

URBAN MINE AS CRAFT MATERIAL: POTENTIAL USE OF WASTES AS GLAZE COLORANTS

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ABSTRACT

This research examines the potential use of urban wastes as glaze colorant in the context of ceramic art to explore cultural value of waste beyond the scope of simple efficiency of material recycle.

INTRODUCTION

Nowadays there are little products in our living environment consisting of only single material. According to "The Toaster Project" by Thomas Thwaites, even a toaster that looks like the simplest home electronics contains more than one hundred different types of materials. In present-day social structure based on mass production and consumption emit copious amounts of these complex industrial products as wastes.

Such wastes are "amalgams" that is mixed up various materials inseparably: metals, plastics, woods, and glasses. These complex amalgam-like wastes are hard to disassemble and cost a lot to recycle materials inside. In other words, the more complex wastes will be, the more valueless it will be in terms of material recycle efficiency.

But when we see such "amalgams" as craft materials, it would appear that these complex elemental compositions contain alternative value.

In comparison with other design domains, craft can be characterized by its material-centric process. Generally speaking, designer make a choice in materials responding to what they want to make. On the other hand, craftsman make the final form from properties of materials in their hands; it is some kind of back calculation process when it is compared to general design process.

From the viewpoint of such craft production process, if we use today's wastes as craft materials, its amalgam-like complexities can be converted into unanticipated and inspirational effect for the final form of craft

pieces—the "rich noise" of urban craft materials. In other words, the more complex urban wastes will be, the more inspirational it can be as craft material.

Looking at urban mines with the perspective of craft artisan, there emerges the potential use of waste as inspirational materials that produce high-value-added material up-cycling.

RELATED RESEARCH

An imagination utilizing wastes as design materials itself is not novel; on the contrary, there are a number of attempts. As the most typical example, there is the domain so-called "Creative reuse".

There is a similarity between creative reuse and our research in the design process itself that start from industrial wastes. However, generally such a creative reuse projects remain at the level of recycling shape or representational value of wastes as a decoration. The materiality of the waste (In other words, the elemental composition that makes up the waste) does not matter much for creative reuse.

The biggest theme of this project is extracting an aesthetic possibility from "amalgams" crystalized as wastes and "rich noise" that the materials contain.

METHOD

On the basis of perspectives previously described, we make ceramic vessels using the broken or lost-function commodities got from clients as a material of the glaze.

Specifically, objects got from clients is powdered in whole, and mixed into clear or white color base-glaze as a colorant. Giving stoneware vessels coats of the glaze, and firing with 1200C high temperature, there emerges unique color and matiere as a result of the color reaction of various minerals contained within the object.

WORKS

As a typical example, when we crash the entire iPhone handset into powder and blends it into calcium based clear glaze, there emerges bright cobalt-blue color on the surface of the vessel. The reaction is mainly due to

the cobalt oxide contained within anode plate of lithium-ion battery of iPhone.



Figure 1: iPhone4 and the vessel using it as glaze colorant.

In other instances, when we use antiquated children's accessory as colorant there emerges bright green color reaction. It is assumed to be due to chrome oxide contained in the accessory.



Figure 2: Children's accessory and the vessel using it as glaze colorant.

Alternatively, when we use rusty military canteen as colorant there emerges gray color with crystalline yellow blob.

The canteen is suspected of consisting of aluminium alloy mainly. Theoretically, aluminium itself does not have efficiency as colorant but it is estimated that bare other metals contained in aluminium alloy make color reaction in the glaze.



Figure 3: Military canteen and the vessel using it as glaze colorant.

In any of these cases, there emerged unique color reactions that couldn't predict from colors of the pre-fired objects. Additionally the glaze color emerged contains complex matiere that can not generate from a single purified colorant because objects are "amalgams" consisting of various minerals.

EXHIBITION

In addition to three cases described above, we made about thirty vessels using wastes as glaze colorant.

In time of exhibition, we choose 5~10 vessels and juxtapose vessels with photographs of original objects.



Figure 4: Look of exhibition.

CONCLUSION

In narrow sense, this research explored the potentiality of the urban mine as new inspirational source in the context of craft, especially ceramic art. In the existing domain of craft, field of material procurement is restricted to natural environments. However, considering today's an extreme amount of material flow in urban field based on mass production and consumption, there ought to emerge new perspective of craft utilizing not only natural materials but also artificial amalgams equally.

In broader sense, the challenge of this research can be interpreted as designing new possibility of material ecology in today's social structure. When we see complex urban amalgams with just technological perspective, it has little value because of difficulty of disassembling and higher cost to recycling, but once we see such amalgams with the perspectives of craft, there emerge alternative potential value for humanity— aesthetic and cultural value of wastes differing from simple recycle effectiveness.

Bringing out aesthetic values from minerals crystallized as valueless wastes through the process of firing, there emerge possibilities of new ecology of design, material, and economy.

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