

BRIDGE AS A PLACE

Travelling Urban Fabric Along the Götaälvbron Bridge in Gothenburg City

Athulya Sunil Kumar, Master thesis at Chalmers university of technology
program : Master program in architecture and urban design
direction : urban challenges





CHALMERS
UNIVERSITY OF TECHNOLOGY

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INSPIRATION

*"The world needs dreamers and the world needs doers
but above all what the world needs most is the dreamers that do." - Sarah ban breathnach*

*"I see the world as a canvas and my imagination as a tool to create wonders. sometimes I fail,
but most times innovation evolves." - Personal note*

ABSTRACT



image 1- people tend to look the beautiful view of the city from the bridge while walking (Author's own photo, 2019)

From the ancient days, people have had a physical, social and even emotional connection and reliance on the bridge as the built form. Bridges have played a part in the city's defense, established a city or civilization's boundary, exercised a civic role and been the location of many historical happenings. As a small scale of architectural design, a bridge, like the building has been an example of an evolutionary body due to a refocus and exploration of new technologies and materials. Specifically, the living or inhabitable bridge has undergone more conceptualization than any other bridge type (Young, 2007)

The oxford definition of a bridge says 'It's a structure carrying a road, path, Railway etc across a river, road or other obstacle. Now what is a bridge according to architecture? We can state numerous example of bridges which most of them serve the purpose of transportation. Bridges also adds up to the identity of cities which makes them into a landmark. The thesis topic deals with what programs can be included on a bridge to connect the fragmented city fabric.

Bridges are used to connect two parts of the city but how much connection is occupied by a bridge is still a question. Most places connected by a bridge have entirely different properties, for example in terms of spatial organization, culture, programs etc. The so called connection is achieved only in terms of transportation. The potential of a bridge is far more than what they really are. As architects and urban designers' one should explore these possibilities for innovative architecture approach. The aim of this thesis is to achieve a strong connection between two parts of the city connected by the bridge. It also aims in Re-thinking the concept of bridge that we have in mind till now.

The foundation of the thesis is Fumihiko maki's theory of possible fusion between architecture and infrastructure which states, parallels can be drawn with historic precedents like habitable bridge, linear city etc. It also focus on rethinking the concept of bridge that we have in mind till now.

ACKNOWLEDGEMENT



I would like to thank my Family, my friends and my fiance for their support and care and all that they have given me and made me what I am today.

I deeply thank Kengo Skorick for being my thesis supervisor and supporting me throughout and giving me all the encouragement I needed with total dedication and care. It would have never been so 'out of the box' if it was not for him.

I would also like to acknowledge my examiner Joaquim Tarraso for giving me valuable feedback and motivation time to time throughout the semester.

Qianqian my best friend for always being there for me giving me new ideas, thoughts and for making me feel confident on my project.

I would also like to take this opportunity to thank my fellow studio members especially Sene, Yunfan, Paulina, Biljana, Klara, Victoria, Ligia, Jorge, Efsta, Stella and Alice for sharing their ideas and valuable feedback during presentations and discussions.

thank you all !!!

- Athulya Sunil Kumar
June 2019

STUDENT BACKGROUND



I was born in a small state named Kerala in India. I did my 5 years bachelors in SPA, Mysore. I worked for an year and a half in different firms after my studies before coming to chalmers. As an architect I consider myself as a generalist in which I am interested in all kind of projects whether it's designing a small room or a thousand square metre building. I tend to enjoy all the process before delivering the final outcome which involves model making, sketching , drafting etc.

- Athulya Sunil Kumar
May 2019

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01.INTRODUCTION



image 2- An engraving by Claes Van Visscher showing Old London Bridge in 1616, Which became an inspiration to this thesis. (Panorama of London by Claes Van Visscher, 1616)

BACKGROUND AND INSPIRATION



The Bridge was a sort of town to itself; it had its inn, its beer-houses, its bakeries, its haberdasheries, its food markets, its manufacturing industries, and even its church.... Children were born on the Bridge, were reared there, grew to old age, and finally died without ever having set a foot upon any part of the world but London Bridge alone... (City-Lab.com, 2012)

Looking back to history the construction of bridges in ancient Egypt is known from the reliefs of the New kingdom (sixteenth and eleventh centuries. BC) and from the descriptions of Herodotus. Their design was based on two main systems of proportions, calculation: a modular (use of certain size unit-modulus) and geometric (in which all three projections of the structures are defined by geometric constructions based on the square or circle). Occasionally the rules of calculating the "golden section" were used. (Kazhar)

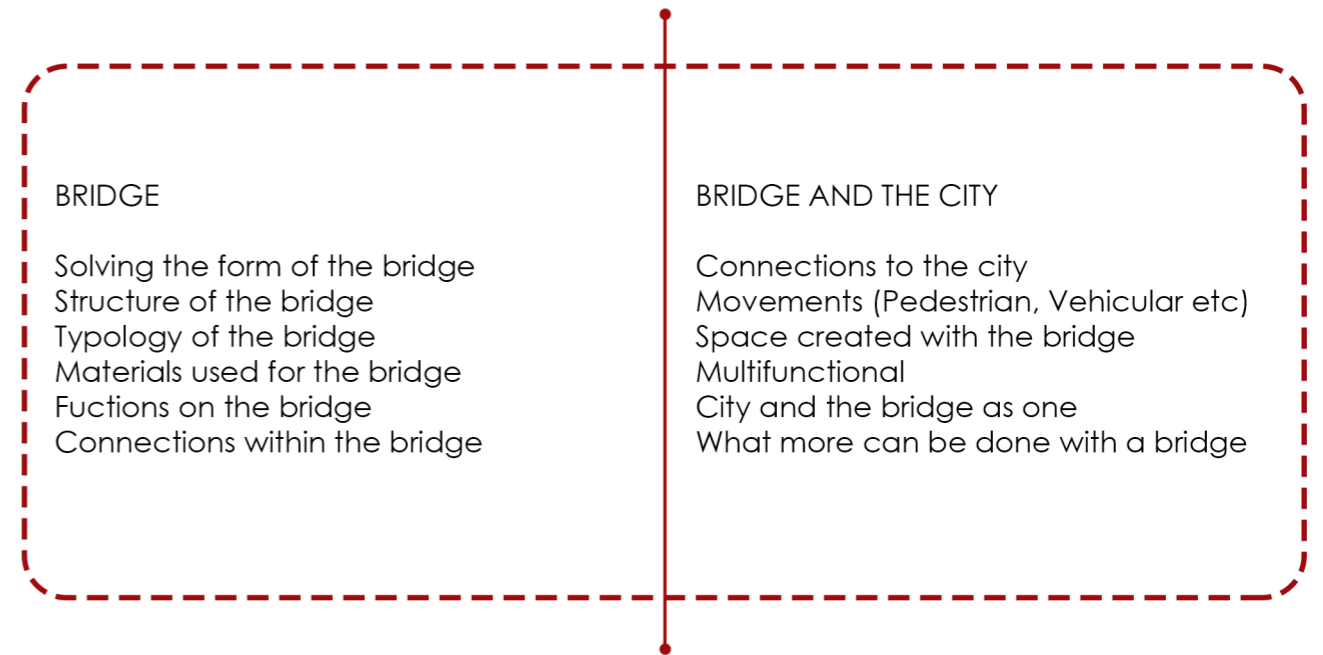
The motivation for this topic was a picture of Old London Bridge. Then by further research it is found that the concept of programmed bridges started at 7th century BC when Romans constructed aqueducts. After that a series of programmed bridges were introduced. A few of them includes. Old London Bridge – 1209/ Ponte vecchio, Florence Italy – 1345/ Krämerbrücke, Germany – 1486/ Ponte Rialto, Venice Italy – 1591/Pulteney Bridge, Bath – 1774/ Chengyang Bridge, Guang Xi, China – 1591.

THE PLACE

Geographically a place refers to how people are aware and attached to a certain piece of space. 'Space' is more of an abstract word but 'place' holds a very important role in architecture.

The first is place as location or a site in space where an activity or an object is located and which relates to other sites or locations because of interaction and movement between them. A city or other settlement is thought of in this way, somewhere in between, and second, is the view of place as locale or setting where everyday life activities take place. Here the location is no mere address but the where of social life and environmental transformation. Examples would be such setting from everyday life as workplaces, homes, shopping malls, churches, etc. The third is place as sense of place or identification with place as a unique community, landscape, and moral order. In this construction, every place is particular, and thus, singular (Agnew, 2004)

AIMS AND OBJECTIVES



The thesis has a strong objective of breaking the rules of what the bridge is build for. This is an attempt to prioritize the spaces created by the bridge rather than considering it as a structural element used to travel between a 'gap'. The thesis is to prove that each structure whether it is a bridge or a bus stop can break the stereotype of the single function concept.

FRAME WORK

THESIS QUESTIONS

WHY BRIDGES ARE OFTEN LIMITED TO SINGLE FUNCTION ?

SUB QUESTIONS

WHAT ARE THE DIALOGUES EXCHANGED BETWEEN TWO PARTS OF THE CITY CONNECTED BY THE BRIDGE ?

HOW CAN BRIDGES ELEVATE THE CULTURE OF THE CITY ?



image 3 - OBJECTIVE DIAGRAM, Showing the bridge as a connection point to several programs in the city.

DISCOURSE

The thesis question is specifically for the context of Gothenburg city, but it also can be a prototype that can be implicated into other cities. The lack of connections in the city fabric of Gothenburg city even though a bridge is connected between northern and southern part of the city makes the project interesting.

There are so many examples of government spending large funds for a bridge and yet fail to achieve the required connections. This thesis will be a reflection of that kind of bridges and also tries to solve this issue. The project deals not only with the connections but also explores what can be achieved in terms of movement and functions.

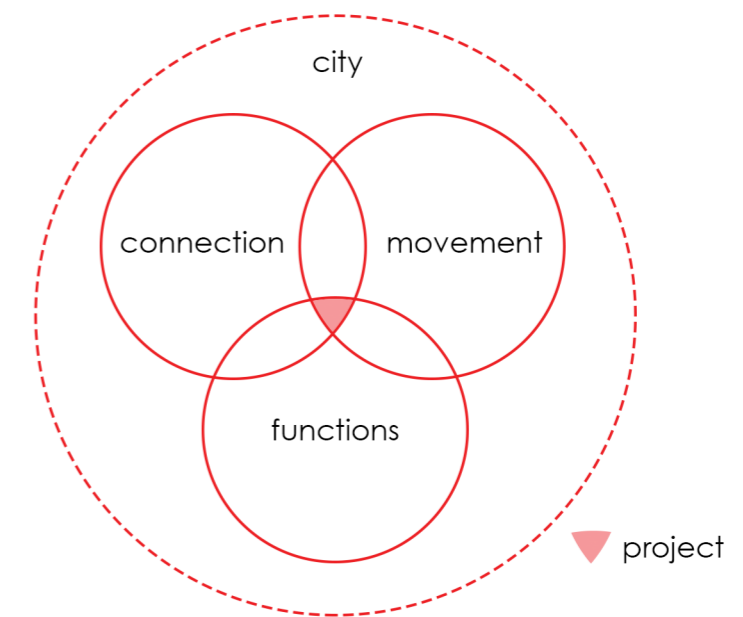


image 4 - DISCOURSE DIAGRAM, explaining the possible connections and where the project lies.

HISTORY



image 5 - Old london bridge, (Photo from wikipedia)

King Henry II commissioned the old london bridge made of stone with a chapel.

The bridge was 26 feet (8 m) wide, and about 800–900 feet (240–270 m) long, supported by 19 irregularly spaced arches, founded on starlings set into the river-bed. It had a drawbridge to allow for the passage of tall ships, and defensive gatehouses at both ends. By 1358 it was already crowded with 138 shops. At least one two-entranced, multi-seated public latrine overhung the bridge parapets and discharged into the river below; so did an unknown number of private latrines reserved for Bridge householders or shopkeepers and bridge officials. In 1382–83 a new latrine was made (or an old one replaced) at considerable cost, at the northern end of the bridge. (Sabine, Ernest L, 1306)

By 1710, most of the houses on the bridge had been rebuilt in the Restoration style and in order to widen the roadway to 20 feet (6 metres), the new houses were built overhanging the river supported by wooden girders and struts which hid the tops of the arches. (Pierce 2001, P. 252)

THE OLD LONDON BRIDGE



image 6 - Location of Old london bridge, google image

HISTORY



image 7 - Ponte vecchio, Florence, Italy

Ponte vecchio is a multi-functional bridge in Florence, Italy. The bridge is constructed over Arno River, in Florence.

The design of the bridge is a Closed-span-drel segmental arch bridge. The bridge consists of three segmental arches: the main arch has a span of 30 meters (98 feet) the two side arches each span 27 meters (89 feet). The rise of the arches is between 3.5 and 4.4 meters (11½ to 14½ feet), and the span-to-rise ratio 5:1. (Structurae, Retrieved on 2007-02-16)

Earlier the bridge consisted of butcher shops but now it consists of shops with souvenirs and jewel shop. There are projected shops and also in almost all the shops the merchants displays their selling goods in front of the display table in their shops.

Ponte vecchio is considered as a great tourist attraction space and its also a central node of the city which attracts a lot of people from different city all around the world.

THE PONTE VECCHIO

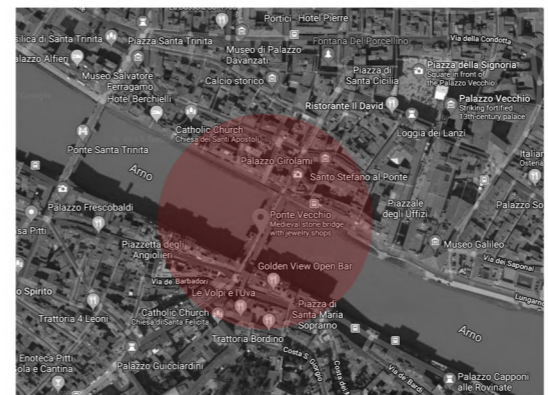


image 8 - Location of Ponte vecchio, google image

HISTORY



image 9 - Krämerbrücke bridge

It is a medieval arch bridge situated in the city of Erfurt. The bridge design is segmental stone arch bridge. It consists of half-timbered shops and houses. This is one of the few buildings in the world which had inhabitants. For over 500 years this bridge is inhabited which is really rare. (Wikipedia, n.d.)

It is a pedestrian bridge were the construction started by 1325 and ended by 1486. From end to end, the Krämerbrücke is 125 m long in total. The stone bridge, which was built in 1325, is constructed from limestone and sandstone, and has six visible barrel arches ranging from 5.5 to 8 m wide. (Ranglack & Brachmanski, 1999)

The bridge is supported by six arches of 79 m long. Many wooden stalls are built on top of the bridge for selling goods. The bridge originally had stone churches at both ends, where gated entrances were erected - St. Benedict's Church at the western end and St Ägidien's Church at the eastern end. St Ägidien's Church, the only one of the two that still exists, was previously a bridge chapel. The chapel was first mentioned in 1110. The archway of the church, via which the Krämerbrücke can be entered, is 3.75 m wide and 3.25 m high. (Vockrodt & Baumbach, 2004)

KRÄMERBRÜCKE BRIDGE



image 10 - Location of Krambrücke bridge, google image

HISTORY



image 11 - Ponte Rialto

The bridge is the oldest of the four bridges spanning the Grand Canal in Venice. The design of the bridge is Stone arch bridge.

The construction of this pedestrian bridge started by 1588 and ended by 1591. It is now a famous tourist location and has been reconstructed several times after the first construction. The width of the bridge is 8.90 meters and height of the bridge is 7.32 meters.

The longest span of the bridge is 31.80 meters. The development and importance of the Rialto market on the eastern bank increased traffic on the floating bridge, so it was replaced in 1255 by a wooden bridge. (Molmenti & Brown, Retrieved 5 September 2008)

PONTE RIALTO



image 12 - Location of Ponte Rialto, google image

This stone bridge is designed by Antonio da Ponte. The two inclined ramps lead to the central portion and on the either side of the bridge there are shops.

HISTORY



image 13 - Pulteney bridge

The bridge connects the city with the land of Pulteney family. The design of the bridge is Arch bridge build with the Bath stone.

Bridge consists of Shops and facades and it is one of the major attraction for tourist from all around the world. The bridge has a total length of 45 meters long and 18 meters wide. The authorities have the plans to pedestrianize the bridge but it is still used by buses and taxis. Because of the beautiful Georgian architecture this bridge is one of the most photographed bridge in the world.

PULTENEY BRIDGE

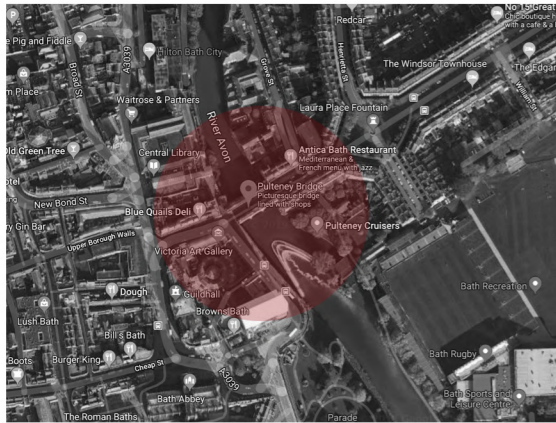


image 14 - Location of Pulteney bridge, google image

The bridge is designed by Robert Adam. The construction started by 1769 and ended by 1774. This is one of the four bridges in the world which has shops all along the full span of the bridge. The bridges has shops designed in Palladian style. (https://en.wikipedia.org/wiki/Pulteney_Bridge)

HISTORY



image 15 - Chengyang bridge

Chengyang Bridge is a special covered bridge or lángqiáo, and one of several Fengyu bridges in the local Dong Minority region. It was completed in 1912. (Tuniu, 2006-04-23. Retrieved January 2, 2010.)

The bridge is located in Sanjiang country, Guangxi, China. The design of the bridge is a covered bridge. The total length of the bridge is 64.4 meters and the height is 10 meters. Number of spans of the bridge are 3.

CHENGYANG BRIDGE

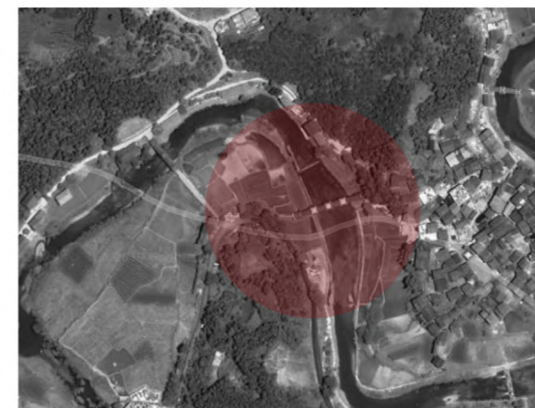


image 16 - Location of Chengyang bridge, google image

The bridge is a combination of bridge, corridor, veranda and Chinese pavilion. It has two platforms (one at each end of the bridge), 3 piers, 3 spans, 5 pavilions, 19 verandas, and three floors. (Tuniu, 2006-04-23. Retrieved January 2, 2010.)

The piers of the bridge are made of stone, the upper structure are built with wood and the roof is covered with tiles. The bridge has wooden hand rails on both sides.

HISTORY

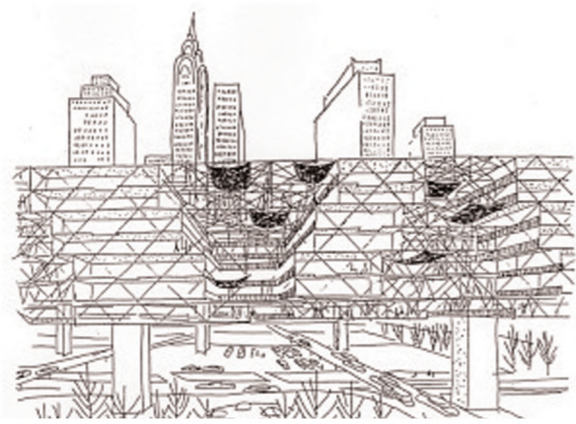


image 17 - Ville Spatiale

The Proposal is by Yona Friedman. He extended on the principles for mobile architecture. It has an idea of creating elevated cityscapes where people could design their own house.

He combined the principles of flexibility and freedom for individuals. This multilayered use of city space make the project futuristic.

In the earlier years he made studies on the technical feasibility. This project is made to make the people think 'out of the box' and enhances the awareness to the idea that an unconventional approach.

VILLE SPATIALE

The multilayered structural skeleton (grid) on stilts and can be flexibly adjusted when desired.

The structure is supported by columns that are situated at an interval of 40-60 meters and which houses that accesses and facility network. Inhabitants are free to decide how their house should look like.

This project can be fitted over less used areas in a city, for instance railroad complexes. The goal is to be able to expand the city within its boundaries and without demolishing the existing buildings. (http://www.yonafriedman.nl/?page_id=78)

HISTORY



image 18 - Thames water habitable bridge

This project is a competition entry on Thames habitable bridge designed by Zaha Hadid.

Connecting two different neighbourhoods and medieval era temple gardens near covent garden. It is designed completely for pedestrians.

It's mainly designed for tourism purpose and the river was polluted a lot beause of the industries near to the river bank. Reviving the river was a major aim of the project. Eventhough the project is not constructed it is one of the major example for habitable bridge.

THAMES WATER HABITABLE BRIDGE

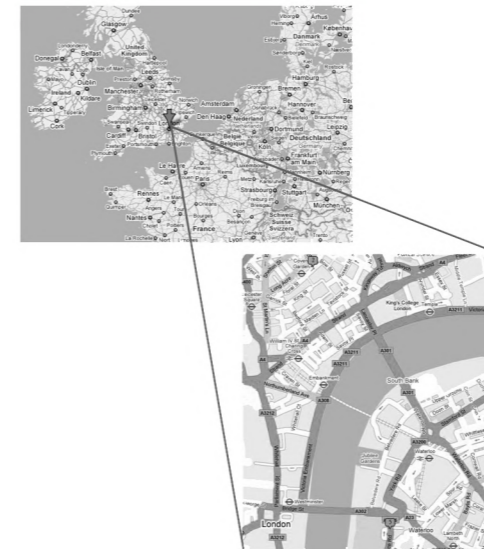


image 19 - Location of Thames water habitable bridge

DELIMITATIONS

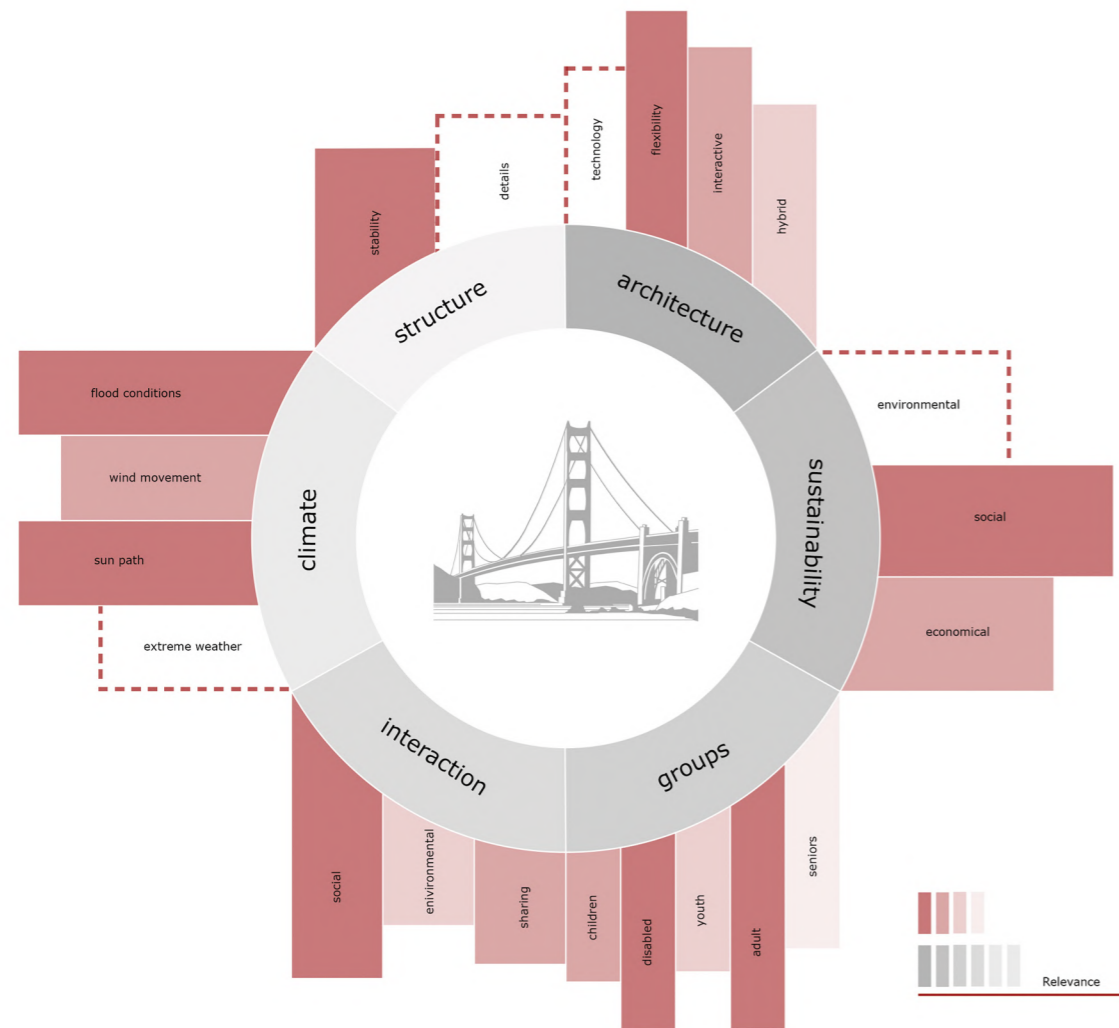


image 22- Delimitation diagram to show the hierarchy of preferences of the project.

REFERENCE AND RESEARCH



GAMLA LIDINGÖBRON BRIDGE
 LOCATION - Stockholm
 DESIGN - Urban nouveau, Stockholm
 FUNCTIONS - Housing

image 20 - Gamla lidingöbron bridge

Swedish studio Urban Nouveau is offering an alternative to the demolition of a 1920s bridge in Stockholm – transform it by adding apartments and a linear park. Urban Nouveau has designed the scheme in response to Lidingö Municipality's plans to tear down the Gamla Lidingöbron bridge, which links the Swedish capital to the island of Lidingö, and replace it with a modern structure. (<https://www.dezeen.com/2018/10/12/urban-nouveau-gamla-lidingbron-bridge-stockholm-architecture/>)



11TH STREET BRIDGE PARK
 LOCATION - Stockholm
 DESIGN - Urban nouveau, Stockholm
 FUNCTIONS - Housing

image 21 - 11th street bridge park

Design creates a literal intersection and a dynamic, multi-layered amenity for both sides of the river," explained OMA Partner-in-Charge Jason Long. "It simultaneously functions as a gateway to both sides of the river, a lookout point with expansive views, a canopy that can shelter programs and a public plaza where the two paths meet. The resulting form of the bridge creates an iconic encounter, an "X" instantly recognizable within the capital's tradition of civic spaces. (<https://www.archdaily.com/557944/oma-olin-win-competition-for-d-c-s-bridge-park>)

DELIMITATIONS

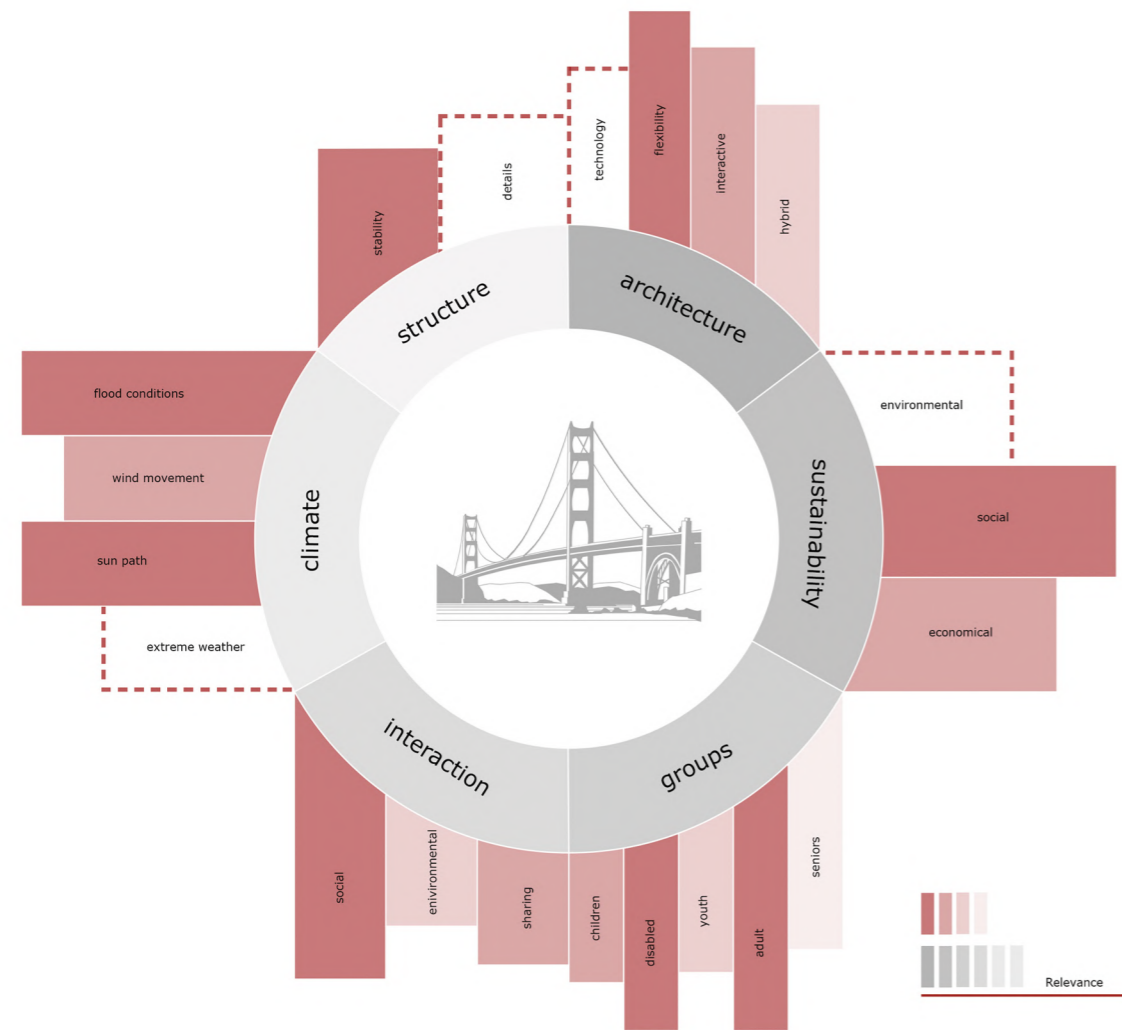


image 22- Delimitation diagram to show the hierarchy of preferences of the project.

02. RESEARCH BY DESIGN AND ANALYSIS

DESIGN IDEAS FROM MAKI'S THEORY

FUMIHIKO MAKI'S THEORY

THE FUSION OF ARCHITECTURE AND INFRASTRUCTURE

Collective form has either a compositional, structural or sequential starting point. Maki and Ohtaka stretch that 'in any form of design, these three concepts will appear either combined or mixed'. Maki investigates the collective form. Maki's theory states that parallels can be drawn with historical precedents like habitable bridge, linear city etc.

The metabolistic ideas come to life through the design of a heavy structure serving both horizontal and vertical circulation. The metabolists were right with their prediction that mass transportation would change urban form for good. The network era as we know it now has even greater proportions than envisioned. The scales of highways, train tracks and harbour are so big, that the development of civic works as an autonomous paradigm is not surprising.

Consider the city as a network - Supportive elements can act as opportunistic architectural points. The theory of linkage demonstrates a strong belief in the potential of architecture. 'Linkage is simply the glue of the city'.



Image 23 - METABOLISTIC COLLECTIVE FORM

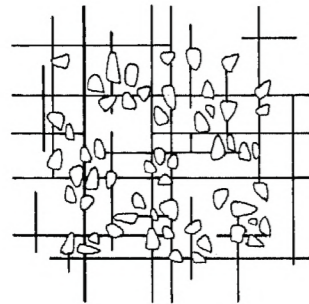


image 24 - To mediate

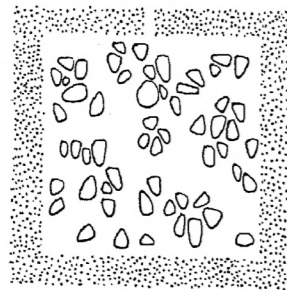


image 26 - To define



image 25 - To repeat



image 27 - The sequential path

Fumihiko Maki's linkage diagrams, 1964

DESIGN IDEAS FROM MAKI'S THEORY

TO MEDIATE

'Connect with intermediate elements or imply connection by spaces that demonstrate the cohesion of masses around them. The project is working as a mediator between public and the private. It should also mediate between the streets, public spaces private spaces, inhabitants and the city'

TO DEFINE

'To surround a site with a wall, or any physical barrier, and thus set it off from its environs.' Maki and Goldberg illustrates this with the medieval city wall, but also bring up the modern ring road as a tool for definition. These elements inform the growth of a city and its architecture

TO REPEAT

'To link by introducing one common factor in each of the dispersed parts of a design, or of an existing situation. That common factor may be formal, or material, or even functional-historical.'

TO MAKE A SEQUENTIAL PATH

'To arrange buildings, or parts of multi-use buildings in a sequence of useful activity. Further, to reinforce such a path by any means necessary to propel persons along a general designated path. Finally, to design a path, or reinforce a path in the natural landscape which will catalyse and give direction to new development along its course.'

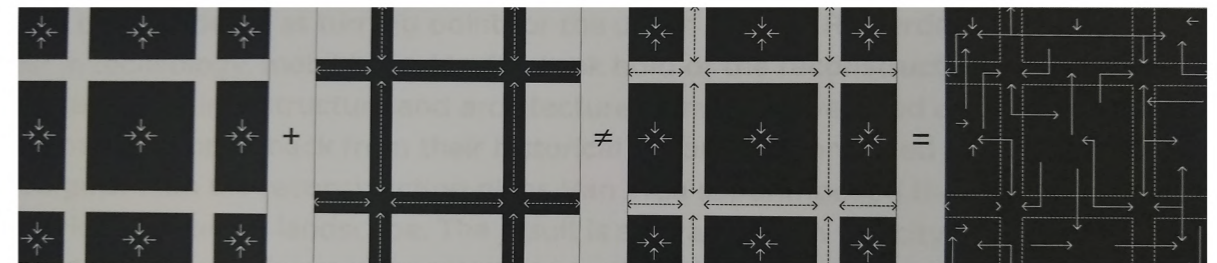


Image 28 -Architecture plus infrastructure results in a new paradigm, making all elements mediators of the city.

CONTEXTUAL ARGUMENT

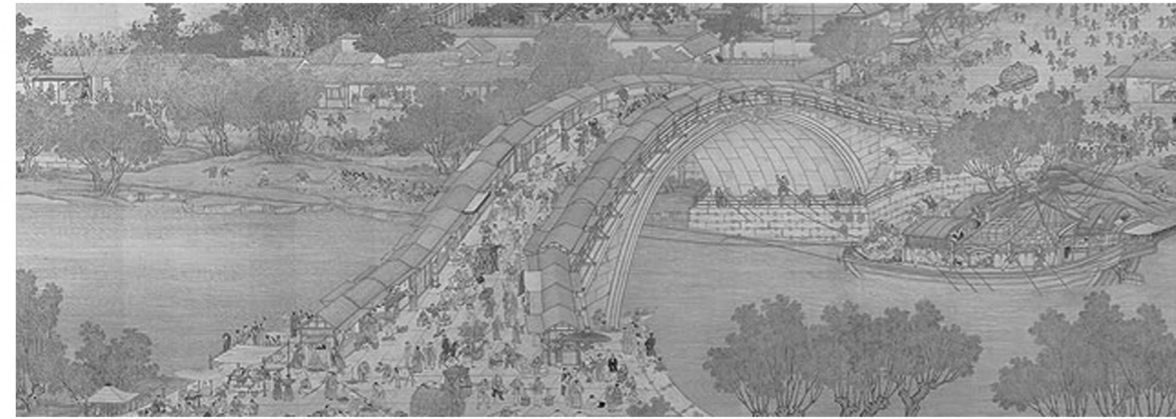


Image 29 - Painting by artist Zhang Zudan

Along the River During the Qingming Festival, also known by its Chinese name as the Qingming Shanghe Tu, is a painting by the Song dynasty artist Zhang Zeduan (1085–1145). It captures the daily life of people and the landscape of the capital, Bianjing (present-day Kaifeng) during the Northern Song. The theme is often said to celebrate the festive spirit and worldly commotion at the Qingming Festival, rather than the holiday's ceremonial aspects, such as tomb sweeping and prayers. Successive scenes reveal the lifestyle of all levels of the society from rich to poor as well as different economic activities in rural areas and the city, and offer glimpses of period clothing and architecture. The painting is considered to be the most renowned work among all Chinese paintings, and it has been called "China's Mona Lisa."

A BRIDGE WITH FUNCTIONS ON IT - PROGRAM

RETHINKING THE CONCEPT OF BRIDGE

RE-ESTABLISHING THE LOST CITY CONNECTIONS

CONTEXTUAL ARGUMENT - tool used q-gis

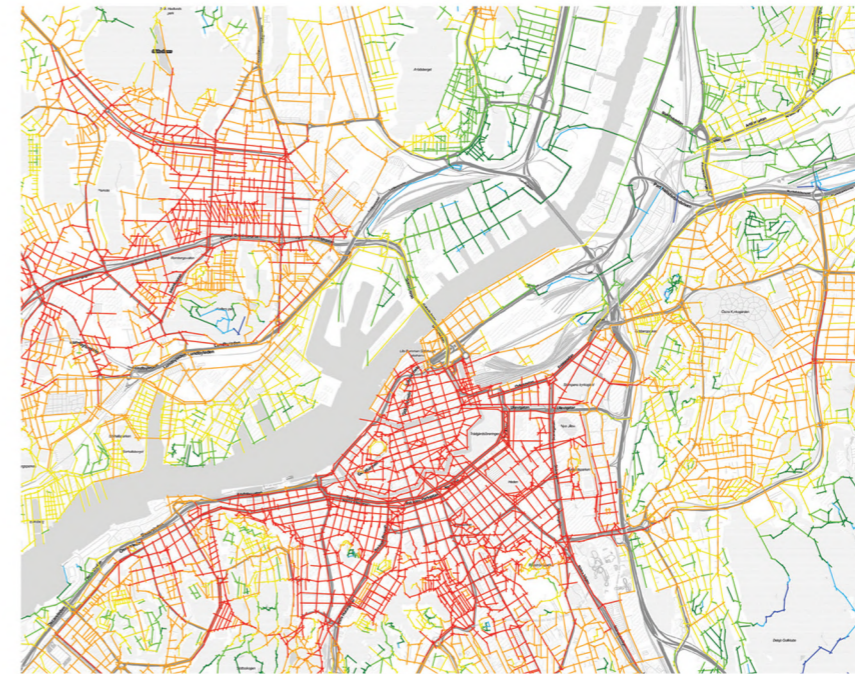


image 30

INTEGRATION R16 - OLD BRIDGE

A weak connection can be seen in the northern part of Gothenburg city.

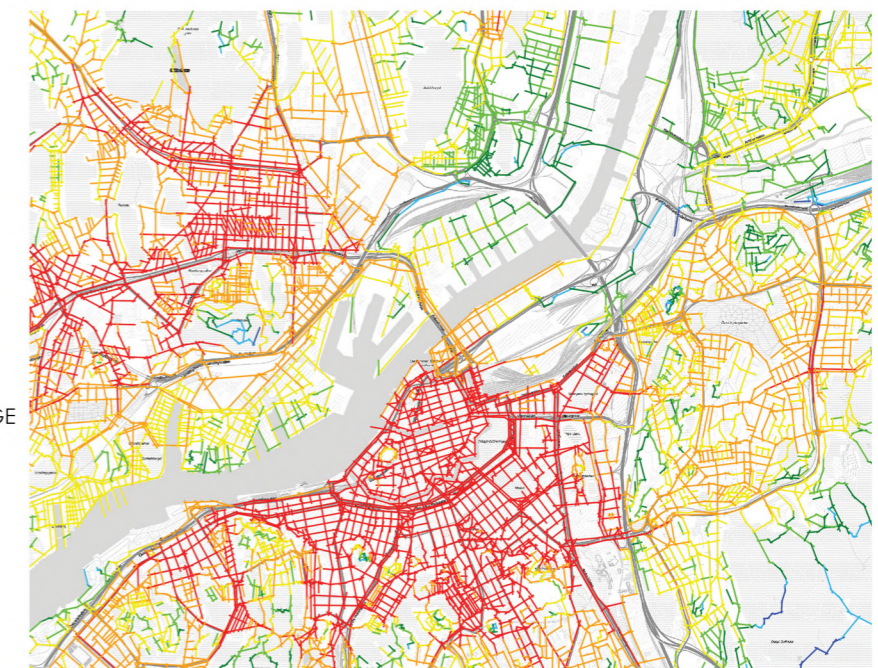


image 31

INTEGRATION R16 - NEW BRIDGE

The connection is much more stronger after introducing the new bridge

CONTEXTUAL ARGUMENT - tool used q-gis



SEGMENT MAP BTW_5000M

The old bridge is a strong pedestrian connector but its hardly used now a days.

image 32

BTW_5000
Segment_140507
0 - 232304
232304 - 1708014
1708014 - 1708014
1708014 - 1708014
1708014 - 1708014



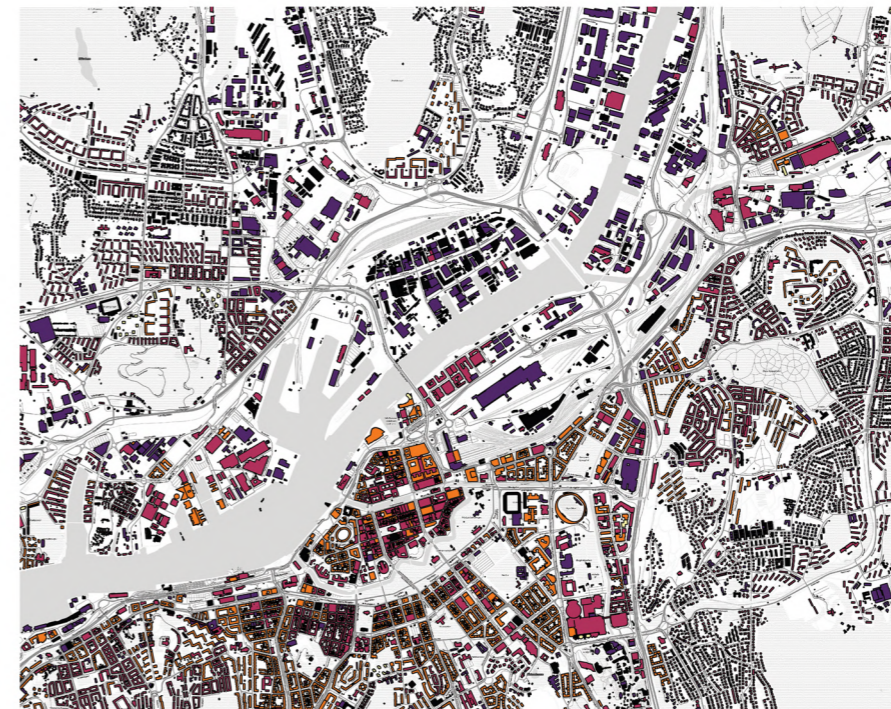
ADDRESS TO POPULATION - 1000M

It shows higher population in southern area compared to northern side.

image 33

ATTRACTION DISTANCE
ADDRESS NUMBER
-1 - 44
44 - 92
92 - 160
160 - 232
232 - 434
434 - 1000
Segment_140507

CONTEXTUAL ARGUMENT - tool used q-gis



BUILDINGS- NUMBER OF FLOORS

The northern part of Gothenburg has less number of floors which eventually affects the skyline of the city.

image 34

NUMBER OF FLOORS
0-3
3-6
6-9
9-12
12-15

TOPOGRAPHY AND GENERAL DETAILS

The northern part has more defined landscape than the later.



image 35

TOPOGRAPHY
WATER BODY
WATER POOL
STREAM

HETEROGENEOUS VS HOMOGENEOUS SPACES

Most simply, 'heterogeneous' means something (an object or system) that consists of a diverse range of items or qualities, which can include differences in kind as well as differences in degree. These could be multiplicities of things, abrupt changes or smooth gradients. However, the dominant approach to such diversities draws from a Platonic lineage that sees all the variations in reference to a model or perhaps a norm; all apparent differences are here really only deviations from the model, their identity given by degrees of resemblance to a single uniformity. All diversity is seen as phenomena measured against this unity, which is seen as more real, even if it only exists as an ideal or statistical mean. This is true for dualism as well. (Fromemuseum.org, 2018)

SITE AND SURROUNDINGS



image 36



image 37



image 38



image 39



image 40



image 41



image 42



image 43

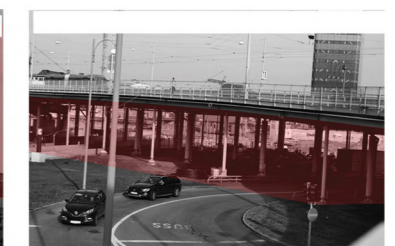
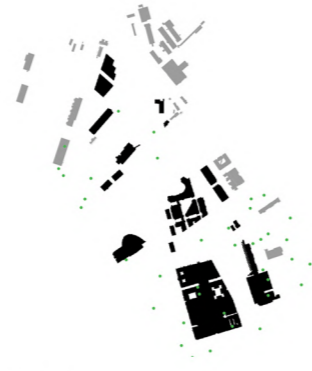


image 44

SITE ANALYSIS



GREEN AREAS



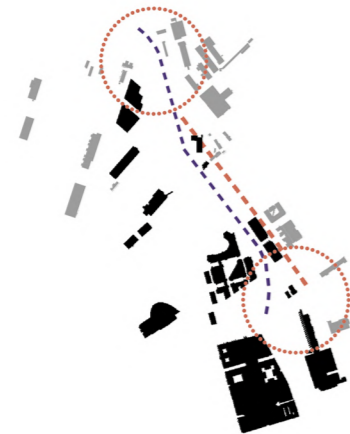
PARKS



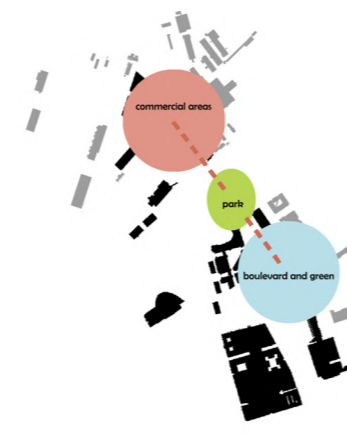
RESTAURANTS AND CAFES



NODES



LOCATION OF BRIDGES



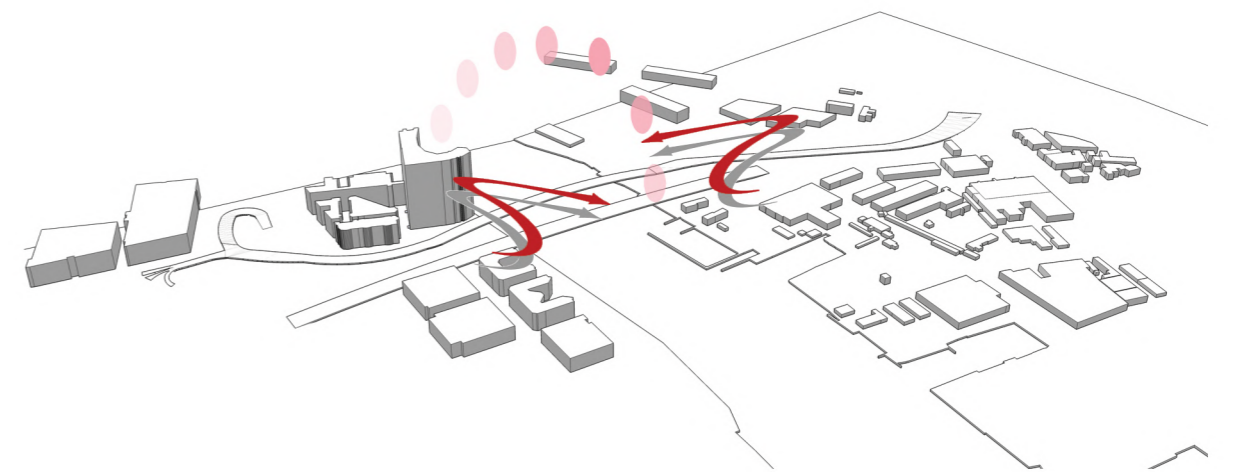
CONNECTIONS

SITE ANALYSIS



image - 45

STRENGTH	WEAKNESS	OPPORTUNITY	THREAT
<ul style="list-style-type: none"> + only connection + water interaction + on-going project + important landmark 	<ul style="list-style-type: none"> + old structure + several challenges 	<ul style="list-style-type: none"> + Rethinking future of bridges + Conservation + Promote walking + Cost efficient 	<ul style="list-style-type: none"> + Traffic and landing + non-pedestrian friendly areas + vibration + complicated structure



WIND MOVEMENT AND SUNPATH

CHALLENGES

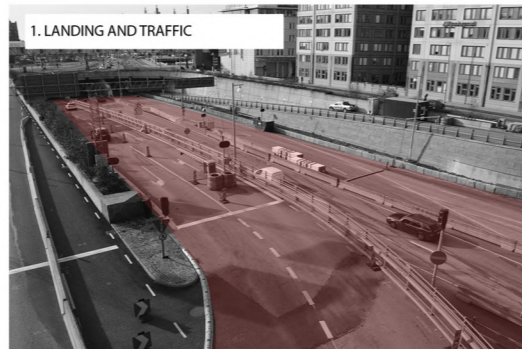


image 46

Traffic in this particular area of the city is a challenging aspect for the project.

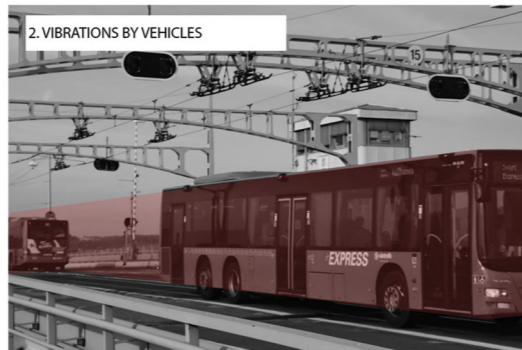


image 47

The bridge vibrates when heavy vehicles pass through, which makes walking through the bridge difficult.



image 48

The structure of the bridge looks complicated and also have negative spaces with uneven steel columns.

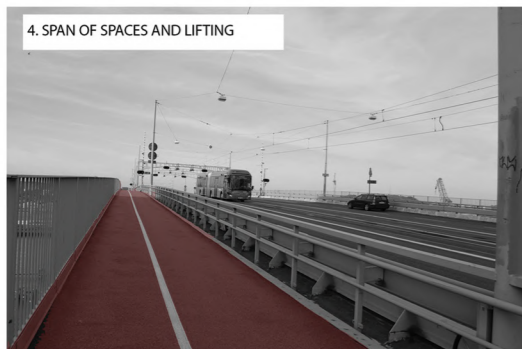


image 49

The pedestrian path is wide and interaction while walking is rarely happening and also the lifting of the bridge is challenging.

SYSTEM BREAKDOWN - PONTE VECCHIO, FLORENCE



image 50 : Ponte Vecchio _ Florence, elevation

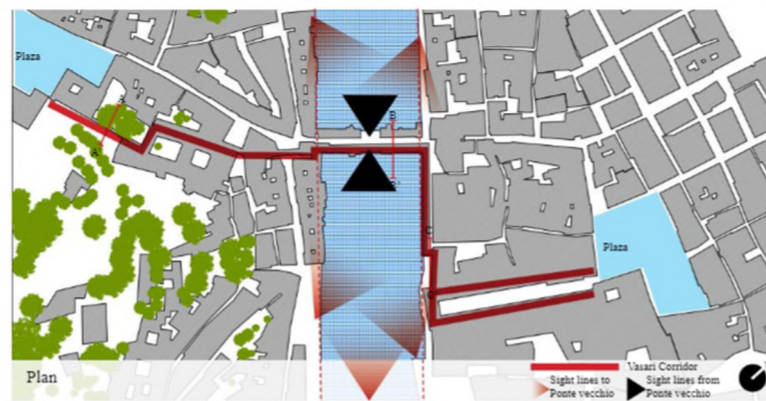
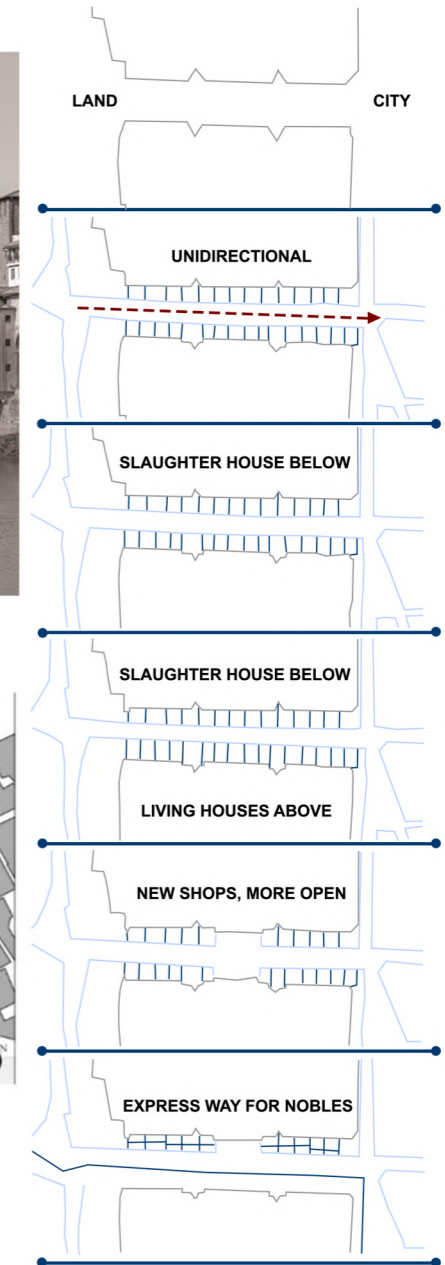
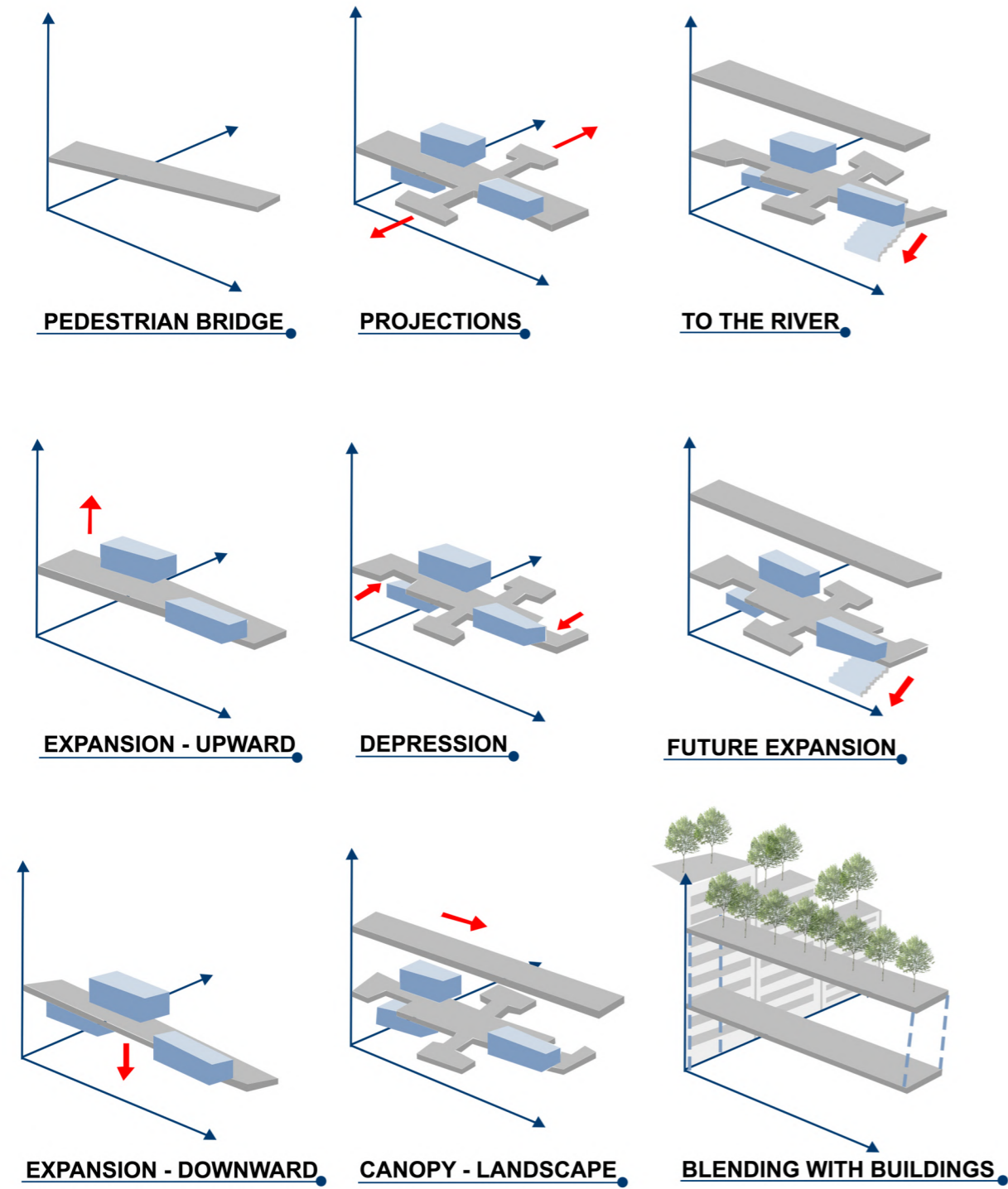


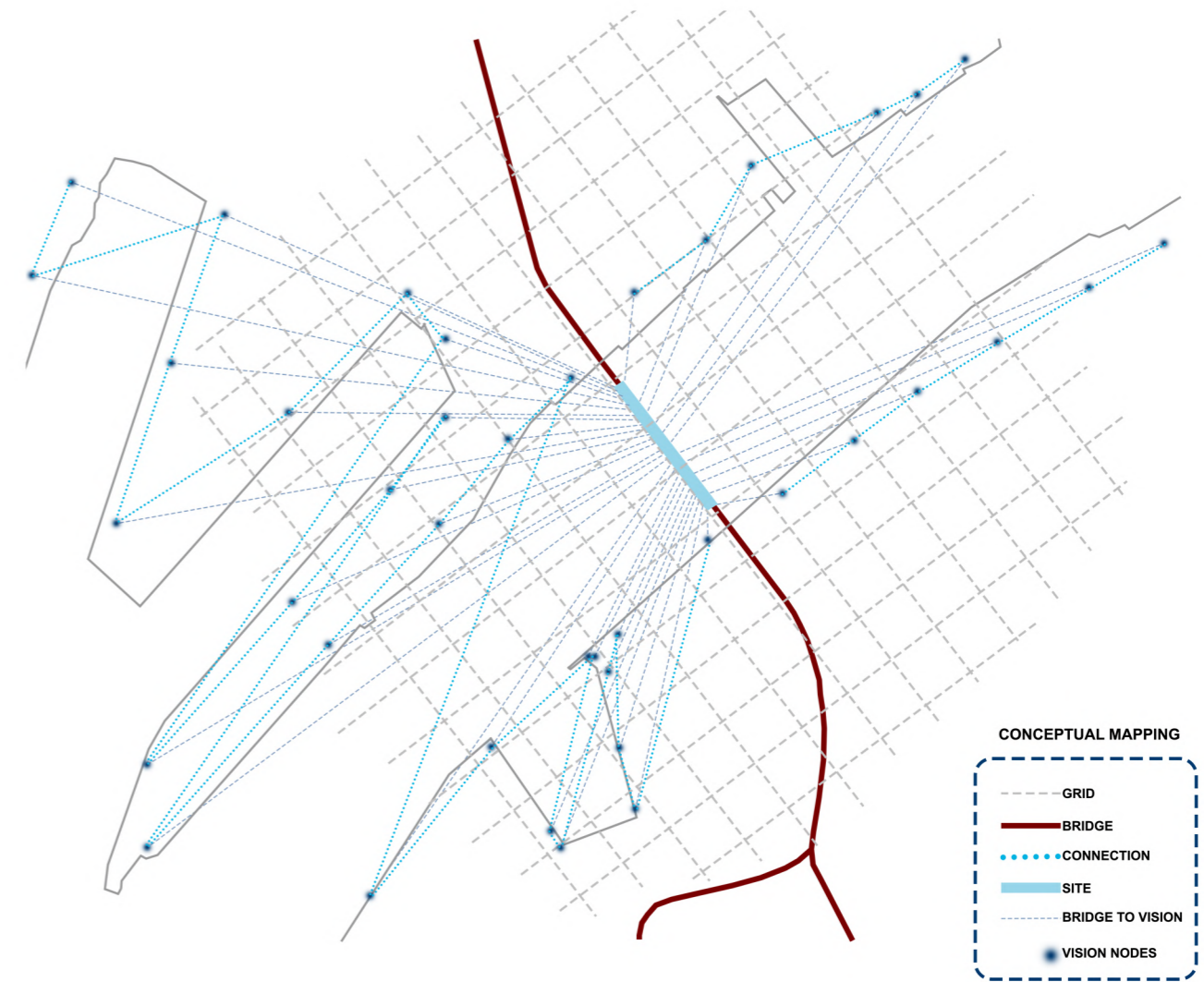
image 51 : Ponte Vecchio _ Florence, plan



SYSTEM VARIATION

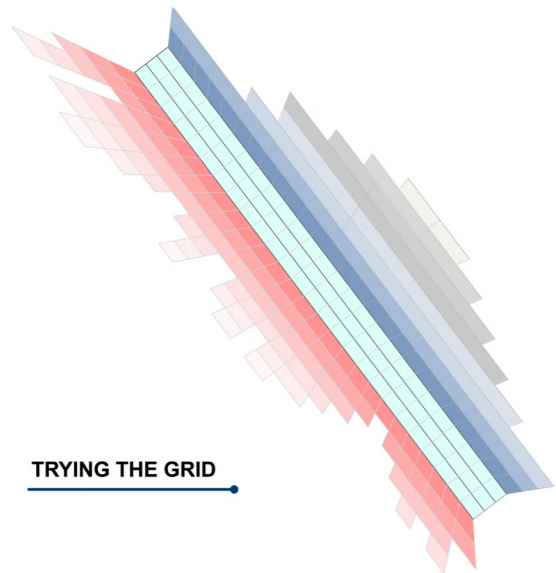


CONTEXTUAL MAPPING



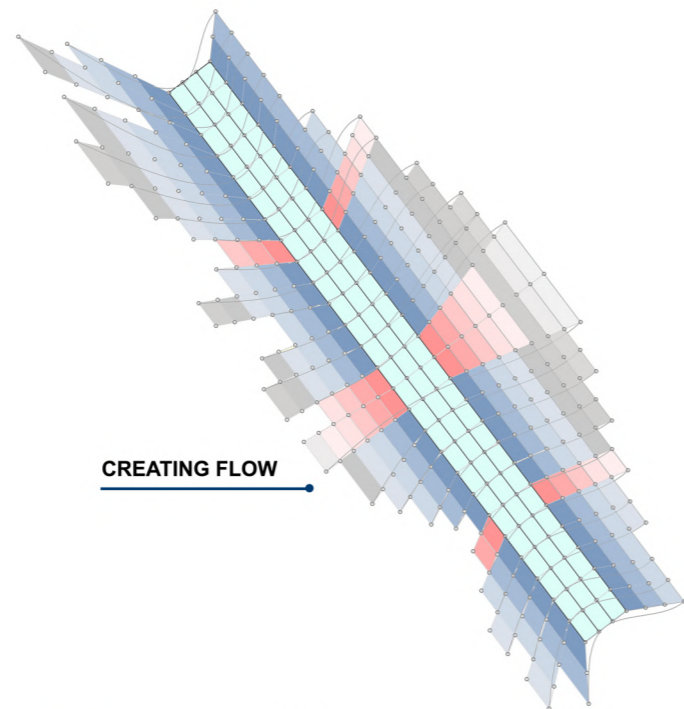
(Vision nodes stands for important junctions from where the bridge can be seen beautifully and these are the points which are nearer to the river formed by roads and river banks)

EXPERIMENTATION



TRYING THE GRID

Grid is made by connecting the vision points. The gradation of colours are done after observing from the bridge. The aim of the experimentation is to divide the interest on the bridge evenly.



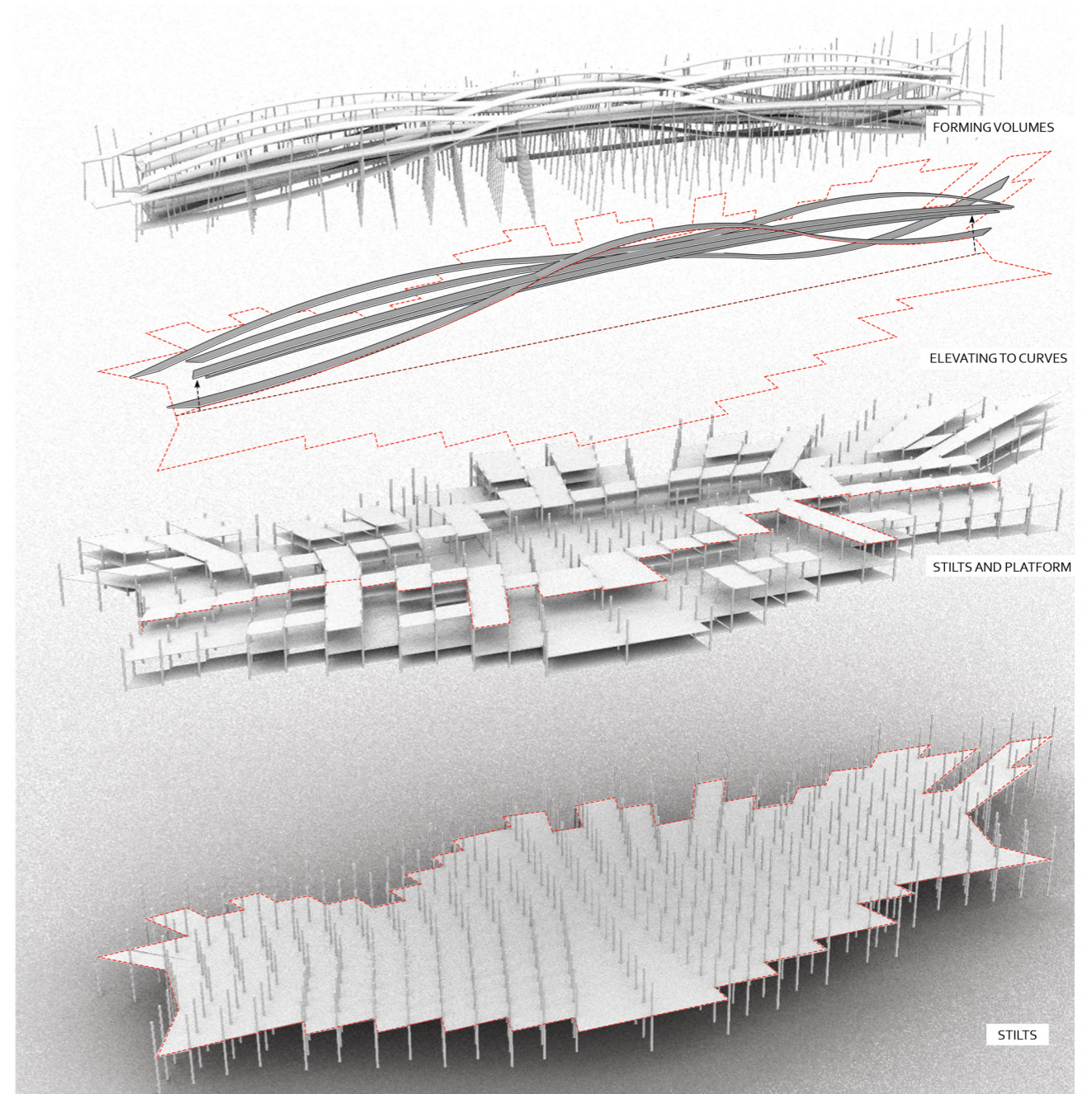
CREATING FLOW

OLD BRIDGE
GRADIENT OF IMPORTANCE

MARKING NODE POINTS



LOGICAL SEQUENCE



FORMING VOLUMES

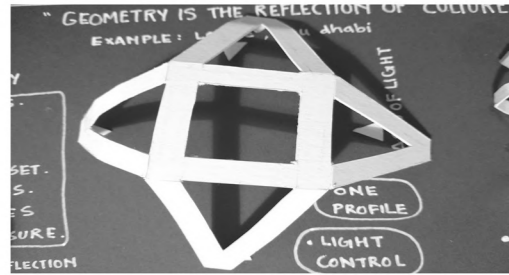
ELEVATING TO CURVES

STILTS AND PLATFORM

STILTS



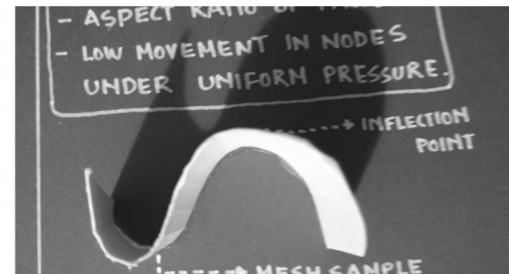
STUDY MODEL - 1 - EXPERIMENTS



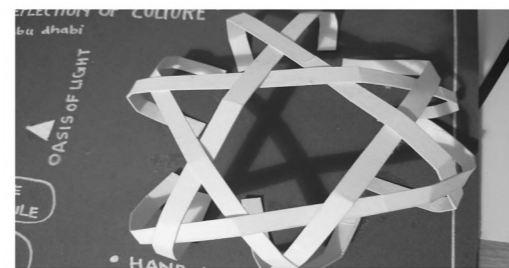
PROFILE 1 image 52



PROFILE 2 image 53



PROFILE 3 image 54



PROFILE 4 image 55

STUDY MODEL -2



PROFILE 1 image 56



PROFILE 2 image 57



FINAL PROFILE COMBINING BOTH image 58

THE BRIDGE IN DETAIL

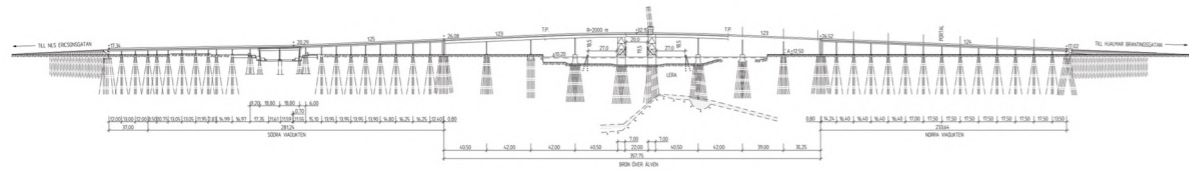


image 59 BRIDGE ELEVATION



image 60 SITE AND SURROUNDINGS

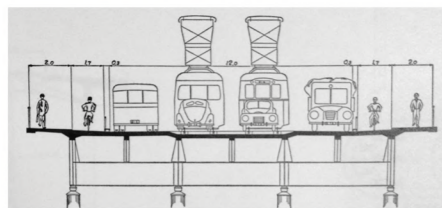


image 61 BEFORE EXTENSION

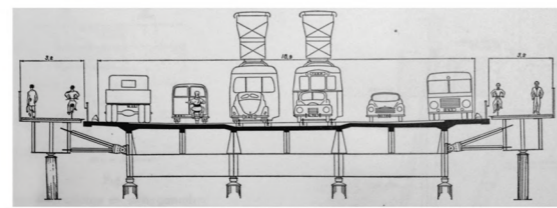


image 62 AFTER EXTENSION

THE BRIDGE IN DETAIL

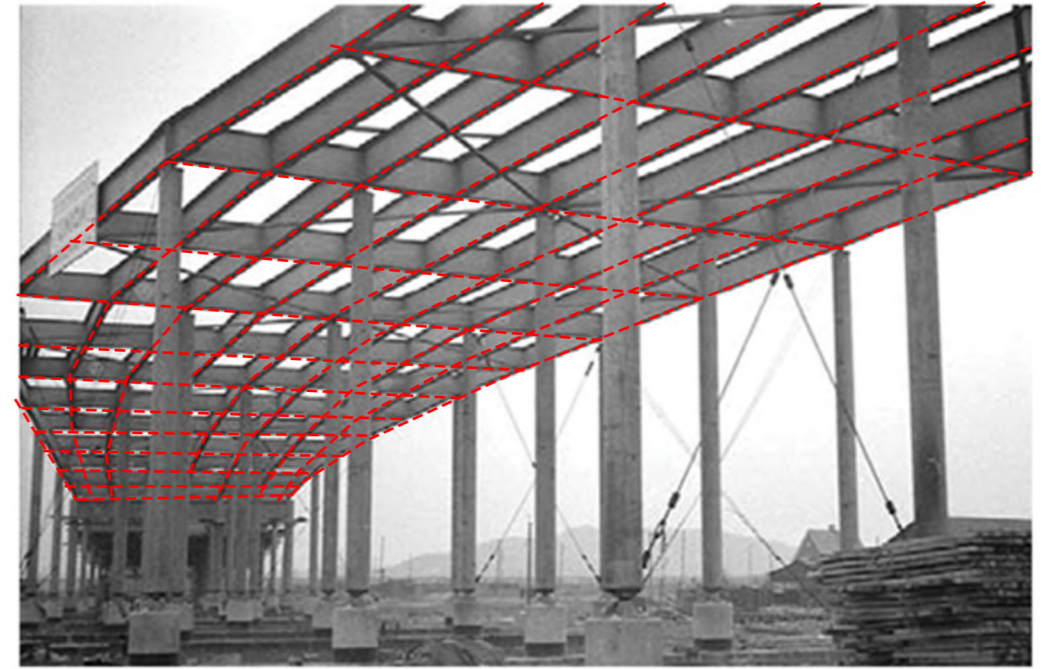


image 63 - Already existing grid on the bridge



image 64 - Details of pillars



image 65



image 66

BRIDGE AND SURROUNDINGS



FRIHAMNEN image 67



RINGÖN image 68



GOTAPLASTEN image 69



BRUNSPARKEN image 70



BACKPLAN image 71



LINDHOLMEN image 72



KORSVAGEN image 73



HAGA DISTRICT image 74

03. A PROPOSAL

WHY THIS LOCATION ?

The bridge is the only connection between Hisingen island and the main land of Gothenburg between Nils Ericssongatan and Hjalmar Brantningsgatan on Hisingen. The bridge crosses the river from east of Lilla bommen on the mainland side and east of freeport on the Hisingen side.

Hisingen bridge is used as a travelling mode by motor vehicles, trams, bicycles and pedestrians. The extension for pedestrians were added afterwards. This bridge is the only Tram link between northern and southern part of gothenburg city. The bridge is going to be demolished and there is a new bridge going to be built near to the old one.

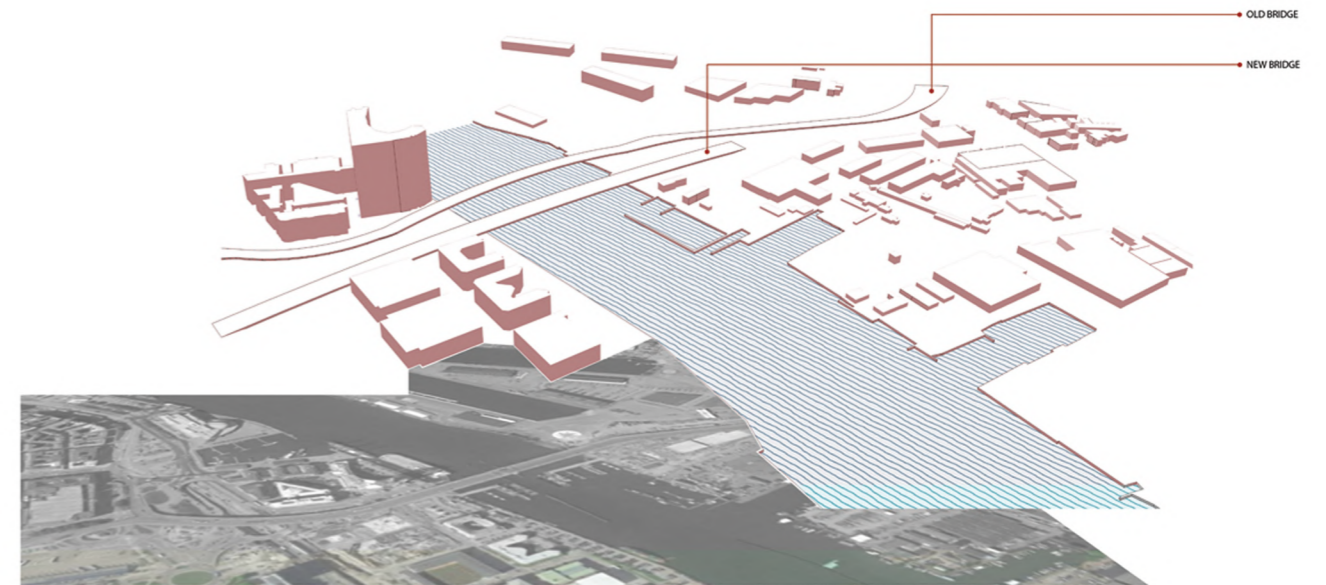
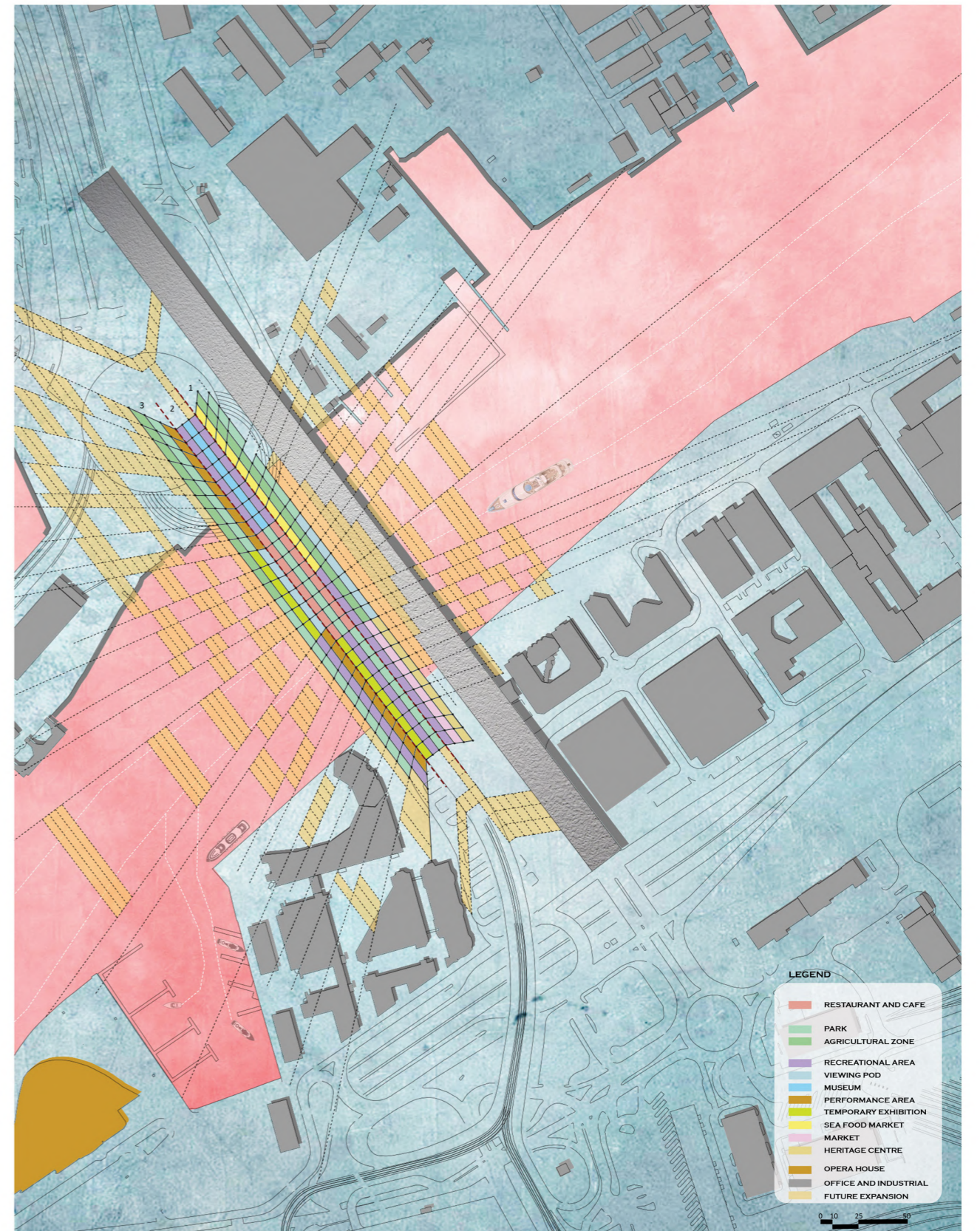
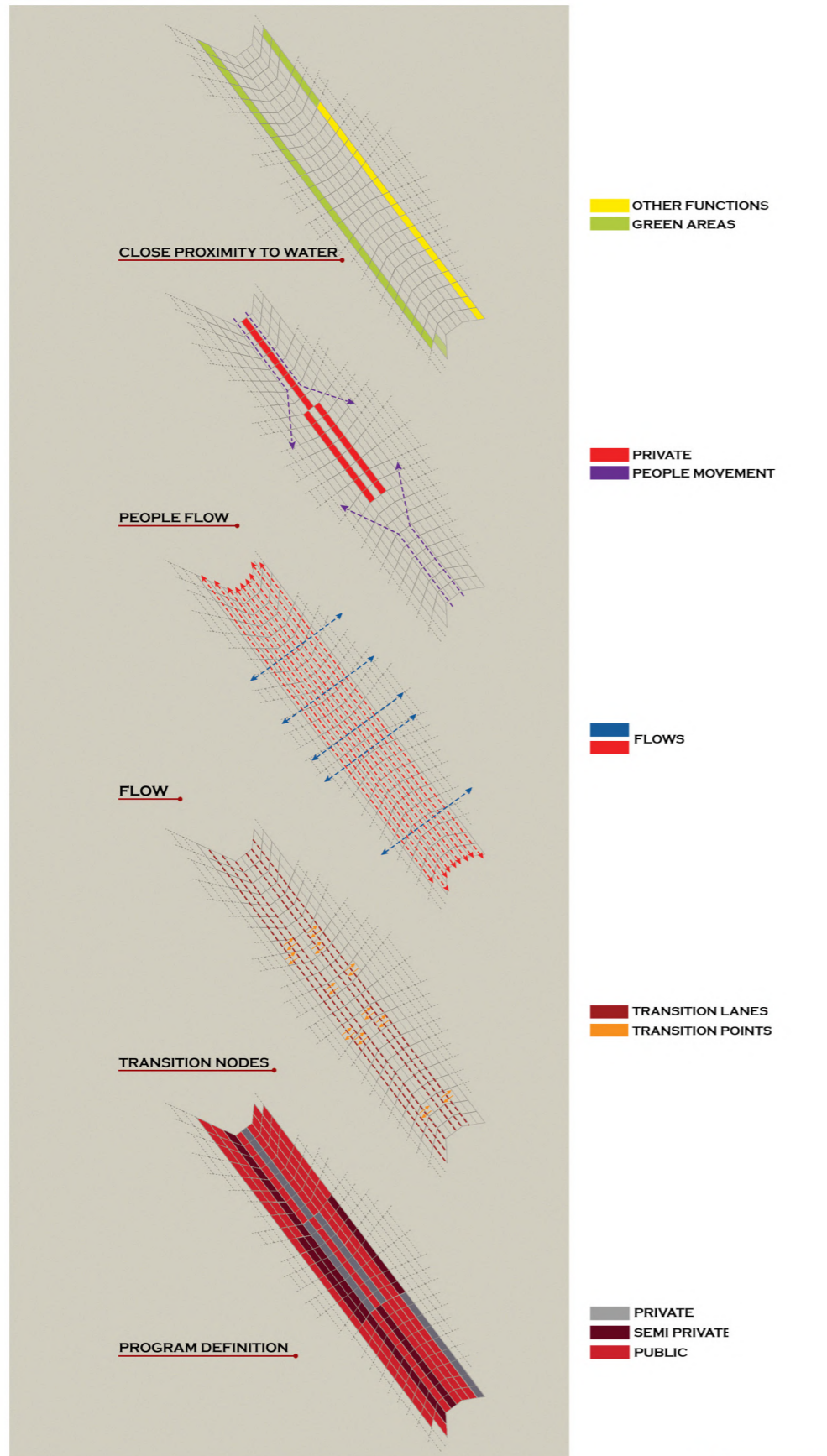


image 75 - Three dimensional view of the old and new bridge.

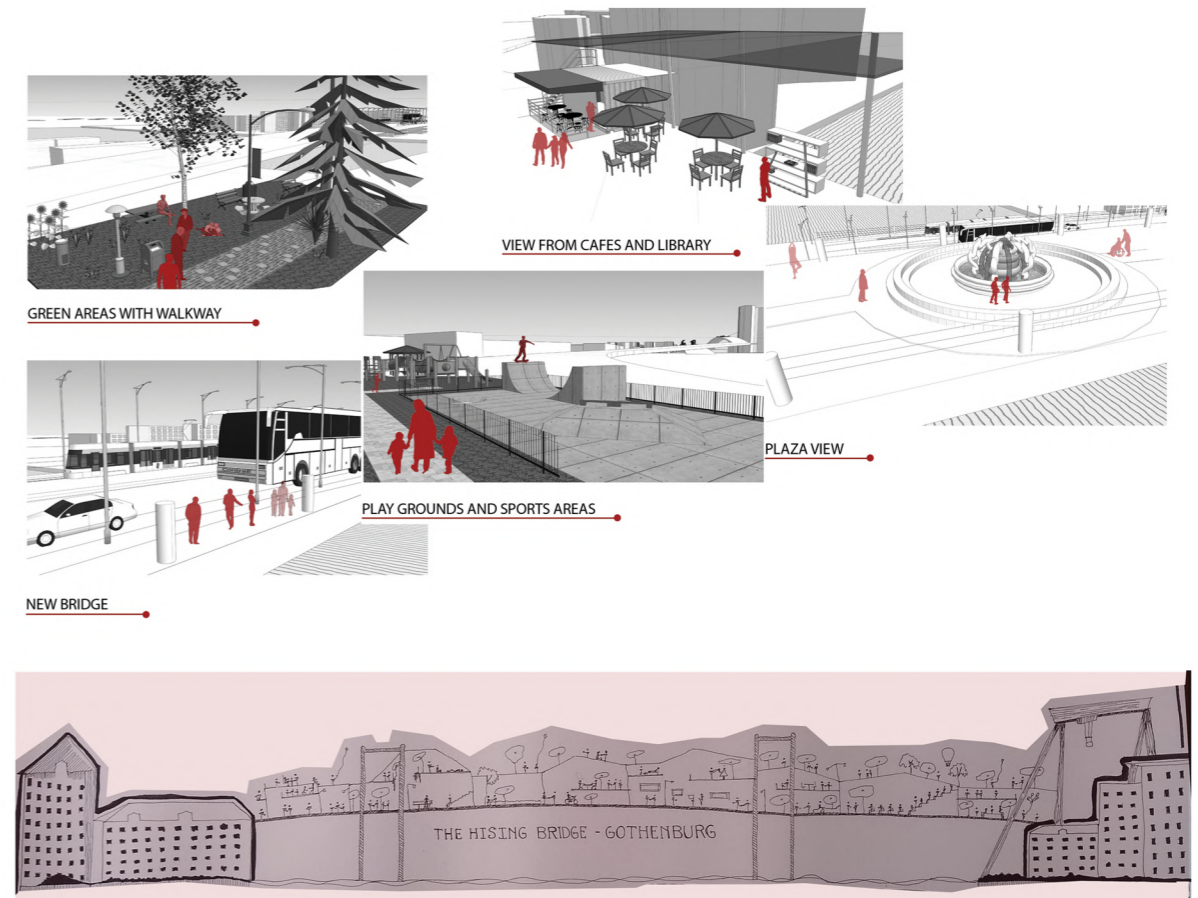
PLAN



PROGRAM ZONING



CONCEPTUAL VISION



VISION - CITY SCAPE EXPANDING THROUGH THE BRIDGE

STUDY MODEL - 3

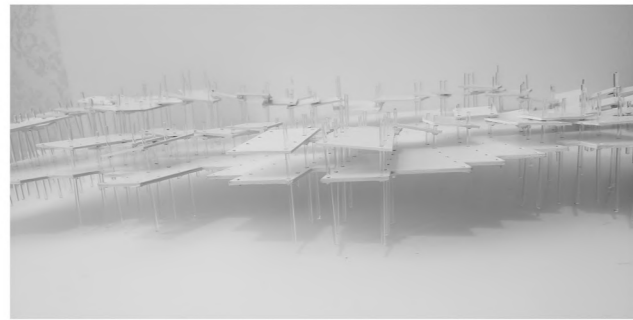


image 76

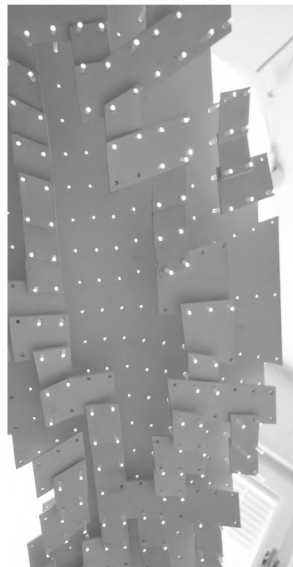


image 77

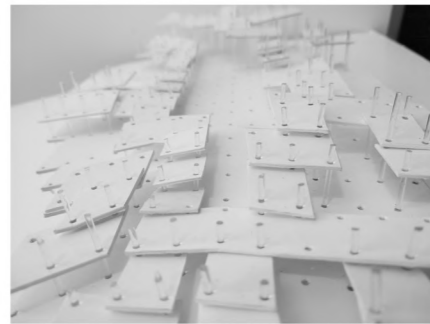


image 78

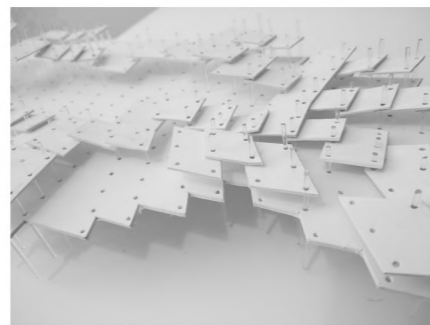


image 79

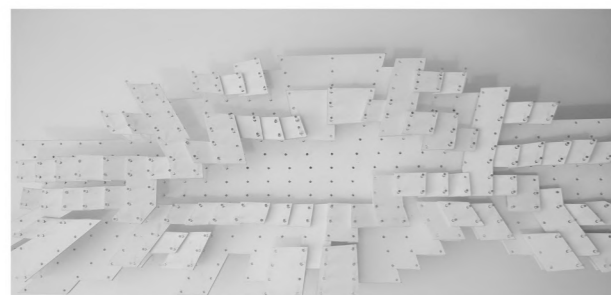
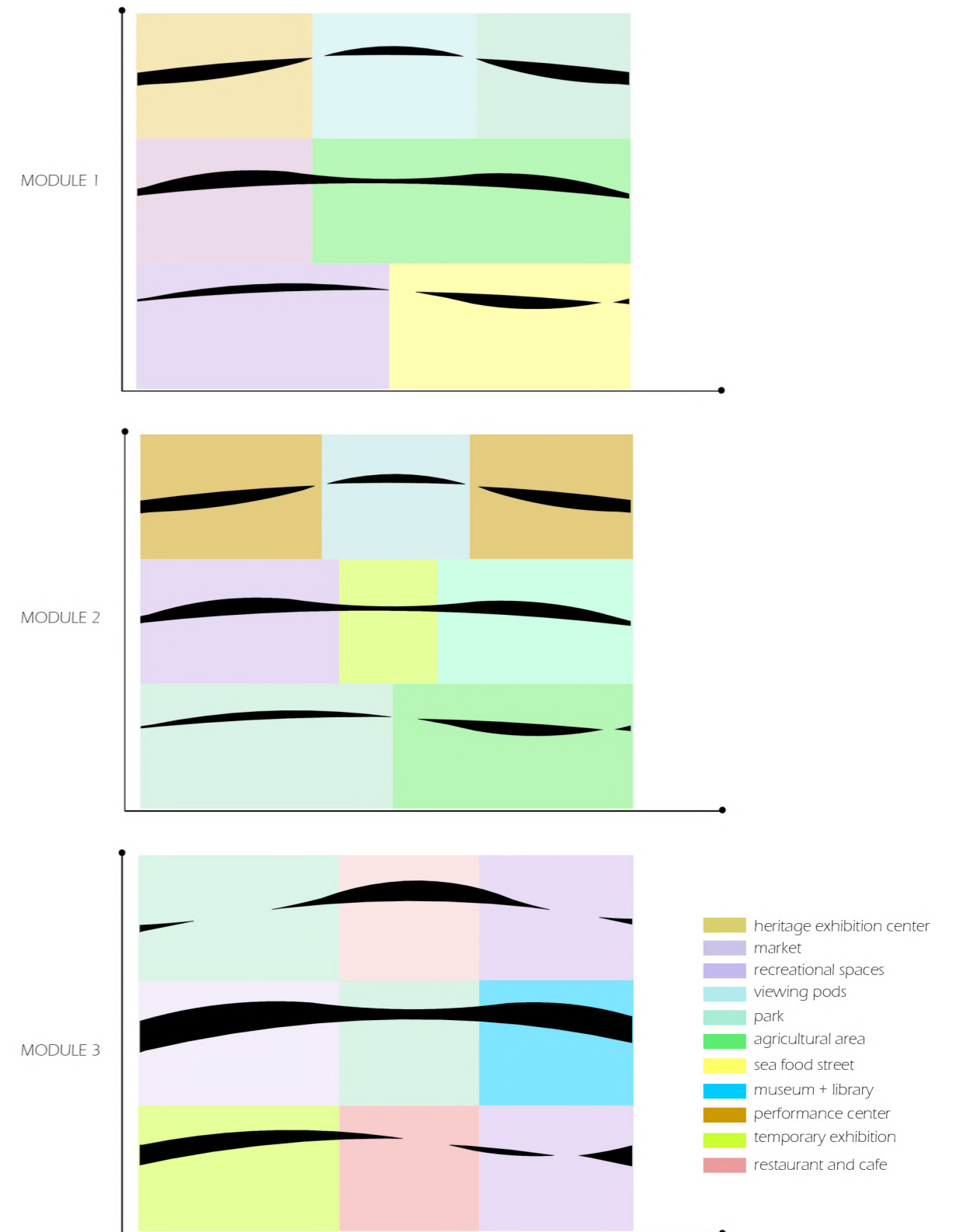
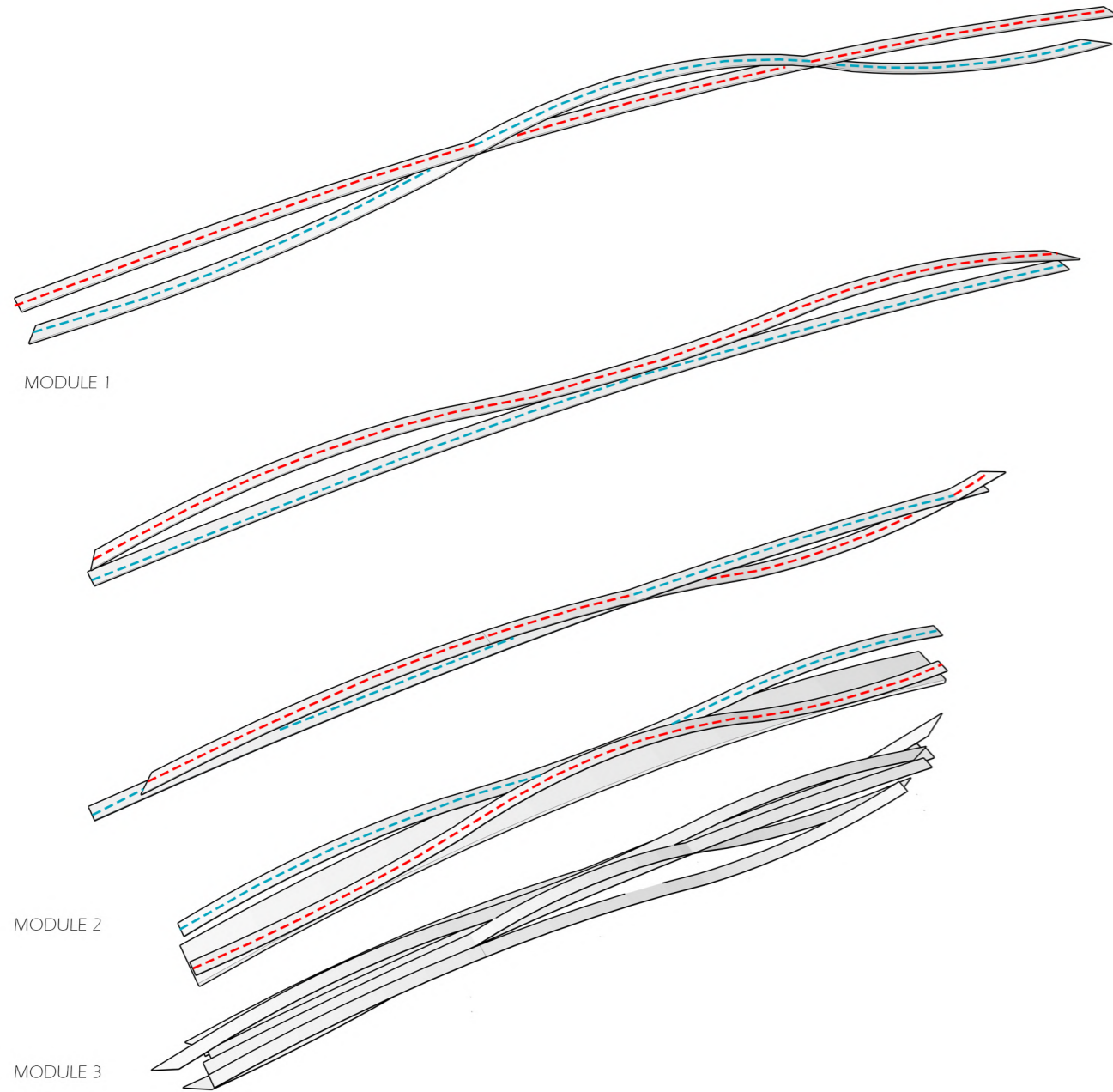


image 80

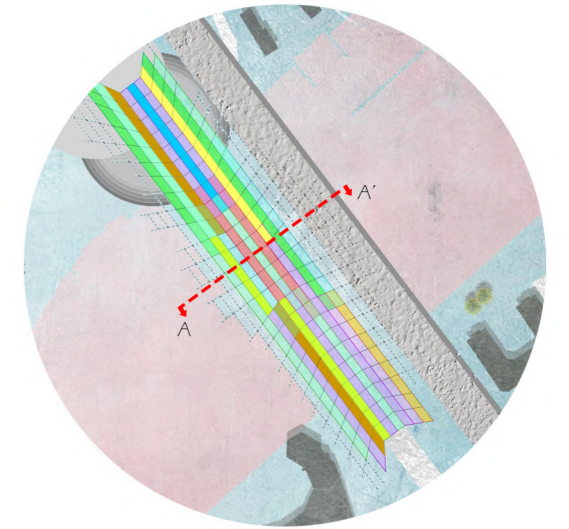
PROGRAM



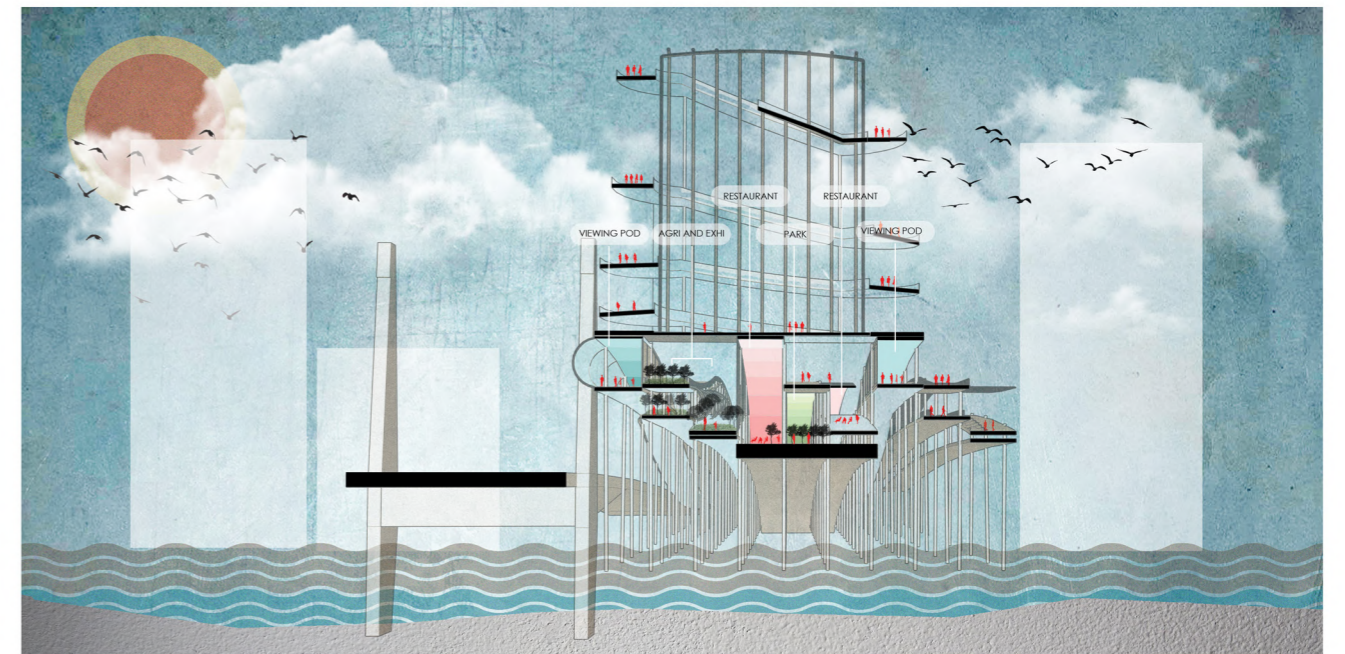
STRUCTURE AND MOVEMENT



SECTIONS

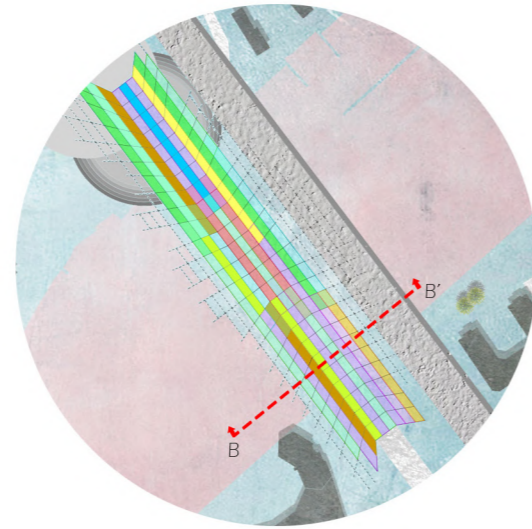


KEY PLAN

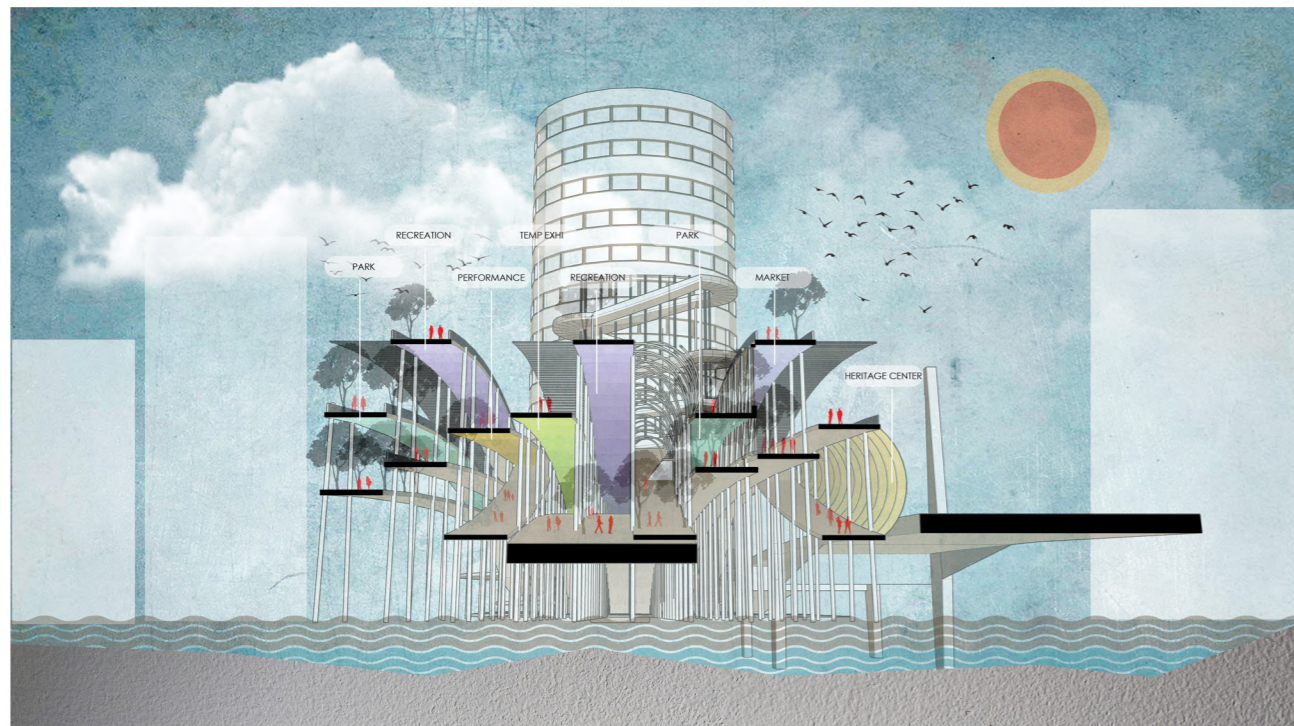


SECTION A-A'

SECTIONS

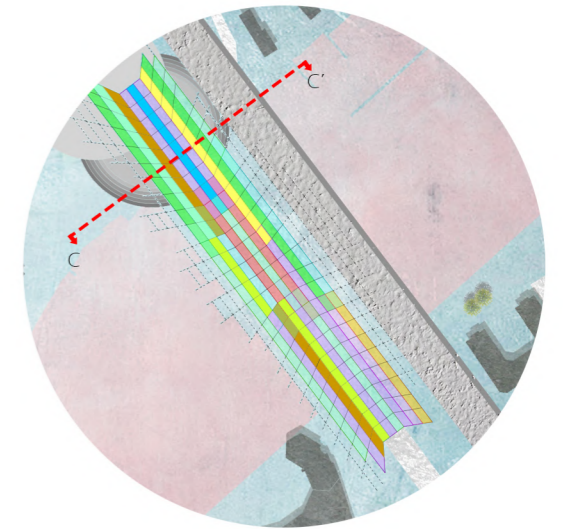


KEY PLAN

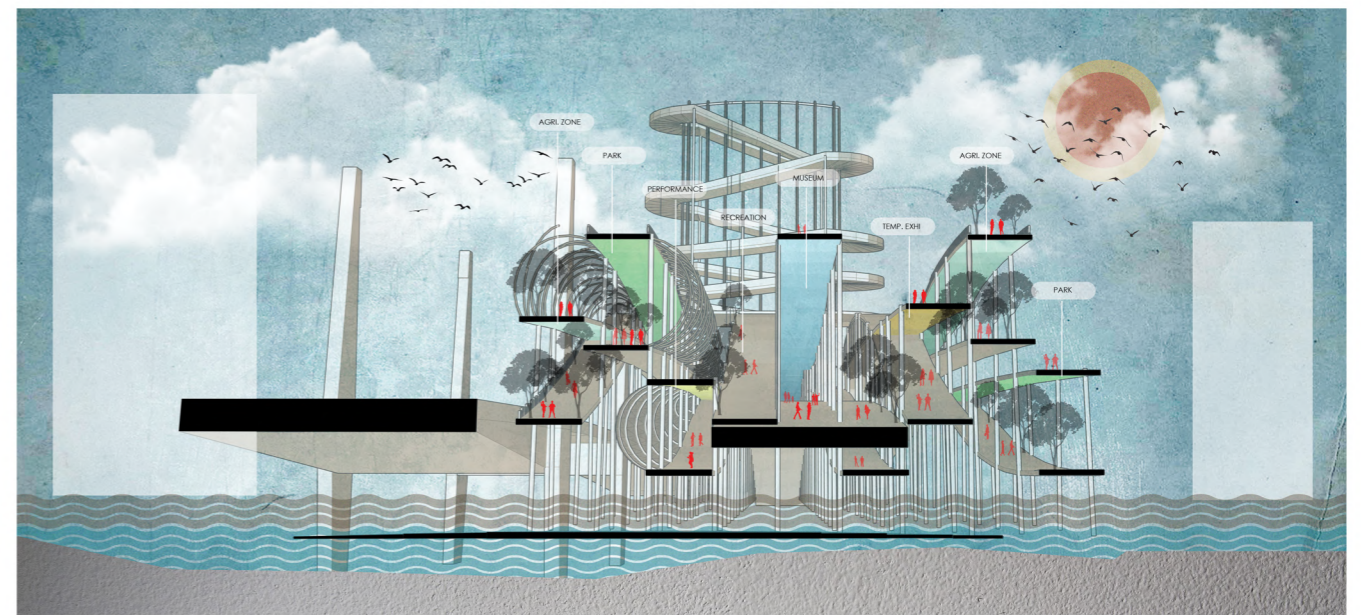


SECTION B - B'

SECTIONS

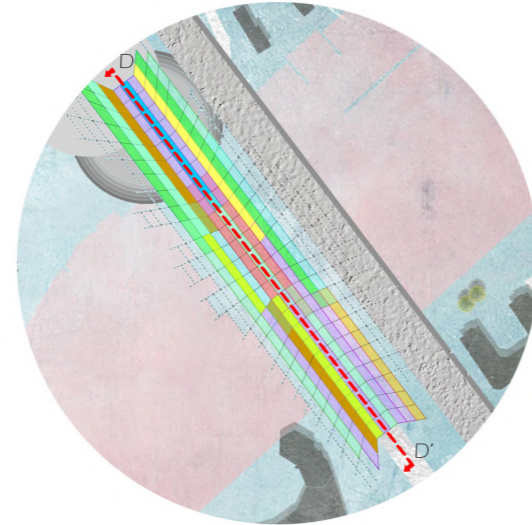


KEY PLAN

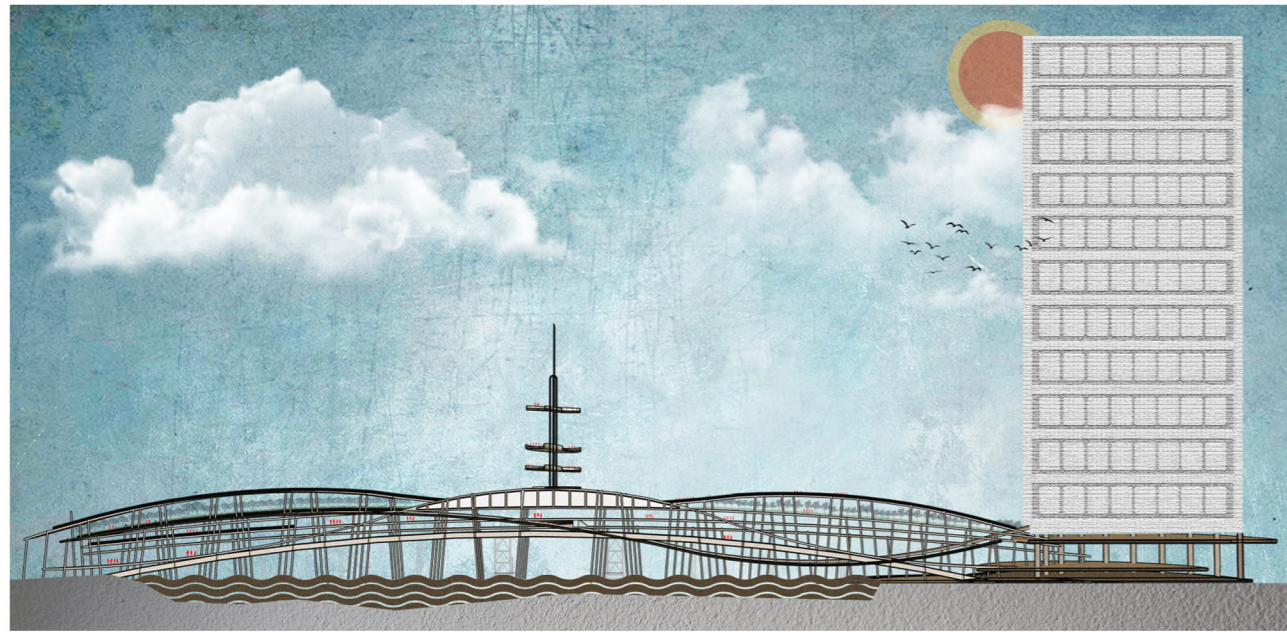


SECTION C - C'

SECTIONS

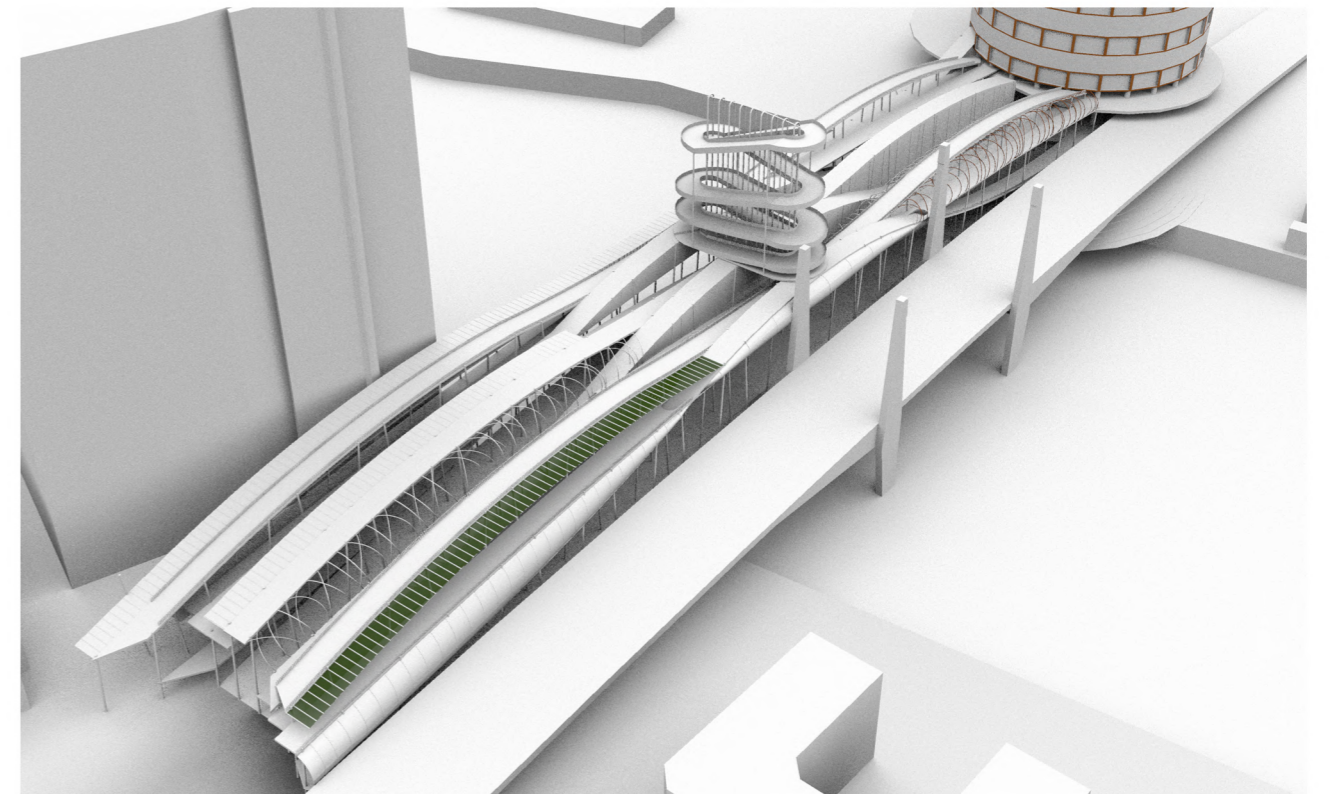


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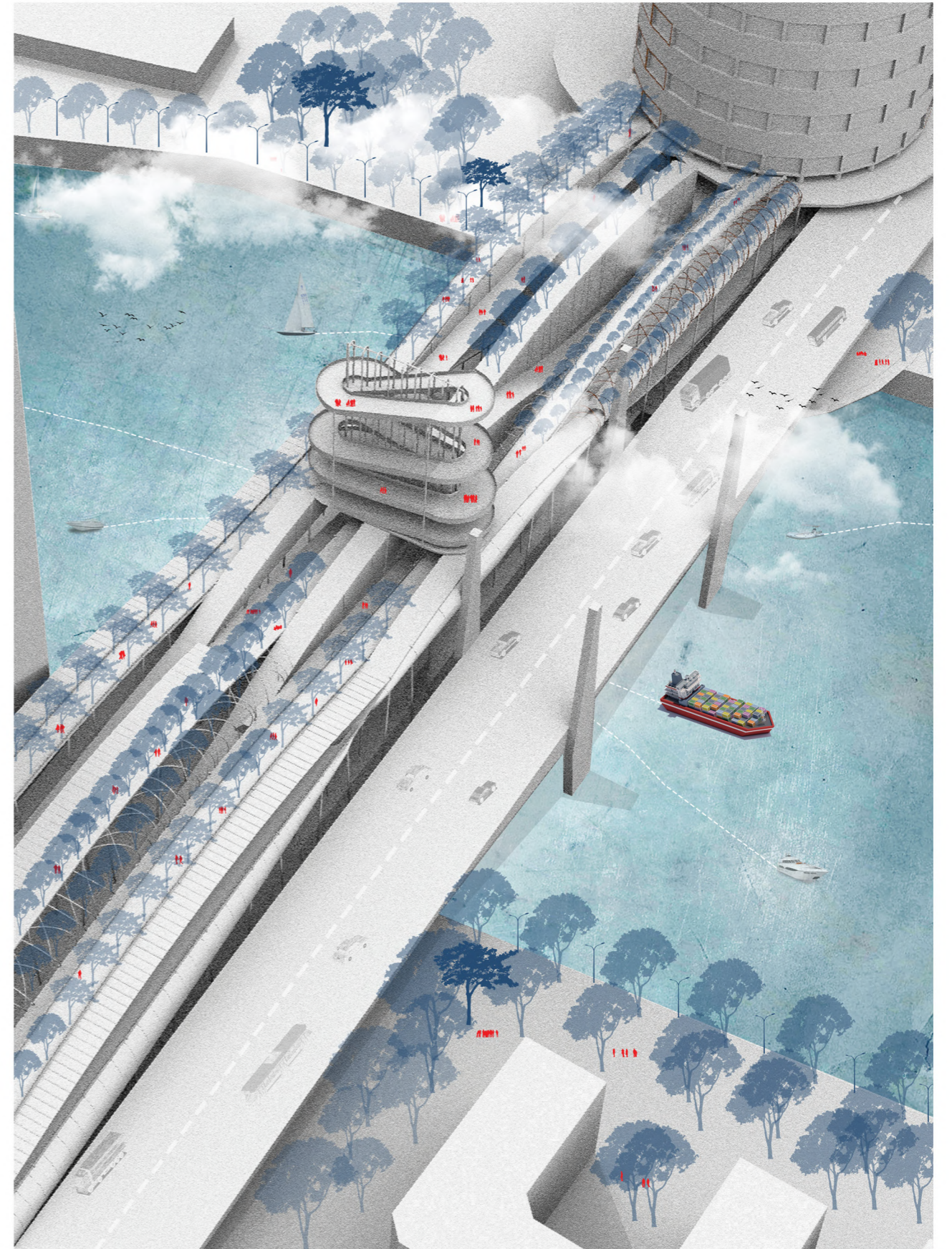


SECTION D - D'

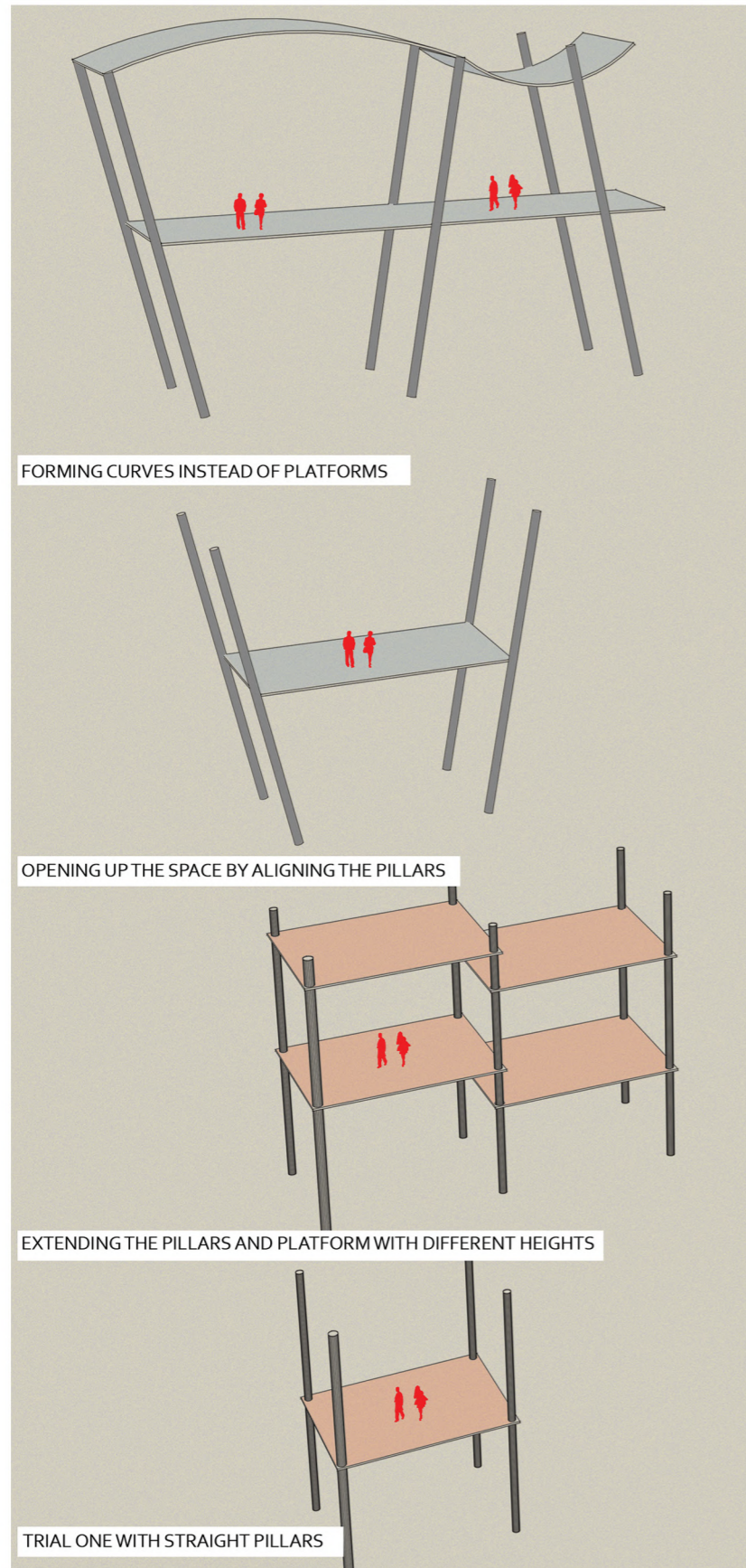
PERSPECTIVE



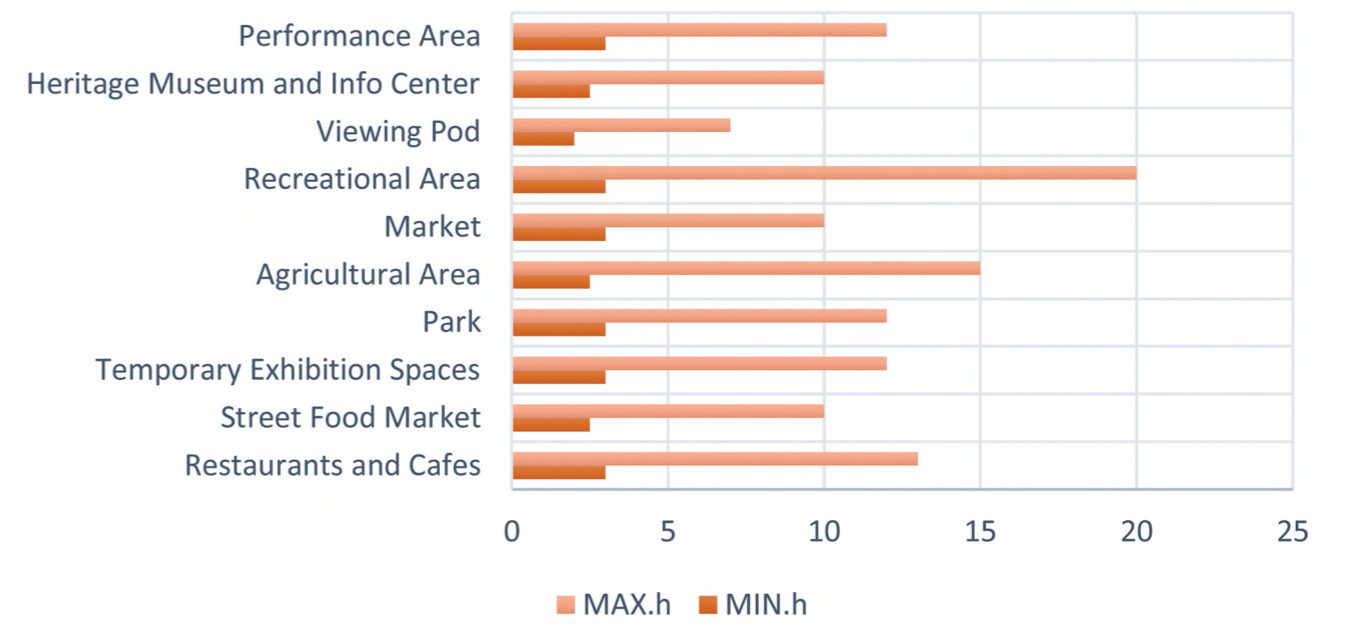
ISOMETRIC VIEW



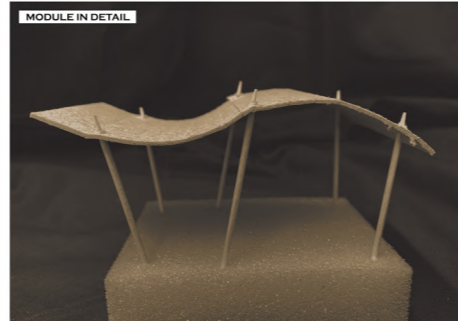
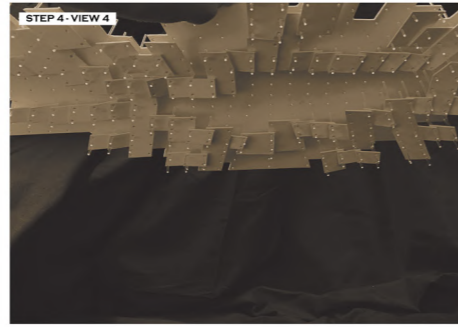
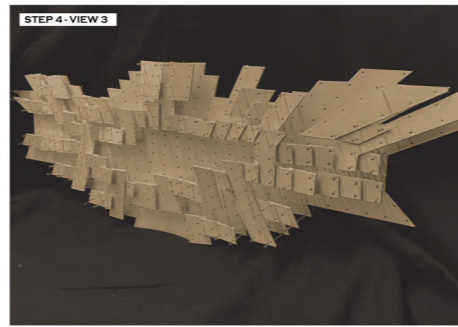
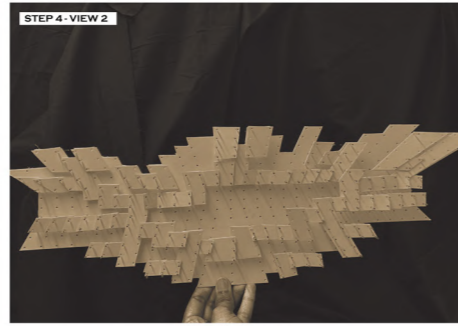
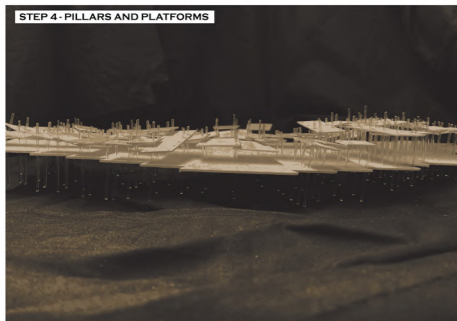
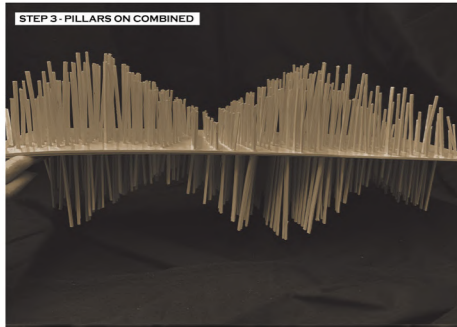
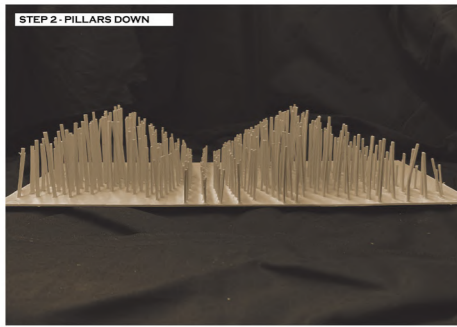
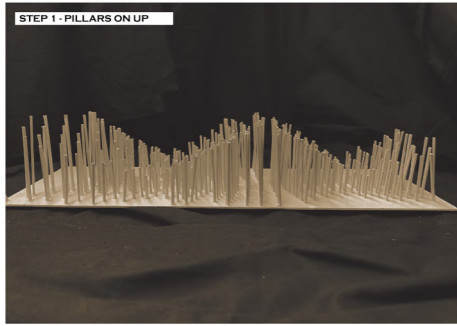
MODULE DEVELOPMENT



PROGRAM HEIGHT ANALYSIS



STEPS WITH MODELS



04.CONCLUSION

TO SUM UP

To sum up in this thesis the city is considered as a network and there are several supporting elements in the city. The supporting elements in the city includes Roads, Railways stations, Bridges, Tram stations, Bus stations etc. This thesis is to prove that the supportive elements can act as an opportunistic architectural points.

The government of major cities are providing money for huge infrastructures which are just used as a means for transportation. The thesis explored the opportunities in these huge infrastructures particularly bridges. The bridges always had a fascinating way of connecting two parts of the city along a gap.

Eventhough we had a lot of examples from history where the bridges include functions now those kind of structures are long gone. To bring back the idea of multilayered functional bridge in today's developing world with a large amount of population will allow the architects and urban designers to design a well organized structure for the people and the city.

This thesis can be set as an example or an inspiration for further projects regarding the bridge in many cities in the world.

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- Image 5 : <https://pixabay.com/en/ponte-vecchio-bridge-ponte-florence-2921510/>
- Image 7 : <https://pixabay.com/en/erfurt-chandler-bridge-bridge-1358497/>
- Image 9 : <https://www.flickr.com/photos/jparise/424203206>
- Image 11 : <https://www.flickr.com/photos/foilman/40135891142>
- Image 15 : https://commons.wikimedia.org/wiki/File:Chengyang_Yongji_Bridge_IMG_1367.jpg
- Image 17 : http://www.yonafriedman.nl/?page_id=78
- Image 18 : <https://in.pinterest.com/pin/576038608564076409/?lp=true>
- Image 20 : https://sv.wikipedia.org/wiki/Fil:Liding%C3%B6bron_gamla_jan_2008.jpg
- Image 21 : <https://www.flickr.com/photos/taedc/10854049413 - 11th street bridge>
- Image 23 : Metabolism and biology : Linear growth, The fusion of architecture and infrastructure
- Image 24 -27 : Maki's Linkage diagrams, The fusion of architecture and infrastructure
- Image 28 : Architecture + Infrastructure, The fusion of architecture and infrastructure
- Image 29 : https://en.wikipedia.org/wiki/Along_the_River_During_the_Qingming_Festival
- Image 50 : <https://pixabay.com/en/ponte-vecchio-bridge-ponte-florence-2921510/>
- Image 51 : From Mohammed Mansoor, city on a bridge thesis portfolio
- Image 59-66 : Old Pdf document regarding the bridge
- Image 67 : <https://www.gp.se/ledare/rosenhall-frihamnen-%C3%A4r-nyeln-fill-framtidens-g%C3%B6teborg-1.5948005>
- Image 68 : <https://www.gp.se/ekonomi/d%C3%A4rf%C3%B6r-rivs-coop-p%C3%A5-backaplan-1.12499>
- Image 69 : <https://sv.wikipedia.org/wiki/G%C3%B6taplatsen>

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