

LIGHT EARTH WALLS

Light-earth is a hybrid walling method using mud and straw. A clay slurry is mixed with chopped straw to form bricks or poured walls. Light-earth walls have extremely low embodied energy and are a very environmentally sustainable kind of walling for dwellings.

Light-earth has higher insulative values and much less weight than mud brick walls. It is also less in width than a strawbale wall and uses only loose dry straw rather than selected compact bales.

Light-earth construction has been used in Europe for over 400 years but it is rarely seen in Australia. It is primarily used as a non-load bearing wall system, requiring a post and beam frame, which should be erected and roofed to protect the light-earth walls from wet weather as they are constructed. The walls must be rendered or clad externally for weatherproofing.

Like all earth building methods the 'light-earth' system is labour intensive. The excavated clay soil is sived before mixing it with dry straw and water in a cement mixer (or stirred to soak in an old bathtub overnight) to ensure that all the straw is fully coated with clay. The ratio of straw to mud will vary according to the clay content of the soil used.

The clay-straw mix is gently tamped into moulds and left to sit for a few minutes before the moulds are removed (bricks are left to harden). Poured walls are constructed between form boards which are raised as the wall rises.

Light-earth walling has balanced mass and insulative properties with a density of 500-800kg/cubm (weight of 10-12kgs for a 400x250x200mm high block). Insulation value of wall is R1.5-2.0.

A lime/earth based render is preferable as an external coating to the breathable light-earth walls.

Light-earth is a low-cost, light-weight wall system which is simple to construct and extremely environmentally sustainable. Contact Jack Metcalf, building consultant, at www.jmetcalf.net for more information.