

Studio Anne Holtrop

ETH Zürich

design studio

FS20



MATERIAL GESTURE:

Weaving and Bonding

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We currently live in a geological age called the Anthropocene Epoch, in which humans are the primary cause of permanent planetary change. Our interest in the Anthropocene Epoch centres around the invention of materials that did not exist before as they cannot be found in nature. For this semester, we focus on man-made materials that are synthesized from naturally found oil.

The development of synthetic materials, commonly misunderstood as plastics, began alongside the production of oil as a fuel. In 1907, Bakelite, the first truly synthetic plastic, was invented. marketed as “the material of a thousand uses,” Bakelite could be shaped or molded into almost anything.

After the Second World War, many architectural experiments were conducted, fully embracing the new materials and their possibilities. In 1956, Alison and Peter Smithson made a complete plastic interior for their House of the Future. In the movie *The Touchables* (1968), a large transparent pneumatic dome featured as the house of a rock star. In the late 1960s, the Finnish architect, Matti Suuronen, made the Futuro, which could be ordered anywhere in the world as a weekend house.

The first plastic age in architecture ended with the oil crisis in 1973. Nowadays, plastics are still used in almost every aspect of our consumption and have become a huge problem in recycling. A large portion cannot be recycled and sinks back into our earth. Geologists have identified new kinds of stone, known as plastiglomerates. The veins in these rocks are not formed by metal or quartz, but with plastic.

In building construction today, we see plastics and bonding materials in many applications. They are in MEP installations, in all kinds of foils, in glues as bonding materials, or composite boards in window and door frames, and in sheet materials, to name a few. However, unlike in the ‘50s–‘70s period, synthetic materials are less embraced and researched as being a significant defining element of architecture.

The aim of this studio semester is to rethink the applications of plastics with the knowledge of contemporary research done in advanced synthetic textiles, composites and bonding materials. We will engage with research conducted at the ETH, such as Mariana Popescu’s on pre-stressed fabric formwork principles. We will visit companies such as EMPA, Oerlikon and 3M in Switzerland, that are focused on advanced fibers, polymer processing, and adhesive materials and foils, respectively.

Through the theory of Gottfried Semper, we will look back at textiles in the pre-oil era, which were used as a bonding material to string and bind, and as woven material to cover, to protect and to enclose.

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