

# CRAFTING THE DISUSED

REFLECTION PAPER

LOCAL WASTE MATERIAL  
TRANSFORMATION POTENTIAL AND INTEGRATED  
WASTE MANAGEMENT ON A  
DECENTRALISED SCALE



I initially entered the studio based on a fascination of creating new elements out of unused/discarded material - mainly plastic as this is currently posing the largest threat to the environment within the context and in relation to its occurrence. During my first semester of research however, I became more and more interested into the activities and processes surrounding waste management. Subsequently, my focus shifted from a material development basis towards understanding the flows and needs for sufficient waste management and promotion of recycling. The field trip and interviews in particular, very clearly brought to light the shortcomings of the neighbourhood, such as sufficient collection space, as well as guidance towards appropriate separation. The designed bank sampah (waste bank) and re-processing facility are a direct result of this research. Analyses of waste types and weekly accumulation formed the basis for spatial needs of the collection and separation part, while also making a clear indication towards the scale of the processing facility thus resulting in a small, low-tech factory. Existing scavenger activities and their routes indicated two currently used locations for larger scale weekly collection of waste of which only one

was sufficient in space. This location also proved to be prominent within the kampung thus supporting the promotion of waste management, recycling and self-made building elements. The case of the zero-waste city of Kamikatsu, Japan acted as an informative study for developing a slow introduction into recycling processes as a participation model.

While temporarily shifting away from a pure waste based material development, experimentations into composite materials of waste and concrete and soil with natural binders were undertaken. However, although this resulted in a material better able to cope with heat it felt counter intuitive to mix polluting materials with natural materials. After all, it is the core incentive of the project to prevent further pollution and degradation into the environment, hence to confine the waste and not to downgrade natural materials in the process. Instead, the design of the facilities was adjusted to cater for the behaviour of plastic materials under sun influence. To conclude, not only did the research shift my initial approach to my graduation project but also directly influenced the concept and spatial and participatory aspects of the design.

## 02 THE RELATIONSHIP BETWEEN THE THEME OF THE GRADUATION LAB AND THE SUBJECT CHOSEN BY THE STUDENT

---

The subject chosen was based on my largely practical research during my previous semester in BuckyLab. While originally developed for Explore Lab, upon suggestion of Marcel Bilow I considered Architectural Engineering for my graduation project as the core idea of aE, as well as the offered freedom fitted my subject well, offering a sensible framework. However, while I considered my subject to be based around the aspect of product development and the product's application in architecture, I would have positioned myself within the 'make' sub-studio of the graduation studio. Yet, based on the way I told my story I was advised to follow the 'flow' track. Retrospectively speaking I appreciate the recommendation and my choice of following it and am confident, that this enriched the concept of my project in its wider spatial and social context.

But I do feel very much that the subject is about both flow and make. 'Make' in the sense of product development but also in a sense of finding practical solutions for the application and more so storage of the elements and waste/raw materials and 'flow' in the wider context of fitting the production into a domain of a

closed looped waste circle.

The project proposal was generally written for the Asian context. The focus on Indonesia in particular though was influenced by long term research undertaken by the studio and in particular by Mo Smit into Bandung, Java. This offered several opportunities of direct contact that had been established throughout the previous years of research and provided extensive conversation opportunities to gain a clearer understanding of the culture and kampung internal organisation.

### 03 THE RELATIONSHIP BETWEEN THE METHODOLOGICAL LINE OF APPROACH OF THE GRADUATION LAB AND THE METHOD CHOSEN BY THE STUDENT

---

The graduation lab of the 'Architectural Engineering' studio is split into two distinct parts:

- 1) extensive research
- 2) design

Individually, I like to approach my design projects in a similar way, however usually the two parts tend to merge a little earlier than they do within the planning of the studio. Practically however I appreciated the intensive focus on the research in all aspects of the context and fascination in the first semester without too much consideration to design solutions. This opened up a much more fact based and practical basis for the initial design discussions without being influenced by stylistic or visual preferences of me as the designer. The shift from research to design after the P2 phase proofed slightly more difficult then expected though as the very specific flow research was largely conceptual and not attached to any physical expression other than layout options.

Personally, I was also struggling with undertaking research in a context that I had not previously experienced in any matter (not having been to

Asia before). Literature study could only take me so far and was not able to give me a clear understanding of the context but in the first month before the field trip served more as a preparatory measure for the actual on site field investigation. For the special context of Indonesia I would have preferred an earlier field trip to be able to make the most of the research period rather than using this to a large degree for 'basic' investigation.

Yet, the research and methodology plan as developed with my research tutor Jan Jongert proofed a helpful guidance for the trip and subsequent weeks. So did the chosen focus on waste flows as first part of the research accompanied with waste material case study research as second part.

## 04 THE RELATIONSHIP BETWEEN THE PROJECT AND THE WIDER SOCIAL CONTEXT

---

opposite page: fig 1. Research map (own image, 2017)

I entered the studio with the ambition of improving waste management by coming closer towards a closed loop of recycling and to change the stigma of waste as useless, unwanted and unattractive.

The context of a poor kampung such as Cigondewah shifted my focus more towards the flows of waste and towards finding solutions to cater for waste collection, sorting and recycling. During the field investigation interviews with local inhabitants made it very clear that there is a growing wish of the community to deal with waste in a more appropriate way after experiencing health issues such as rashes. It became also apparent though that the community is struggling to set up any sort of waste management due to a lack of knowledge with regard to recycling but also due to a lack of space. Furthermore, a small group of very poor inhabitants (even for the kampung) did not see enough of a health benefit in potential recycling in comparison to the effort to dispose of waste in an appropriate manner. This is where the waste bank will play a larger role, encouraging locals to recycle as part of additional income. Furthermore, it is expected that with time peer pressure supported by good role

models will help to engage everyone as social/community based perception is of increased importance within the kampung. During the field trip a first start into recycling and re-using by community members was noticeable.

Given the context a low-tech solution was the most appropriate ultimately resulting in simpler waste products based on their production, than what I would have designed for a western context. The produced elements are ultimately meant to support the densification and to offer a cost-efficient alternative to construction materials for the community, while simultaneously clearing the environment of pollution before the problem multiplies in the coming years with growing population rates.

