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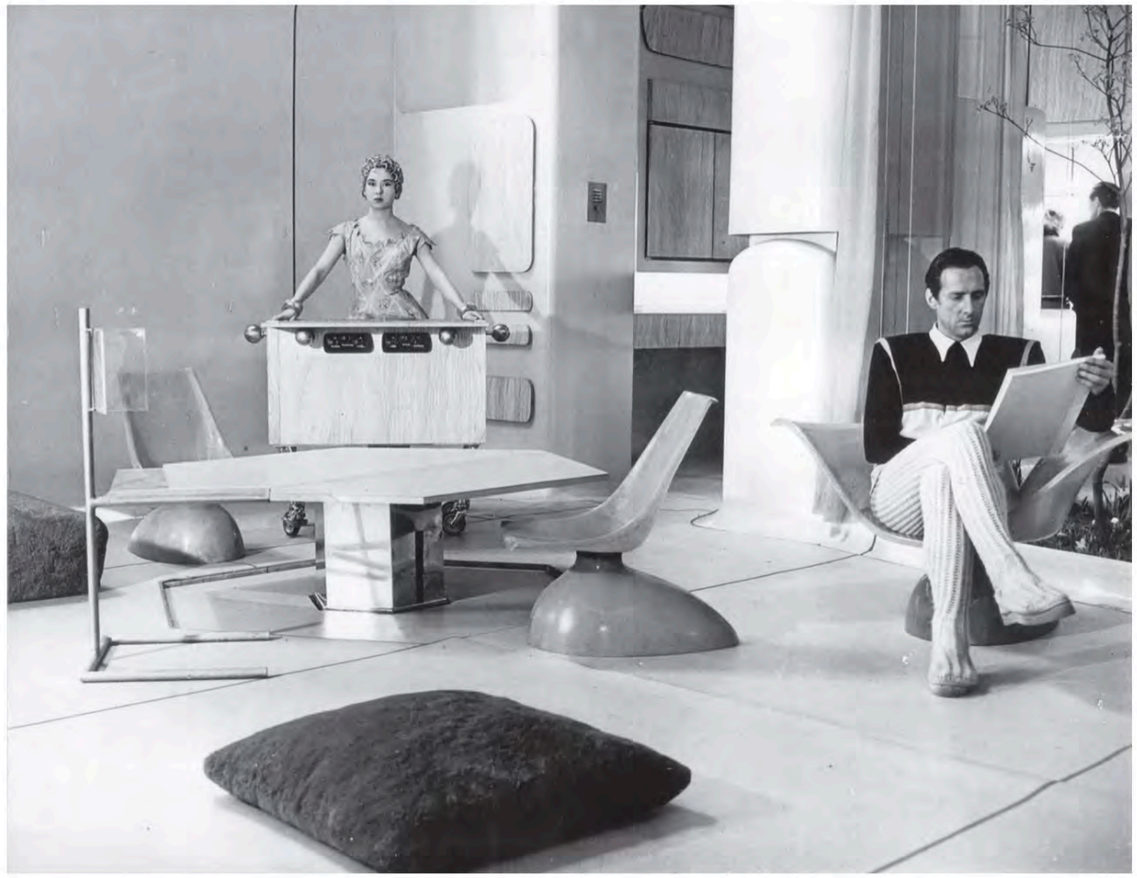
Photo by CSIRO

MATERIAL GESTURE:

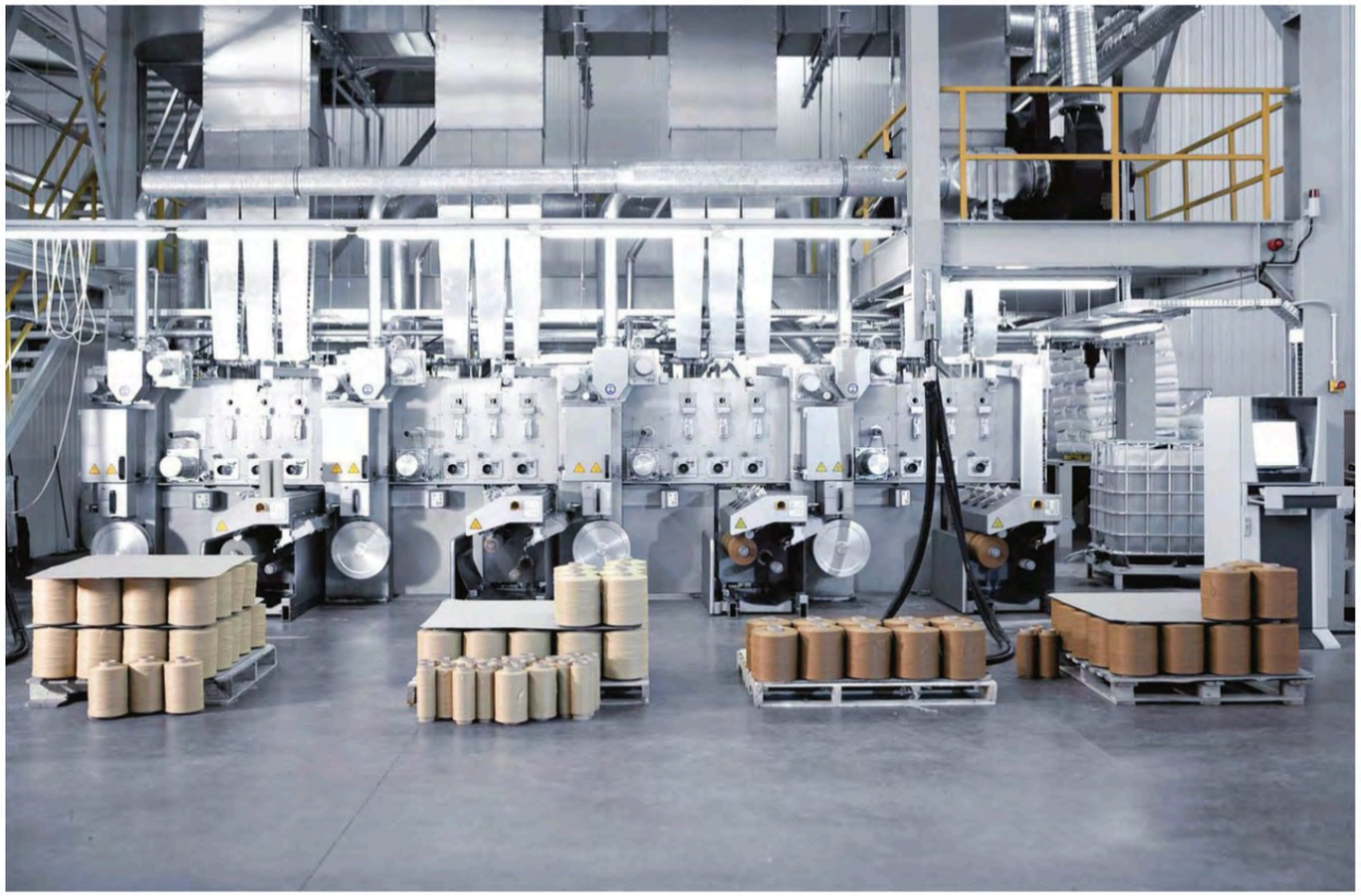
Weaving and Bonding

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.



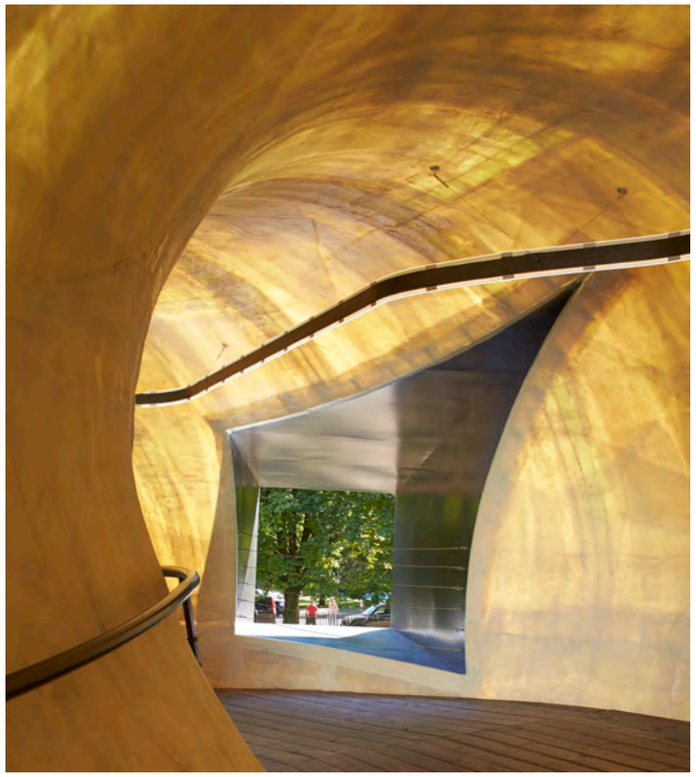
In 1956, a plastic house designed by Alison and Peter Smithson was exhibited at the Ideal Home Exhibition in London. This house, although largely a mock-up and containing a rather large number of space-age gadgets and fashions, demonstrated some of the first examples of GRP(glass-fibre reinforced plastic) shell chairs, in both saddle and petal form, and also 'Pogo' fold-flat chairs in transparent acrylic. The construction was never intended to be fully industrialized, as the design was an examination of the way in which we might live rather than of the means whereby that end might be attained. This was also a most under-rated design which might well have generated further exercises into ways of living.

Geologist have conducted a study on a new type of stone ‘Plastiglomerate.’ The study points to how the Anthropocene Era is leading to the formation of new manmade minerals. It consists of a mix of molten plastic debris and beach sediment, including sand, wood, and rock.



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. Unlike in the ‘50s – ‘70s period, synthetic materials are less embraced and researched as being a significant defining element of architecture.

We will visit companies such as EMPA and 3M in Switzerland, that are focused on advanced fibers, polymer processing, and adhesive materials and foils, respectively.



SERPENTINE PAVILION

Smilijan Radić
London, 2014

The pavilion, a glass-fibre reinforced plastic (GRP) shell resting on large quarry stones, was inspired by a papier mâché model which Radić created four years earlier. GRP is more commonly used in boatbuilding. A seemingly impossibly thin translucent shell of 12mm gives the sensation that the entire volume is floating. During the evening hours, the amber tinted light glows from inside.

ETH RESEARCH FOR A KNITTING STAY-IN PLACE FORMORK

Mariana Popescu from Block Research Group at the ETH conducted research on developing a novel type of formwork for concrete based on pre-stressed fabric formwork principles. It aims at creating geometries that are fabricated in one piece by knitting technical fibres, which could ultimately be used as reinforcement for concrete.

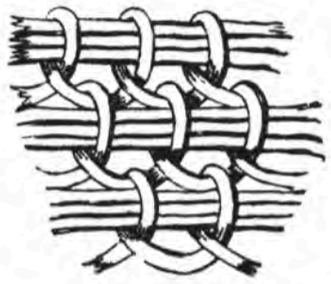


Fig. 1

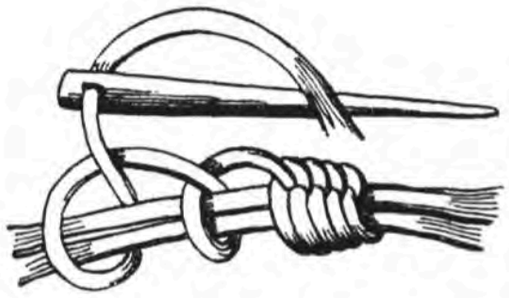


Fig. 2

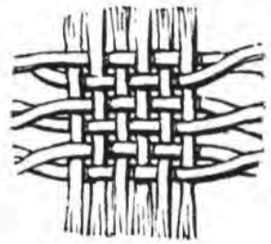


Fig. 3

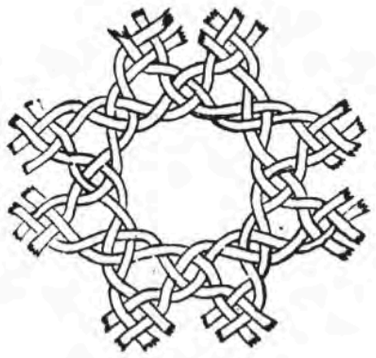


Fig. 4

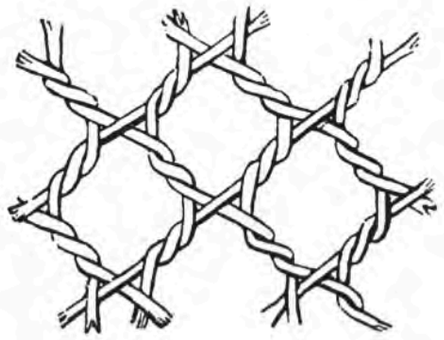


Fig. 5

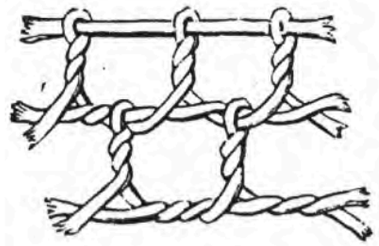


Fig. 6

Fig. 7

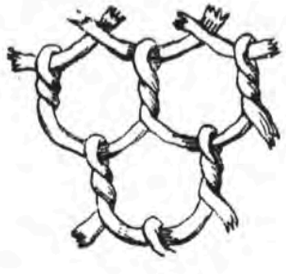


Fig. 8

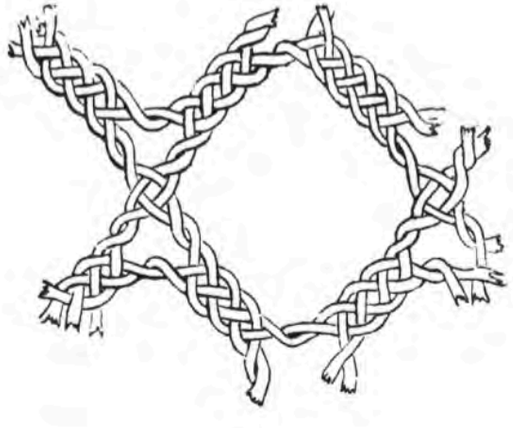


Fig. 9

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.