



# A Framework For Constellating Bandung

Reflection Paper

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A master thesis about how to contribute to a change in the current **segregation** problem of Bandung, by developing a framework for **social and resilient communities** along the railway

## 1. | Introduction

## Shared Heritage Lab

In the Shared Studio Lab, the focus lies on the translation of the design in the city of Bandung, Indonesia. The city of Bandung was once established by the Dutch as an important transport hub, governmental & military base and travel destination for the Dutch colonial society. After Indonesia became officially independent in 1949, the city saw a pressure on public spaces, networks, health and comfort as a result of the rapid growth in population. The aim of the studio is to explore the notion of shared Heritage between the Dutch and the Indonesians. The Shared Heritage Lab approach is to find a sustainable solution for these challenges by evolving the important heritage structures and areas of Bandung, in order to realize inclusive, thriving and healthy environments for working, living and leisure.

## Fascination

As part of this year's, 2018-2019, Heritage & Architecture Studio: Bandung Shared Heritage Lab, we were assigned to investigate the historical, cultural and social development of the railway backbone in Bandung, Indonesia. The railway that once was the core of a servicing system that was feeding the areas around it, either in terms of the military or industrial sector is now a physical boundary between the north and south regions of the city and contributes to a significant extent to the traffic problems and the social inequality and segregation between the formal and informal areas of the city. The railway is today acting as a no-go zone throughout the whole middle section of the city. This is creating the current architectural discourse and the urgent need to face social inequality, segregation, availability of basic infrastructure to low-income communities and environmental change. This is directing the problem, and my focus for the need for urgent intervention and re-interpretation of the original spatial and immaterial qualities of the area. During the fieldtrip to Bandung we saw several complexes, building and infrastructures that are abandoned or in bad condition. It was during this trip that I came across the "KNIL Magazijnen".

The previous military storage that is facing the railway directly is today partly abandoned or used for private agendas. One example is how the area is taken over by young people to perform different self-organized sports and music programs.

The most important thing to take into account that the railway track that was built by the Dutch during the colonial period is the difference between the military areas and the informal settlement of the Pisang kampung. The two areas are strikingly different both in terms of their morphology, land use and support infrastructure provided by the government. This brings me to my research question; How can we conserve and adapt the heritage of KNIL Magazijne through integration to revitalize the balance of border conditions regarding Bandung's informal and formal segregation?

**"Inequality causes problems by creating fissures in societies, leaving those at the bottom feeling marginalized or disconnected from the city"**

*"Nicholas Kristof"*

Furthermore, how can music and sports facilities offer re-connection between the "two worlds" in the shared heritage complex of KNIL Magazijne. The idea is to change KNIL Magazijne to a new cultural destination along the "new green belt" of Bandung. The cultural destination should offer a wide variety of facilities for self-organized sports, as well a series of customized workshops area for music education. The idea is that this will meet the aim of the increasing for self-organized and individual alternatives to attract local youth and create lasting social change through street sports and culture. In a growing city that is continuously having segregation issues, this can be an example of how to reconnect people into constellation towards a balanced urban city and to create a showcase for similar circumstances for the rest of the city.

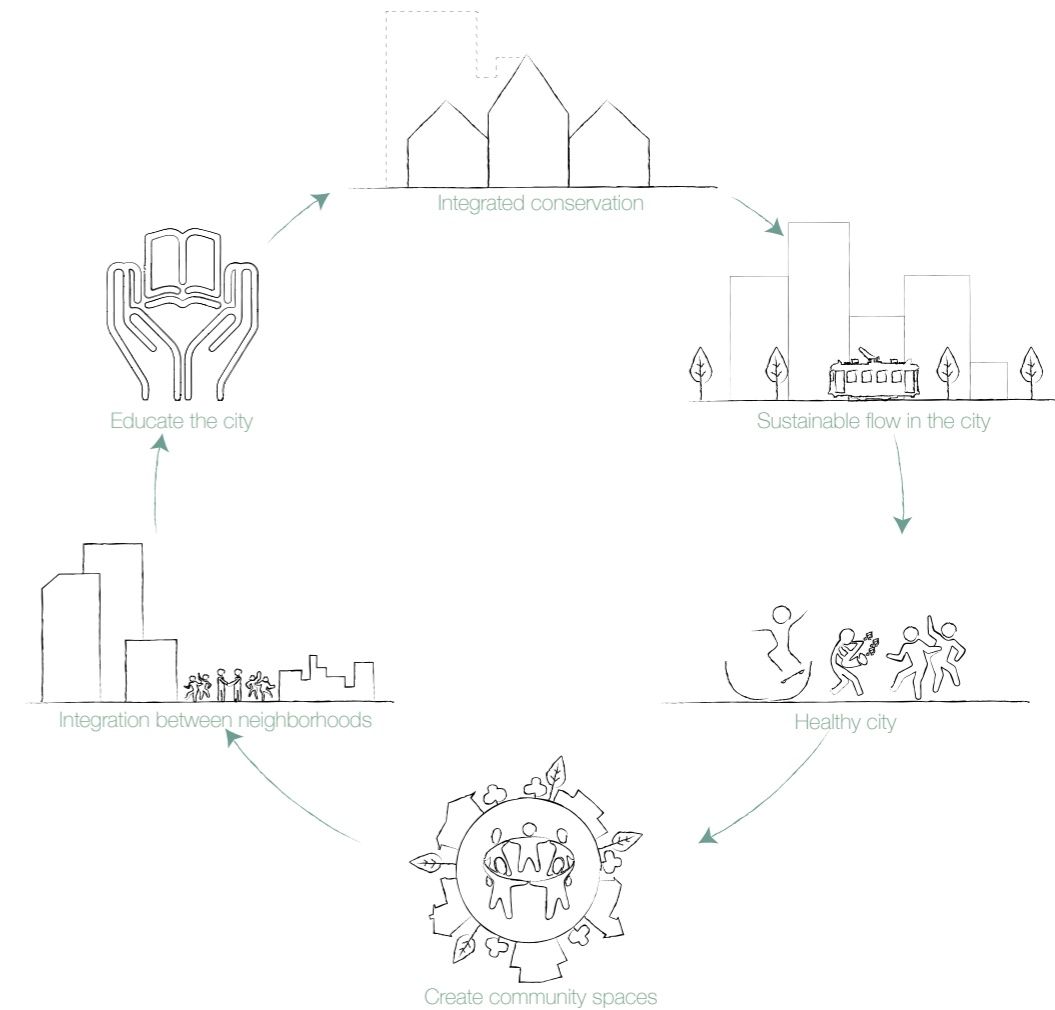
## Ambition

The studio have also put a lot of emphasis on the larger scale of the city. A part of the research was about how we could come up with ideas of how to transform the railway into a new tram system, where possible areas could be transformed through integrated conservation into new community spaces. Not only will this create a sustainable flow in the city, it will also contribute to a more integration between neighborhoods. The new communities will also help to educate the growing youth population in Bandung to be more healthy through the different communities. But most importantly, the ambition behind this project is to research how it is possible to work on integrated conservation that can promote healthy communities in a growing city in order to reconnect people from different classes, and to showcase these examples for the world.

## Reflection

In this reflection paper I will go through the process of my graduation time to reflect on how I worked, how it influenced my work, what I have learned, what I tried to achieve and what I can possibly do different in the future when it comes to architectural research.

The reflection paper will focus on the three research phases. Before site visit, the site visit and the research after the site visit. In the paper I will also reflect on the cultural values of the site, and how during the different phases my ideas around some of the values changed. Moreover, I will discuss my vision and ideas regarding what shared heritage is, and what it means for me. Furthermore, I will discuss my design process and how the architectural research influenced the outcome.



1.   Introduction	6
2.   Research phase	10
3.   Vision on Shared Heritage	13
4.   Design process	14
5.   Conclusion	18
6.   Value Matrix	20

# Reflection Paper

## 02. | Research Phase

### Historical Research

The aim of the studio was to explore the notion of shared heritage between the Dutch and the Indonesians. As my background is from neither of those mentioned countries, it became important to study and investigate both the Dutch and Indonesian history so as to position myself in terms of the events that affected the social, economic and cultural development of the colonial city of Bandung throughout its history and evolution, from the former Colonial city to the current mega city it is today. It became also important to study the current architectural discourse and the urgent need to face social inequality, segregation, availability of basic infrastructure to low-income communities and environmental change which directed the focus of the design and research into the social layer of the city and its current and future needs along with heritage conservation.

### Cultural Value Assessment

To get a grip around the complex process of preservation, conservation and transformation it was essential for me to use the research methods described in Designing from heritage, Strategies for Conservation and Conversion by Marieke Kuipers & Wessel de Jonge. I used the book as a guideline for my observation, analyze and the plot to make decisions regarding conservation based on cultural consciousness. I went through three steps before “concluding” on what changes can be done to achieve a good project. First of all it was important to use literature, studies, inventories, measurements, descriptions and photographs to analyze the site during the field trip. I did this to get a grip on the atmosphere of the space. This allowed me to observe the building on site in its present state in a coherent manner. I used the observation to interpret a cultural value statement through the cultural value matrix (figure x). By doing this I could guide myself through the qualities of the heritage building.

By creating and working along the matrix I could argue for the transformation framework that was needed for how to conserve KNIL Magazijne. Furthermore, this research method helped me to distinguish the level of implication for the building, where I tried to understand and interpret the tangible and intangible qualities of the monument as well as the context in which it is situated, again throughout history, so that the project can be developed to the current social needs and still respect the existing values.

### KNIL Magazijne

The cultural value research was done for “KNIL Magazijne”, located between Gudang seletan and Gudang Utara, just outside city center of Bandung, Indonesia. It was used as a storage unit for the military district during the Dutch colonial period (1900s - 1942), the Japanese occupation (1942 - 1945) and after the Indonesian independence until 1990. Today the complex is rented out to private individuals for light industry and social activities.

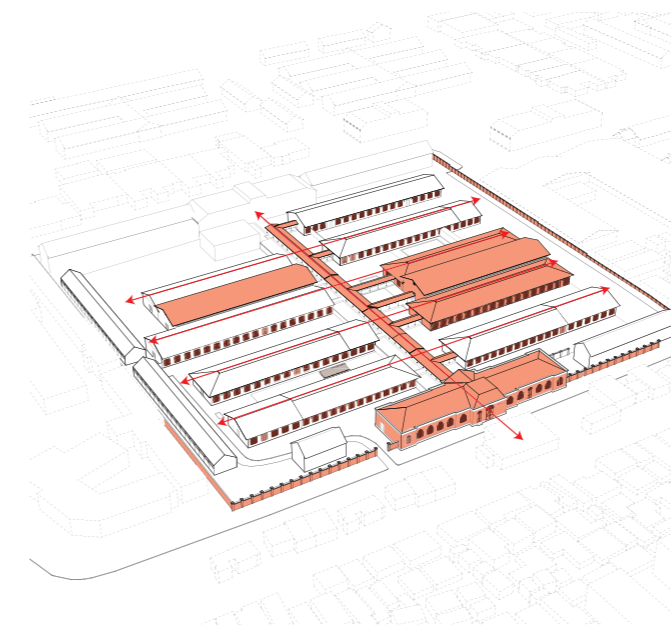
Throughout historical documents and maps, we can estimate the origin of the complex to be between 1900 - 1905, with later additions before 1942. Further alterations were done to the complex between 1942 - 2017. The complex consists of 19 buildings which are enclosed by a perimeter wall. Their spatial arrangement is organised along a central axis / servicing system that served the purpose of the former use. The warehouses are constructed with load bearing brick masonry walls and timber roof structures. On the exterior the patina, the articulated mouldings and the wooden shutters characterize the buildings. Furthermore the entrance building, on the south side of the complex, constitutes an example of imperial architectural style - “Beax-arts” that reflects the colonial past of “KNIL Magazijne”.

The “KNIL Magazijne” forms the south edge of the broader military district. An area of the city that was planned according to the Garden city concept of the 20th century that included administration and utilitarian buildings as well as residential and communal spaces. The whole district is developed on a strong

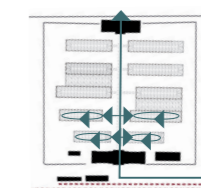
on a strong grid reflecting the formal character of the military with wide streets, public spaces and greenery. The complex's proximity to the railway justifies its use as a storage space. The entrance building was the connection point between the railway and the warehouses, inspecting and provisioning the goods to the warehouses through the trolley track system. Today, “KNIL Magazijne” works as a buffer zone between the formal military neighbourhood and the informal settlement south of the railway.

The “KNIL Magazijne” is worth of preservation because of the tangible and intangible values inherited in its physical appearance and interpretation within the current urban setting. More specifically, on a site level, the wall that encloses the whole complex has historical value because it reflects its military past and age value due to its natural decay and craft-work. Moreover, the spatial arrangement of the storage buildings around the industrial system / trolley track has rarity value since it represents the historical functional system of the complex.

On a building level, the load bearing construction of the warehouses has use value considering it allows for flexibility and adaptability of the interior environment and the repetitive rhythm of the façade openings. Besides, the timber roof structure has historical and rarity value because of the uniqueness of the material used. Smaller elements such as the wrought iron tension rods on the exterior and the cast iron column of the entrance building show significant art value as they reflect the architect's intention to balance technical and aesthetic aspects. Furthermore the entrance building has historical and art value being a typical example of the Beaux Arts School architectural style located in Bandung. Last but not least, one of the most important elements of the complex to which age, historical, rarity and art value has been attributed to, is the trolley track. It has age and historical value because it reflects the history of the place and its use as a storage while art and rarity value considering of its uniqueness in the context.



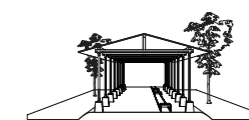
Most valuable elements



Central axis



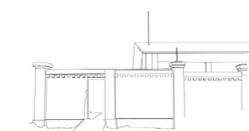
Unique timber Roof



The Trolley Track



New Communities



The Wall



The Flexibility

## Ethnographic Research Method

It was also essential to choose an appropriate research methodology to analyze the transformation program of the built heritage. I used the ethnography as the main research methodology. The changes to the external environment should be a product of the internal need. Therefore, during the site visit in Bandung, I decided to interview the locals and developers. The goal was to observe the social life in order to learn and analyze the behavior of the city's indigenous population.

One has to remember that the architect's main job is always to build for someone else, and not your own interest. It was therefore crucial to learn and discuss with the local people in Bandung about their interest, what they would like to see develop in their area and so on. Through discussion I started to understand the need for what type of space that can fulfill the program needed. I also spend several hours during my field trip to research the difference between how the formal and informal settlement and structure works. This step was important when it comes to finding a balance in the social structure in Bandung.

## Conclusion

I chose to use these two research methods because they are underlined by the idea that they will integrate and balance the outcome of the design proposal. From the Heritage & Architecture studio's research methods, the notion is to argue the importance of what should be heritage listed, and how the building can possibly be reused. Ethnography, on the other hand, is a qualitative research method used to emphasize the observations internal and external social practices to recognize what the adaptation of the site can become. Furthermore, I also used precedent as inspiration for transformation, and the design will always be a result of research by designing and search for precedents with the two research methods mentioned.

The idea was to combine all of the methodologies to strike a balance between the preservation of cultural values for future generations and tailoring the program to the specific needs of the society.



## 03. | Vision on Shared Heritage

Shared heritage is the collection of art, language, history, tradition, and ceremonies that distinguish us as a people. Our shared heritage is a dynamic concept, growing and adapting as new experiences shape our interpersonal relationships. Shared heritage is our global cultural ambassador. It is what we share with those who visit our communities to enlighten them and to help to understand our values and who we are as a people. By innovating and modernizing within the boundaries of our shared heritage, we strike a balance between globalization and remembering our ancestors and their traditions.

One can say that shared heritage is the heritage architecture that can work to make cultural heritage accessible to all by removing social, cultural and physical barriers. By this I mean that heritage work can be used to let people rediscover how much of our built work is made by our shared values and history. By putting our heritage in the spotlight we can create a sense of belonging to the world. This is also a reason for why I think the expression of shared heritage should be changed to "Our" Heritage.

This view was an important aspect for my design process. A part of heritage work is the importance to protect the built heritage and conserve traditions and cultural values for future generations. By doing this I had to find the connections of the past, binding it with the present to create a sustainable future. And the binding towards the future does not necessarily have to be vernacular Indonesian architecture, nor does it have to be modern Dutch architecture. But rather a balance between protecting our shared past towards a future that combines the knowledge we share today from both worlds. This will help us progress to a mutually shared future that not only appreciates the past, but also binds us towards the next generations.

The design will then hopefully create something new that will enhance the quality of life of the local people that combines our heritage.

Past



Future

## 04. | Design Process

Through this text I will explain the process of changing KNIL Magazijne, the previous military storage of both Dutch, Japanese and Indonesian army into a new community that will enhance sport and music facilities along the “new green belt” of Bandung. The cultural destination should offer a wide variety of facilities for self-organized sports, as well a series of customized workshops area for music education. The idea is that this will meet the aim of the increasing for self-organized and individual alternatives to attract local youth and create lasting social change through street sports and culture

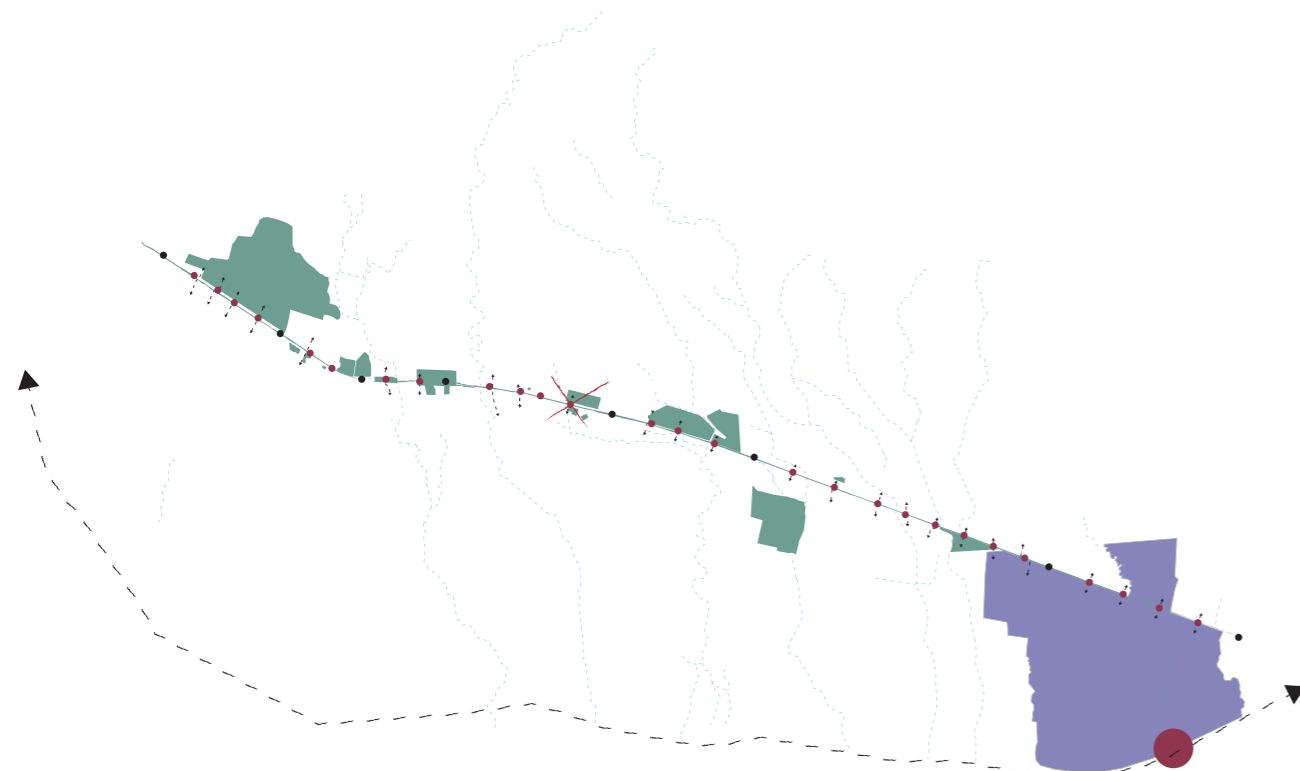
### The “Green Belt”

The studio have also put a lot of emphasis on the larger scale of the city. This allowed the group to explore and understand the role of the railway in the city’s development as well as its relationship with the areas that developed around it. The railway that once was the core of servicing system that was feeding the areas around it, either in terms of the military or industrial sector is now a physical boundary between the north and south regions of the city and contributes to a significant extent to

the traffic problems and the social inequality and segregation between the formal and informal areas of the city. The railway is today acting as a no-go zone throughout the whole middle section of the city.

During the research we located and pointed out empty plots, heritage sites and other possibly areas that can be transformed to programs that are more suitable to create a more healthy city, such as public buildings (Library, markets etc), community spaces (educational, workshops etc) and new housing project that can enhance the connection between the two sides of the railway.

The idea is that the railway that connects Bandung to the rest of the Island Java will still continue, but through the new High Speed Tracks station at Gedebage in the newly planned new city center. From here there will be local transport to the old railways tracks of inner Bandung, that through our vision is changed to a new tram line. There will be several stops along the line that again will connect the north and south of the city. This should hopefully create a more healthy flow with lesser traffic.



## Master Plan

One of the obligations of the design process was to re-establish the north-south axis connectively between the storages of the complex through the trolley path. It came therefore to me naturally that the entrance building of the complex, that has a historical and art value, being a typical example of the Beaux Arts School architectural school style should work as a the main transition from tram stop to the complex. It is therefore re-established as a stop, restaurant and meeting point between the other activities and the rest of the city through the new green belt. Just in front of the main entrance there will be developed a smaller park that is a part of the larger green zone of the city.

The enclosed wall that is surrounding the complex site and surrounding is going to be preserved as it is reflecting the character and the spirit of the place. Yet, there will be a new opening on the left side of the complex so it becomes a little bit more open to the public. The opening is through puncturing a three meter wide hole. By doing this there will still be an enhanced sense of enclosure even though some part of it will be taken away.

Beside the station on the south side of the complex, the project will also include an outdoor passage on the left side of the site. This passage have two functions. Firstly it will create a new connection from north to south, but it will also include several outdoor activities. Moreover, there will be a an educational park, football and basketball fields, a outdoor skating park and a smaller mosque for washing and praying.

Furthermore, the programs that are rented out in complex to social activities are working well to integrate people into the site today, and it was therefore important to nurture and connect the empty storages to the social activities. I zoomed in to four storages where I through the process designed a music and theater school, some indoor activities combined with workshops. The connection through the different activities is expressed through the trolley tracks path. This will create programmatic connections for the different programs on site. This will be done by keeping the trolley track visible, where it will also show the spirit of the place when it used to be a storage.





## Openness and Flexibility

Throughout the design process I was curious to figure out a way to work along the openness and flexibility of the storages. It was a key element for the site and the spatial plan of the complex, as it is defining the language and character of the place and it was therefore important to maintain it for me. Yet, we should not forget that Bandung is undergoing a rapid growth in population. To maintain the openness and flexibility of the complex, but in the same time densifying it I decided to find a balance between adapting new programs to the storages through flexible space plans, but also build vertically.

One of the problems of building vertically is that there is a chance to create “an alien” on the existing site. I decided therefore to carefully built vertically on the left edges of the storages, further away from the central axis. By doing this I believe I was able to maintain the identity of the area, but in the same time introduce more square meters. The programs I was introducing to the storages also needed height as it is supposed to be used for theater and musical spaces.

## Maintaining the Void & Timber Structure

The timber roof structure of the building is highly valued. The goal was to maintain and enhance it as it is one of the rare qualities of the complex. The structure & spatial plan do also create a void / spatial character to the building. Here I saw the opportunity to create workshops, indoor skating park and several study rooms. The question was, how could I find it possibly to introduce the new horizontal structure and intervention but in the same time maintain the visible void? My solution was to make a seamless transition, where the historical void meets the new theater hall, here the structure could continue horizontally up. However, one of the problems I got into here was that the theater should be able to close and open if there is a show or not. I solved this by designing a movable and flexible door that will work as a transition zone between the old void and the new one.

## Seamless Connection

One of the core aspects of the design was to create a seamless connection between the new and old without any sudden changes, interruption and difficulties. The intention was to achieve a seamless transition with a continuity of management through building technology and design. The goal was to make the entire connection between new and old simple: seamlessly integrating the connection between wood and brick. The connections were therefore lined up on the same axis. However, I had several issues with handling incoming rain where the connection happened. To solve this, I decided to create a 10cm gap between the new and old, and connect them with thin pieces of steel as a connector between the two materials. This simply means that the change of new and old is happening without negative impact, resulting from the integration.

## Language of the site

One of the essence of the project was to create a language for the new design that worked with the complex. The roof on the new vertical structure has a pitched roof design, just as the old storages. It even have the same angle on the pitch. It is then rotated 90 degrees to face the other direction. First of all, the reason for why the roof is pitched is purely environmentally because of the heavy rain during the rainy seasons in Indonesia.

One other element that is appropriated with the site is the trolley track. The trolley shows that once it was normal to see stuff moving around from one storages to another one. This is why several objects in the new intervention are movable, such as smaller educational rooms, doors and windows. All of these elements are contributing to create a more industrial aura. Moreover, this is why the stairs are designed in steel, together with other smaller elements such as the gutter pipes are made of steel.

## Streetscape & Circulation formation

The architectural concept behind this is based upon the idea of an indoor Kampong streetscape. The idea is to open the storages and transform the “void” into new kind of interior spaces: a covered streetscape upon the cities informal Kampong lifestyle. In a growing city that is continuously having segregation issues, this can be an example of how to reconnect people into constellation towards a balanced urban city.

Furthermore, when I started to draw the circulation through the different programs in the complex it came to me that if I wanted to create a feeling of informal Kampung street formation I had to implement the same ideas in to my design. During the site visit I saw how there was possible to walk several directions to get to wherever your destination was. Moreover, during this walk you could witness life in the streets. This is why I designed several circulation paths towards the different programs, where towards the destination you “have” to witness what's going on in the room next door.

Another effect of this type of circulation path is that you create several meeting points in the complex. However, I struggled to figure out what type of program to introduce when this happens. The solution came from the Kampong itself, whenever you had a meeting point, you designed a place to relax and get something to eat.

## Green Streets

The alleys between the storages is a part of the complexes typology. As a part of the concept is to bridge the site together, these alleys becomes open and unused. Going back to the projects title, constellating Bandung, it is all about finding a balance between the informal and formal lifestyle in the city. By doing this we can bridge the two different structures back together. During the site visit we could see how some part of the cities formal settlement was planned to be green and had garden city concepts in it by the Dutch colonist. The informal settlement in the other hand is dense and less green landscape. It is therefore that I design green alleys between the storages as a escape area from the dense city.

## Visibility & Mix of Materiality

Theaters, music halls and community areas are particularly larger ones, and should therefore be in a prominent position within the city and the site. Furthermore, the complex should be easily recognizable. I have tried to achieve this through architecture itself by the facade. This is why I have choose to transform the storages vertically up to 20 meter in red processed bamboo. Every theater need sign-age both to say what it is and to advertise the current and forthcoming production, and I believe the red color will be different from other facades and structures in the area. In the same time, the color red together with the whitewashed plaster on the brick storages are colors that express the cultural colors of Indonesia. Moreover, the views into the building from the street are also important in promoting a venue and encourage the people to enter.

Indonesian informal building structure are often build up by several different materials. This unique combination of materiality was something I wanted to integrate in my design. This is why the new building objects are in bamboo, timber, glass and steel.

## Sustainability

Nerveless, we should not forget to take climate control in use even though there was several obligations to sustain in the complex. One of the problems I faced during the design period was the patina that been created over the years. This was an example of dilemma where I had to chose if the age and aesthetically appealing aura it gave for the spirit of the place should be fixed or not. I chose to use a whitewashed plaster on the brick, as this will help protecting the building in the future without further damage on the brickwork.

I also chose to mostly use sustainable materials, such as bamboo and timber. These are local, recycled and renewable materials. This produce reduction in carbon while minimizing impact to resource systems. Furthermore I developed a self sufficiency water use by using water collection and recycling.

## Mix Use

In the end I want to discuss the idea of bringing different programs into one project. The idea behind this project is to transform KNIL Magazijne into a new vibrant culture house for street sports, music and theater culture and art. By crossing the different programs we are able to create a vary in different areas in the same place. By doing this we are able to get the different type of people to integrate together towards a healthy community.

During my design process I had issues with finding the right position and place for the different programs. There were two reasons for this issue. First of all there was technical problems regarding sound and noise from sports activities that could disrupt the music and theater lessons, and secondly the programmatic relationship connection between the different fields. I ended up with the solution of mixing the programs along the circulation. If you start at the skate-bowl, the next program you will see is a musical or theater activity. From the theater one you will go to a music one, and so on. I had to put extra attention on the technical solutions regarding the acoustics so this could be possibly.

## Community & Urban Fabric

The goal of this design is to create an urban fabric that takes the physical aspect of urbanism, building types, communities, psychological and socio-cultural typologies. The aim is to create a space that excludes the environmental segregation that we can find in Bandung today. This new community that I am trying to create is contributing to make a sustainable, attractive and vital urban design.

Going back to the quote I used in the beginning of the paper from Nicholas Kristof, that "inequality causes problems by creating fissures in societies, leaving those at the bottom feeling marginalized or disconnected from the city", this whole project is about turning the disconnected relationship between informal and formal structures back together through a community that strikes a seamless balance between the two world via music, sports and culture.

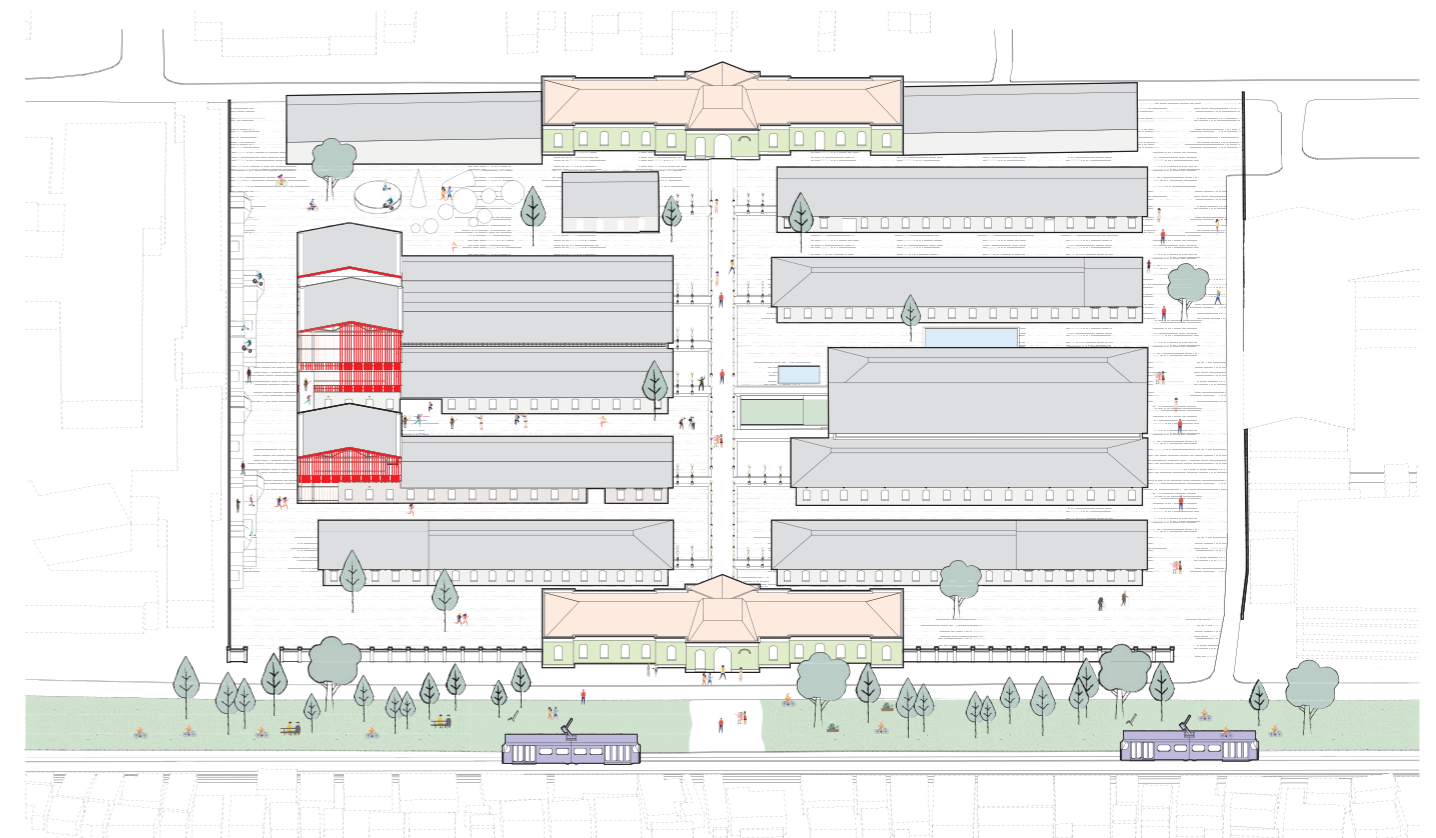
## 05. | Conclusion

During the design process I found it important to balancing different methodologies to figure out how we can best gear cities towards a more sustainable future. I adopted the valuation matrix as it helped me to determine how to protect the built heritage through cultural, social, ecological and economical methods. Furthermore, it was through ethnographic techniques that I could introduce the local way of living and architecture that works simultaneously with their identity. The goal of this research was to uncover the complex socio-cultural institutions. Once I familiarize myself with their identity, the architecture I designed will reflect the patterns of behavior and human nature in its habitat. I hope this work will create something new that will enhance the quality of life of the local people.

Even though these methods are useful to contribute original solutions, there were still significant obstacles that limited the value of my work. Firstly, to familiarize and study a new environment, a considerable duration of time is required. In our case, the study trip lasted for only two weeks. Therefore, the information will still be vague and questionable. Furthermore, the rushed nature of study trip caused me to scramble for answers and rush to conclusions.

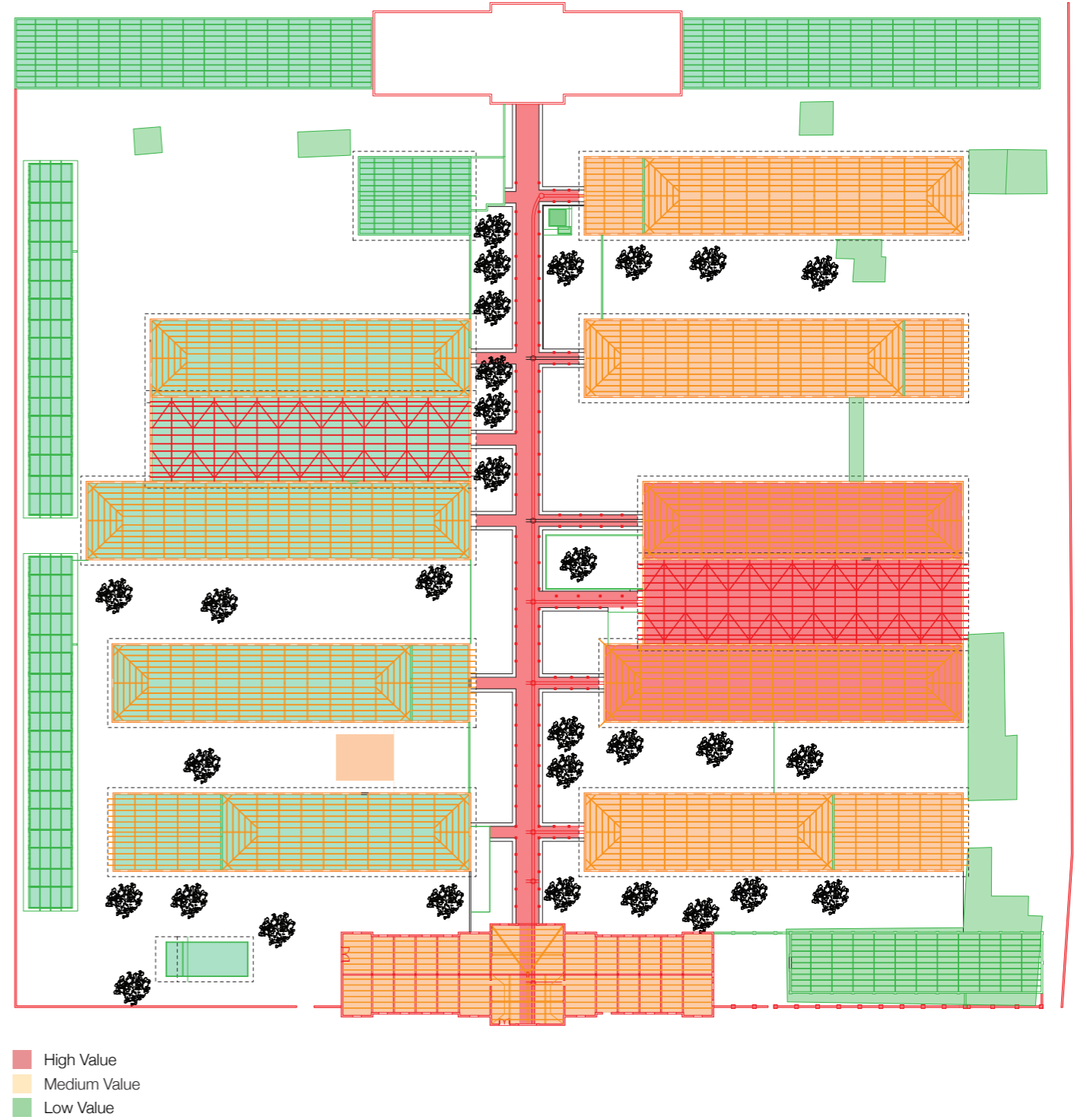
It is of the utmost importance to protect the built heritage and conserve traditions and cultural values for future generations, but also present a new program to serve societal needs. Therefore, the goal of architectural heritage should not only be to preserve, but also to adapt the site to reflect the local needs of the population. In order to adequately serve the needs of the population, it is necessary to conduct a proper cultural value matrix and sufficient ethnographic research. Only then is it possible for the architect to develop a sustainable solution which takes into account the needs of the local people. Striking a balance between the preservation of cultural values for future generations and tailoring the program to the specific needs of the society is the key to sustainable environments in the future.

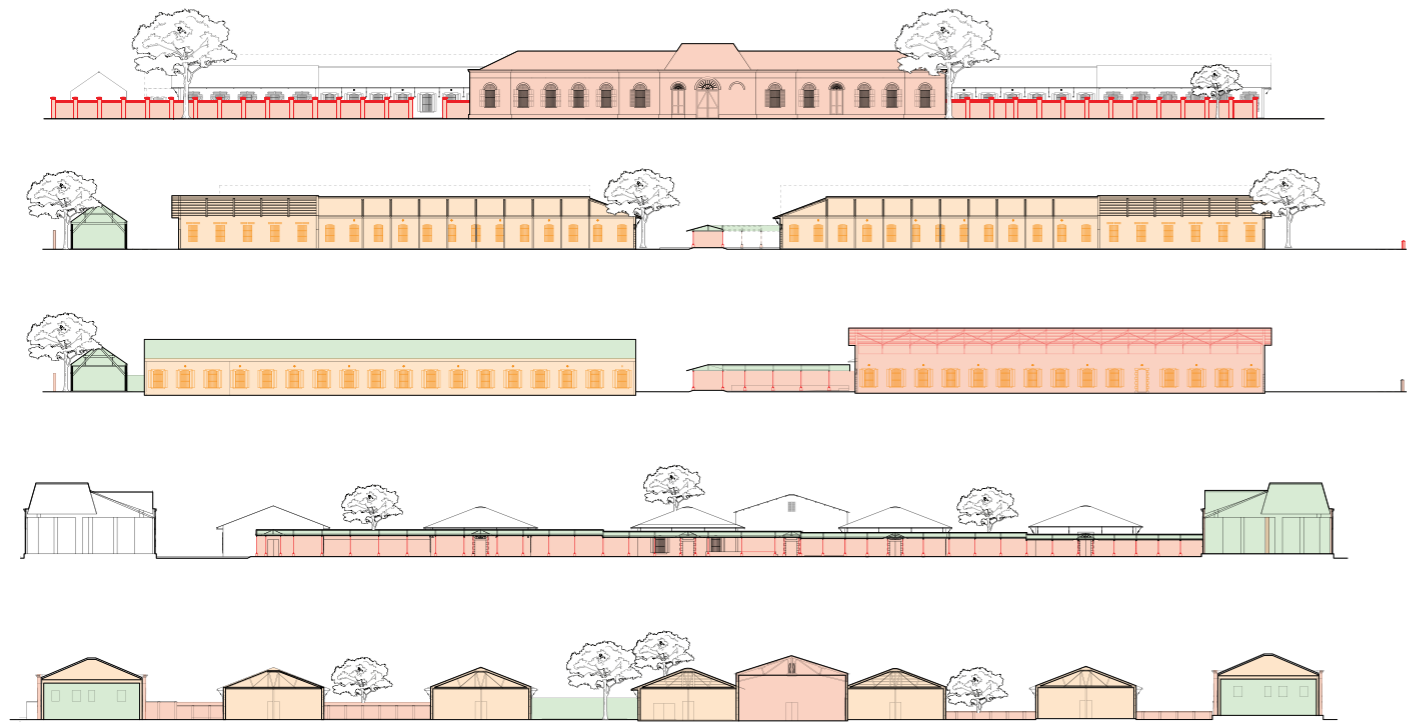
Finally, I hope this research can be inspiration for similar cases around the world.



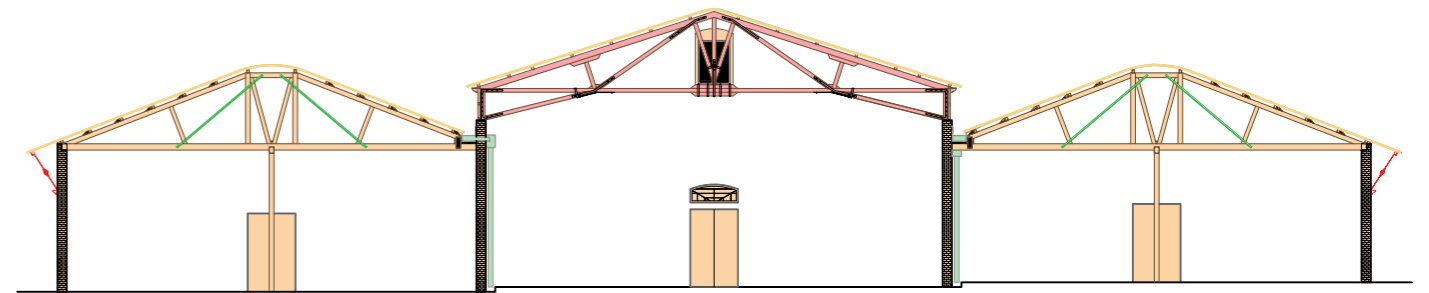
# 06. | Value Matrix

	AGE VALUE	HISTORICAL VALUE	USE VALUE	NEW-NESS VALUE	RELATIVE ART VALUE	RARITY VALUE	OTHER VALUES
<b>SURROUND SETTING</b>							 Military dominance  New social uses
<b>SITE</b>		 Layers of military history  Imperial character  Dutch cross bond	 Built vs open space  Utilitarian construction		 Ornaments on openings  Cast iron column	 Connection through central axis  Timber roof structure	 Re-use
<b>SKIN</b>	 Elements  Load bearing wall	 Timber framing building  Wrought iron joint	 Large "void"  Flexibility + Repetition		 Exterior circulation  F.W. Braat Iron decoration		
<b>STRUCTURE</b>	 Timber framing building  Load bearing wall	 Evolution of buildings  Military green colour	 Skylight  Natural ventilation  Gutter system		 Trolley track		
<b>SPACE PLAN</b>		 Evolution of buildings  Military green colour					
<b>SURFACES</b>	 Patina  Trolley track						
<b>SERVICES</b>		 Trolley track					
<b>STUFF</b>							
<b>SPIRIT OF THE PLACE</b>	 Trolley track	 Enclosed / Military presence	 Industrial character	 New social uses			 W.ibr Wilhelmnia Intentional commemorative value  Patina





- High Value
- Medium Value
- Low Value



- High Value
- Medium Value
- Low Value

