

**REFLECTION PAPER**  
**Bridging the border of MMC**

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## Introduction

This paper is reflecting on my graduation project. In this paper, my design approach and its relation to the research are mainly explained. Through wrting this reflection, my taken steps in the graduation project was cleared.

## Graduation studio and chosen project

Heritage and architecture studio focuses on the transformation of heritage buildings in their urban and cultural context. It is not merely about conservation and restoration of these heritages, but is about giving adaptive uses to them on their cultural significance. Industrial buildings are of growing concern nowadays among all the heritage buildings in this post-industrial society which is a main topic in Heritage and architecture studio. As the representation of fast and convenient production, industrial buildings are mostly built in modern style which looks the same all over the world. Therefore rehabilitating these buildings in their contexts is a challenging task in this graduation studio.

The theme of my group is the transformation of a former military industrial complex(MMC) in Lisbon. MMC is a group of 20 industrial heritage buildings related to Portugese recent war history. The building I've chosen within this site is the entrance ensemble that facing to neighbor (Fig.1). It consists of building 07(former watertower), building 08( former car workshop), building 09(former office building) and shed 06(collective workspace of buildings above and powerstation).This ensemble has the most intimate scale among all the buildings of MMC. Being allowed to choose any topic freely, my project is exploring how to open up an industrial complex to its context while developing its site spirit. It is about the reconnection of former industrial heritage to the existing context. Therefore my research question is: how to open up an industrial heritage while respecting its introverted site spirit?



Fig 1. Ariel photo of entrance ensemble in MMC, Google map

## Studio methodology and personal approach

My approach for this project was based on the methodology of my studio, which framed my working method mainly in the research process and inspired my design continuously in design process.

Heritage & Architecture brings together the fields of cultural history, technology, and architectural design in a single holistic approach, which is listed as the H&A triangle(Fig.2). The focus of the studio remains architectural design. Heritage & Architecture approaches research and design on all levels of scale ranging from the use of materials and technology, through the reuse and redesign of a building complex, to the development of landscape and urban structure. From the research on all scales ranging from urban structure to building materials, I got sufficient knowledge of the current situation of existing built environment and its context, major qualities of site and chosen buildings, potentials and challenges for their transformation. The conclusion of researches above helped me with clarifying the theme of my design, which was formulated into principles that guided my design process.

My personal approach mainly helped me in the design phase, which started from spatial study and social study about opening up introverted buildings. The studies helped me with finding solutions to deal with my project. These solutions were tested in different scales by using sketches and models, and the chosen solutions were discussed with my tutors. From the studies, the scenarios and discussion with tutors and fellow students, my design was sharpened and improved.

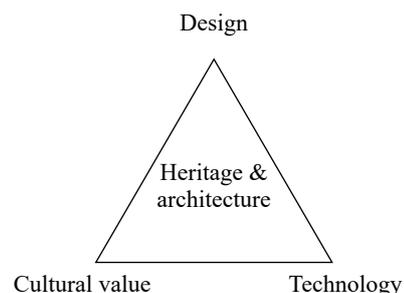


Fig 2. Heritage and Architecture triangle, Graduation Manual of Heritage and Architecture studio

## Research and design

The theme of my design is "bridging the border". It came from my observation of the site. The conflict between introverted site spirit and the requirement of connecting it to the context across the border was my conclusion of the research phase. Therefore in the design phase I need to give solutions to this theme on the transformation of entrance ensemble. From the research of MMC and its context, I concluded a principle of "connecting MMC to its context across its border from social, spatial, economic aspects while developing its introverted site spirit within its border" as guideline for the design. However the research of built environment did not offer me sufficient knowledge of how to transform the border issue. In order to explore on how to connect my building to its context, I carried out a social study and spatial study based on relevant literature.

From social study, I was mainly looking for activities that can link my project to the local community, which also fit with the character of entrance ensemble. In order to reach a social bond between them, I chose leisure functions like market, small theater, cafe, cooking workshop to reinterpret the collective place making in the rehabilitation.

Unlike the program choosing which only concerned about connection, the spatial configuration should be in a balance between opening and enclosure. It was the most challenging part in the design to consider the way of opening up the ensemble. So I read about books like *Architecture: Form, Space, and Order*; *Life between buildings*, *Elements of architecture* etc. to explore the way of opening. From the literature above, the elements of spatial definition which characterise the spatial relationship inspired me that I used this theory to control the degree of space openness and link between spaces. Since the spatial relationship correlates to the activities it accommodates, I combined the activity organisation and spatial relation in the design process. The helpful theoretical foundations which enlightened my design are listed as images on the right side of this page (Fig.3, 4, 5).

The intervention went together with the interpretation of major qualities of entrance ensemble. What contributed to the place making of this ensemble in my view were its role as collective working place of the city and its unique industrial history as a car workshop. The former character was represented as monumental facade and collective working square with a shed on it. And the latter character lied in its repetitive trusses and transitional layers. To merge the major qualities of existing part into the research theme explored, the space was carefully intervened in the design.

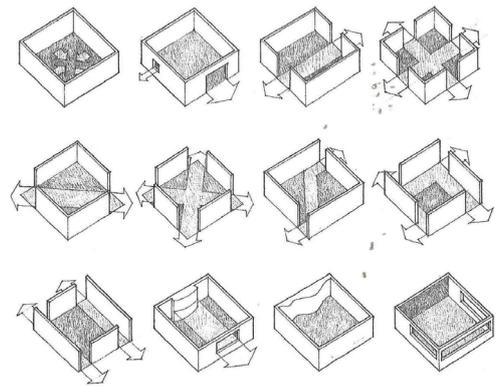


Fig 3. Openings of spatial fields, Francis D. K. Ching, *Architecture: Form, Space, and Order*, 4th Edition, p162

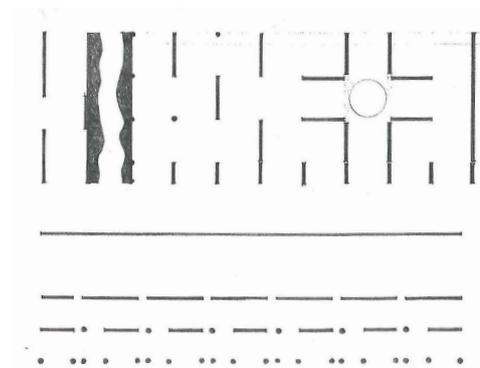


Fig 4. Sets of parallel vertical planes can be transformed to a wide variety of configurations, through which the spatial fields can be related to one another, Francis D. K. Ching, *Architecture: Form, Space, and Order*, 4th Edition, p145

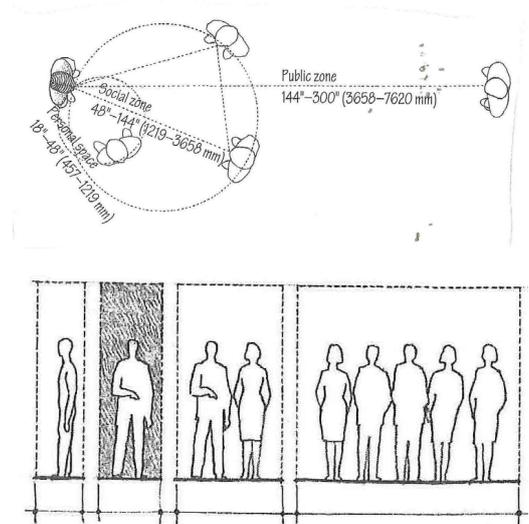


Fig 5. Activity dimension correlates to spatial dimension, Francis D. K. Ching, *Architecture: Form, Space, and Order*, 4th Edition, p328

In my design, I doubled the volume of entrance ensemble to strengthen the border while protecting the introverted inner world. Meanwhile the volume was divided into parallel spaces from solid to transparent, in this way not only the border was dissolved, a connection leading to MMC was also created. The functions were arranged corresponding to the public degree of spaces. Market was placed on ground floor to create a coherent public activity flow from neighborhood to collective square of MMC, through this way the social connection was integrated into the spatial connection. In the design, the juxtaposition of volumes enhanced the introverted site spirit, but it also aggravated the border tension. Transforming the volume into a variety of space configurations cleared up the border barrier, while it also enriched the border in its content. The spatial fields were related to each other but also retained autonomy on their own character. Therefore the entrance ensemble was able to be closed and linked to each other at the same time (Fig. 6).

In the end, I think my design project reacted to the research question and design theme thoroughly (Fig. 7). What is more, the major qualities of entrance ensemble were preserved and enhanced. Firstly, the monumental facade was renovated as an important component of urban fabric in the neighborhood. Secondly, the former collective square was brought back to its inhabitants, acting as the meeting point of local community and MMC. Last but not least, the transitional layers which remarked historical function of ensemble was enriched in the process of disassembling the border, with a clarified space flow leading to the collective square. The entrance ensemble was reinterpreted as co-living center of local community and new economic alternative, being integrated into the commons once again.

## **Project in a wider social context**

More and more industrial buildings are eliminated and await to be reutilised as consequence of post industrial stage nowadays. These industrial heritages share a character in common: the conflict between introverted site spirit and requirement of connection. This introversion within the border is the representation of industrial production process, which marks the placemaking of industrial heritage. However it also obstructed the future connection between the local community and its economic alternative. To close or to open up? It is not a single problem only existed in MMC, but remains similar in all the former industrial complexes.

Since my design project was exploring the way of opening up an industrial heritage while enhancing its identity, it offers an approach of connecting existing industrial complex to its context as well as a way of thinking to deal with the border issue.



Fig 6. Connection across the border in the design outcome

Transformation strategy

Principle	Justification	Masterplan scale strategy	Ensemble scale strategy
Connecting MMC to its context from social, economic, spatial aspects	MMC was the social economic center of territory in its history. The current dilemmas of Beato are the result of its disconnection.	Place economic alternative in industrial MMC(connection to city and territory);  Position social function in monumental MMC(connection to local community).	Composing social activities' narrative from neighbor to MMC;  Transforming the entrance ensemble into a leisure center of local community.  Disassembling the border to construct a spatial link between neighbor and MMC.
Conserving its introverted site spirit within its border	The introverted enclosure of MMC represents the military industry function which relates to the recent Portuguese history.	Clarify the physical border of MMC;  Leave narrow openings to connect MMC and its neighbors.	Enhancing the distinction between outside and inside of MMC;  Double the volume of MMC to strengthen its border.

Fig 7. Principle, justification and transformation strategy on various scales