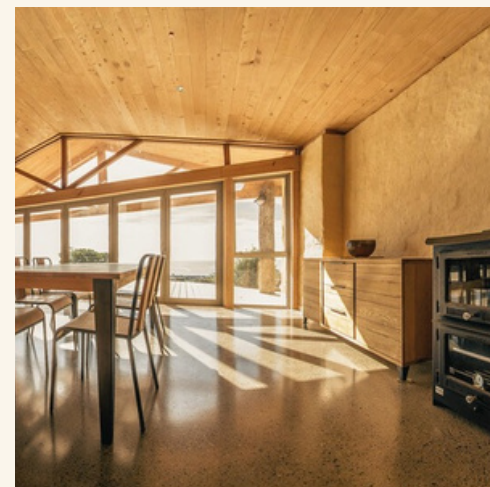
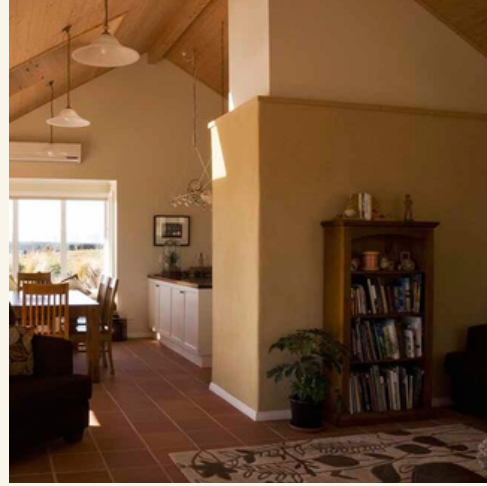
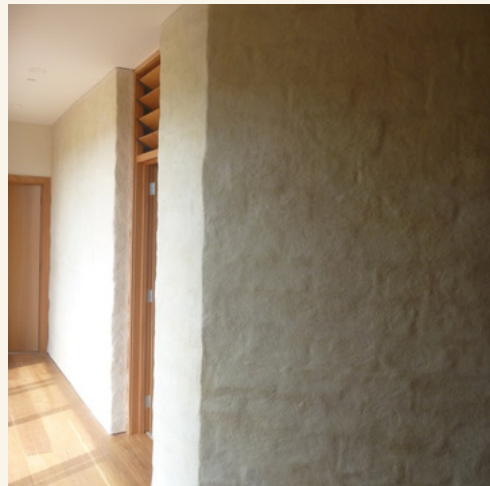
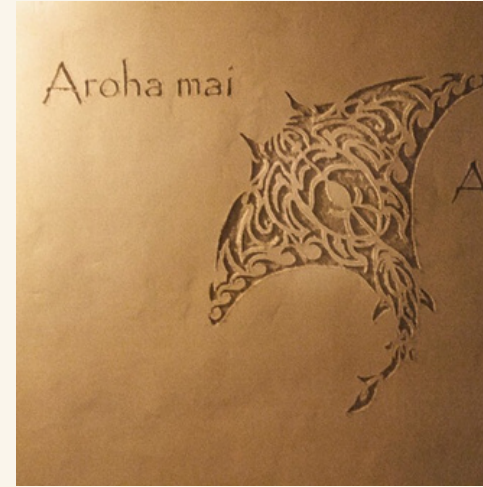
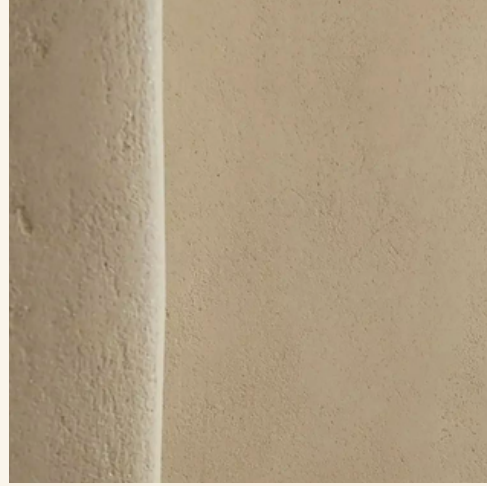


Retrofitting Earth

THERMAL & ACOUSTIC COMFORT

**SOLID
EARTH**



THERMAL

Raw, unfired earth has excellent thermal mass properties, with high specific heat capacity and a dynamic rate of change, allowing it to help buffer temperature fluctuations and maintain an even temperature within spaces without the need for additional energy. Thermal comfort is ranked as one of the highest contributing factors influencing overall human satisfaction in buildings.

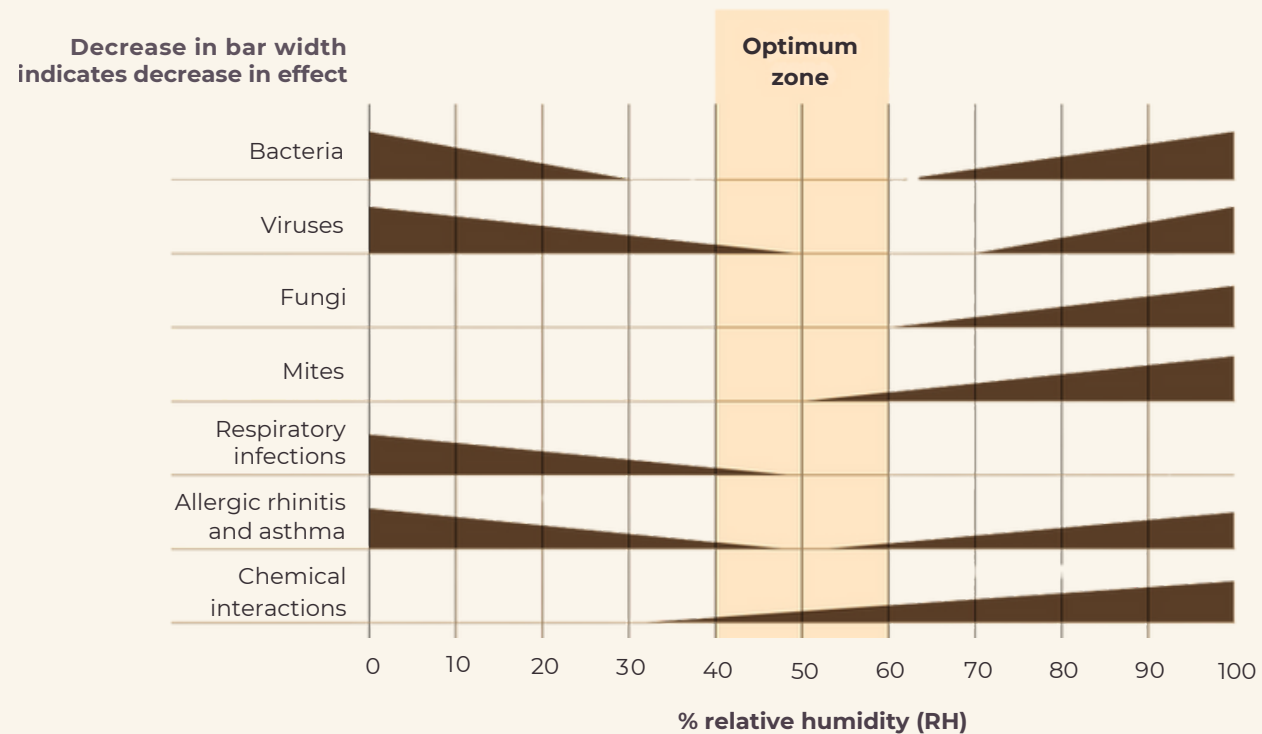
Locally sourced earth has a very low carbon footprint and environmental impact, which sets it apart from other commonly used thermal mass materials.

ACOUSTIC

Solid earthen materials help absorb and dampen sound within a space, and reduces the transfer of sound between spaces to create calm and harmonious interiors. Earthen bricks have been used in music studios because of their good acoustic performance.

Healthy Living Spaces

HYGROSCOPIC NATURAL FINISHES



Elevated relative humidity within buildings creates the conditions for the growth of many harmful biological substances such as mould, fungi, bacteria and viruses. It also increases the release of VOCs from other materials.

To achieve good indoor air quality it is important to regulate relative humidity. It has been demonstrated that by maintaining relative humidity between 40 - 60% the majority of adverse health effects are minimised.

There are two main mechanisms of materials that help regulate internal humidity: Vapour Permeability & Hygroscopicity.

Raw, unfired clay is one of the best building materials to keep relative humidity in the optimum zone.

VAPOUR PERMEABILITY

Vapour permeability is a material's ability to allow the passage of water vapour (moisture in the air). Vapour permeable materials prevent the harmful accumulation of moisture within the fabric of a building that leads to the development of damp and mould. This is becoming more important as the industry pushes for 'air tight' buildings that can cause trapped moisture and the problems associated with this.

Clay plasters have excellent vapour permeability and are the most permeable of conventional wall finishes, superior to gypsum, lime and cement plaster, as well as acrylic and lime based paints. Clay plaster is approximately twice as vapour permeable as lime plaster, and eight times more vapour permeable than lime plaster with a limewashed surface.

HYGROSCOPICITY

More important than vapour permeability in the regulation of humidity is the hygroscopicity of a material. Hygroscopicity is the ability of a material to absorb and release moisture from and to the air, which is a fantastic way of passively regulating the moisture of a space to keep relative humidity within the optimum zone of 40-60%.

Raw, unfired clay is one of the best materials available when it comes to moisture buffering. It has a large capacity to absorb water vapour and excellent speed of uptake, both important qualities for a material to be able to effectively regulate humidity within an interior space. Clay has a hygroscopic capacity that is ten times better than gypsum and almost twice as high as lime plaster.