

The main objective of this research is to store the energies embedded in building materials in an appropriate database, so that policy decisions can be made regarding alternatives. Any building material can have many components which are other materials) and also be a part of a higher level material. The energy in a building material will in general comprise production energy, energy to transport its component materials and the energy embedded in those materials. All these energies can also be classified according to input energy type as biomass, fossil fuel and electrical energy.

There are three tables, namely Data, Samples and Relations, that are used to structure the data in a relational database. The final energies of all the materials is stored in the Data Table. The calculation can be based on average, maximum or minimum energies. The Samples Table relates the material described in the Data Table to the various samples that are available. The Relations Table defines the component parts of each sample. There are many relationships between the Data and Sample Tables and between the Samples and Relations Tables.

A typical output from the database is that 10m<sup>2</sup> of brick work has an average energy of 9731 MJ (range of 6210 -11610 MJ). Of this, the energy embedded in the actual bricks is by far the greatest, having an average energy of 8912 MJ (range of 5482 – 10701 MJ). This large energy in the bricks is made up largely of biomass energy input (8827 MJ).