

WORKS+WORDS 2019

Surplus Paper

- experiments with leftover material from production of rattan furniture in Indonesia.

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This project focuses on how engaging in waste material from rattan production in Cirebon, Indonesia can offer new possibilities in exploring weaving techniques and experiment and develop the material into a new language of tactility, textures and rhythm. Also, the possibility of making new products from leftover materials that can provide new jobs for the people in area.

In present global reality, companies from the 'developed' countries have out-sourced much of the basic production to countries with lower payroll costs, that have an abundance of raw materials, modern factories and an able handed workforce. In Indonesia the production of rattan furniture is one of the largest in the world. While bamboo material is available elsewhere and also needs an advanced technology in processing, about 85 % of the world's rattan production comes from Indonesia and there is an officially signed ministerial decree banning the export of rattan raw materials which means that the production must take place within the boundaries of the country.

Rattan is a climbing palm that grows as a vine in the rainforest. The vines creep up the trees from the bottom of the forest and have been known to grow up to hundreds of meters long. Rattan grows naturally without disturbing the existing structure and balance in the rainforest while at the same time cleaning the air by transforming CO₂ into clean air.

There is a common misconception that rattan furniture is made of bamboo. There is quite a big difference between rattan and bamboo although they look similar on the surface. Rattan stems

are solid whereas bamboo stems are hollow. This means that if the material is bent into shape, it is rattan. Unlike bamboo, rattan furniture is extremely hardwearing and can last for generations. As rattan grows by climbing the trees in the rainforest, it is important to preserve the trees in order to preserve the rattan production. This means that rattan indirectly helps to preserve the rainforest in Indonesia. It is the fastest growing tropical wood and it regenerates in 5-7 years. The production of the furniture is low tech and does not require production facilities that pollute the environment. But rattan has a bad reputation for being cheap material that easily breaks, an image formed because of the many low-quality rattan products flooding the market. Another problem is that there are a lot of leftover materials from the production.

Indonesia, because of low salaries has until now had no interest or need to improve the production or to reuse the leftover materials from furniture production, but the global factory changes all the time its geographical site and when salaries rise, Indonesia may lose its place in the market. But also, another factor is interesting; if Indonesia can improve their design products and export and sell them to Europe and North America as high-end design products they can really increase their income and ensure jobs for workers and communities.

The outsourcing of production as mentioned earlier has a serious implication; a negative consequence for the education of designers, since their education will eventually lose vital knowledge and close contact with materials and production methodologies. Through outsourcing, 'we' are actually losing our craft. We can, however, empower 'them' by engaging designers with rural/local crafts. This is not unlike the division between craft, workmanship and design already in place as defined by Risatti (Risatti, 2007, p.162 - 181). But it spans today over cultural and linguistic barriers to a much greater extent than before. According to Risatti, (Risatti, 2007, p. 166), the notion of design implies separation of the process of form giving from that of making, which makes for a kind of Cartesian split of mind from matter. In consequence of this division of design from making, design education will, for a large part, eventually lose that vital knowledge which can only be obtained from direct material engagement. As we think through things separating design from making will deprive designers of vital thinking.

An important part of designing is knowing the performance and properties of materials and how they react to processing. Kenya Hara states; 'when technology changes the structure of our world,

the aesthetic values that have accumulated in our environment are often victimized ' - (Kenya Hara, 2007, p. 410) The world pushes forward in terms of technology and economy and these changes also affects where in the world certain things are produced. Our long nurtured aesthetic sense of material tactility is closely linked to a short distance between designer and production. Another implication is the fact that in the last decade central themes amongst designers and design researchers such as 'design thinking', 'the extended notion of design' and user-oriented methods have taken the headlines from some of the designers more silent virtues; the knowledge of making, questions about form and the close and intense contact with materials and production. Design as a concept is undergoing radical changes and is losing its close relation to art and design of physical objects, and instead becoming a generic tool for the creation of new ideas, strategies and innovation. This change has affected educational structures and teaching focus and to some extent at the expense of the designer's core competence; Giving form. International design research conferences and national political strategies have focused on how design can improve and develop our society. The conception of the notion has changed radically and includes e.g. the conception of strategies and services, work modes like co-creation and design-thinking and even scientific inquiries, evidence-based design and transformation design. That is all very fine, but we still need to teach the students the close relation between the mind the eye and the hand if we still want to produce beautiful design objects. (de Gier, Overby & Holmsted Olesen, 2013) Another competency you can acquire from a designer is the ability to read a production site; by seeing the machines, the materials and the capacity; a good designer should be able to suggest new products for a company.

We visited a factory in Cirebon, Indonesia producing low cost rattan furniture for IKEA.

The company had a fairly strict agreement with IKEA, which visited the factory on a monthly basis to check if the production site was legal and that no people under the age of 18 were working at the site. They were always looking for improvements and IKEA were very keen on using the surplus material from the rattan production. So, the owners told us that they wanted to do something about this and we decided to engage with the material and made a series of experiments looking into the performance and properties of the materials and how they would

react to processing in a context of textile techniques and weaving. We also wanted to see if it was possible to create a high-end product that could be sold in Europe.

The exhibition material is characterized by studies and experiments with the new possibilities the surplus material offers. Due to the rigid and brittle fiber structure of rattan, the material works both functionally and aesthetically in a different way from traditional weaving materials.

It has been our wish to demonstrate how the surplus material has the potential to be re-introduced into production and provide new opportunities. All the materials are plant-based and are locally available. Rattan, cotton, flax and reused cotton have been used.

We conducted a series of tests and we first examined the stiffness and brittleness of the material through a series of smaller weave and braid samples. It was important to inquire about the properties of the material and find the most appropriate way to apply it. The material is very uneven, and precisely by letting the imprecise appearance of the rattan meet the precision of the spun thread, we thought something interesting could arise.

The company Findora stated that they had some finishing work when the rattan was used in braided designs; Fibers stuck out from the material and they had to burn them off after the braid was completed. We wanted to apply the material as it was and to its given terms.

We found that precisely the combination of the soft fabrics and the hard rattan gave a contrast in the meeting and gave the material a structural stiffness which at the same time gave good bearing capacity. The woven pieces achieved great rigidity in one direction and great flexibility in the other. We have been curious to see in what context the woven fabric can be used, and found that it also has qualities in hanging, and thereby diffusing the light.

The work contributes to ongoing discussions about how we make the best use of our resources and to waste as little as possible in industrial production by addressing how we can use surplus materials from rattan production and achieve products with new artistic values. In that sense it refers to UN goal #12; Responsible consumption and production.

Furthermore, it points out how designers can add value to a production and make products for high-end markets out of waste from production for lower end of market.

The work is still in progress and we are continuing to experiment with weaving tests, different techniques, mixing the material with other materials etc. We are also planning to go to Indonesia to implement our ideas in the production.

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