1. **Hempcrete Australia Manual**

1.1 **WHAT IS HEMPCRETE?**

The hempcrete building material is comprised of the woody core of the industrial hemp plant, also known as herd or shiv, and lime-based binders. The lime portion of the mix acts as a biocide, which makes hempcrete buildings naturally pest and mould resistant.

1.2 **WHAT IS HEMP?**

Hemp or industrial hemp is the common name used for varieties of *Cannabis sativa* that contain almost no THC. The hemp plant grows quickly and is one of the most versatile and highest yielding biomass plants known. Hemp can be grown without pesticide or agrochemical inputs, and sequesters large amounts of carbon dioxide (CO₂) during the growing cycle. One ton of harvested hemp absorbs 2 tons of CO₂.

One hectare (2.5 acres) of hemp is sufficient to build a standard house. It grows up to 4 meters high in 14 weeks. 60% of the plant can be used for building.

1.3 **WHY BUILD WITH HEMPCRETE?**

1.3.1 **Good thermal qualities**

Hempcrete buildings have excellent insulation properties (up to R4.2) when built to a the recommended 250mm thickness. Buildings stay warm in cold weather and cool in warm weather without a constant input of energy.

With good insulation, considerable amounts of money and energy can be saved.

1.3.2 **Monolithic building envelope**

The monolithic construction method used in hempcrete buildings drastically reduces air leakage and draft.

This is achieved through a continuous insulation from the wall to the ceiling.

1.3.3 **Breathability**

The hempcrete structure allows transfer of moisture through walls and avoids condensation build-up. This means that the humidity and air quality inside the building are controlled.

1.3.4 **Good acoustic qualities**

Hempcrete walls have great acoustic absorption. A rendered hempcrete wall will reflect most of the sound ~900Vs/m² (speed of sound per m/s) Compared with steel which is ~6100Vs/m². Any remaining sound traveling through the wall will be absorbed by the porous constitution of the hemp wood and the hempcrete itself.

1.3.5 **Carbon sequestration**

During the growing cycle hemp sequesters large amounts of CO₂.

1m³ of hempcrete locks in 150kg of CO₂ i.e. approximately 5.4tons of CO₂ per house.
Although the manufacture of the lime binder (including harvesting and transport) does release CO$_2$ into the atmosphere, the result is that hempcrete removes more CO$_2$ out of the atmosphere than it contributes, making it a carbon-negative material.

1.3.6 Fire resistance

The lime in the binder makes hempcrete fire resistant.

Hempcrete is non-combustable and has a fire rating (FLR) of 60/60/60. We are currently testing hempcrete walls to achieve 120/120/120.

1.3.7 Pest, mould and mildew resistance

The lime portion of the mix acts as a biocide making hempcrete buildings naturally pest, mould and mildew resistant.

In addition, hempcrete buildings provide an optimum humidity range in which mould and fungi do not grow.

1.3.8 Free of Toxins

Many building products and their manufacturing processes use and release large amounts of polluting components.

These include V.O.C’s (volatile organic compounds) which are in glues, paints, polyurethanes etc. The mix of hemp wood and lime creates a long lasting, toxin-free building product that can offer zero carbon constructions. This makes hempcrete allergen free.
Disclaimer
This document is intended to give general guidelines and practical information to the builder. It does not constitute a specification. Neither Hempcrete Australia Pty Ltd or St. Aster Limes can accept any responsibility or liability on the use and application of their products, errors or omissions in this document, loss, damage, injury or adverse outcome of any kind resulting from the use of the information contained in this document or reliance upon it.
Readers are advised to seek specific professional advice from Hempcrete Australia relating to their construction project and circumstances before embarking on any construction work.
All care has been taken to guarantee the accuracy of the information. Drawings and models representing technical details are indicative and suggestions only.
All diagrams and pictures are the property of Hempcrete Australia, and are subject to Copyright 2013. No part of this book may be reproduced without prior written permission of Hempcrete Australia Pty. Ltd.

Technical support
Please get in touch with us if you require further information - contacts below. The Hempcrete Australia website installers' login is a rich source of information.

Hempcrete Australia Pty Ltd
Director  Johoan Tijssen
ABN 76 155 685 859
Web www.hempcrete.com.au
Email admin@hempcrete.com.au
info@hempcrete.com.au
Skype johanthempcrete

AUSTRALIA
Office 07 5429 6634
Mobile 0416 331 008
Fax 07 5429 6635
Address 8 Thynne Court
Maleny Qld 4552 AUSTRALIA
Postal P.O. Box 1227
Maleny Qld 4552 AUSTRALIA

INTERNATIONAL
+61 7 5429 6634
+61 4 16 331 008
+61 7 5429 6635

This is a preview from the Hempcrete Australia Installation Manual 3rd Edition.
For the full version please contact Hempcrete Australia to register for the training course, or to gain further information and technical support.