

Sustainable Innovation of Glass Design and Craft

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Barely any research has been made into the implementation of sustainable principles in glass design and craft. A common tendency among students and practitioners is to consider it problematic if not impossible to develop a “truly sustainable practice”. Generally glass crafts people and glass designers aim to explore new aesthetic possibilities for the material and see sustainability as a hindrance for aesthetic freedom.

On the contrary the field of design has strong and growing emphasis on sustainable development. Fry (2009) argues that what he defines as sustain-ability is not an end goal but an ongoing process of re-directing the way we design our world and thereby our future. This approach along with further research into sustainable development within the field of design and combined with material specific methodologies may reveal new possibilities for sustainable as well as aesthetic innovation within the creative practices of glass design and craft.

The paper will consist of an exploration of how introduction of sustainable principles may serve as a catalyst for aesthetic innovation in a process of experimentation with materials end techniques. A workshop for students of glass at The Royal Danish Academy of Fine Arts, School of Design, Bornholm, where new glass was replaced with recycled glass will provide the empirical foundation for a discussion and analysis of the issue.

Background

For more than 5000 years glass has been utilized by humans in numerous ways ranging from spacecraft windows to beads. Glass is a natural material and can be found in nature in the form of i.e. obsidian and fulgurites. Glass in itself does not impact the environment negatively, but mining and transportation of raw materials and production of new glass products contributes to CO₂ emission. Therefore, reduction of production and transportation of new glass is desirable (Environmental Protection Agency, 2012), and can be realized by recycling glass, that has already been manufactured, used and collected for recycling, but has ended up in landfills due to the market mechanisms that allow manufacturing companies to buy raw materials at a lower price than it would cost to prepare collected glass for recycling.

The sustainable impact of recycling is evident. According to Waste Online (2011) statistics show that:

- by mixing shards (recycled glass) in the batch (virgin materials) a reduction of the energy consumption for melting the glass can be obtained, resulting in a reduction of the CO₂ emission of approximately 315 kg per ton glass
- for each ton of shards that is recycled into the glass batch 1.2 tons of virgin materials are replaced
- by recycling the glass, clinker production from burning waste and deposition of glass is reduced

Today glass production predominantly consists of window glass, glass wool for insulation and containers such as bottles and jelly jars. Glass craft and design hold only a fraction of the market. Still there is reason to believe that generation and implementation of new knowledge about sustainability in the fields of glass craft and design is desirable since these fields according to Friedman (2004) influence trends in the patterns of consumption, through what is defined as the trickle-down effect.