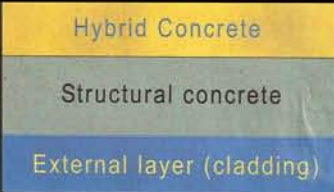


GC013 implicit performance - current living

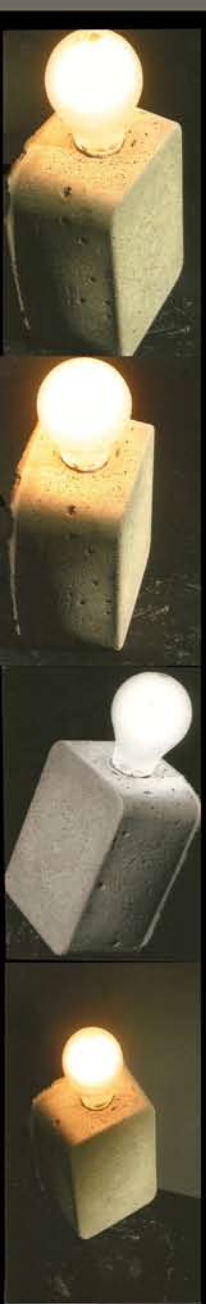
1. Adding electrically conductive elements to a regular concrete mix to provide a conductive capacity to provide thermal and electrical properties. Harnessing the potential of concrete as a "skin" to be manipulated. i.e In this case providing a thermal capacity, or applying current through it to create a light source



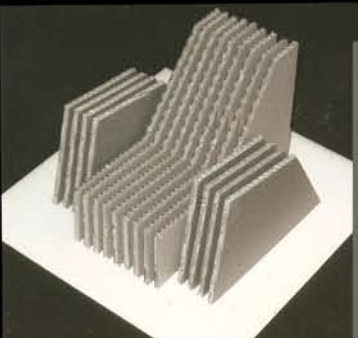
2. Possibility of the development of this technology to be harnessed in all new builds involving exposed concrete surfaces - the technology could remove the need for installation of separate under floor heating systems, externalised radiators and even wired light fittings

3. Electrical conductivity can be embraced in the form of a thin layer used to provide adequate power for lighting systems, which would be introduced at the casting stage either pre-cast or in-situ. The mix may be different to provide thermal capacity, but this could be laid as a slab/screed to allow for heating benefit. The conductive concrete can be connected to mains power, and thus a reliable light source can be obtained

Cement + sand + water + coke breeze = Conductive concrete mix



4. The energy transmitted by the free electrons travelling through the charged concrete is changed from kinetic energy to the form of thermal energy when it bombards the concrete molecules. This thermal energy is stored by the concrete mass and thus it heats any connected space by radiation/convection



5. The inherent resistivity of concrete, which is an insulator in an unmodified dried state, is such that it may be possible to overcome this by providing a skim coat of plaster to the conductive surface, while still allowing for thermal energy to pass through.

6. The production of our hybrid adds no more to the embedded energy cost of the production of normal concrete, as the component added to provide conductive capacity is a waste by product of the steel manufacturing industry. Coke breeze is normally landfilled, and using it in this way provides opportunity to turn waste material into a new and exciting technology