

# the living wall

an ecological sound barrier solution inc.

Sound Barrier



 **ramo**  
green barriers

**Our mission:  
Find solutions to  
environmental issues  
thanks to plant-based  
technologies**

# Our natural sound barrier walls

## REPAIR AND EMBELLISH WITH PLANTS

Ramo proposes a unique model of circular economy under the licence of the Danish company Pilebyg. Almost 25 years of experience in Scandinavia. The Green Barriers are natural sound barrier walls, durable and efficient made with willow. Since 2006, Ramo cultivates willows on 400 acres in Saint-Roch-de-l'Achigan and in other places in Quebec.

Ramo has already installed more than 10 kilometres of sound barrier screen in Quebec that perfectly integrate into the landscape.



- Choosing Ramo is an excellent way to support the green recovery of Quebec.
- Natural, recycled or recyclable materials
- Willow stems capturing 32 kg of Co<sub>2</sub>/m<sup>2</sup>
- A greening of the landscape
- A high social acceptability
- Graffiti-proof surface
- Possibility of integrating climbing plants

**The  
manufacturing  
emits 6 times  
less  
CO<sub>2</sub> than  
concrete**



# Sustainability

Willow walls have existed for over 25 years in Scandinavia and already 10 years in Quebec



Historically, during the 25-years of the Danish company PileByg along with our 10-years, there have been no recorded instances of mould, staining, rotting or degradation due to humidity or UV rays. We design and build our fences with robust and sustainable materials and we adequately protect the wood components to ensure the durability of our projects.



# Integration of climbing plants

Offering a long life span, our solutions are maintenance free. The willow will turn grey with time. Climbing plants will give green and red touches according to the season.

We know different approaches can be taken depending on proximity with residences, the aesthetics sought after, or on other criteria that will improve the outcomes and the prestige of a project.



# OUR TEAM

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We are experts in willow cultivation. Our willows are used in particular to create sound barrier barriers. Our products fit very well with the surrounding landscape and are made of natural and durable materials which age without losing their beauty, structural integrity or acoustic performance. Tested and proven technology, our products are designed to respect the standards and requirements in terms of quality and performance. Our team will work with you during all the stages, from design, through to fabrication and installation.



# Different types of facades



# Debarked natural willow facade



Debarked willow, like natural willow with bark, does not require any type of maintenance, but it is still recommended to plant some Virginia Creeper to protect the product and improve its aesthetics. The willow stems will turn grey over the years, like the natural product.

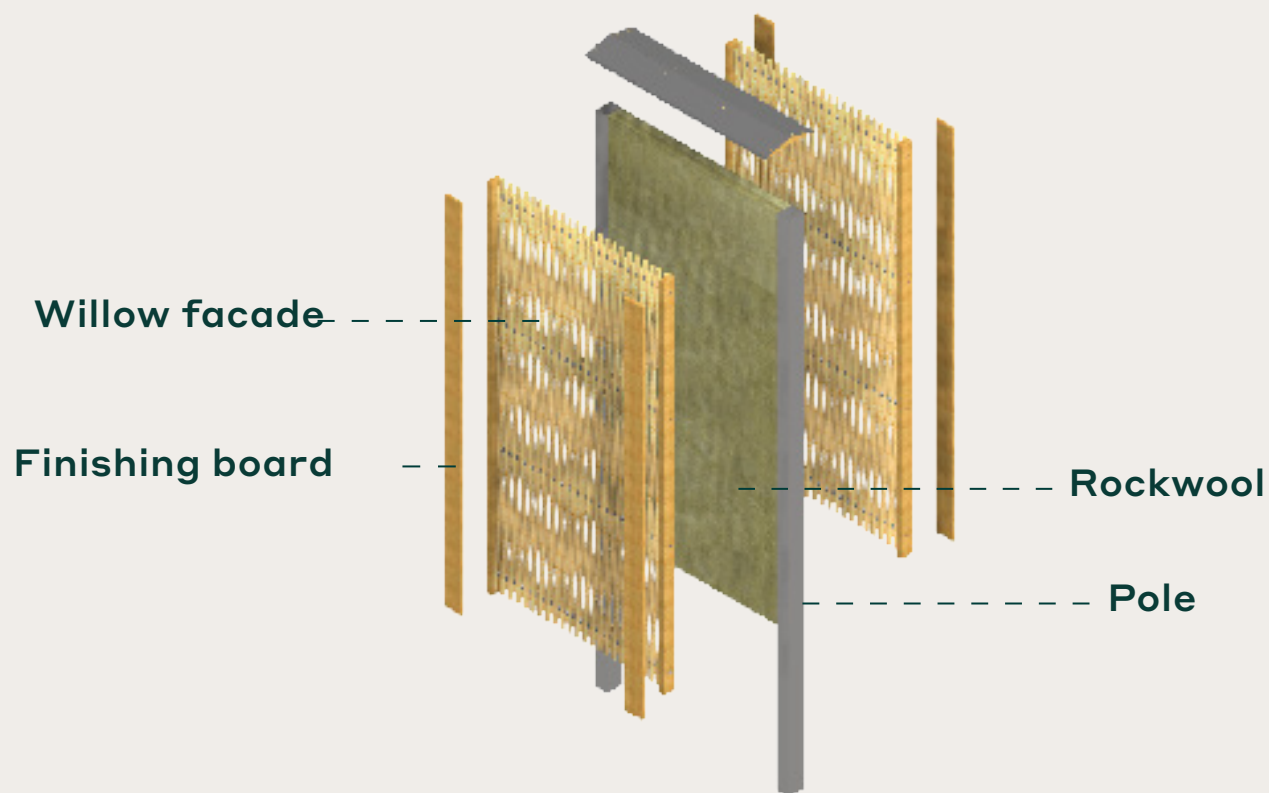
- Homogenous appearance
- Absorbent
- Integration of climbing plants
- No maintenance required
- Graffiti-proof
- Willow cultivated by Ramo

Ramo green barriers

# DEBARKED

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## FIGURE: SOUND BARRIER WALL DEBARKED WILLOW FACADE



\* Technical drawing on request





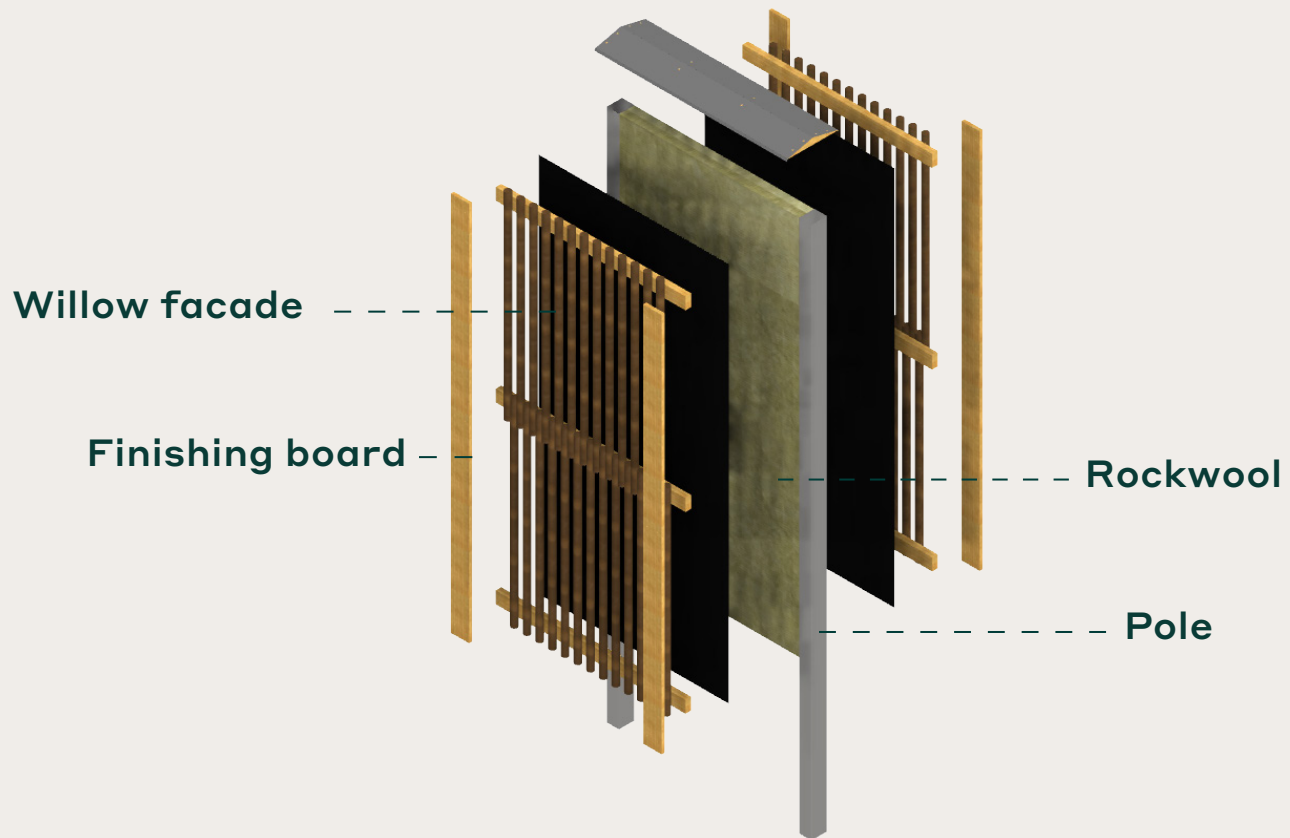
# Roasted cleaned willow facade



Roasted and debarked willow façade is made of larger diameter willow stems. The stems are interspersed which exposes the acoustic core of the sound barrier wall. This façade provides the natural aesthetic of willows at a reduced price.

- Large diameter debarked willow façade
- Absorbent
- Integration of climbing plants
- No maintenance required
- Graffiti-proof
- Willow cultivated by Ramo
- Competitive price

## FIGURE : SOUND BARRIER WALL ROASTED CLEANED WILLOW FACADE



\* Technical drawing on request

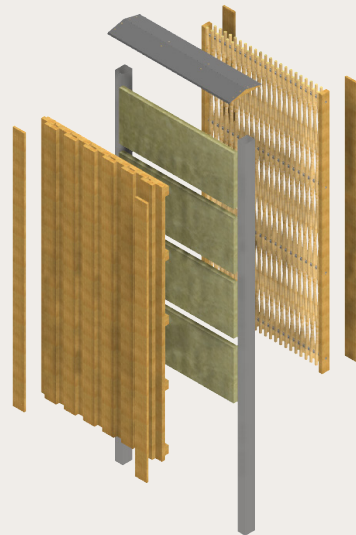




# Alternative options for façades

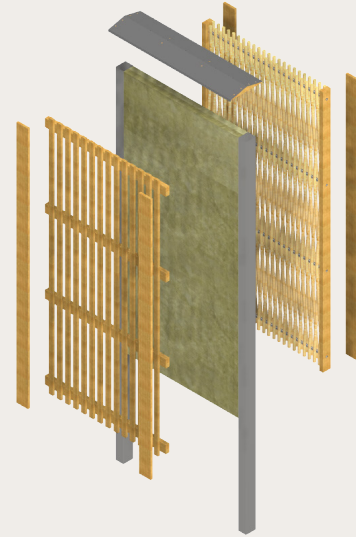
We guide our clients through all stages of the design. We have different façade options that can be adapted depending on the proximity of neighbouring residences, the desired aesthetic, the budget, or any other criteria that would improve the outcome and success of the project.

## Larch board



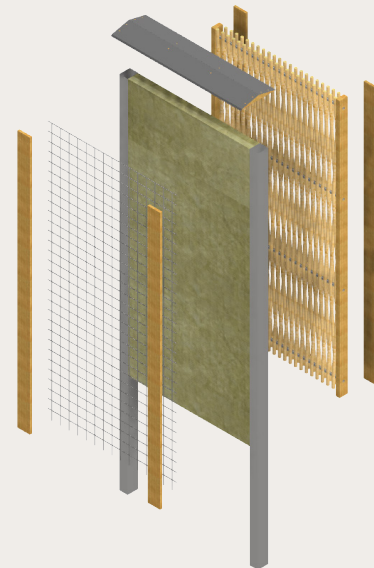
The larch solution is part of the line of reflective sound barrier walls. It is an affordable and maintenance-free option, but is not immune to potential graffiti.

## Larch latte



As efficient and easy to install, the larch façade is more traditional looking. It is made with larch laths that expose the rock wool core that provides sound absorption.

## Mesh



The mesh façade is a simple solution as well as a discrete and very affordable option. It is ideal when the façade is hidden or does not necessitate an important visual aesthetics.

# Mounting options



## PREASSEMBLED

The preassembled wall can be directly installed inside the frame of an H post.

The preassembled installation requires high clearance above the sound barrier wall to allow the equipment to operate.

## ASSEMBLED ON SITE

When the wall is assembled on site, the installation proceeds through three steps: installation of the posts, installation of the rock wool, and installation of the facades. This requires less equipment and is well adapted for smaller projects comparatively with preassembled installations or boxes.





# Dimensions and acoustic data

STANDARD HEIGHT	STANDARD SCOPE	THICKNESS
1 - 6 m	1,54 - 4,88 m	150 - 350 mm

To reach a high range, it is possible to put rock wool inside the metallic boxes before the installation. Thus we can save time when assembled on site. We will then attach the desired facades. Thanks to the rigidity of the boxes, we can reach a range of 4.88 metres which allows a reduction in the number of footings.



MATERIAL	THICKNESS mm	SURFACE DENSITY (kg/m <sup>2</sup> )	STC	NRC
Wool 13	120	13	23,5	0,85
Wool 21	120	21	25	0,80
Larch 1po	25	14	26	0,2 -0,5
Larch 1 5/8po	41	23,1	28	0,2 -0,5
Larch + Wool 2po	25 + 51	17,6	29	1,00
Larch + Wool 4po	25 + 102	21,3	31	1,05

We refer to acoustic studies to design a wall that will respect the recommendations made by the acoustic specialist.

TYPES OF POLES	WOOL	TUBE HSS	POLE H
Description	Robinier faux-acacia	Galvanisé à chaud	Galvanisé à chaud
Standard dimension	102x102mm	102x102mm	W360 x 33
	102x127mm	102x127mm	
	102x152mm	102x152mm	
Type of foundation	Sonotube . Bloc	All type	All type
Type of installation	Assembled on site	Assembled on site	Pre-assembled casing

# They trusted us



... et bien d'autres encore

“

The sound barrier wall was installed several months ago and still today, we receive positive feedback about this project which significantly contributes to the landscape design of this new neighbourhood. Even better, the wall will get nicer thanks to the greenery growing gradually between the willow stems making up the wall. Considering the quality of the sound barrier wall delivered to us and the great professionalism of all the team at Ramo, I highly recommend your company”

Marie-Sara Hamel,  
VP Operations, Broad Group

Real estate project TOD at Candiac station. A 400-metre sound barrier wall of debarked willow.



# Ramo also offers...

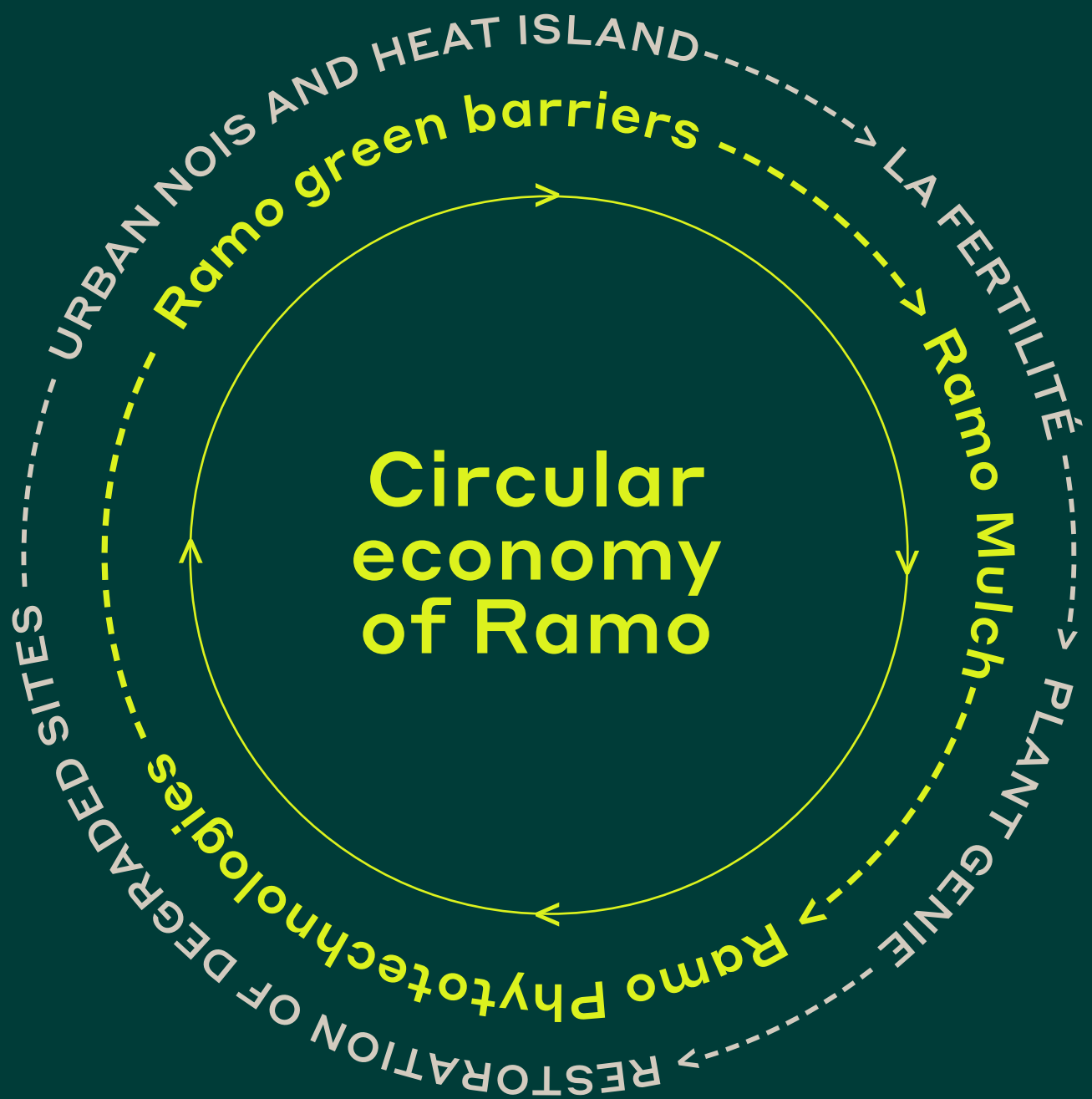
...phyto-technological solutions leveraging the characteristics and properties of willow to solve several environmental issues.



...RCW mulch. With the wood chips resulting from our production we create a very efficient mulch for different purposes.







OUR WILLOWS ARE TRANSFORMED INTO PRODUCTS WITH A HIGH ADDED VALUE TO RESOLVE SEVERAL ENVIRONMENTAL ISSUES.

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Contact us

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