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Thesis "Materiality – a survey of the Belgian Blue Limestone"

I INTRODUCTION

In the architectural profession, creating an enjoyable built environment with a strong identity feeling is a very important task. One that cannot be attained without an architect's awareness. Awareness that is only completed, if it was preceded by research. When it comes to design practices, I had the opportunity to work in a country, where the research methodological awareness is very rare, and also in the Netherlands. In the former, the work culture is specific, and attention is mainly put on the production part and time effectiveness. Either in the education curriculum or in practice. There are only some basic mass studies or search for references conducted, but nothing more. From my experience, that results in a very blindfold- driven design. One uses more intuition than a real awareness based on data. Whereas, in the Netherlands, that seems to be totally different. Even in the architectural office, more attention is put on the research stage. That research-methodological awareness starts during the education process. The course gave a great overview of the research methods and approaches that one could take. Among them, lectures of Klaske Havik and Eireen Schreurs were the ones that influenced my research the most. The former focused on phenomenology as a research tool, which I found very crucial for the topic of material culture. The latter gave a specific direction to my research by introducing me to the *stoffwechsel* idea. Semper's theory lets me think about the material culture in a broader perspective of a cultural continuum. Moreover, the books introduced during the lecture — "Style in the Technical and Tectonic Arts; or, Practical Aesthetics" by Gottfried Semper, "Metamorphism : Material Change in Architecture" by Ákos Moravánszky, "Phenomenology of Perception" by Maurice Merleau-Ponty, "Being and Time" by Martin Heidegger, " or "Experiencing architecture" by Steen Eiler Rasmussen, "Thinking Architecture" by Peter Zumthor, "The Eyes of the Skin" and "The thinking hand" by Juhani Pallasmaa — provide a good insight in these topics.

The group of Spolia has been exploring terms of spolia in-se (material), and spolia in-re (non-material) since the last few weeks. Critical evaluation of Anderlecht district resulted in the organisation of the research according to the following perspectives: materiality, architecture, and bricolage. Then, these topics were organised on a timeline — from a deep analysis of prevailing material, Belgian Blue Limestone, its sedimentation, extraction, *stoffwechsel* idea, spolia in-re, and spolia in-se, to the introduction of terms to spoliare, to assemble, and to appropriate. My individual part was the materiality perspective, thus the focus was put on the first part of the timeline, whereas the last three terms were analysed by other group members. In the time of pending obsolescence, the survey, prepared by the group, aims to be a starting point for the discussion about potentiality to be used as a spolia. Therefore, the research question is a quest for spolia in the Anderlecht district (What has a potential to be used as a spolia?), what will help to answer the question posed by the chair: "what is worth keeping?".

II MATERIAL CULTURE RESEARCH

Deep analysis of the prevailing material, Belgian Blue Limestone, on the base of a material biography will be conducted. Both, Marxism and phenomenology positions on material culture will be incorporated, simultaneously limiting the structuralist and semiotic perspective¹. The aim is to understand the surveyed material fully, and answer a research question: what has the potential to be a spolia? Therefore, the research is carried out on the two levels that the findings can interact with each other, hence allowing a deeper analysis. Both parts gather the data that could help to understand the material properties, tectonic, weight, sound, haptic qualities, the relationship between the body and material, psycho-psychical impact, and historical and social values it has. Nevertheless,

¹ Tilley C., Keane W., Kuchler C., Rowlands M., *Handbook of Material Culture*, (SAGE Publications, London, 2006), p.7-10.

when the first part puts focus on the material origin, sedimentation, and extraction, the second surveys the processing, and the construction technique.

SEDIMENTATION | EXTRACTION

In the first part, I was collecting the data on sedimentation, and extraction of local material, the Belgian Blue Limestone. To experience the situated craftsman practice, I *visited the quarry (Carrieres du Hainaut) and the Documentation Centre of Blue Limestone (Le centre de documentation de la pierre bleue Durée) in Soignies*. Not only did I buy precious samples from that trip but also, using a comparison, I was able to recognise a particular fossil animal type inside the surface of a limestone sample.



Fig.1 and 2. Leporello presented the sedimentation and extraction process.

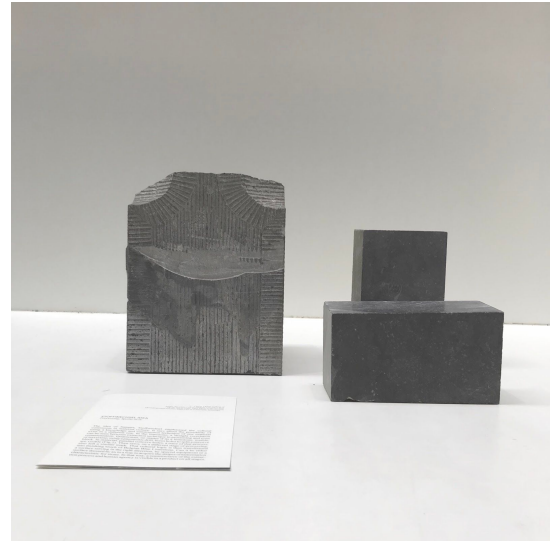
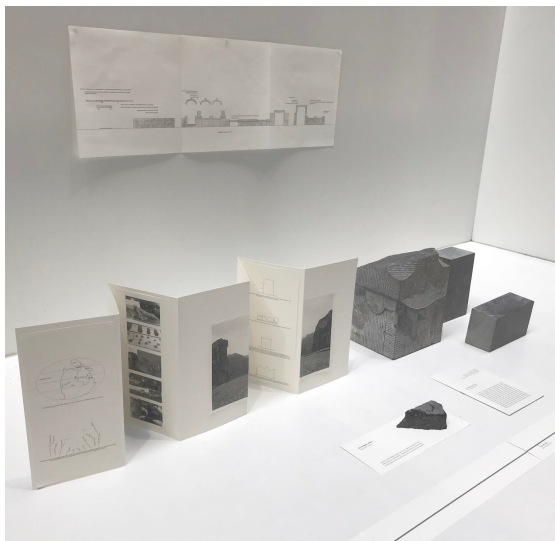


Fig.3 and 4. Part of the research presentation; Limestone samples presented the idea of Stoffwechsel.

DETAILS | CONSTRUCTION

In the second part, analyses through case study — elements made from the Blue Belgian Limestone — were conducted by analytic writing. Photographing and phenomenological evaluation are to help the investigation of details and construction technique characteristic. Gathering all those data helped in understanding a characteristic of limestone building tradition. Rotor — actor available in the surveyed site — would always take limestone elements during their inspection because it's a

precious material. Therefore, it has a high potential to be used as a spolia. Taking that into consideration, and thinking about the building as a repository of spolias, I decided that making a bricolage of elevations (plinths, portals) as a plaster cast (model making) would be a great tool. That could help to answer the research question: “What has a potential to be used as a spolia?”, and to emphasise limestone as a spolia in-se and in-re. Even though the surveyed building may not be intended for demolition, similar can be found all around the country, and be saved for that purpose. Plaster casting would help to find out the construction technology logic, so that knowledge could be used even in a different material (Stoffwechsel idea). It also helps to understand the proportion and sizes, in a very haptic way, what could influence the design as well (thinking by making). In that part of the research, I also visited a professional stonemason from Delft, who helped me to prepare additional samples of limestone (Fig.2,3.). The visit was a great source of information as every side of a piece was processed differently. As I had the opportunity to take a part in that process, that was also a continuity of my research-by-making approach.

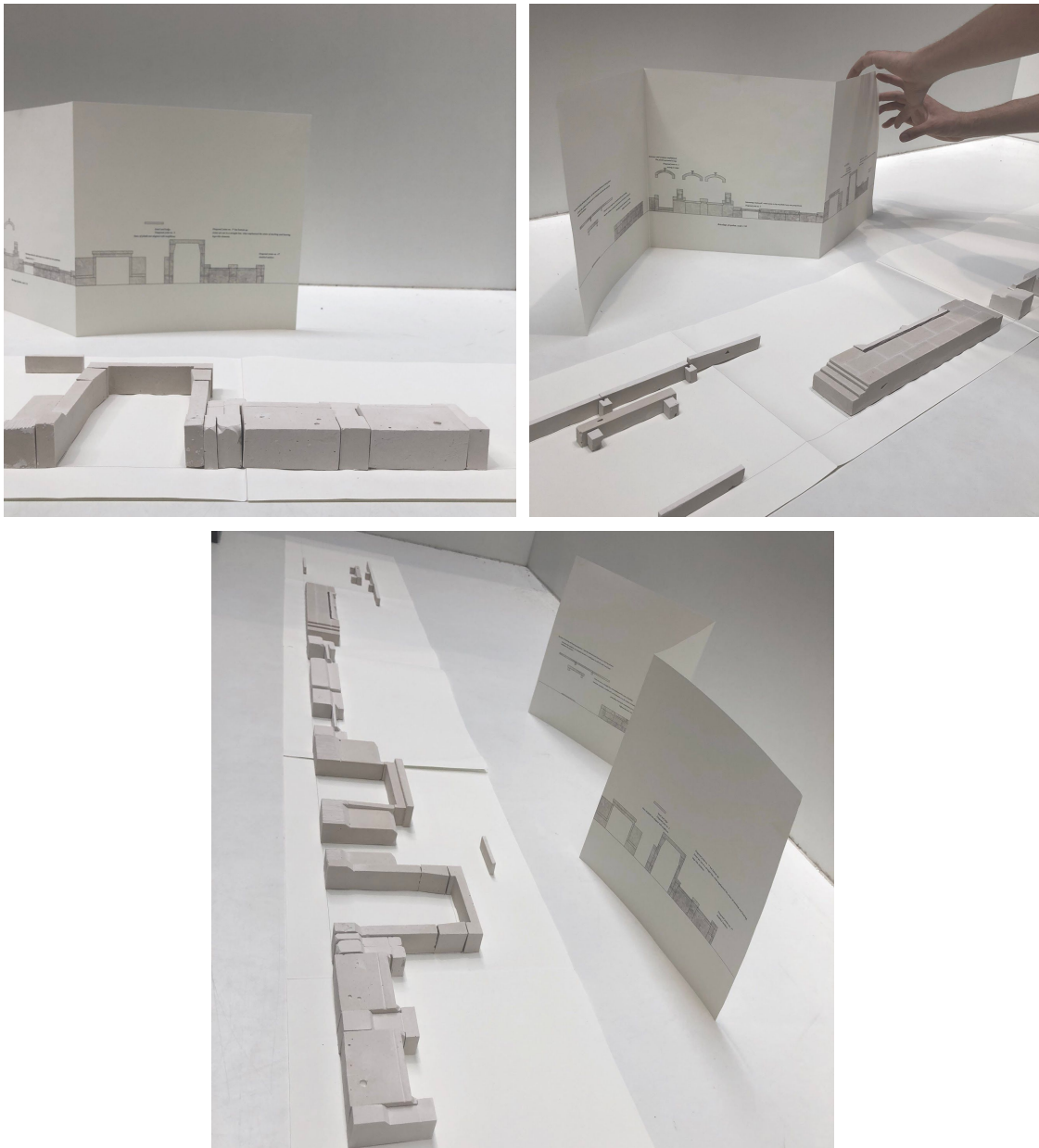


Fig.5,6 and 7. Bricolage of elevations (plinths, portals) as a plaster cast.

III PREDECESOR

In 2017, Chairs of Interiors Building Cities led the graduation studio called “City of Stones”. that focused on the local material culture, natural stone in the city of Maastricht. The investigation emphasised a cultural continuum of material culture and the materialisation issue. TU Delft students took a part in a casting workshop what was their research methods. In the past cast was a very important method of building’s representation but also research. Not only it constitutes a survey of architectural style or technique, but also a mass. In the middle of the XIX century, the most popular tools for documentation of architecture was either a photograph or a cast. The latter was also used for education purposes — students of architecture acquired drawing skills in the help of plaster casts. About their popularity can testify the fact that the first architectural museum was with a collection of casts.² Then its popularity stopped increasing due to new technologies and difficulties that characterised that method. It took a very important haptic experience away from architects. Soon, the drawing was in line to share its fate, which exaggerates the current hegemony of eyes³ even more. Today, in a time of digital age, I still consider research by making as a very powerful tool. The one that could teach students the building techniques, proportions, and scale. An empirical approach, like any other, boosts spatial awareness. Moreover, it does reconstitute the importance of body and human agency in a design process. There was also one more important factor that has influence the cast’s popularity — its neutrality that results in a lack of distraction⁴. The abstractness was consider an advantages at the beginning, but then the discussion about authenticity has started, and cast was criticised because of the lack of material properties.⁵ For my research the character of plaster casts was a huge advantages. According to the idea of Semper, Stoffwechsel, the knowledge of one material technique can be transformed into another. The material that I would like to transform knowledge from the Belgian Blue Limestone is a concrete. Therefore, the abstractness of plaster cast was very much appreciated. The process of pouring gave me already some experience that could be used in a concrete cast. On the other hand, limestone is a component of concrete and a stucco, so in that case a claim of the lack of authenticity is not reasonable. Here, the stereotomics (heaviness) and tectonics (lightweight) distinction of Semper is also worth mentioning. According to Kenneth Frampton book, those terms are related to a material production in a way that wood can be seen analogously to basket weaving, textile, or carpentry, whereas stone work to brickwork, rammed earth or later to a concrete.⁶ All materials used in the research - limestone, gypsum, concrete - would then qualify to the stereotomic part. The same classification already can be seen as an argument against the lack of authenticity.

Kenneth Frampton, in a given text: “ Studies in Tectonic Culture” argues that tectonic and tactility in a modernistic turn was omitted. The author formulated the idea that emphasised the importance of tectonics, together with topos (the site) and typos (the meaning). It resulted in a higher awareness of building’s materialisation and object’s studies, thus it was a starting point for the new architectural discourse⁷ - the one which was strongly connected to the practice (e.g. Zumthor, Andrea Deplazes). That method of practice-based research, which connects the theoretical, academic knowledge to practices, has been popularised since the 1990s. Lucas Ray, in his book "Research Methods for Architecture", emphasises the importance of research component in practice-based methods and the risk of being criticised for its lack.⁸ Taking that into consideration I put a lot of attention to interweave these two elements - changing from making to writing and reading and vice-versa. Doing so the strong bond between two elements was created in a way that seems to

² Elsner J., *The cultures of collecting* ed. Elsner J., Cardinal R. (London 1994), 159-165.

³ Term introduced by Juhani Pallasmaa in his book “The Eyes of the Skin”.

⁴ Lending M., *Promenade Among Words and Things: The Catalogue as Gallery*. “Architectural Histories” (2015), 3.

⁵ Schreurs E., *City of Stone, booklet of the Chair of Interiors Building Cities* (Impressed, Pijnacker, 2018), p.10.

⁶ Frampton K., *Studies in Tectonic Culture* (Cambridge, 1995), p.5.

⁷ Schreurs E., *City of Stone, booklet of the Chair of Interiors Building Cities* (Impressed, Pijnacker, 2018), p.8.

⁸ Ray L., *Research methods for architecture* (Laurence King Publishing, London, 2016) p.43.

be a unity. Lucas Ray provides relevant examples of practice-based research a.o. experiments including a number of participants, and intervention and provocation. Nevertheless, I found them irrelevant to the researched theme. The casts, both plaster (facade elements), and concrete - are like an experiment itself. However, in my series a larger group of people was excluded as the factor that could not enrich the research significantly. Worth mentioning seems to be the Knowledge Transfer Partnership (KTP) - a very interesting partly government-funded initiative that connects academia and practice among different professionals in the UK. It emphasised the importance of the knowledge exchange that I also implemented in my research. Part of it is very much connected to a professional architectural practice. The focus was put on a historical reconstitution of architecture as a craft. Therefore, I was gaining knowledge through cooperation with different craftsmen, stonemasons, and anthropologist, historian, and geologist, what was very pertinent.

IV ISSUES HAUNTED ARCHITECTURAL PROFESSION

During the lecture, Eireen Schreurs presented material culture-related issues. One of them was considering situated practices; local making traditions were opposed to globalized industry, with whom they have a little chance to win. The Belgian Blue Limestone quarries, located in a city of Soignies since 1668, 38 km from Brussels, undoubtedly can be qualified as a local-making tradition. In Europe, the blue limestone is extracted in Croatia, Ireland, and Portugal. Nevertheless, they do not constitute a competitor for the Belgian Blue Limestone on the territory of Belgium or the Netherlands. The same cannot be said, however, for province Shandong in China, where prices, despite transport costs, are very competitive. In Belgium, there are strict regulations about the size of cracks visible in the limestone. Namely, if they are big enough, the material surrounding them has to be removed. Of course, all regulations depend on the functional purpose of the element. Due to these regulations and difficult processes of extraction, only 25% of extraction is intended to be sold, whereas the rest constitutes a waste. Undoubtedly, that makes the extraction quite unsustainable process.

In a time of pending obsolescence and a novelty regime, we need to think about a more sustainable built environment, either by using a new building technique, new materials or re-use of certain objects/materials. Even though, in the past re-use of materials was present, today it is getting more popular. Not without reason, the topic of Mies van der Rohe prize 2019 was “What’s old, what’s new”. The question, posed by the chair: “what is worth keeping?”, and a research question: “what has a potential to be used as a spolia?” refer to the same problem in a current discourse in the field of architecture. It is also very much related to an issue of the lack of identity that haunts modern spaces. The spolia itself could be a good remedy in the space with its utter lack. Thanks to its implementation to project, architecture could be more contextual and regional. Moreover, the introduction of Semper’s idea of Stoffwechsel (term presented during the Eireen Schreurs’ lecture) into my research gave a new interpretation of the spolia topic. It speaks about the possibility of using knowledge and a construction technique of one material even in a different one. By emphasising the cultural continuum in the material culture, it provides proof that nothing is an invention ex novo, and a spolia itself is not as obvious as division into old and new objects.

Because of the very specific topic of my research, some strategies were impossible to incorporate into my investigation. Namely, Investigating Social/Spatial Practices (Berkers M.), Investigating Territorial Scales (Hooimeijer F.), and On Heuristics, Investigating Typologies (Gorny R.A.) Research and Design (Mejia Hernandez J.). Nevertheless, they boost my awareness of the research methodology for the different topics, so I wouldn’t say that I oppose them. The one that was very much related to the research topic was the phenomenology by Klaske Havik. By some, the scientific values of that philosophy are still underestimated. It values people’s experience and embodiment as the main agent in the process of cognition. Among the presented examples were Pallasmaa’s books. In his work, he emphasised the importance of the body and a sense of touch in

the cognitive interpretation of the world, which stays in strong opposition to the current oculo-centric regime. In my opinion, it is difficult not to agree that human embodiment plays a crucial role in experiencing the world. That way of thinking was incorporated into the project on every stage. The importance of the senses was emphasised in a strategy of XX century philosophy of Edmund Husserl, Maurice Merleau-Ponty, or Martin Heidegger. Moreover, it stays in close correlation to Giambattista Vico's *verum ipsum factum*, which returns to "[...] the state of affairs in which knowing and making are inextricably linked; to a condition in which *techne* reveals the ontological status of a thing through the disclosure of its epistemic value."⁹ That's to say, assembly things can help us to understand them more deeply, what I explored in my research. Richard Sennett, in the book "Craftsmanship", describes the link between characteristic for specific crafts way of thinking and doing things, and tools and developments of required skills. The author emphasised that all skills start from the body's activity, which uses its wisdom that one gained by touch and movement in his or her hand.¹⁰ Pallasmaa argued as the separation of architecture from crafts resulted in a decrease in architects' importance. That could give food for thought to increasing issues in the architectural profession where architects have not only less control and authority but also smaller gratification.

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⁹ Frampton K., *Studies in Tectonic Culture* (Cambridge, 1995), p.23.

¹⁰ Sennett R., *Craftsmanship* (Penguin Books Ltd, United States, 2009), p.35.