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Designing Sustainability for All

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Rethinking and Reconstituted materials for a sustainable future

"Reconstituting-Plan" Project as an Example

Rubbish and wastes are transferred to raw materials

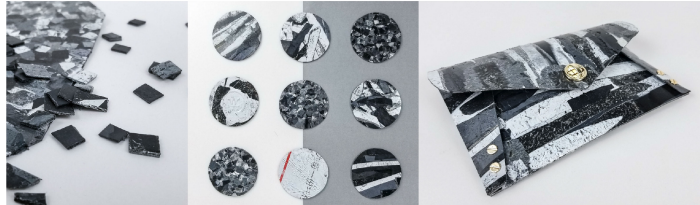
In the sixties of the last century, the U.S. Urban sociologist Jane · Jacobs put forward the urban assumption as the future mine, he thought that resources can be extracted from the limited natural resources, lots of required raw materials can be exploited from the urban rubbish. Rubbish and waste are the knotty problem for specialists and us, but it may be a "treasure" for designers. Designers collect alternative raw materials of products from industries, life rubbish and wastes, compared with the limited and expensive traditional raw materials, the wastes and rubbish are abundant and cheap. Therefore, brands and manufacturers also district their eyes to the family rubbishes and industrial wastes, and study how to transform their innovation to new raw materials, the measure is guiding us towards the future. "waste should simply not exist... waste is a resource."

RePlastic

"Reconstituting-Plan" is the design practice project formed by RePlastic and BioPlastic, on the one hand, it recombines new products by the household wastes, on the other hand, it tries to produce the organic bioplastic by new formula and food wastes.

Plastic is a kind of valuable resource, however, the identity of plastic is very contradictory in the real life: we covet its convenience; but hate its pollution. In theory, every plastic product can be recycled and reused, RePlastic project pays attention to the waste plastic rubbishes in life, and transfers them to "new raw materials" by recycling, then it plays the secondary value of "waste plastics". The project mainly pays attention to the disposable plastic rubbish in life, such as PET bottle (PE), express package (PE), tubularis (PP), it looks for the processing methods of every kind of rubbish and wastes by the material recombination experiment, and designs and produces the materials and products with aesthetic value, such as bulk materials, sheet materials and products without visual sense and tactile sense effects.

In recent years, with the flourishing development of Internet economy, on-line shopping replaces with the traditional shopping form gradually, and becomes the main form of domestic shopping, which causes that the domestic express and logistic industries develop rapidly, and with it come the pollution issues of express plastic package and express accessories. The RePlastic project also put forward the feasible scheme to the express plastic package (main ingredient is PE). It fulfills to recycle the waste express plastic, endows a brand new life for it after the material recombination experiment. Exactly as "urban mine" theory, it is a brand new resource, which can be transferred to a new product by simple processing, and it can be reused after the product cycle ends. RePlastic is a part of "Reconstituting-Plan", which tries to establish a complete system, including material recombination, test analysis, productization and re-waste.



BioPlastic

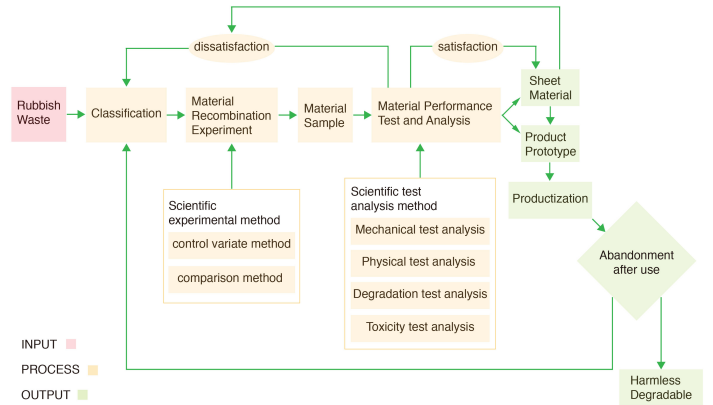
Organic bioplastic is the alternative plastic material from the regenerative biomass resource, it is not the actual plastic, but a material which has the plastic property, such as from vegetable oil, starch or microbiota, the production methods of bioplastic are various, BioPlastic part of the practice project is trying to produce organic bioplastic by food wastes actively, it can produce the alternative material for the fossil plastic currently and put forward the more and possible resolution and design practice.

BioPlastic project mainly pay attention to the edible wastes and scrap materials in life, such as nut shell, all kinds of egg shell and garden stuff, it is enlightened by the molecule cuisine, looks for feasible preparation methods by the different prescriptions and proportion of material recombination experiment, finally the organic bioplastic with the fossil plastic characteristic can be obtained. And it designs to produce the bulk materials, sheet materials and products with the aesthetic value but without visual sense and tactile sense effect.



Method

The overall method model of "Reconstituting-Plan" project, as is shown in Figure: it is mainly composed of three main processes, rubbish and waste input stage, material recombination and recycling stage, and new material and product output stage.



The material recombination and remade stage is the second stage in the whole model, which is the core method of "Reconstituting-Plan" project. Including four main parts, classification, material recombination experiment, material sample and material performance test and analysis, firstly, obtain the material sample by the material recombination experiment; then take the performance test and analysis on material samples, including tests and analysis on material mechanics, physics, degradation and poison; if the material sample passes the step, it can enter in the final product output stage, if the material sample is inadequate in the test analysis stage or it can not meet the productization demand, return back to the material recombination experiment again, adjust the detailed configuration method of material recombination again, enter the final product output stage after the material samples meet all the tests and analysis. The product output stage is the third stage of the whole, the strict second stage (material recombination and recycling stage) shall be passed before entering in the stage, but if the inadequate productization demand issues are still found in the bulk material, sheet material output or product prototype stage, return to the second stage again and adjust from the material recombination experiment. The third stage is not only production and manufacture, but also to pay attention to the issues of new materials or new products after using up the wastes, all the RePlastic project outputs in "Reconstituting-Plan" can flow backward the front end, and become "raw materials" again upon simple classification; however, the output in BioPlastic project can be decomposed harmlessly and naturally, the following researches of harmless decomposition still continue at present, the model is a kind of ideal "cradle to cradle" systematic design process.



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