

# the living wall

an ecological sound barrier solution inc.



## FAQ



**ramo**

**green barriers**

# Natural sound barrier



**Why are your sound barrier wall green-based?**

Our mission is to offer solutions to environmental issues thanks to green technologies and our products fit perfectly in urban or rural landscapes. We used dried willow stems as stakes for the climbing plants planted in front of each barrier.

Through the years, the barriers are covered by climbing vines, giving them a unique combination of greenery and wood, and exhibiting a natural feature.





## An ecological sound barrier wall?

Our products are designed in order to limit their ecological footprint. The components are strategically selected and assembled to offer a life expectancy comparable to the highest standards in the industry.

Most of the materials used in the making of our walls come from Quebec. The materials used in our walls are natural, recycled or recyclable.

# As durable as a concret wall ?

Although when speaking about sound barriers walls, the first reference is the concrete wall, in fact, wood or technologies like the one used for the Ramo green barriers have been used for decades and are just as durable.

**DURABLE**  
DURABLE



# Since when have you been producing green barriers ?

The Danish company Pilebyg has 25-years experience in designing and producing sound barriers walls in Scandinavia using willow. Since May 2010, Ramo green barriers offers a product range of sound barriers walls made in Quebec.

Ramo green barriers represents more than 10 kilometres of sound barrier designed, produced and installed in the province for the last ten years. Along with our partner, we keep ourselves at the cutting edge in the development of new product offerings which are sustainable and meet current standards.



# Which type of maintenance is necessary for the wall?

No maintenance is required.

# The product aesthetics fosters a high social acceptability

We pay particular attention to the aesthetics of the product in our design and selection of materials.

Be it in a rural, urban or industrial setting, our acoustic solutions are chosen to be harmonious with the environment and the landscape.

The wood will turn grey with over time and the climbing plants will provide green and red touches following the seasons. This enhances the quality of living environments while answering the issue of noise pollution.







The willow is a plant that grows very quickly in northern conditions like in Quebec. In less than three years, it can reach a height of 5 metres! Moreover, when it is cut, it regenerates itself. It is our source of raw material that is almost infinitely renewable!

At Ramo green barriers, the willow is used to produce sound barrier walls, fences, phyto-technological projects and mulch.

## Why use willow for your walls?





## But the willow is not known for its great durability?

When looking at the specialized literature, the willow is not always recognized for its great durability when compared to white cedar or white oak. However, the first enemy of wood is humidity. By applying the basic principles of wood durability, and maintaining dry conditions, most of wood species can be durable on the long term.

Moreover, our debarking process is unique. We debark the willow stems as one would peel a banana. This technique maintains and extremely smooth the external surface of

the willow stems so that it is very difficult for water to penetrate, contrary to a wood piece that would have been sawed or debarked through an abrasive process.

We tried treating our willow stems with industrial sealers, but it was impossible for the product to penetrate without a prior mechanical sanding. The only part that could be exposed to the elements is the top end-cut of the stem but we protect that part with a metallic cap.

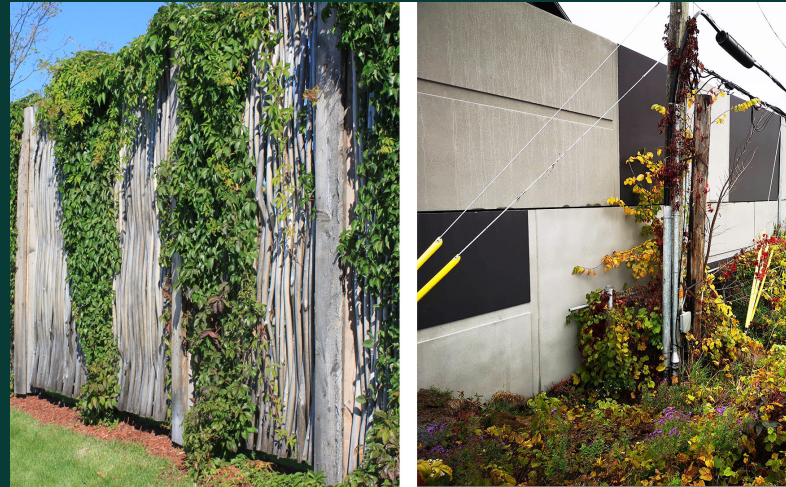
## Will the wall deteriorate with time?

In the cumulative 25-years of expertise of the Danish company Pilebyg and our 10-years of experience, not one single project has had issues with mould, discoloration, rotting or deterioration because of humidity or exposure to UV rays.

It is worth mentioning that we design and produce our walls with robust and durable materials and that we adequately protect the wood elements to ensure the sustainability of our projects.

Graffiti and vandalism are very rarely found on our walls because paint does not easily adhere to the very smooth surface of the willow stems. The paint fades with rain or with peeling of the bark, and the wall is covered with climbing plants. Besides, green surfaces are generally less inviting for the graffiti perpetrators, because their “art” is difficult to be perceived on these types of surface with irregular reliefs, contrary to a uniform and flat surface like concrete.

## An anti-graffiti wall, really?



Contrary to steel or concrete, wood is not affected by de-icing salt<sup>1</sup>. In the context of a highway project, it becomes a definite advantage to consider the use of wood.

## Can the wood resist de-icing salts?

<sup>1</sup> Reference: CECOBOIS, Guide on the durability of wooden bridges (3, 5, 4 de-icing salts, page 6).



Effect of sodium chloride on concrete

Référence : SEREX

## Are your walls as efficient as concrete walls to decrease noise?

Our walls are as effective as the concrete ones for noise reduction. We work with external companies who specialize in acoustics. The consultation of an acoustic study allows us to realize a proper design. In this study, the acoustic specialist not only recommends the height, length and placement of the wall, but also the type of wall in order to

fulfill the specific noise reduction requirements. We respect the recommendations of the acoustic specialists and the standards of the Ministry of Transportation in Quebec.

## Is your wall flammable?

While wood does have flammable properties, the flame-spread rating is relatively low in our products considering the materials used in the design. The rock wool, the steel rods and the galvanized posts will act as activity retarder.

Historically, over the cumulative 25-years expertise of the Danish company Pilebyg and our 10-year expertise, no one single project was exposed to fire.

**EFFICIENT**  
**EFFICIENT**





## Is the wood going to rot?

Wood has been used in house building and road infrastructures for centuries, including bridges, farm buildings, guard rails, phone posts that one can find in our landscape.

Depending on its use, the wood can be more or less sensitive to rotting. Humidity is wood's greatest enemy, but thanks to a smart integration of the wood components, we can obtain a long live expectancy of our products:

- Vertical aspect of the exposed components helps with water drainage.
- The adding of a protecting metallic cap on top of the barrier
- Specialized debarking to get a smooth, quasi-impermeable surface,
- Limited contact between wood components and the soil
- Integration of climbing plants decrease deterioration due to UV rays and rain
- Usage of metallic structural components or wood species less prone to rotting

# Is it Ramo green barriers who built the green wall that was demolished in Laval on highway 440

NO. This work was not designed, nor produced, by Ramo green barriers. This project was one of the first green walls ever done in Quebec. Yet, these first-generation projects used live willows which required, among other things, a lot of maintenance, including constant irrigation and frequent trimmings.



The solutions offered by Ramo green barriers are adapted from a Scandinavian concept and are made of steel structures, dried willow facades and an acoustic core of rock wool lending sound absorption properties to the wall. The wall is capped by a metallic piece which increases its lifespan and climbing plants are also integrated. This design permits to get durable acoustic performances and offers a maintenance-free product more compatible with the needs of our clientele.





## What are the benefits in promoting a green wall of Ramo green barriers?

- Product aesthetics fosters social acceptance
- Tree planting
- Natural, recycled or recyclable materials
- Greening of the landscape
- Carbon capture in the willow biomass during growth
- Efficient measure to offset heat islands
- Durable, environmental and effective
- Respecting standards
- Economical range of products
- Unique concept of circular economy
- Creation of local jobs in environmental technologies



# I would like a natural sound barrier wall. What should I do?

Contact us! Our team will assist you through all the steps.



# ramo

## green barriers

Contact us

the living wall

an ecological sound barrier solution inc.

416.698.5863

info@thelivingwall.net

www.thelivingwall.net

20 Leslie Street, Suite 121, Toronto, ON M4M 3L4

