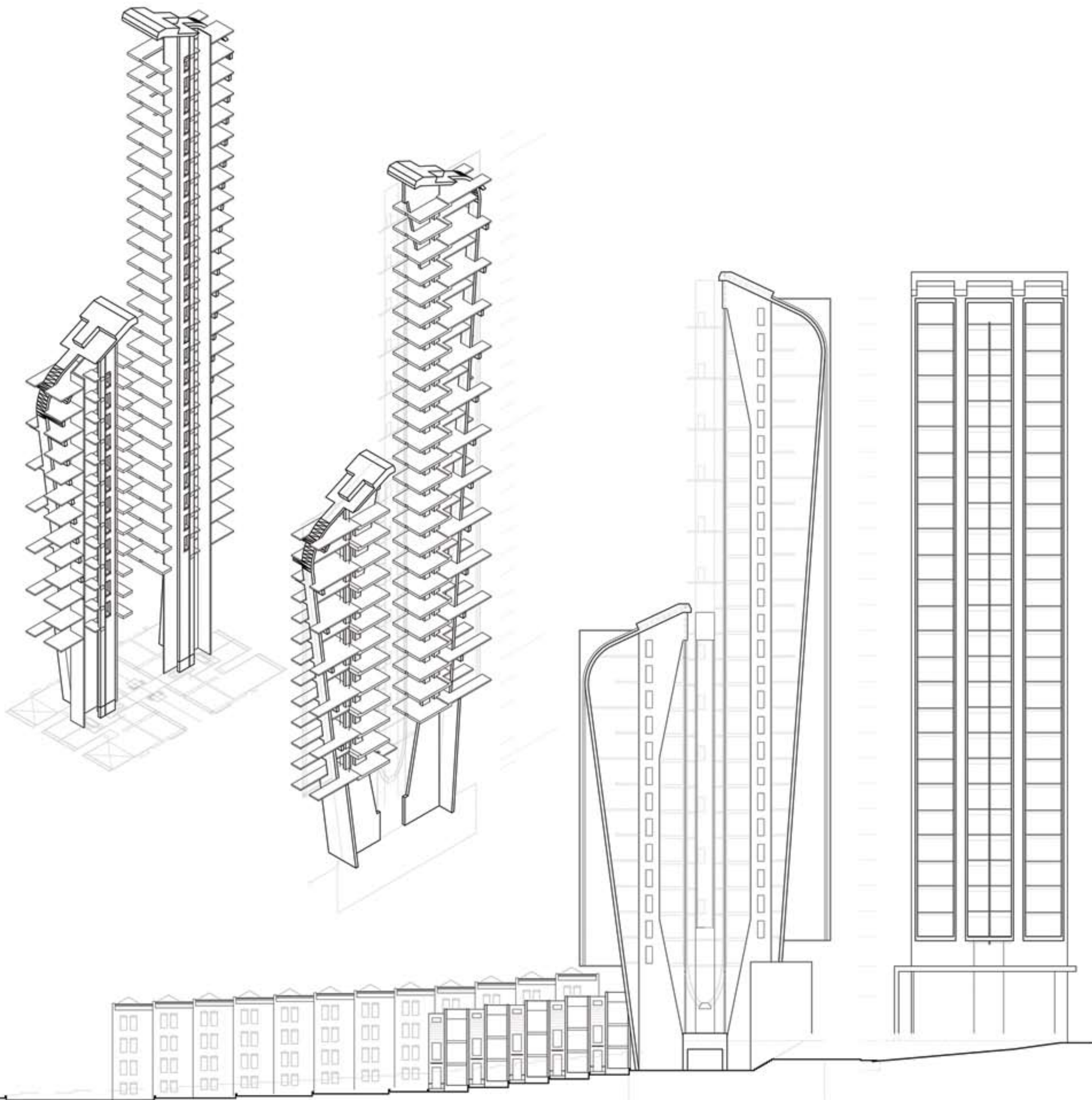


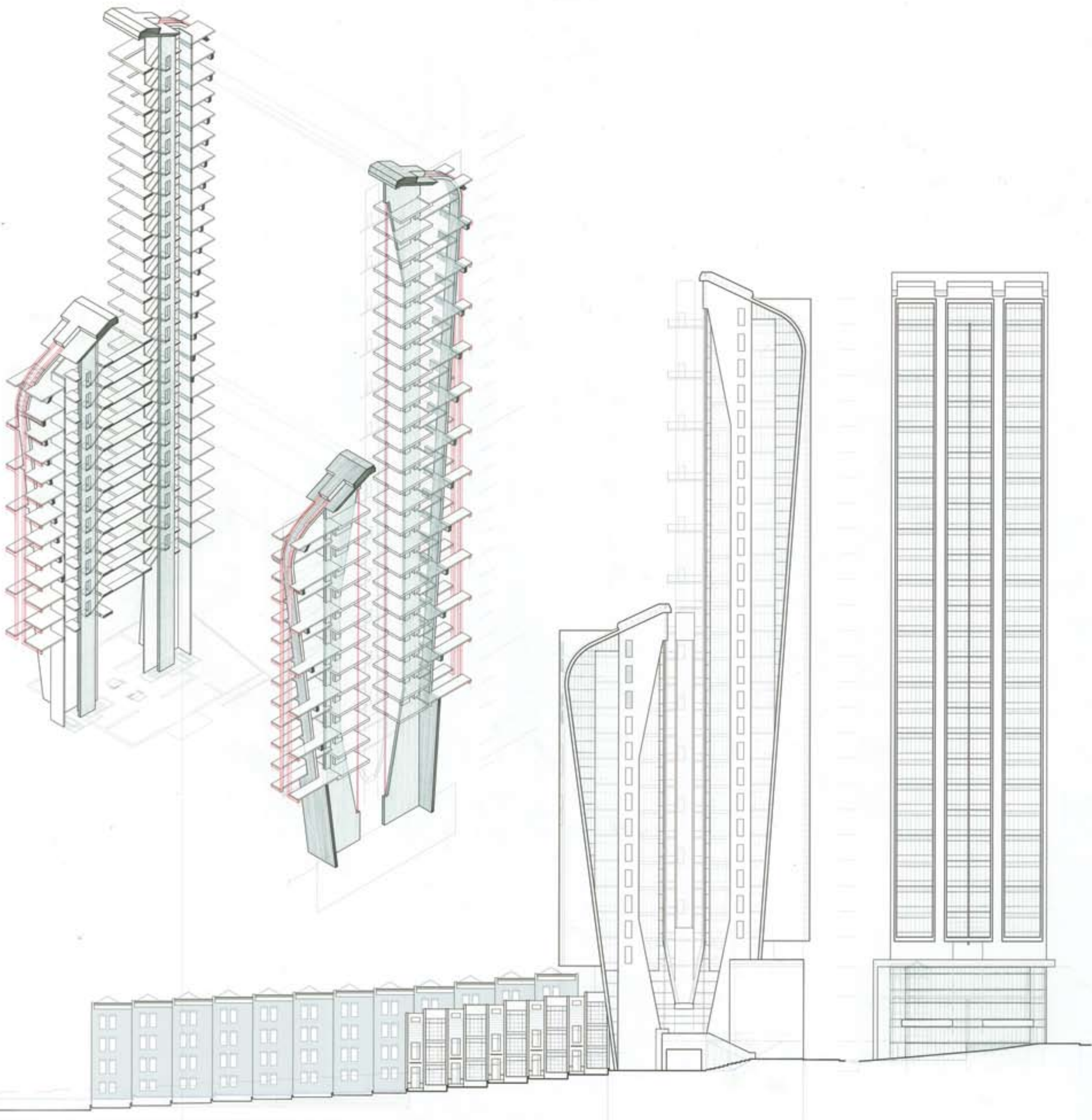
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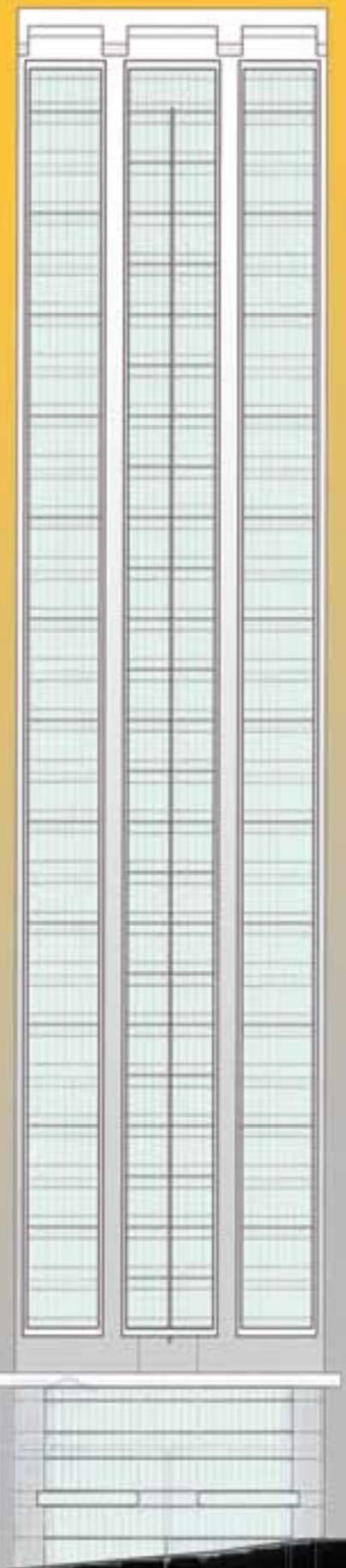
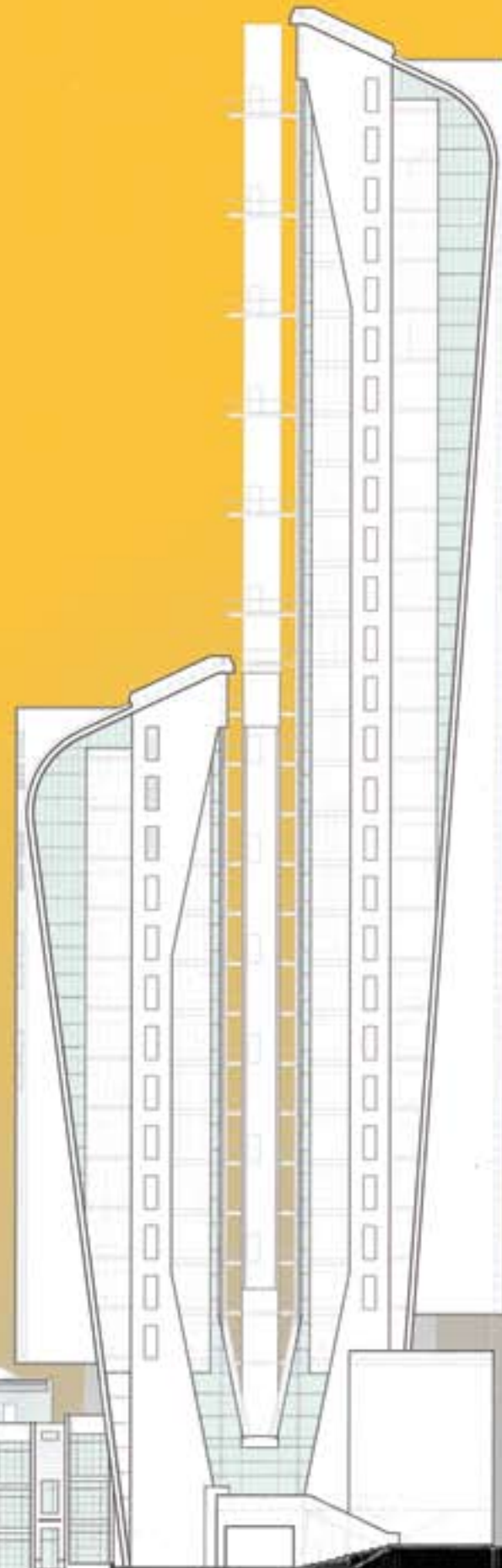
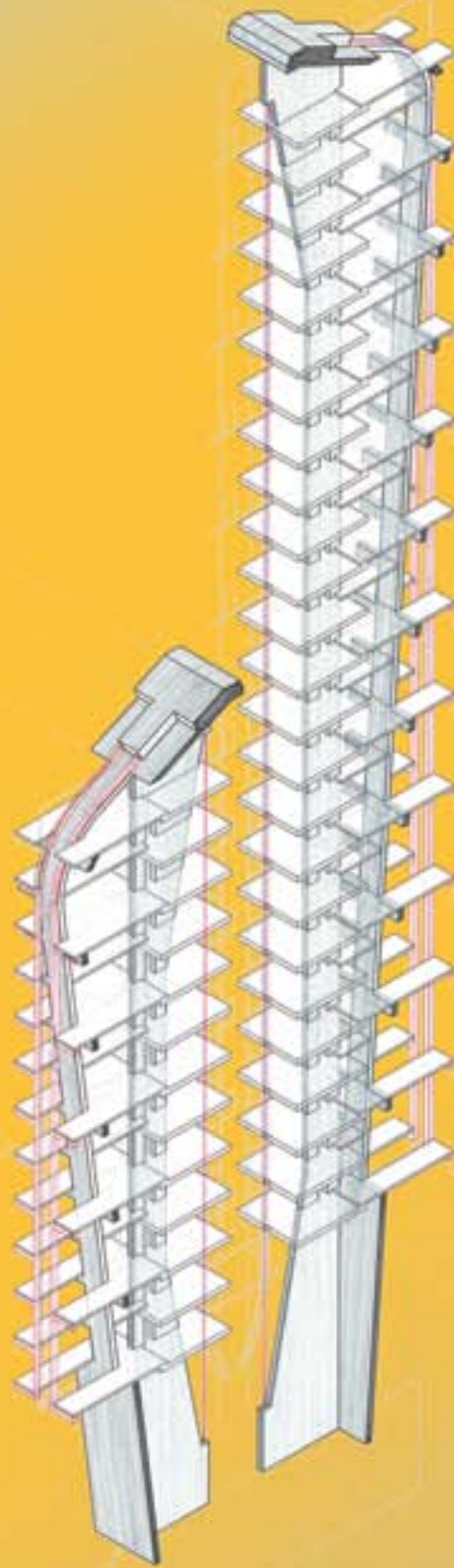
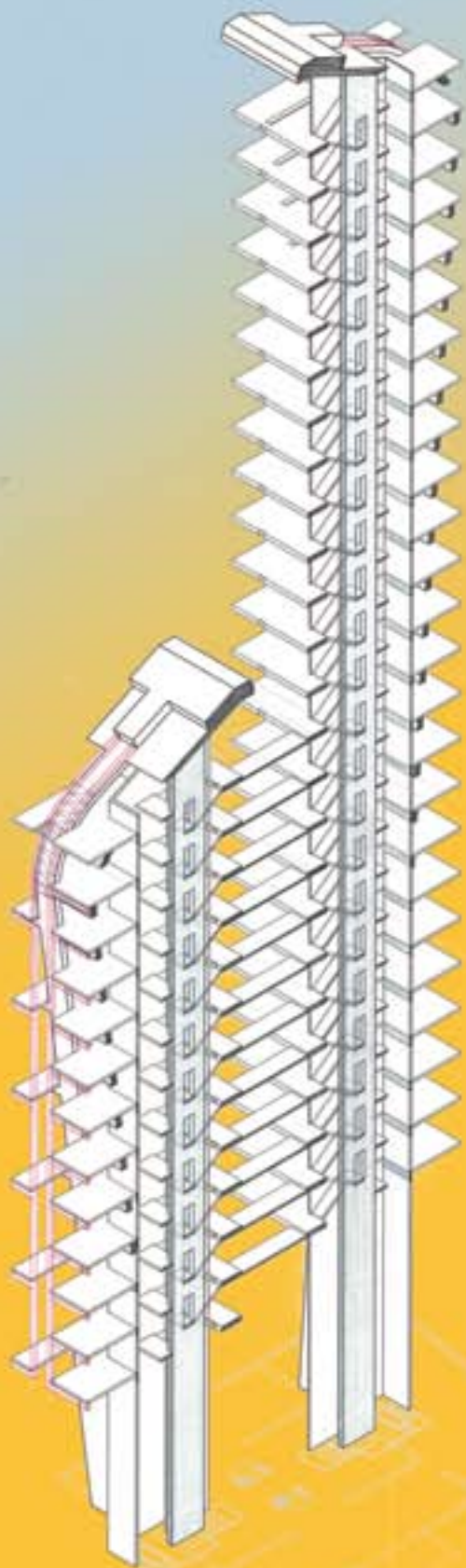


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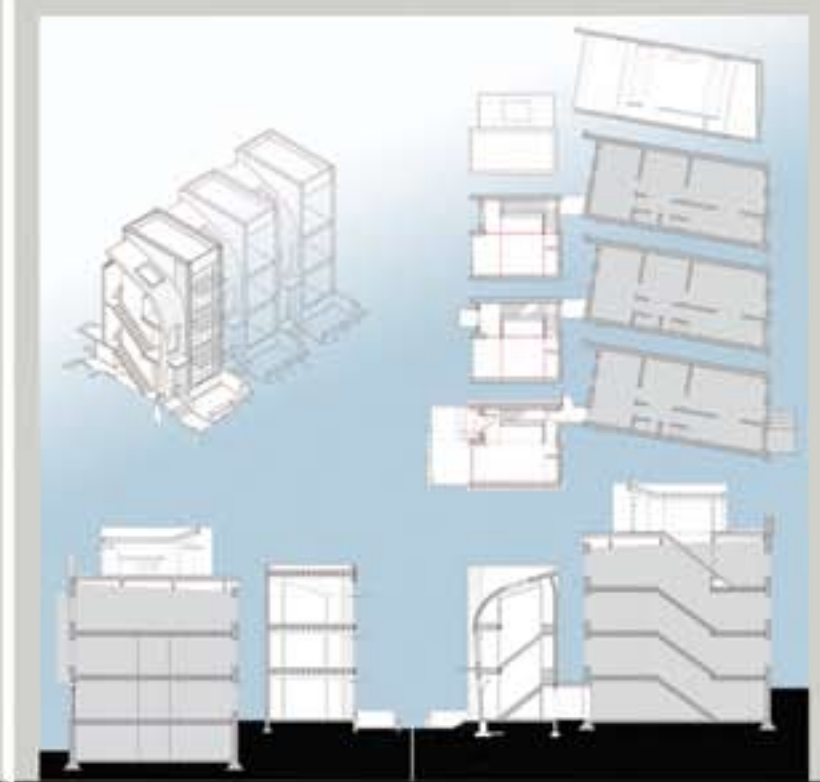




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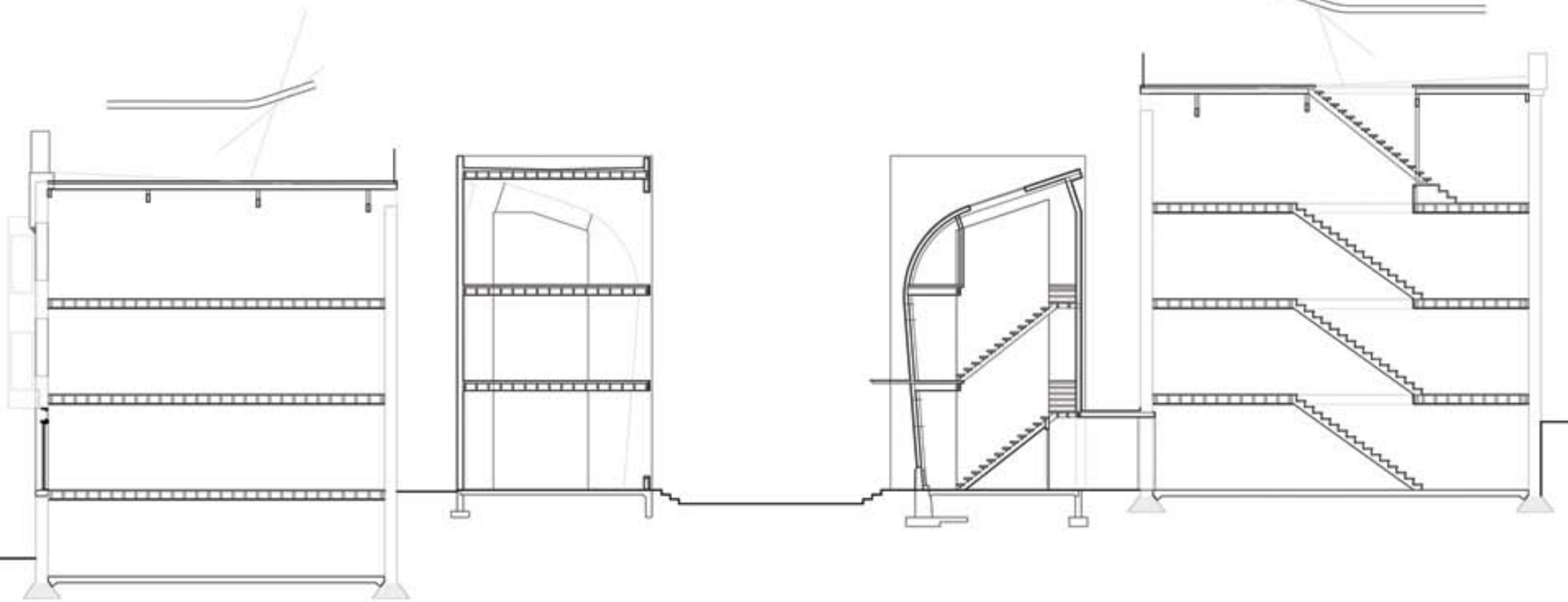
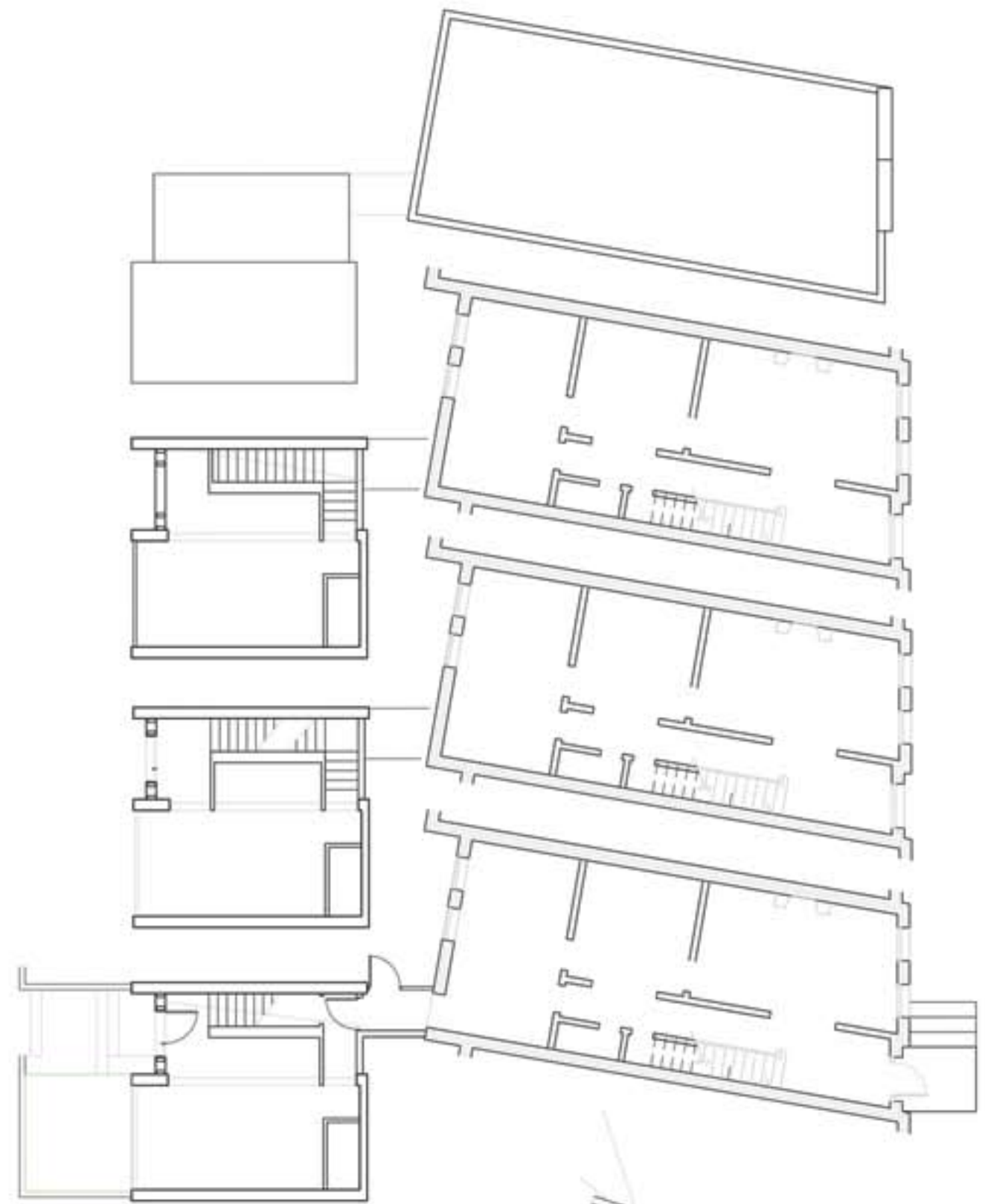
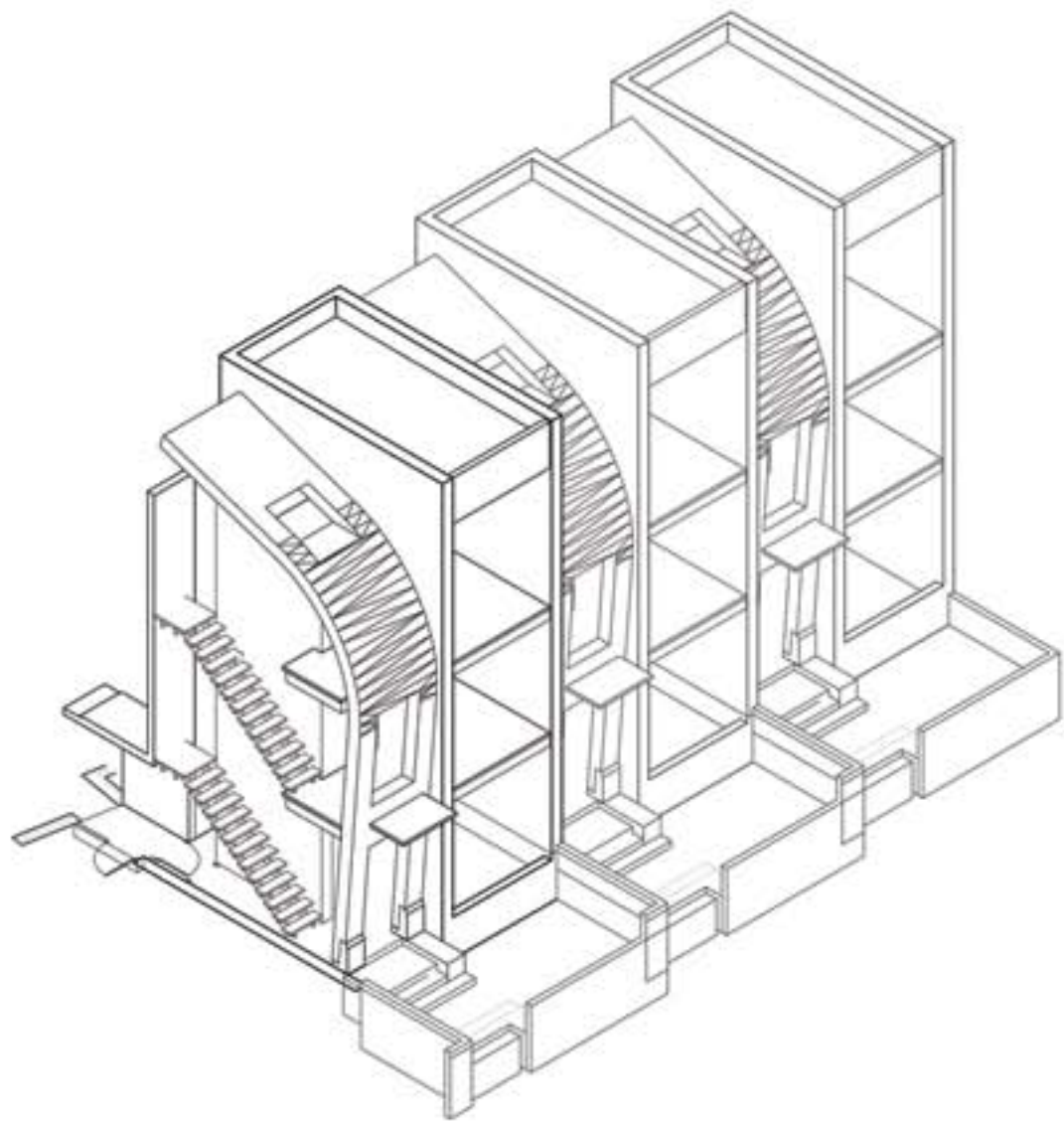


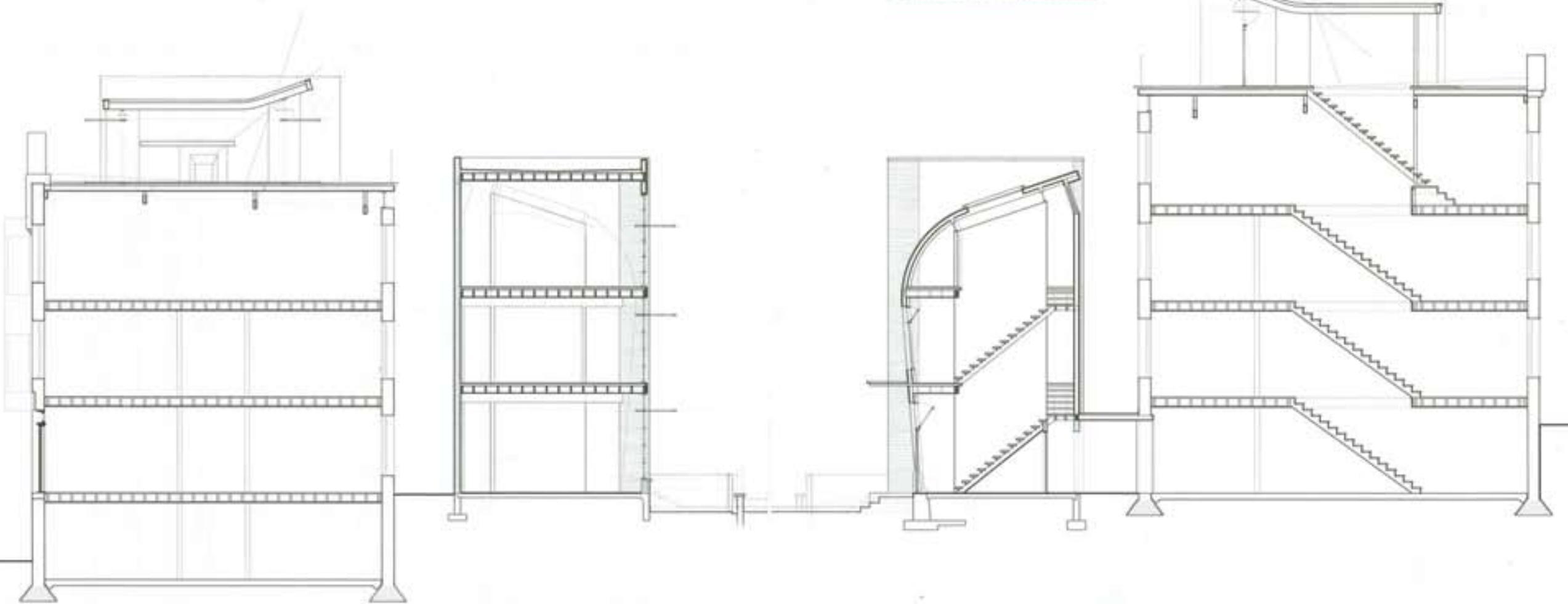
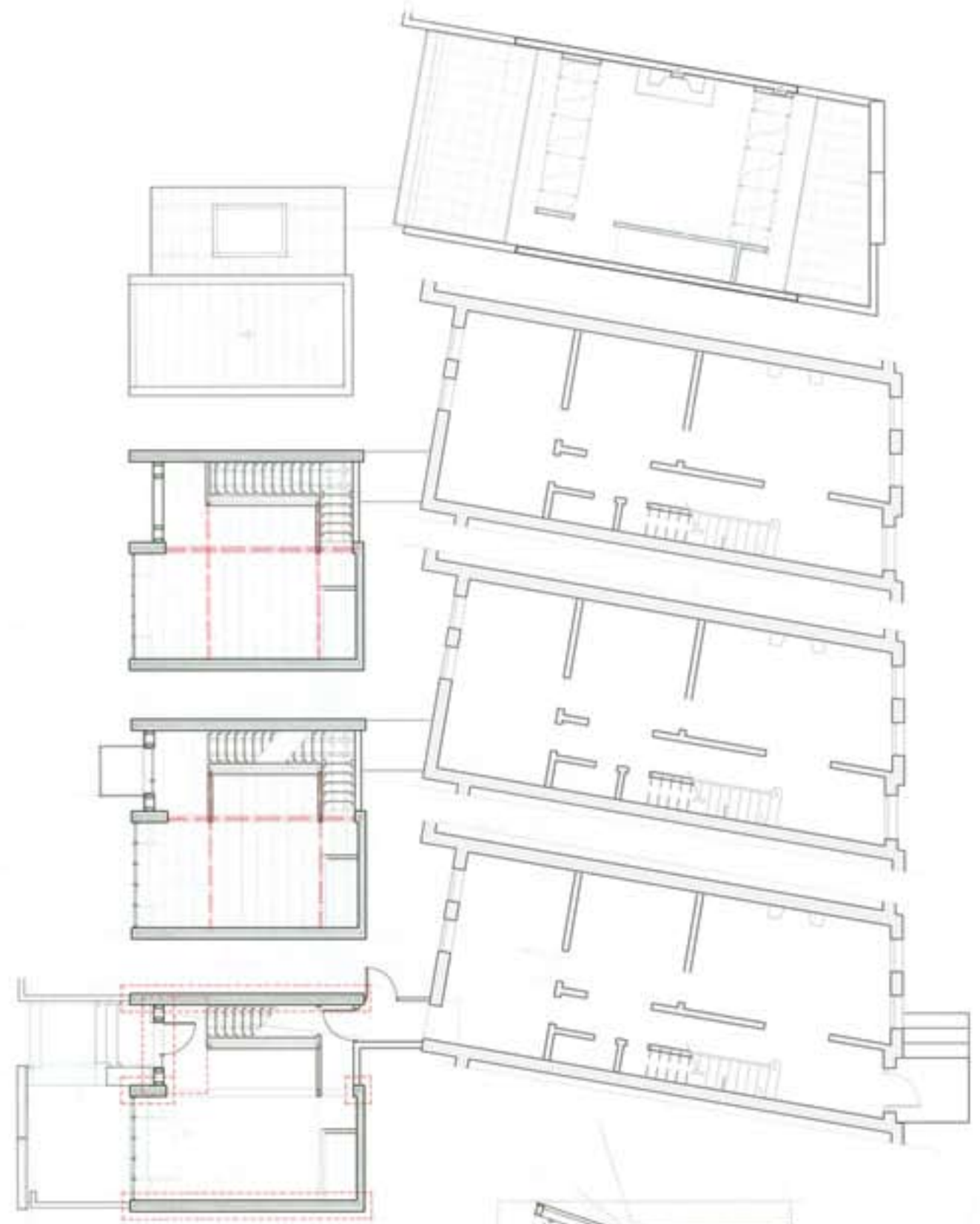
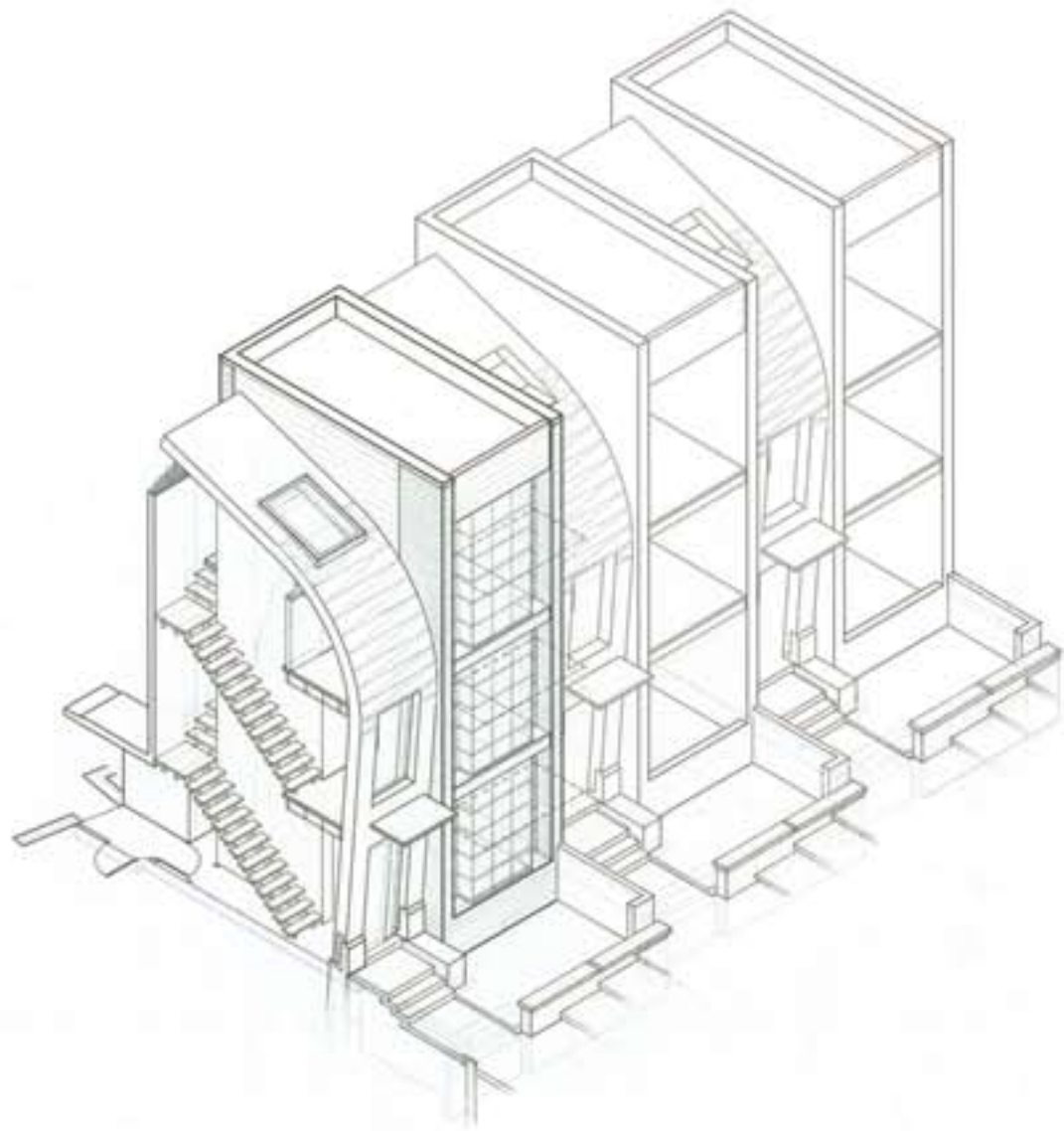
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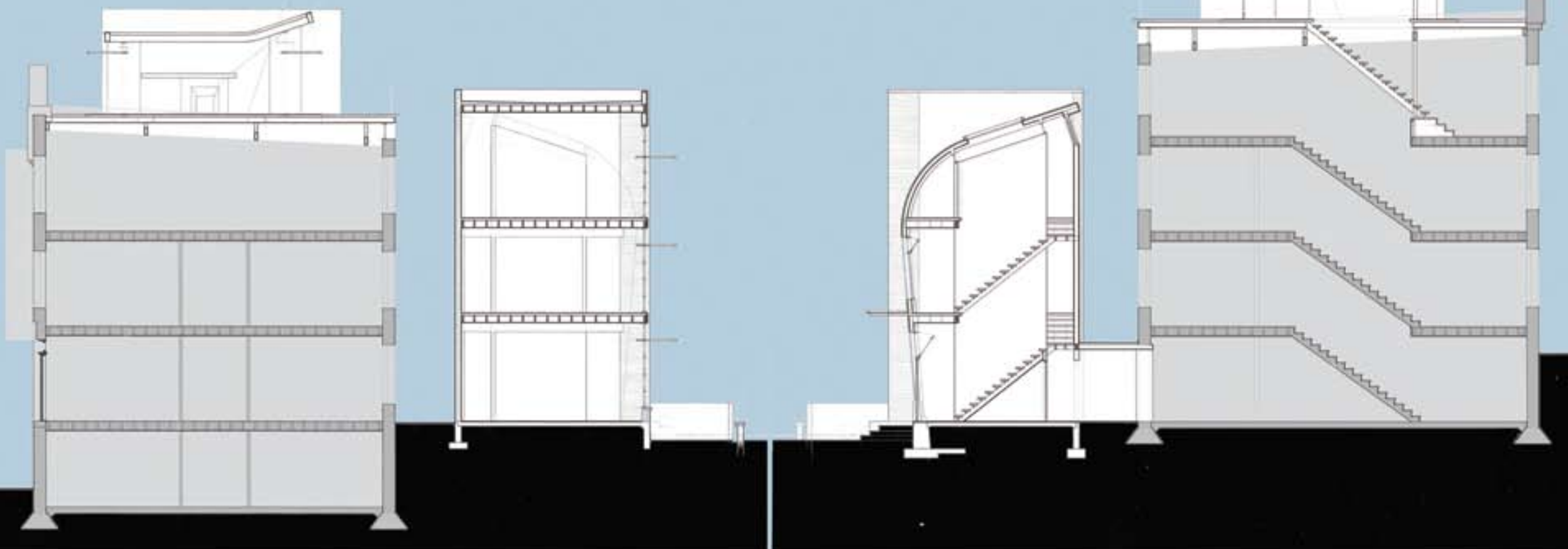
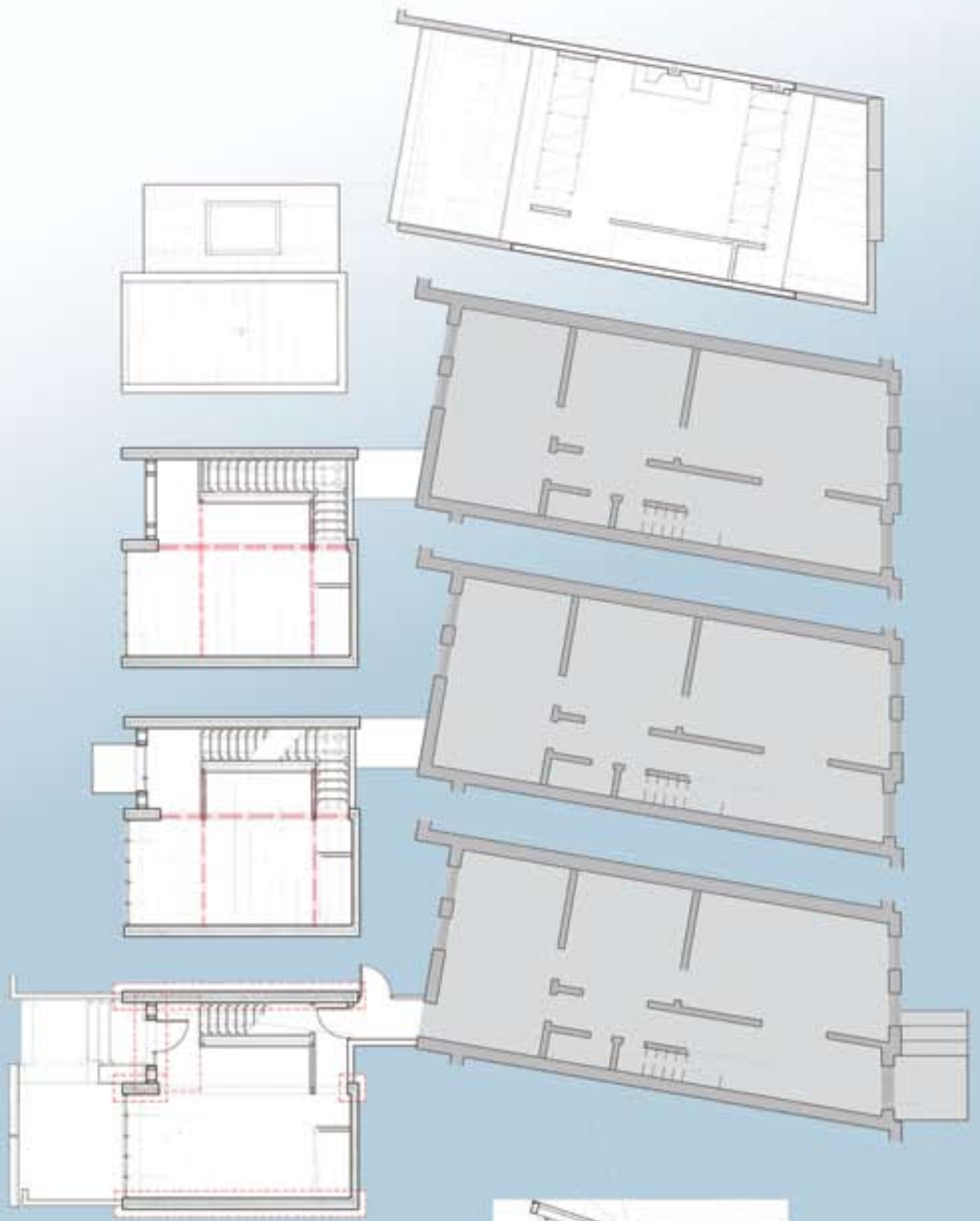
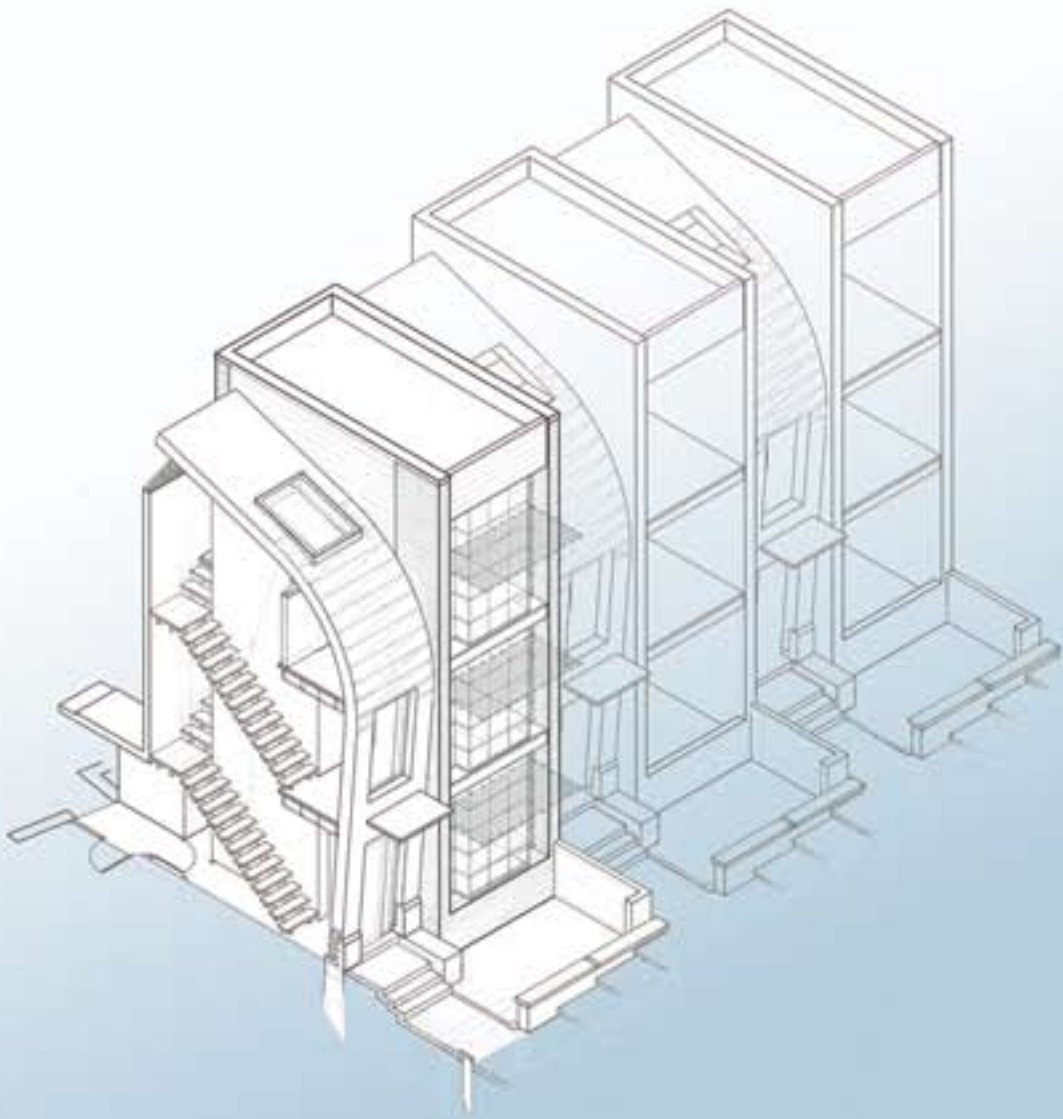


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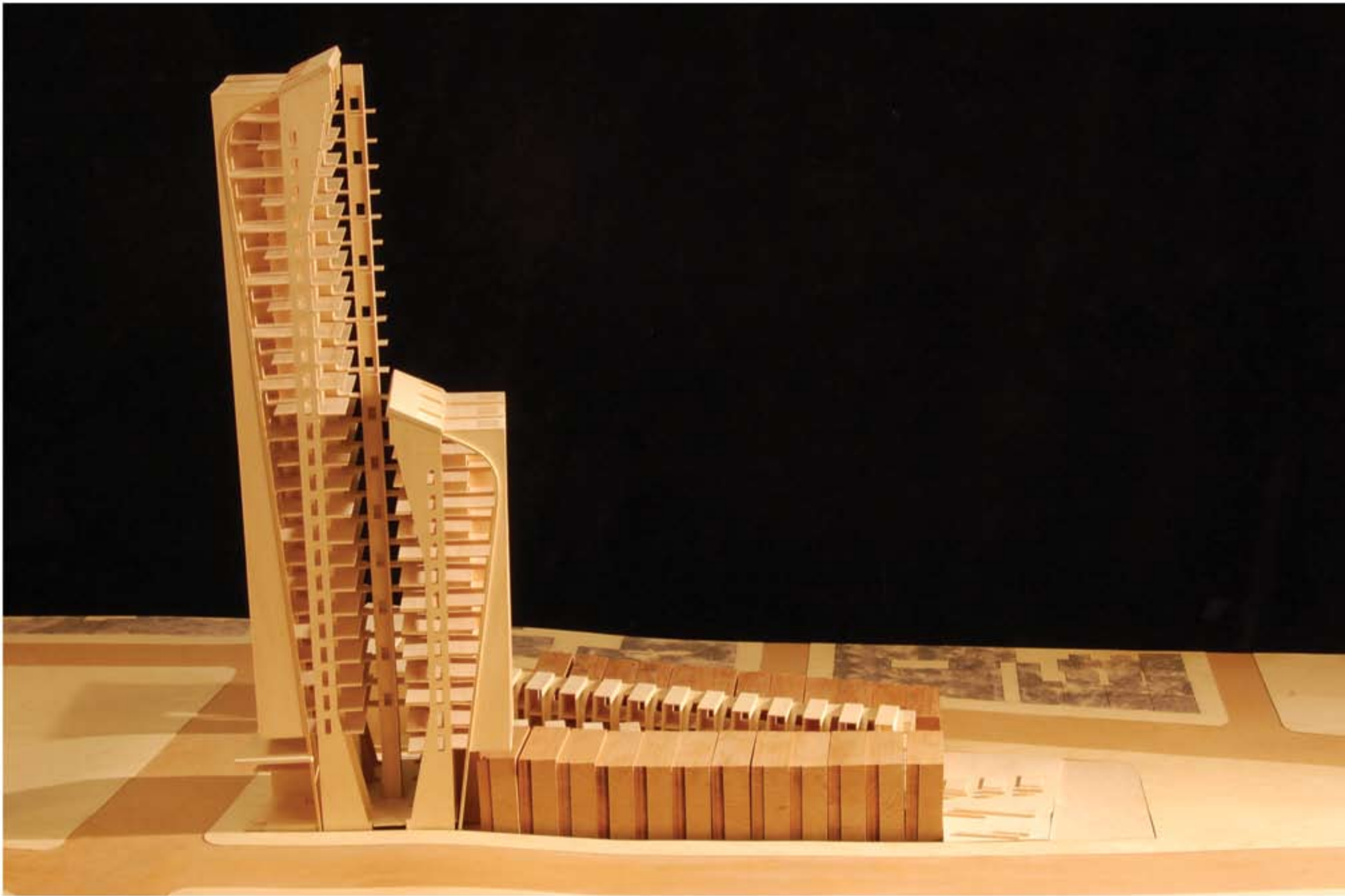
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MODEL



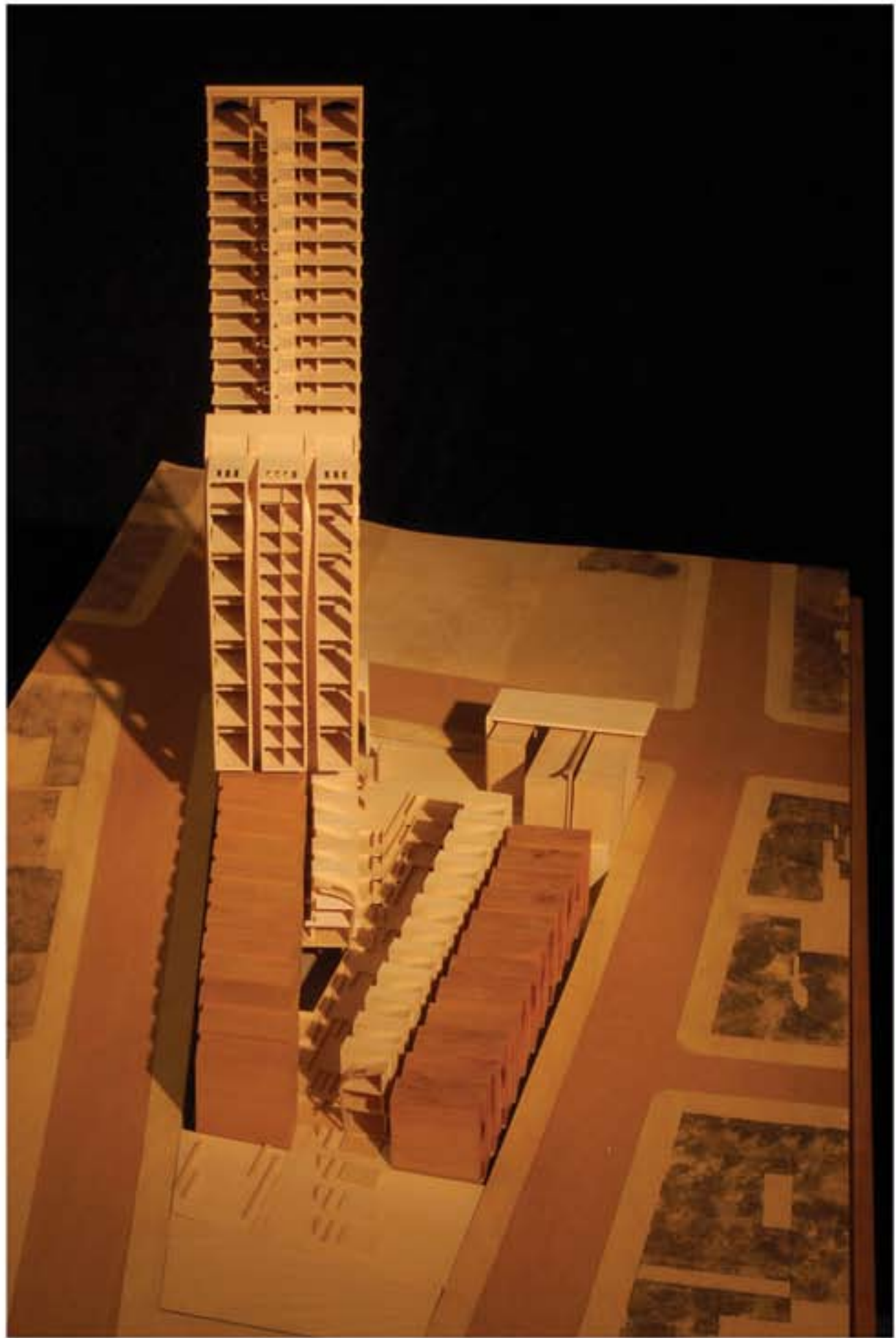














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Christian Norberg, *The Concept of Dwelling*, Rizzoli: International Publication, Inc.

Benoit B. Mandelbrot, *The Fractal Geometry of Nature*, W. H. Freeman and Company, New York, 1977

Henry Gras F.R.S., *Gray's Anatomy*, Courage Books, 1974

Image List

1 - Christian Norberg, *The Concept of Dwelling*, Rizzoli: International Publication, Inc, page 33

2 - Christian Norberg, *The Concept of Dwelling*, Rizzoli: International Publication, Inc, page 53

3 - Le Corbusier, *The City of Tomorrow and its Planning*, Dover Publications, Inc, New York, page 289

4 - Benoit B. Mandelbrot, *The Fractal Geometry of Nature*, W. H. Freeman and Company, New York, 1977, page C3

5 – www.freefoto.com/, Ian Britton, Tree, Sunrise, Northumberland

6 - Benoit B. Mandelbrot, *The Fractal Geometry of Nature*, W. H. Freeman and Company, New York, 1977, page 170

7 – circuit board photo, <http://www.flickr.com/photos/craigjewell/>

8 – 2008 Travel Guide Road Guide, GeoNova Publishing, Inc, map 94, New York City

Image List Cont.)

9 – USGS, New York City, <http://www.usgs.gov/>

10 – www.wadih-ghsoubi.com/Nature/2/index.html

11 – Waterfall, <http://www.flickr.com/photos/konsumisyon/>

12 – Female Shoulder, http://www.flickr.com/photos/ash_sphinx/

13 - Henry Gras F.R.S., *Gray's Anatomy*, Courage Books, 1974, page 44, fig. 14

14 – Plate 125 Antropology & Surgery, (Plate 7)

15 - Henry Gras F.R.S., *Gray's Anatomy*, Courage Books, 1974, page 40, fig. 6

16 - Henry Gras F.R.S., *Gray's Anatomy*, Courage Books, 1974, page 248, fig. 169

17 - Omitted

18 - Henry Gras F.R.S., *Gray's Anatomy*, Courage Books, 1974, page 338, fig. 213