Hemp concrete, the solution that is needed for the renovation of the heritage.

# Maisons et Cités: the leading social landlord in Hauts-de-France

Maisons et Cités is a social landlord located in the Hauts-de-France region, which manages 64,000 homes.

It is mainly mining housing.

"If you have watched the film Germinal, you can imagine these individual brick houses. Most of them are over 100 years old and not insulated at all," says Franck Mac Farlane, head of the Research and Expertise Unit.

The main problem with these buildings?

They are very damp and cannot be insulated from the outside because most of them are listed as UNESCO World Heritage Sites.

"We have a commitment to the state to renovate 2,000 homes per year”.

# In search of a high-performance biosourced material

"A few years ago, Maisons et Cités started thinking about alternatives to oil-based insulation," says Franck Mac Farlane.

They were looking for solutions to solve the problem of thermal inertia and humidity, but also the installation problems they were encountering with the use of glass wool.

They then undertook this reflection, in partnership with the CD2E, accelerator of the eco-transition.

# From concept to reality.

# 2015 was the year of the first test project: Réhafutur 1.

# "This worksite aimed to renovate a house that was not at all representative of our heritage, an engineer's house, it was over 300 m²."

# "We insulated each wall with a different biosourced insulation material; hemp concrete, cellulose wadding, flax, sheep's wool, etc. and we studied the behaviour of each of these walls.

# The second test site, Rehafutur 2, was carried out in mining houses, representative of the local heritage.

# Two of these houses were insulated with hemp blocks.

# "We received very positive feedback from the inhabitants. In November, they still hadn't turned on the heating and it was 21 degrees inside."

# In 2018, the third and final test site started: Rénochanvre.

# This time it was an opportunity to try out sprayed hemp concrete and compare its behaviour to a conventionally insulated house, in order to measure comfort, thermal performance, temperature, humidity and CO2.

# "We quickly found that hemp provided a smoother temperature, much less subject to the variation of outside temperatures”

# **The final decision: hemp concrete the winner**

When it came to choosing between the different bio-based materials tested, hemp quickly stood out.

However, there was still one question.

"We were hesitating between sprayed hemp concrete and hemp blocks. Each had its advantages, so we decided to combine both.”

# **A large-scale project and the creation of a sector.**

Today, hemp has moved from test sites to the real conditions of the project named: Pecquenchanvre.

This project has proven the real performance of this biosourced material and opened up new perspectives.

Indeed, the reflection of Maisons et Cités and the CD2E on the research of biosourced materials has been transformed into a project for the creation of a local hemp sector.

In addition, the CD2E organises training for craftsmen and contractors directly on site, thanks to a mobile container, in order to make the use of hemp accessible to as many people as possible.

Their objective is to increase the number of houses renovated with hemp blocks and hemp concrete year after year.

A great adventure for hemp in heritage renovation, which once again demonstrates its ability to ensure optimal comfort for inhabitants, even in the most humid environments.

Would you like to discover other testimonies and feedback shared during our Pro Day?

Stay tuned, they will be coming soon.

**Social Media Focus:**

Have you watched the film Germinal?

Then you can imagine the brick houses in the coalfield.

Each one is more humid than the next!

How do you renovate these houses and ensure optimum comfort for the inhabitants?

Knowing that they are classified and impossible to insulate from the outside...

The answer lies in hemp.

Discover without delay how hemp has taken its place in the large-scale project of Maisons et Cités.

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