New Zealand Hemp Industries Association Inc

iHemp

FOOD - FIBRE - HEALTH May 2021 #15

ENVIRONMENTALLY FRIENDLY HEMP HOMES IN NZ

6 Reasons to Build with Hemp

Photo: Erkhart Construction

FREE PUBLIC EXPO DAY:

SAT 22 MAY

ROTORUA

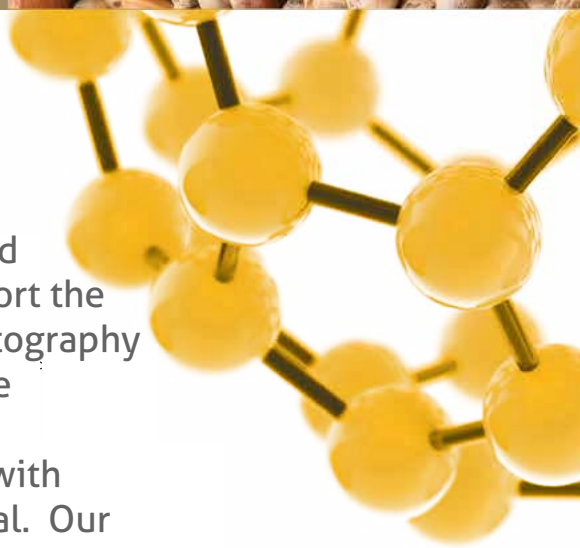
You are invited to the
NZHIA IHemp Summit and Expo
20-22 May 2021, Rotorua

The New Zealand Hemp Industries Association Inc
is the go-to resource to help you with your iHemp journey,
for more information and to join go to

NZHIA
Food. Fibre. Health.

CAWTHRON
The power of science®

CBD & THC TESTING



CBD and THC testing for the hemp industry

Cawthron Analytical Science is offering IANZ accredited testing of CBD, THC and related cannabinoids, to support the hemp industry. Our High-Performance Liquid Chromatography (HPLC) method is IANZ accredited to measure bioactive cannabinoids in a range of hemp seed derived food ingredients. R&D services are also available to assist with product development on Cannabis sativa plant material. Our team use the latest instrumentation to identify, measure, and extract chemical compounds, bioactives and isolates.

WHAT WE OFFER:

- ISO 17025-accredited laboratory
- 7-10 day turnaround time
- Access to technical staff
- Access to online reporting
- Consultancy and advice

CANNABINOIDS MEASURED

- Cannabidiol (CBD)
- Cannabidiolic Acid (CBD A)
- Delta-9 tetrahydrocannabinol (THC)
- Delta-9 tetrahydrocannabinolic Acid (THC A)

ACCREDITED MATRICES

- Hempseed Oil
- Hempseed Flour
- Hempseed Cake
- Hempseed Protein

To find out more about our capabilities please contact:

Customer Liaison Team

Email: *customerliaison@cawthron.org.nz*
Ph: +64 3 548 2839
98 Halifax Street East,
Nelson 7010, New Zealand

MAY 2021 IN THIS ISSUE:

Historical Hemp Production for Home Building. ***Russia***

Reasons 1 to 6 why you should build with hemp

The Future of Industrial Hemp. ***Dave Jordan, The Hemp Farm, HempNZ***

Improving the Housing Situation for Maori & Rural Communities. ***Te Rana Porter***

Amazing business opportunity.
Jo Say hba.nz

Try a Hemp House before you buy.
Barbara Provan

Hemp Bridge still standing after 1500yrs.
The Canna Chronicles

Building a Forever Hemp Home
Keith Stubbs

HEMP CONSTRUCTION IN NZ

Getting Past the Local Council

Toby Rickkets

Building with Hemp for a Regenerative Future.

Antoine Tane

Laura & John from Opotiki.

Laura

First Hemp House in Taranaki. **Matt Low, Melissa Burleigh**

Klara Marosszeky

The Australian Hemp Masonry Company

UK Industrial Hemp Build

Marks & Spencer Retail Store

Hemp is also a Superior Insulator

Iso-Fib

Building houses with Hemp Lego Blocks

Just Biofibre

NEW ZEALAND HEMP INDUSTRIES ASSOCIATION EXECUTIVE

Chair
Richard Barge
021 706 690
richard@hemptatsic.co.nz

Secretary, Executive
Eduardo Zanata
027 443 7592
hemphubnz@gmail.com

Chair Govt Committee
Stephanie Iremonger
021 595 259
steph.iremonger@gmail.com

Executive
Kirsty Harkness
021 432 989
kirsty@mountbase.co.nz

Executive
Andrew Bell
022 447 6475
bell.nz@hotmail.com

Executive
Paul Wright
027 750 8789
sales@hemphealth.co.nz

Executive
John Smith
027 279 06 48
hempsmith45@gmail.com

NZHIA
Food Fibre Health

Promoting the Economic, Environmental, Health and Social Benefits of the NZ Hemp Industry

EXECUTIVE COMMENT

This construction issue celebrates hemp fibre building materials, particularly hempcrete.

It is very timely as 2021 will be a milestone year for the iHemp fibre industry as Aotearoa/ New Zealand's first commercial scale decortication line to process iHemp stems will be operational in Christchurch.

This supply of locally produced bast fibre and hurd will stimulate the industry to grow by creating and building demand.

The trick will be to manage this supply and demand as the industry scales up.

Exciting times ahead as large-scale demand will require other decortication factories.

And, due to prohibitive transport costs, these factories will need to be close to where the crop is grown, which naturally leads to **bio regional development.**

We are set to establish a new sustainable primary industry, based on a regenerative crop, that can make products and provide services that will affect every industrial sector.

Richard Barge

EDITORS NOTE

Editor

Marco Fantham

markfantham@gmail.com

021-067-5710

BUILDING WITH HEMP IS A NO BRAINER!

New Zealanders and Australians were legally allowed to grow and import hemp products for building in 2006.

We have just seven hempcrete houses completed. There is a good number currently in pre-construction. Australia has 260. What is wrong with this picture?

However, there is a growing force of hempsters dedicated to the cause.

We now have much needed infrastructure in New Zealand with the HempFarm/Carrfields Fibre Processing factory newly set up in Christchurch to separate the raw iHemp stems into bast fibre and hurd.

The hurds are what are used to build with. In this issue we profile some of those products like Hempcrete.

There are also the DIY Kiwis doing it for themselves, getting help from Australia.

And, we have a group of Ngati Tuhoe women touring the country and getting other tribes interested in growing and building healthy homes .

For any info you need on building with hemp in New Zealand, please visit www. HBA.NZ

THERE'S NO PLACE LIKE HOME... ESPECIALLY IF IT'S MADE OF HEMP

Russians sorting raw hemp fibers in the Kursk region in the 1960s. Hemp has been used as building material for millennia in Europe and elsewhere, but it's only just starting to get wider recognition as a green construction option.

The New York Times

Oleg Sizov/TASS, via Getty Images

6 REASONS TO BUILD WITH HEMP

HBA NZ
Hemp Building Association NZ

REASON #1

IMPACT OF THE GLOBAL CLIMATE CRISIS ON NZ

Through the construction and heating/cooling of buildings, the construction industry globally is responsible for 25% of all carbon emissions.

To address this statistic and the impact it has on climate change, the **New Zealand Green Building Council** is calling for all new homes to be carbon zero by 2030.

This is to support the NZ government's legislated commitment to our being carbon zero, as a country, by 2050. For new homes to actually be carbon zero, we need to be using construction materials that have a carbon zero footprint. We also need to construct buildings that require minimal heating or cooling.

THE FUTURE OF INDUSTRIAL HEMP...

Pictured: Hemp Pioneers Dave & Anne Jordan standing in front of their decortication machine inside their huge hemp fibre factory, near Christchurch

HempFarm NEW ZEALAND

HEMP NEW ZEALAND

Understanding history helps us see the future.

Most readers of this magazine would understand the value proposition of industrial hemp for New Zealand and the world. Hemp NZ Ltd has set the stage for the fibre industry in New Zealand. Anne and Dave Jordan, founders of the HempFarm brand and grower program, have taken industrial hemp to new highs in the quest to normalize the crop and all products made from it.

Dave began the journey in 2008 growing his first crop. Anne joined him in 2011 and together with Anne's son Harley, they set out to build a vibrant hemp business based on a feed stock that would provide sustainable solutions for remediating many of the environmental issues that we face today.

New industry provides economic sovereignty for New Zealand.

In 2019, after 10 years of running and developing the HempFarm grower program themselves, Dave and Anne invited Carrfields Limited to join forces and administer their grower program. At the same time, Hemp NZ Ltd, the parent company of HempFarm, entered into a partnership with Christchurch based NZ Yarn Ltd. "We decided that the synergies between the two companies was so strong, that it made sense to join forces. Hemp fibre and hemp/ wool blends will give a unique and innovative edge to the industry", explains Dave. "New Zealand wool is world renowned and so to blend this beautiful yarn with sustainable, high quality hemp fibre makes perfect sense" says Anne.

After spending many years in R&D and travelling the world to find the best in hemp decortication systems, Dave and Anne sourced a state-of-the-art hemp fibre processing line which arrived in the country last year. It's the first and only one of its kind in the southern hemisphere. At the end of 2020 it was installed at NZ Yarn Ltd, which has recently changed its name to New Zealand

Natural Fibres Ltd, reflecting the new diversity hemp brings to its operations. This decortication system is designed to cleanly separate the bast fibre from the inner woody core – the hurd or shiv as it is called - from the stalk. Several thousand square bales of hemp straw will be processed within the next few months.

This fibre facility will roll out several added value products over time, aiming to reach plant capacity within a couple of years. Raw hemp fibre will be carefully blended with wool for products such as eco-matting, insulation, and wool yarn for carpets and more. Hurd for hempcrete buildings will also become available. "This is a massive breakthrough for New Zealand" says Dave, CEO of Hemp Farm and Hemp NZ. "This is just a start for the industry" he states. "We are proud to have partnered with the yarn industry and with the iconic Carrfields to administer the HempFarm grower program in the South Island and we look forward to a vibrant future ahead for the companies involved".

Meanwhile Dave and Anne's original team of three has grown to twelve personnel working out of the new HempFarm head office based in Tauriko, Tauranga co-located with its purpose built, certified organic food processing plant. A newly appointed Board is in place to guide Hemp NZ and HempFarm through its next exciting growth phase in food and fibre.

Pictured: Hemp Pioneers Dave & Anne Jordan

IMPROVING THE HOUSING SITUATION FOR MAORI IN RURAL COMMUNITIES

Pictured from left: Marewa Titoko, Te Hemanawa Kutia, Gina Kora, TeRana Porter - Directors of Hinemaia Hemp Ltd

"Hinemaia Hemp had a dream to improve the housing situation for Maori in rural communities. And as a consequence, they would be creating a local intergenerational industry, that is iwi owned and operated," reveals TeRana Porter.

"We are collaborating with Klara Marosszeky's group who commissioned a mobile decorticator (APU) which will be a game changer. Hinemaia Hemp Ltd will buy the APU in November. Three months to import and build, it will get here with time for harvest and drying. Processing will start around July. Building begins when dryer and warmer, so around end Oct 2022. Our first small build will be up by Christmas 2022.

"We presented to 89 land trusts from Te Kaha to Te Arawa today, finishing with our first TV interview with Maori TV. It's our tribal mission to confront Environmental, Economic and Housing challenges."

Initially dedicated to tribal farming for Fibre and Construction, Hinemaia aim to branch out to include products such as organic insulation batts, hemp mulch, animal bedding and a 'green' road building material.

Pictured: Hemp harvested and stacked for retting, and will shortly be ready for the APU mobile decorticator.

Terana explains, healthy homes become affordable using locally grown fiber, locally processed hurd and community powered builds. What will enable local processing is the purchase of the specially designed APU machine Hinemaia intend to import from Australia. Its price tag is 350k. A public fund raising campaign will be launched via TV3 this weekend.

She goes on, "The machine arrives February. Fiber crop is harvested March. Community Build begins July. Build will complete in December. Follow their journey on FB: Hinemaia Hemp o Te Waimana

JOIN / FOLLOW CONTACT US ON OUR FACEBOOK PAGE:

HINEMAIA HEMP O TE WAIMANA

Kia Tika. Kia Tūturu. Kia Maia

6 REASONS TO BUILD WITH HEMP

HBA NZ
Hemp Building Association NZ

REASON #2

HEMP AS A CARBON NEUTRAL/ NEGATIVE BUILDING MATERIAL

Hempcrete is one of the few building materials that can actually achieve a **NEGATIVE carbon footprint**.

Hemp sequesters (takes out) significant amounts of carbon from the atmosphere as it is growing, and then continues to do so to a certain capacity once it is combined with its lime binder.

One cubic metre of concrete creates around 150kg of CO_2 One cubic metre of hempcrete sequesters approximately 300 kg of CO_2 This means that every hempcrete home (or commercial building) is actually helping the planet by **REDUCING** the amount of carbon in the atmosphere, rather than contributing to it.

Get a 2nd Opinion from Ayurvedic Practitioner $59

Ayurveda is the oldest and still functioning medical system in the world, from India.

Homeostasis

Or

Get a FREE over the phone 20 minute chat with Marco, if you would like to talk about hemp and/or your symptoms.
021-067-5710

Guillermina Minicucci

COMPLEMENTARY MEDICINE

European Institute for Scientific Research on Ayurveda
Cannabis Hemp Academy Colorado
The Medical Cannabis Institute San Francisco

Ayurveda
COMPLEMENTARY MEDICINE

new hemisphere™

new hemisphere are pioneers of hemp ingredients in New Zealand, being first to reach supermarket shelves in late 2018. Grown and produced in rural Ashburton against the backdrop of the Southern Alps, the range now boasts 8 healthy hemp products (including 2 new flavours). With growing focus on health and nutrition the Hemp Seed Oil, capsules, protein, flour and hulled seed all boast a range of health benefits associated with omega 3 and 6 and consumers can't get enough.

Made from chemical residue free seed, and **Keto diet friendly**, the oil is cold pressed and extra virgin to preserve all it's natural qualities. Whether it's a health boost for your smoothie, capsules on the run or bumping up the protein and fibre content of home baking, new hemisphere has you covered.

For more information, email info@ nzhempfoods.co.nz or call 027 669 9203

HAVE A SPECIALTY INGREDIENT BUT LOOKING FOR FURTHER OPTIONS TO CREATE SOMETHING NEW?

TALK TO US

We specialise in creating quality skincare and personal care solutions using world-class ingredients and technology. Have you ever thought of using your unique ingredient in a skincare line?

We've worked with a number of companies who have had innovative ideas and extraordinary ingredients, and together we've helped to create new skincare solutions to widen their brand and their market!

We are proud to promote Kiwi ingenuity, and we favour our local suppliers to produce unrivaled personal care and skincare products, direct from our Marlborough based lab. We can design anything, our only limit is your imagination!

GMP CERTIFIED FACILITIES • PICK YOUR PRODUCTION RUN*
CREATE YOUR OWN BESPOKE FORMULA • UPSCALE OR ENHANCE EXISTING FORMULAS • FLEXIBLE TIME-FRAMES

designer SKINCARENZ

DESIGNERSKINCARENZ.CO.NZ
INFO@DESIGNERSKINCARENZ.CO.NZ
71 GROVE ROAD, BLENHEIM, 7201
(03) 578 6266

*T'S & C'S APPLY

AMAZING BUSINESS OPPORTUNITY

Jo Say: jksay@hotmail.com 027 655 2219

In order to build a hempcrete home we need hemp hurds, a lime-based binder and water.

So far, all the NZ hemp homes have used a certified binder imported from Australia. (See www.HBA.NZ for product links). Our Australian cousins are way ahead of us with over 170 Hempcrete homes already built there.

We are following in Australia's footsteps. That is how we know that there is fantastic business opportunity here in New Zealand for someone to produce, get certified, retail a local NZ Hempcrete binder. The principle ingredient is lime. To be sustainable and help reduce hemp building costs even lower, we need to be retailing a locally sourced & produced NZ binder.

If you are entrepreneurial or know someone who is, and want to be involved in helping to grow the NZ hempcrete construction industry, please get in contact and we can talk about this exciting and potentially lucrative business opportunity. ❑

HBA NZ
Hemp Building Association NZ

6 REASONS TO BUILD WITH HEMP

HBANZ
Hemp Building Association NZ

REASON #3

MINIMAL HEATING OR COOLING

Hempcrete homes require minimal heating/cooling because of the unique combination of hempcrete's very good **R Value AND its strong thermal mass performance** (the ability to absorb heat and release it back into the interior space when the temperature drops).

A straw bale home has a good R value, it has almost zero thermal mass performance; rammed earth houses have a great thermal mass performance but very low R value.

Hempcrete is unique in having both a high R value AND good thermal Mass performance, meaning that heating/cooling of the home is minimal.

This is good news for the home owner (comfort and electricity bills) and the environment (significant reduction of carbon emissions).

AIR BNB HEMP STUDIO IN WANAKA

Barbara is building for the first time, it's an AirBnB and she goes 'the full monty environmental' and builds using hempcrete. Making her the first 'Hempcrete House Build' in New Zealand built by a building firm.

Barbara explains, "People really appreciate being inside our Hemp Studio, because it's like being in a Cacoon really. Due to the dense walls, there is no echo and an absence of outside noise.

She goes on, "People say , 'It's like being away from the world'. In a traditional build, there would be noise problems just from opening and closing doors. If I was to build again, I would have every room hempcreted.

"It's close to a constant temperature inside, warm during the winter and cool during the summer.

"It was a big leap for me being the first hemp house done by a building company in New Zealand, so I am real glad I stuck with Lochy Erkhart Construction in Wanaka. I let them choose the architect, because we needed an 'Alternative Building Material' person.

"If you are considering building a Hemp Home I have taken the guess work out of it for you:

Consider coming to stay for a few days. Feel the comfort, feel the peace. Book here

6 REASONS TO BUILD WITH HEMP

HBANZ
Hemp Building Association NZ

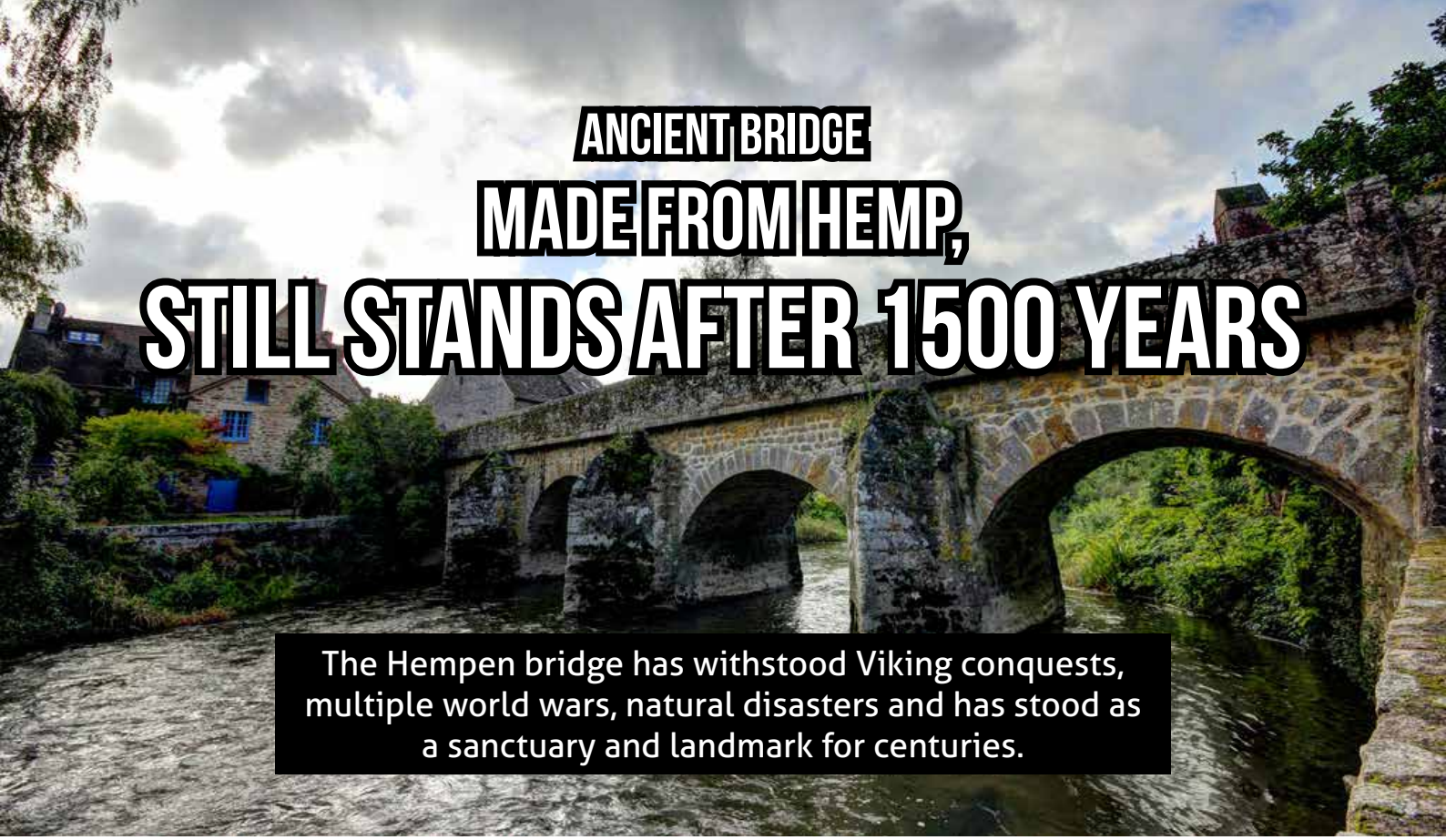
REASON #4

NO MORE DAMP, MOULDY, LEAKING KIWI HOUSES!

Hempcrete has a natural hygroscopic performance capacity. This means a hempcrete wall can absorb moisture from inside the building when there is an increase in humidity (caused by high rainfall, showering, boiling kettles, cooking, drying laundry inside, using gas heaters, costal air, high humidity regions). The hemp wall then naturally releases the moisture back into the interior space, when the internal humidity level has dropped.

This means that condensation, black mould and a 'leaky home' are not possible in a hempcrete home. This greatly assists with minimising asthma and other respiratory diseases that are increasing exponentially in New Zealand.

A hempcrete home is one of the healthiest buildings to live in. The outside of the hempcrete home does not need any cladding. To keep it watertight it is rendered with lime plaster. Having overhanging eaves is also a useful idea if the home is in a known high rainfall area.



ANCIENT BRIDGE MADE FROM HEMP, STILL STANDS AFTER 1500 YEARS

The Hempen bridge has withstood Viking conquests, multiple world wars, natural disasters and has stood as a sanctuary and landmark for centuries.

The oldest structure in Saint Céneri le Gérei dating back to the Merovingians is the old stone bridge crossing the Sarthe river. The fact that it has survived antiquity is a miracle, the secret to how it survived is shocking.

A stone and mortar bridge crossing the river point was constructed by the Merovingians who ruled the area around 500 AD. **Upon closer inspection the secret to its longevity is discovered... Hemp!**

The bridges ancient stonework has been held in place for centuries using mortar made from hemp. With a mixture of more than 10% hemp, the hemp mortar has held the bridge together longer than any other structure in the village, not to mention that it is also the only structure that has had to withstand the rivers punishing current.

The hemp mortar's immortality comes from its ability to breath. Typical mortar cracks and chips to pieces as the mortar expands and contracts with typical temperature and moisture influxes. Hemp has the amazing ability to absorb moisture, allowing the mortar to take in and release the excess water when conditions allow. These abilities have allowed the bridge to survive as other structures turn to rubble. ❑

6 REASONS TO BUILD WITH HEMP

HBA NZ
Hemp Building Association NZ

REASON #5

NEW ZEALAND'S LEAKY HOME CRISIS!

The leaky home crisis in New Zealand is effecting around 90,000 existing homes and will cost at least NZ$48 billion to fix. (This figure does not include all the commercial and non-residential buildings that are also failing). Sadly, leaky failing homes are STILL being constructed in NZ today. One of the main causes of leaky homes is using cladding material which fails – and the **NZ building code specifies that cladding on a new home only has to last 15 years!?! This is unsustainable and outrageous.** A hempcrete house effectively fossilises or 'cures' so it becomes harder each year. Hempcrete buildings exist in Japan and India that are centuries old! With the impact on inhabitants' physical and mental health, and the associated financial burden on our healthcare service, living in a damp leaking house is one of the biggest health and social issues we collectively face here in New Zealand today. Building homes in New Zealand with hempcrete, provides a real and achievable solution.

Pictured: Keith Stubbs at his Hawea Grove property The Hawea Grove was a finalist in the "Communicating for Impact" category for the **2020 Sustainable Business Awards.**

"BUILDING A 'HEMP FOREVER HOME'"

Keith Stubbs spent 20 years travelling around the world working in the snowboard and media industry. On his travels he began to see the damaging effects of climate change and felt that the building industry was one that was being overlooked in this regard.

That concern turned into a desire to build a home that could last a lifetime, and make it an eco-build.

At first he researched prefabricated products, but the companies he looked into weren't able to supply the background details he required about their materials. So he decided to build his own eco-home with waste material found on building sites. That was until, he met Lochy and Joel from Erkhart Construction, when they introduced him to Hempcrete.

Keith decided to build his eco-home with Erkhart Construction, once he saw their previous hemp house build and on-site recycling efforts.

Keith explains that, "Hempcrete can help to build a home that has a very low carbon foot print , and maybe even a negative one, which was his aim for his own home."

It is estimated that hemp absorbs three to four times the

amount of carbon than trees as it grows.

Keith says, "Anyone interested in building with hempcrete really needs to be looking at a new build situation."

Hempcrete walls are fairly thick. 240 mm for Keith. "The interior and exterior walls can be plastered. Along with the installation of the hempcrete itself, this can become very labour intensive", he warns.

Keith suggests, "The biggest obstacle is finding a builder that can do it properly. I only know of one building company in the North Island and one in the South who specialise in hempcrete. These types of houses need to be built by someone that understands the process and really care about the product. You don't want a spec house builder just throwing something up."

He goes on, "Because the walls are thicker then normal the build is more like a straw bail or a rammed earth build. You have to use a shuttering system on the inside to hold the hemp in place. Which is completely different to a conventional build.

"There is a new hemp fibre processing plant in Christchurch now and that will help bring the building costs down, so people don't have to source their hemp from overseas. The processing plant in Christchurch has partnered with a wool processor, so going forward; I expect to see hemp and wool together in consumer products like curtains, carpet, etc."

Keith's advice is:

"This is not the type of build where you would do it to save money.

It's really the type of home you would build for ecological reasons, and to last a lifetime."

Visit www.haweagrove.nz for more information and to watch the web video series about the whole process. ❑

At last:

Chocolate & Vanilla Hemp Protein Powder

(Certified Organic 70% Hemp Protein)

Growth + Goodness

Hemp Connect Chocolate or Vanilla Hemp Protein Powders are delicious, easy to use, and a source of high-quality plant protein. These flavoured protein powders use a 73% hemp protein powder blended with natural flavours, resulting in delicious blends pulsing with protein.

Hemp Connect

Buy here

Chocolate Hemp Protein Powder (500g)
$54.99

Vanilla Hemp Protein Powder (500g)
$54.99

HOW TO HANDLE THE LOCAL COUNCIL GETTING A PERMIT

Toby Ricketts is a keen DIY'er, him and his wife bought some land in Manganui, Northland and decided to live on it, while they figured out how and where, they were going to build their house. (He normally works in radio in a recording studio environment.)

After five years they had worked on drainage and lighting patterns, on their plot. Also, floor plans and materials. "We stumbled across Hempcrete and Marianna and I were instantly impressed because it's sustainable, breathable, non-toxic, light in weight... and 'echo friendly'. Hempcrete seemed to tick all the boxes.

"Due to the lay of the land, the sunniest part was extending over a gully that could be subject to flooding. So we had decided to build on poles. Along the way we discovered that we were one of the few people in New Zealand to attempt a Hemp Home build, and the only ones to be doing it on pole and rail foundations.

"There are challenges to get through 'Council' but it was easier than we expected..."

Toby explains, "Except for the windows and doors to be set back a bit (allowing for the thickness of the walls) the rest of the house is constructed exactly the same as a traditional build. That also means you can easily rip the cladding off an existing house, and clad it with Hempcrete.

"The trickiest part of the process dealing with the Council is around windows and doors. So we came up with a solution that was partly traditional and partly innovative. We used a free online software for the floor plan and measurements then gave it to a designer Danny Hancox at Coppermine Cad Services. He made it all comply with council codes. The foundations also needed to be custom engineered for the Hempcrete - it was a bit of a mission.

The house faces due North to collect heat during the winter, but the eaves keep out the sun in mid-summer, and the interior stays cool.

"Hempcrete goes in wet but is dry in six weeks, dryer then the timber in the house. Water vapour if it gets inside the wall somehow, it can easily dry. I could probably spray down my internal walls until they are wet, come back in a few days, and they will be completely dry. On a 'traditional build' if water was to get inside the membrane of the windows or doors, it would not be able to get out. Untreated timber will just rot.

"With Hempcrete because the moisture is constantly moving, the moisture levels are naturally regulated.

"The Hempcrete naturally promotes longevity in the materials. There is always a hemp fibre touching another hemp fibre, which leads to the outside. Which is why you never get moisture or mould problems - it's like a moisture sink.

"Hempcrete also has **'Thermal Mass'** which means the

outside walls will gently warm during the day and then, by evening that warmth can radiate through and warm the inside of the building.

"Hempcrete has Acoustic Superiority. When you walk into an internal hemp walled room you instantly notice it's like a recording studio. Most people would notice this, but as I am a sound engineer I really noticed it and was delighted. As opposed to a traditional build that buzzes and rings.

"Hempcrete is very attractive. Once we lime plastered some of the inside walls we realised that it was starting to sound like a jib board house, so we left a number of the walls and spaces without the plaster. Hempcrete is light and soft when dry (6 weeks from installation) it can be flakey like weetbix and come apart if you knocked it continually, in order to fortify that we used Sodium Silicate (Water Glass) to spray on. Visually it looks better than I ever expected.

"I am so impressed with it, I am now going to build a new Sound Studio entirely made from hemp. Hemp insulates from sound so well, planes could fly over and we'd never hear them. The Hempcrete is so dense, you just don't hear anything. It traps all the acoustic energy and disperses it, so well.

TOBY TIPS for getting your Building Consent:

You need a proven building system. The Council need to know that your system is going to produce consistently, and it be durable. The only system we could find that had the tests, that would meet the council requirements was a French company Lhoist, that made a product named Tradical HEMCRETE (no P). They had a system that was proved in Australia. Proven to pass the Australian Building Code in terms of performance and reliability.

So what I needed to do was write a document that linked the New Zealand Building Code to the Australian

Building Code and show that if the HEMCRETE System passed the Australian Codes, it therefore passes the New Zealand Codes.

Anyone who gets in touch with me can have the use of that document for free.

toby@tobyricketts.com
tobyricketts.com

The kitchen in the Hemphouse - half lime-plastered for resilience and acoustics

BUILDING WITH HEMP FOR A REGENERATIVE FUTURE

Antoine and the team at a Hempcrete 101 workshop

"Out of the ashes of the Christchurch Earthquake Rebuild rose a desire in me to change the inefficiencies in the building industry", says Antoine Tane, a builder of 10 years experience, whose father is an architect.

"When I saw the waste and inefficiencies produced by the building industry, it put me on the pathway, to find alternative means' of construction.

"There wasn't many alternatives available in the New Zealand market so I decided to go travelling, to see what other options were being used around the world.

While I was in Mexico I worked on a collaborative build project that used bamboo and hempcrete. I saw the advantages of using hemp as a building resource right away, like it's sustainability factor and the incredible insulation values, it just seemed to tick all of the boxes.

"When I arrived in France I saw hemp houses being built

Hempcrete 101 workshop

all over the Country. The hemp construction there was popular and the industry more developed. It occurred to me that if France could do it, New Zealand could do it too. New Zealand could have a sustainable and healthy building industry with locally grown materials.

"Hemp could take the New Zealand building industry to a whole new level.

"New Zealanders could actually grow their own homes in their backyards. Homes that are going to be healthy for us and our families, lasting hundreds of years.

We have a program called Educate to Regenerate (kohuhemp.nz). Where we plan to teach people everything there is to know about building with hemp. We ran a couple of Hempcrete 101 workshops last year and plan to get more going in the future.

Your 'Hempcrete Tiny Home' that comes with your own garden.

Antoine believes: "Living in warm, dry sustainable hemp homes is the future.

"If you have land, you can start right now; by educating yourself on growing and building your very own hemp home. The quicker we can share knowledge and resources the quicker we can take care of problems like damp, leaky homes and the lack of affordable housing.

"'Co-housing Development Organisations' are choosing hemp because of it's benefits:

- The most regenerative resource on the face of the earth
- One of few resources that can generate food, fibre, shelter and medicine. ❑

6 REASONS TO BUILD WITH HEMP

HBA NZ
Hemp Building Association NZ

REASON #6

HEMPCRETE'S FIRE RESISTANCE: SAFETY FOR YOU AND YOUR LOVED ONES

Hempcrete is a nonflammable building material (meaning it is almost impossible to catch fire). "A fire test was conducted in August 2019 by Professor Marton Marosszeky, Director at BCRC, Sydney, NSW. Built from Australian Hemp Masonry Company's products, a previously constructed hempcrete wall was rendered with 10mm of AHMC Hemp-lime Render. A week later a 600mm high pile of bush timber was piled up and ignited at the base of the wall. The test was conducted to simulate an ember attack situation during bush fires where there is potential for a buildup of fuel at the base of walls. The fire was maintained for 1 hour and fully documented. No damage was observed in the 200mm thick, 10mm rendered hempcrete wall exposed to a 600mm high flame from a fire burning right against the wall for a period of 60 minutes." (Credit: hempmasonry.com.au)

MEET THE HBANZ TEAM
VISIT THE HEMPCRETE STALL
HEMP SUMMIT / EXPO
ROTORUA, 19 - 22 MAY

Laura and John reside in Eastern Bay of Plenty in a small town called Ōpōtiki. They are borderline obsessed with hempcrete and growing a flourishing hemp industry.

Two years ago, Laura attended New Zealand's first hemp summit. She was eager to meet like minded hemp lovers and learn more about building with hemp.

Unfortunately, hemp building in NZ was not really a thing yet, so she skipped over the Tasman Sea to learn from the Australian Hemp Masonry Company, all the ins and outs of this 'new' technique.

Growing and processing hemp stalks into usable hurd has been a slow journey for New Zealand but what about the other very important part of a hemp building? The Binder.

Laura cheekily asked what was in the AHMC Binder but was told this was proprietary knowledge. Common knowledge says that it is mostly lime but what lime? Hydrated? Hydraulic? What else could be in it? This is

John tamping hempcrete between formwork.

Laura assessing first binder trial on the outside test wall.

when John became interested and curiosity led them down a road of research, trial and errors.

You would find them both late at night, in their shed, making 'sweet' hemp bricks, trying to find the secret binder recipe.

Laura and John decided to retro fit an existing structure. Not a new build. Which means removing the existing walls and installing the hempcrete using a shuttering system, either one side or both sides.

Building a test wall outside proved to be helpful as they tested their recipes in the elements. Voila! A recipe worked! They decided to invest in a larger experimental project, retrofitting the shed walls with this glorious material. 900kg of hemp hurd was ordered from The Hemp Farm. And, over a tonne of lime and pozzolan additives were delivered to their door, just in time for lockdown 2020.

Laura and John got to work with their humble concrete mixer, using a garden hoe to help mix the hempcrete as it rotated. Mix after mix, batch after batch, they slowly completed the project in a year. The 7 x 4-meter shed has been transformed into a warm, cosy studio space with french doors, that open out to the garden.

It is still a work in progress as the exterior needs to be lime plastered - a whole other learning journey! The inside will either be lime plastered or sealed with Sodium

Silicate, also known as 'Water Glass'.

All-in-all it has been a successful experiment, but what advice would the couple give to others willing to give it a go?

"I would attend a workshop or help someone with their hemp house. Experience is valuable and fun!" says Laura.

"I would recommend buying a pan-mixer" says John. "The concrete mixer was okay for this job, but a pan mixer would save so much time. They are expensive but if you're gonna do a full house, or multiple houses, it's definitely worth it."

Laura and John will be at the upcoming NZ Hemp Summit in Rotorua on the 20th-22nd May 2021 where you can see samples of hempcrete and a demonstration of how it is made.

Inside the shed after finished hempcrete application

1ST HEMP HOUSE IN TARANAKI

Matt Low, Melissa Burleigh-Low & son James
New Plymouth ***more...***
The unusual windows tilt rather than open.

AUSSIE IS FURTHER DOWN THE HEMP CONSTRUCTION TRACK THAN NZ

AND THIS SHOULDN'T BE SO, CONSIDERING WE HAD THE SAME 2006 STARTING POINT.

Klara Marosszeky (Managing Director of the Australian Hemp Masonry Company) recounts: "I first became interested in hemp in 1999. At that time the NSW Department of Primary Industries position on hemp was "It's not a viable crop for NSW!"

"I was also working for Greening Australia at that time and we had a big map on the wall at work, showing where corridors of trees needed to be established or restored for wildlife, due to the impacts of land clearing and deforestation.

"We were very aware of the emerging 'carbon issue' and we were trying to address that with trees. While in the process, I became really aware that we would also need to find a faster growing biomass because we couldn't sustain forestry at the levels we were logging at.

"I planted my first Hemp crop in 1999 and we started research the following year at NSW University, that was supervised by my brother. He was the Founding Director of the Australian Centre for Construction Innovation at UNSW and he is still involved with Construction, Safety and Durability in buildings."

Klara points out 3 reasons why she now felt she could contribute to the hemp industry in a meaningful way.

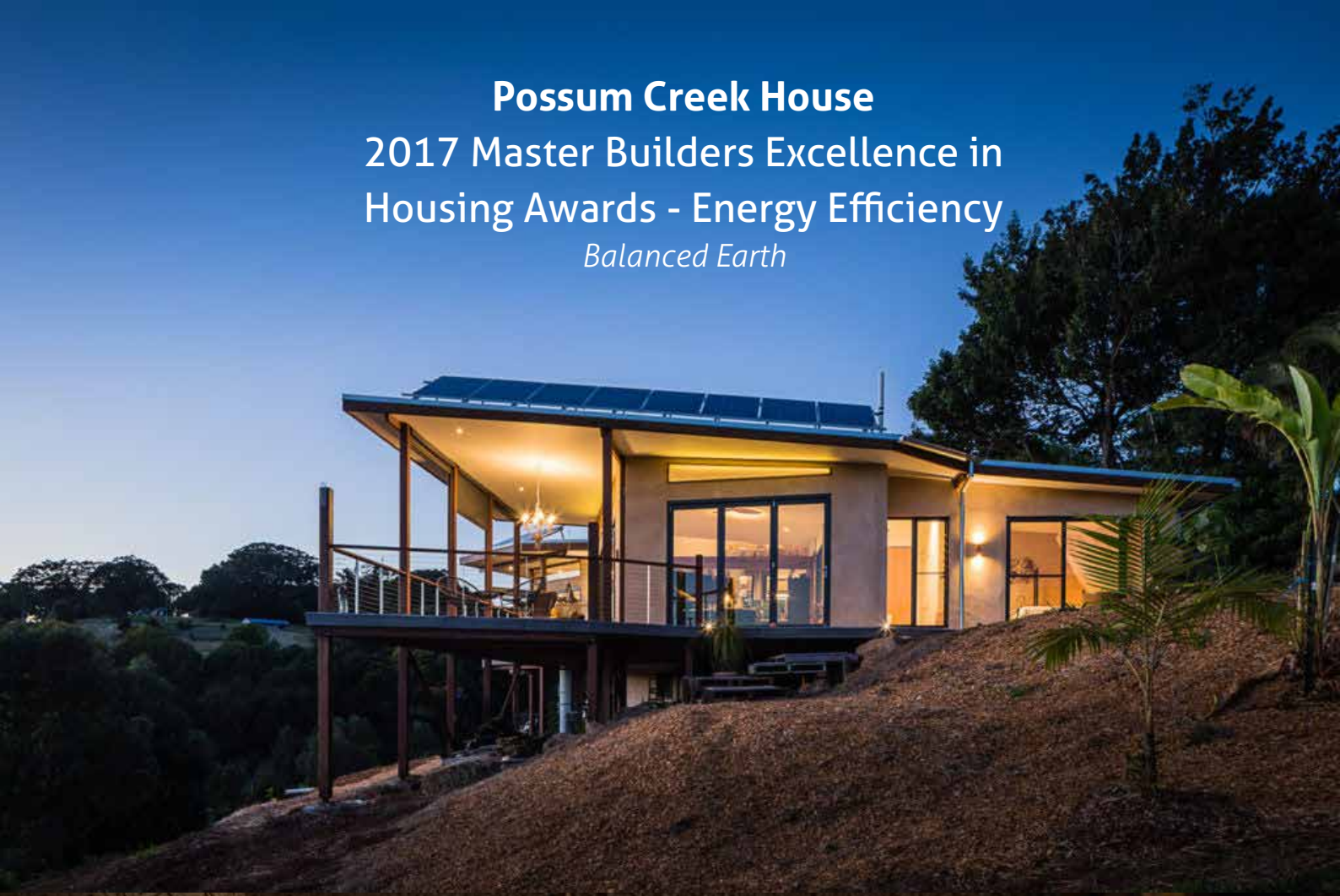
1. "My brother gave me the confidence to develop innovative building materials. We also had multiple architects and engineers in the family.
2. I was born to Hungarian parents and Hungary has a long history with hemp.
3. Hemp construction was the least controversial side

contd pg 46

Possum Creek House

2017 Master Builders Excellence in Housing Awards - Energy Efficiency

Balanced Earth



of the hemp industry, which could initiate legislative change, to allow the many other benefits of hemp to come forward.

We went on to develop a product at the university and continued to be heavily involved in the hemp industry in terms of lobbying government and submission writing. Hemp was finally commercialized for Fibre in NSW in 2009.

Our first council approved build was in 2009. I started work with clients who were prepared to take a gamble on me. Part way through, we had to close up the house for 3 months while they went overseas. In the region the home was in, buildings are prone to mould. We made the media that year because we were able to bring attention to two of the greatest advantages of building with hemp, effective Moisture Management and Mould Resistance."

She adds, "There are at least 6 hemp buildings in New Zealand that are finished or soon to be finished. We're involved with 3 of them. In Australia there are 260 plus hemp buildings including a few commercial builds. "

Klara's Australian Hemp Masonry Company is a training, consultancy and resource company for:

- Architects and Building Designers
- Engineers
- Builders
- Owner Builders

They also supply Building Code compliant proprietary Australian hempcrete building products.

"There is a real need for education, she adds." Their website is set up to be an education resource
www.hempmasonry.com.au

There is a lot of information there about:

- Building with hemp
- Understanding the performance of hemp
- Hemp products and what goes into a building
- Estimating costs

It's a superior living environment in everyway, nothing else comes close. Along the way people start to realize the benefits of hemp in homes.

- Energy efficiency
- Thermal comfort
- Humidity comfort
- Air quality comfort
- Acoustic comfort

Klara also adds, "Labour is the more expensive part of the build, representing around 60% of the total cost. We encourage people to join up with us for training, especially if they want to be involved with their build."

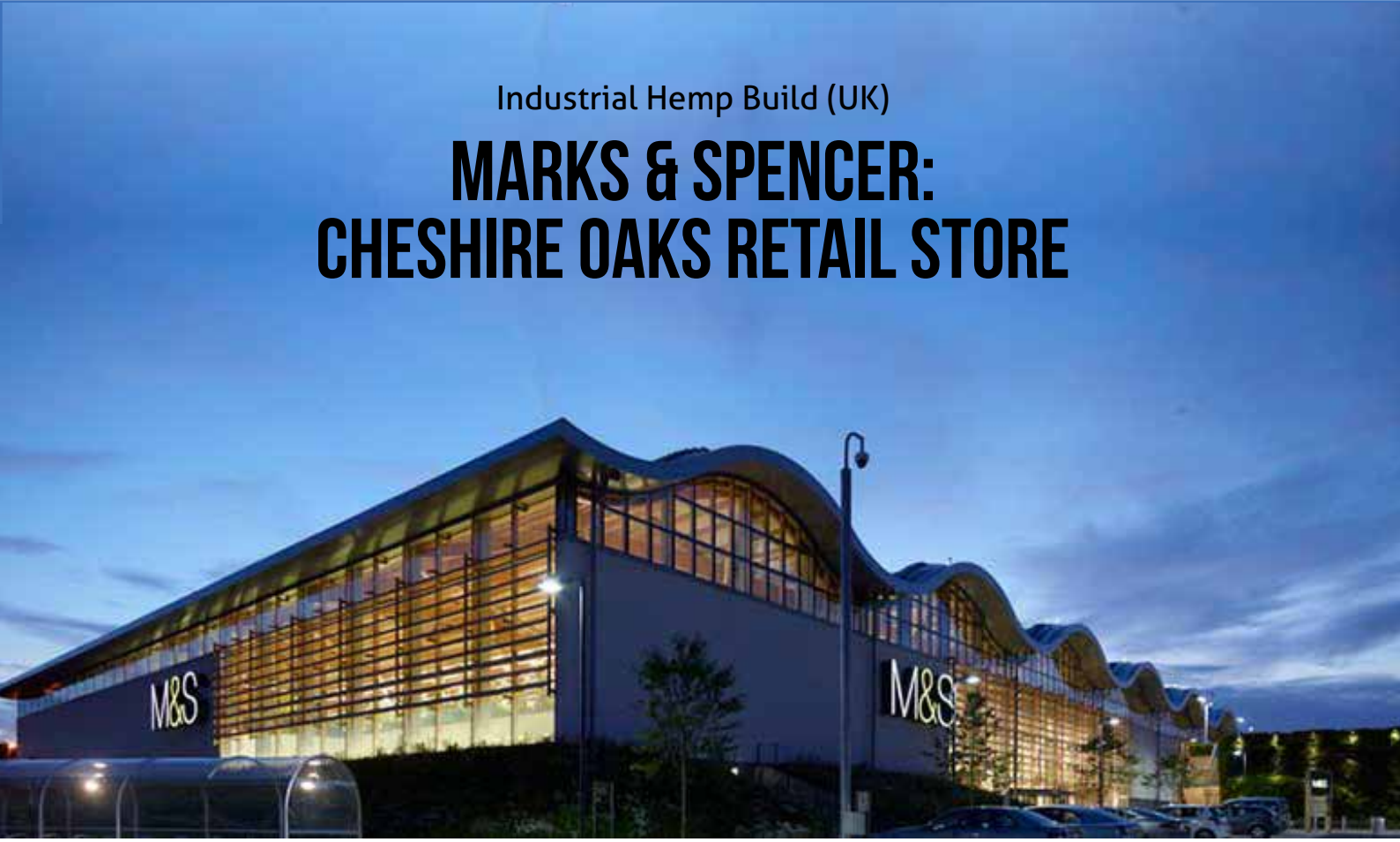
Klara concludes, "For 'New Zealand Hempsters' we offer training, workshops and consultancy. We can also supply Australian Binders and Render for use with NZ hemp. Initially contact should be through our website." ❑

Klara Marosszeky
klara@hempmasonry.com.au
hempmasonry.com.au
facebook.com/AustralianHempMasonry
+61 422750612

THE AUSTRALIAN HEMP MASONRY COMPANY

Industrial Hemp Build (UK)

MARKS & SPENCER: CHESHIRE OAKS RETAIL STORE

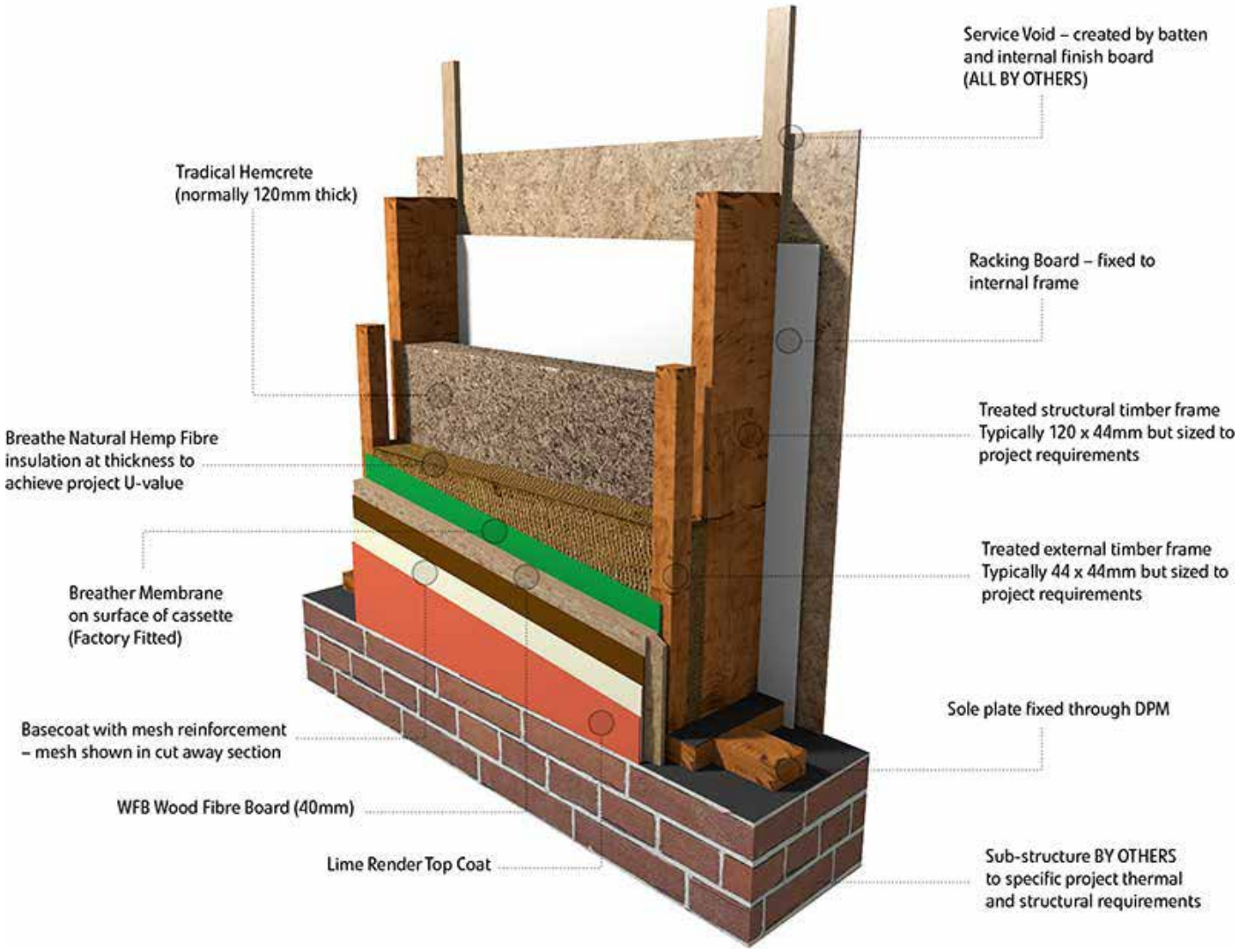


Hembuild, part of the Limetec Group, was asked to supply a 198,000sqft retail store near Chester built to M&S Plan A requirements, for optimal sustainability and energy efficiency. UK's largest retail store and largest M&S store in Europe, taking seven years to build.

Hemclad was selected for all non-glazed areas of the envelope. As its thermal mass and inertia properties were calculated, by extensive thermal modelling, to provide savings to the M&E plant (heating & cooling) at construction stage, plus reduced energy when in-use.

2600m2 of Hemclad "infill" panels applied into a primary/secondary frame by others. This frame was a mix of steel and glulam elements. Hemclad panels made at approx. 3.8m x 2.4m complete with pockets for installation by telehandler, as crane installation was not possible due to eaves overhang already in place. Panels have 0.12U-value using a twin-stud arrangement to minimise thermal bridging – overall 400mm deep with 200mm Hemcrete factory-cast and 200mm Breathable hemp-fibre quilt. Specification chosen after extensive thermal modelling to provide the best balance of thermal mass to suit retail store thermal dynamics and optimisation of heating/cooling plant. more...

Generic illustration of a Hemclad panel



You guessed it...

HEMP IS ALSO A SUPERIOR INSULATOR

4 REASONS WHY...

Whether used for thermal insulation or soundproofing of walls, partitions, roofing or even floors, hemp has become an eminent player in the field of green building. Here are four reasons why hemp insulation is worth considering.

1 It's an eco-responsible choice

Made with local and renewable raw materials, hemp has a low environmental impact. It's a 100% natural material that is entirely biodegradable, and it requires less energy and water to produce. Furthermore, it does not require insecticide or pesticide treatments.

2 It promotes comfort

Hemp regulates the temperature inside the dwelling. In the winter, the heat accumulated in the lime is gradually redistributed, providing comfort throughout the home. Conversely, in the summer, hemp prevents overheating and locks in the freshness.

In addition to being a thermal insulator, hemp is also endowed with soundproofing properties.

Finally, installation is easy and the material can be handled without gloves.

3 It's breathable

Hemp insulation promotes air exchange, which prevents ambient air pollution. Hemp is a breathable material that regulates moisture levels and helps prevent future damage.

4 It's durable

Over time, hemp concrete will continue to solidify. It is naturally non-flammable and an insect repellent (termites, mites, ants, etc.). Thanks to these properties, it will not deteriorate prematurely.

Whether in hemp wool panels, rolls or bulk, you will quickly see that hemp holds all the advantages.

HEMP HOUSES COULD BE GREENER, FIRE-RESISTANT, AND BUILT LIKE LEGO

"A Vancouver Island home built using cutting-edge green technology is now move-in ready.

It's called the "Harmless Home," and the exterior walls are constructed out of Lego-like building blocks, made essentially of compressed hemp, lime and water.

Now, it's being hailed as the most sustainable, safest and most energy-efficient house possible.

Home owner, Arno Keinonen recently settled in.

"We are very happy with the end result," he said.

The product is sustainable, carbon negative and a quicker build than using concrete, says Just BioFiber

The product itself is being manufactured in Calgary. It doesn't mould and is virtually fire-resistant.

"We heat it up to over 1,500 degrees..." – Global News Calgary (Continued in the Article)


JustBioFiber
Structural Solutions

COME AND SEE A HEMP BRICK

at the free public Expo Day

Sat 22 May 2021

ENERGY EVENTS CENTRE ROTORUA