P4 Reflection

Graduation Studio: Maastricht, City Of Stone
Design Theme: Through Stone Frames
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Material Culture: A Point of Perspective

The graduation project Maasticht, city of stone, aims to interpret city from the point of view of material culture. In this studio, researches are made to illustrate how a particular kind of material would shape urban and architecture images. Here material is seen as not only a physical existence but also a cultural carrier. Its textures, colours, physical characters and processing crafts would deeply influence a local architectural tradition. Thus, material culture can also be utilized for regionalism against globalization, helping architects to find a balance between a local tradition and a contemporary context.

This reflection contains three parts. The first part looks into the stone culture in Maastricht, and how I define my own position under the main graduation theme. The second one is about how this culture could be applied to the design project. The third part focuses on how to re-interpret the material culture during the design development.

Material Culture: Stone in Maastricht

In Maastricht, different from most Dutch cities where brick is the main architectural material, stone is widely applied in building constructions. The processing of stone would leave specific details on its surface. Moreover, its physical character is very suitable for engraving and sculpturing. This all makes stone a tangible and expressive material, which, on a larger scale, could also influence the character of the city of Maastricht.

If looking at a common street façade in Maastricht, one could notice that stone is mainly used in the ‘openings’ --- windows and entrances --- of buildings (Fig 1). The unique texture of stone thus emphasizes the position of these openings, the connections between the exterior and interior space.

During a 5 days’ workshop in Maastricht, through gypsum model casting I tried to understand how stone as a specific material would interact with architecture. The model contains only the stone entrances part of the façade. While with size and decoration differences of the entrances, spaces characters can still be indicated in such an abstract model (Fig 2).

After the workshop, the research continued to focus on the stone openings in Maastricht. About 30 entrances were chosen as study cases. From a typology point of view, these gates were disassembled into basic components: beams, columns, cap and decorations. Through studying of these components, I analyzed how the forms of the gates are related with both the street facades and interior spaces. In every case, the stone frame of gates would always interact with both exterior and interior. With this dualistic character, an entrance could be seen as an intermediate or switch between two different spaces (Fig 3).

Stone as a material used in the transition between spaces is viewed as a representation of the material culture in Maastricht. According to this point of view, a relation between material and human activity is defined. Therefore the application of stone culture in this project is not only a present in the appearance level but also gains a functional meaning.
Fig 1. A common street façade in Maastricht; black indicate the stone part, from P2 presentation

Fig 2. Gypsum model of Huis Victor de Stuers, containing only the gates and ground
Fig 3. Stone frame as space transitions in Maastricht, from P1 presentation
Stone Culture and Craftsmanship Center

The project is a ceramic center with workshops and exhibitions. The ceramic production has played a prominent role in the development of Maastricht during the 19th century. Before the First World War, Maastricht was a veritable town with a culture of ceramic craftsmanship, while after the war the ceramic production gradually turned to industrialization. This project, however, provides a chance to re-bring the craftsmanship culture to the urban life.

The Iliffe Yard in London is taken as a reference of how the craftsmanship can interact with public life (Fig 4). In the Iliffe Yard, several workshops are situated along an alleyway, which as a result becomes a place of tourists for its unique craftsmanship atmosphere. In this project, this way of plan arrangement is utilized. Three workshops are put on the ground floor as three isolated parts, which are connected by an exterior path. The path, which allows citizens to reach craftsmanship culture, are accessible from the surrounding environment (Fig 5). Together with the workshops, this path becomes a unique place of craftsmanship. In this case, a frame of stone is applied to label the transition to this place from the surrounding context. Continues along the path, these frames, which also form a colonnade, would lead people to the place of craftsmanship.

The rest functions, such as exhibitions and archives, are situated on the upper floor. They appear as two L-shaped volumes above the path, just as the ceramic culture of Maastricht is based on craftsmen and workshops (Fig 6).

Material Culture of Stone --- Contemporary Reinterpretation

The design seeks to reinterpret the stone culture in a contemporary manner, instead of a simple imitation of existing image. The colonnade should be organically integrated with the whole building, which means structure and material logics well defined.

The colonnade could serve for either structural or non-structural use. The later choice could offer the colonnade a more flexible layout in the plan, while at the same time bring more complexity to the structure system, which was not reasonable in a building of small scale. Thus, I decided to make the colonnade part of the whole structure, sacrificing some flexibility for a clearer structure scheme. On the other hand, from the façade point of view, a large volume laying on a colonnade also display a sense of load bearing. To emphasize the colonnade, the upper volume is simplified to a certain extent. The façade is brick cladding with regular openings. The window kinds are limited, with small changes in height and width slightly indicate the interior function.

The material of the colonnade could be chosen between natural stone and artificial ones (concrete). According to the span (which varies from 3.6 to 2.7 meters), concrete beams are a logical choice. The column, therefore, would also be concrete to make a unified frame. As a part of the whole structure, the colonnade should keep a tectonic honesty. Thus no more additional surface covering such as stone cladding would be used.

A straight beam with slight concave underneath is applied instead of a more traditional arch. Both the beams and columns would be prefabricated other than casting in a whole, in order to respond to the basic composition of a stone frame in Maastricht. The proportion of the colonnade influences its space experience. The study of colonnade proportions appears in the project Church of St. Benedictusberg Abbey by Hans van der Laan, in which he used a simple system of beams and columns, but created various space character by simply adjusting different scales. This
Fig 4. The Iliffe Yard in London, from website

Fig 5. Layout of workshops on the ground floor, from P2 presentation
Fig 6. Composition of colonnades and upper volumes, from P2 presentation
method is elaborated in Dom Hans van der Laan, Tomelilla¹, which also inspired this design. Besides, the former research of the Maastricht gates provides another reference.

In the detail design of colonnade, a linear striation texture is given to the front and back side of both beams and columns, while the other surfaces are left smooth. In this way, the colonnade gains a sense of direction. Material is therefore linked with space character by its texture differences. However, the real effect of this texture is not yet tested. It could vary according to the modes used and aggregates. Moreover, further landscape design, such as the paving pattern, as well as exterior furniture, could also help to enhance the space character of the path. These works would be carried during the p5 period, mainly through the way of model making.

Fig 7. Study of details, from P4 period