

Sustainable Innovation 2010

A review of Neolithic manufacturing and how materials and processes may be integrated into contemporary products.

Lee Hall.

Stephen Stanforth.

Ceri Thomas.

There were many prehistoric materials adopted by our predecessors; these materials existed before the Iron Age and our current Petrochemical Age. This study looks at our history and defines the Organic Age by the materials utilised in product manufacture. A timeline of major historical periods is presented mapped with materials and the factors which negated material suitability are identified and examined. Whilst the evidence, in terms of product exemplars, is scarce, records of the practices and materials are still preserved in ethno-archeological archives. A number of these materials became obsolete when key historical developments rendered them redundant. However, given the current necessity for more sustainable opportunities, can these early materials offer insights to today's mass production markets? Considering Neolithic product media in relation to modern techniques and demands requires scaling in terms of volume and economics. A formalized method has been adopted to level the societal demand against silvicultural capabilities. This paper reviews this method and its development, use and wider applications in using organic materials in a modern context. The study also includes a rating of organic materials, lingo-cellulosic composites and naturally occurring polymers for suitability in today's product manufacturing environments. This rating is applied in terms of space and food crop requirements, to product material crop balances and an initial study of how the use of such materials shape both the economic and social structure we have built around petrochemical polymer and metals industries.