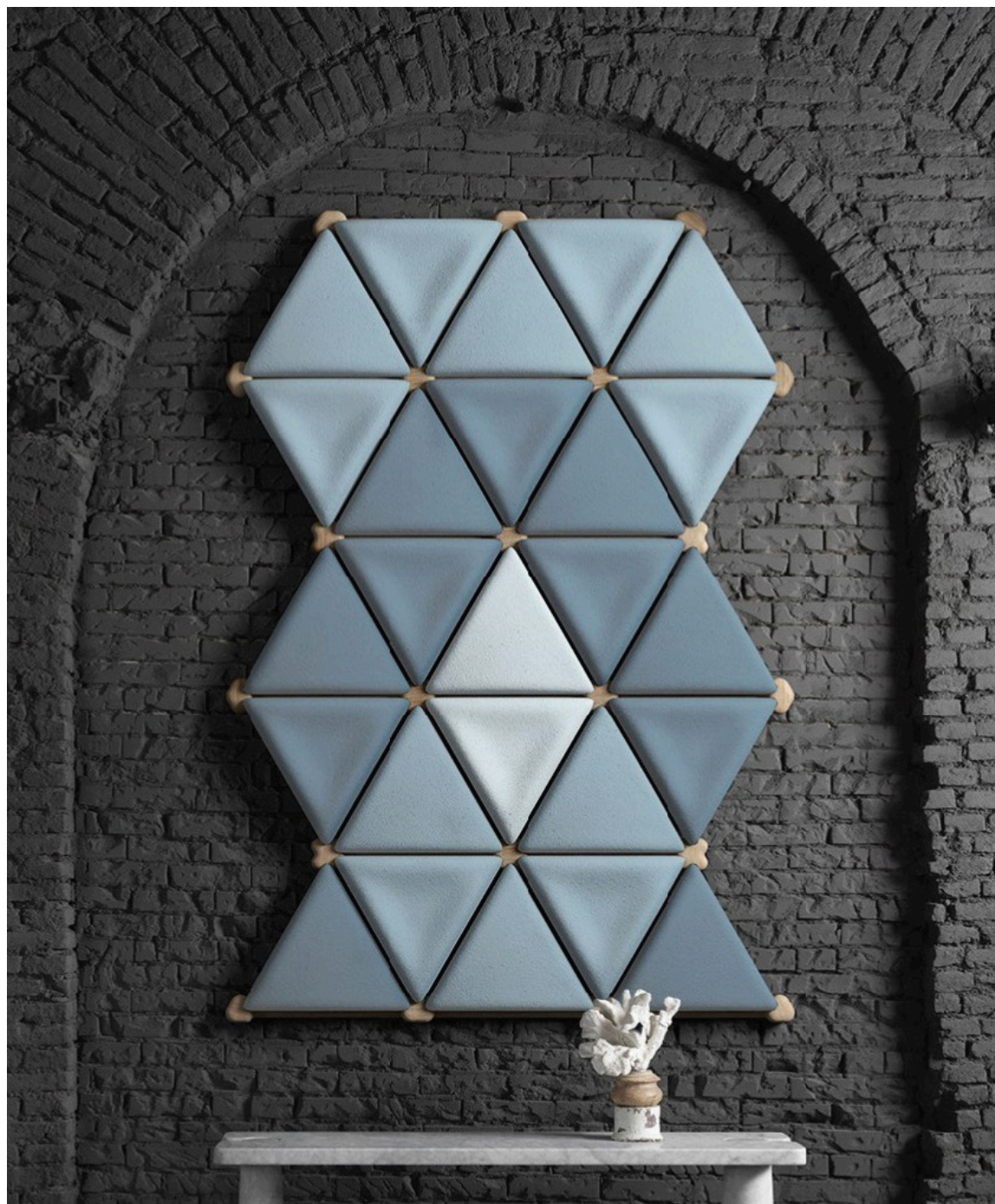


FORESTA SYSTEM



Installation guide

# Installation Guide

## Foresta Acoustic system

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The FORESTA Acoustic system is born from the intention of bringing Nature back into the everyday's spaces we inhabit. Inspired by the unique sensation of walking through the woods, the system combines Nature's vernacular materiality (as exemplified by wood) with the radical innovation deriving from mycelium-based technologies. A wooden structure composed of rails and nodes supports and eases the installation of triangular acoustic-absorbing modules, as if each single module would represent multiple colored leaves sprouting from the branches of a tree.

## Table of Contents

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General Introduction	p.3
Product Components	p.4
How to Design	p.6
Composition Examples	p.8
Foresta Structure	p.12
Exploded Assembly	p.14
Installation Steps	p.15
Care & Maintenance	p.19

# General Introduction

## Nature's technology

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We are thrilled about your interest in Mogu FORESTA system. The whole system is based on biomaterials and it is (grown and) made in Italy, out of low value residues and the most advanced fabrication technologies, with the lowest possible environmental impact. FORESTA is based on the combination of a wooden supporting structure and Mogu Acoustic panels, made of mycelium materials. The panels are the result of transformation processes which have as input biological materials; Mogu attentively carries out such transformations, thanks to its advanced technical protocols, derived by Nature and crafted with the utmost care. Despite Mogu's best efforts, due to the very nature characterizing biological materials, our products may bear slight differences from the reference standard pattern seen in reference images. Small imperfections, such as color differences, dimensional variations, irregular edges or minor surface imperfections should be considered as unique product features and an inherent value of a product that directly derives from Nature.

## Arrival & Installation

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Mogu FORESTA system is delivered ready to install, as in your preferred configuration. Mogu Acoustic panels are dimensionally stable, however the wooden components of FORESTA could benefit from 24 hours acclimatisation to room conditions. Upon delivery, open the boxes and inspect the products immediately. Eventual damages should be reported to Mogu immediately. If installation happens days after delivery, make sure to leave the boxes open, stored in original packing and in a clean, climate controlled environment free of moisture. Handling of Mogu products should happen with the utmost care, not imposing any force onto the material. Wall & ceiling surface where you install Mogu products should be clean and free of dust. Never install Mogu products on surfaces subject to humidity or on recently painted surfaces; paint should dry at least a week before installation.

## Product handling

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We recommend avoiding cutting and general manipulation of Mogu Acoustic panels. Mogu declines any responsibility for product performance (acoustics, fire and all declared properties) after alteration. However, if required by your project, cutting of Mogu Acoustic products is possible with standard saws. We recommend contacting our Support Team ([support@mogu.bio](mailto:support@mogu.bio)) to receive suggestions concerning the cutting methodology and touch-up painting afterwards, to ensure the best results. Do not screw into the panels or use any other fixing system rather than the ones recommended by Mogu's installation guidelines. Mogu bears no responsibility for properly checking the environment and surface conditions where the products are installed. The responsibility for the evaluation of potential issues and compensating for different field conditions is with the installer. You are welcome to contact us at [support@mogu.bio](mailto:support@mogu.bio) for inquiries concerning installation & products handling.

## Dimensions & weight

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	w [mm]	h [mm]	t [mm]	side [mm]	sqm	n°/sqm	weight [Kg]
ASPEN CONCAVE / CONVEX	455*	398*	65*	455*	0.1	10	0.6*

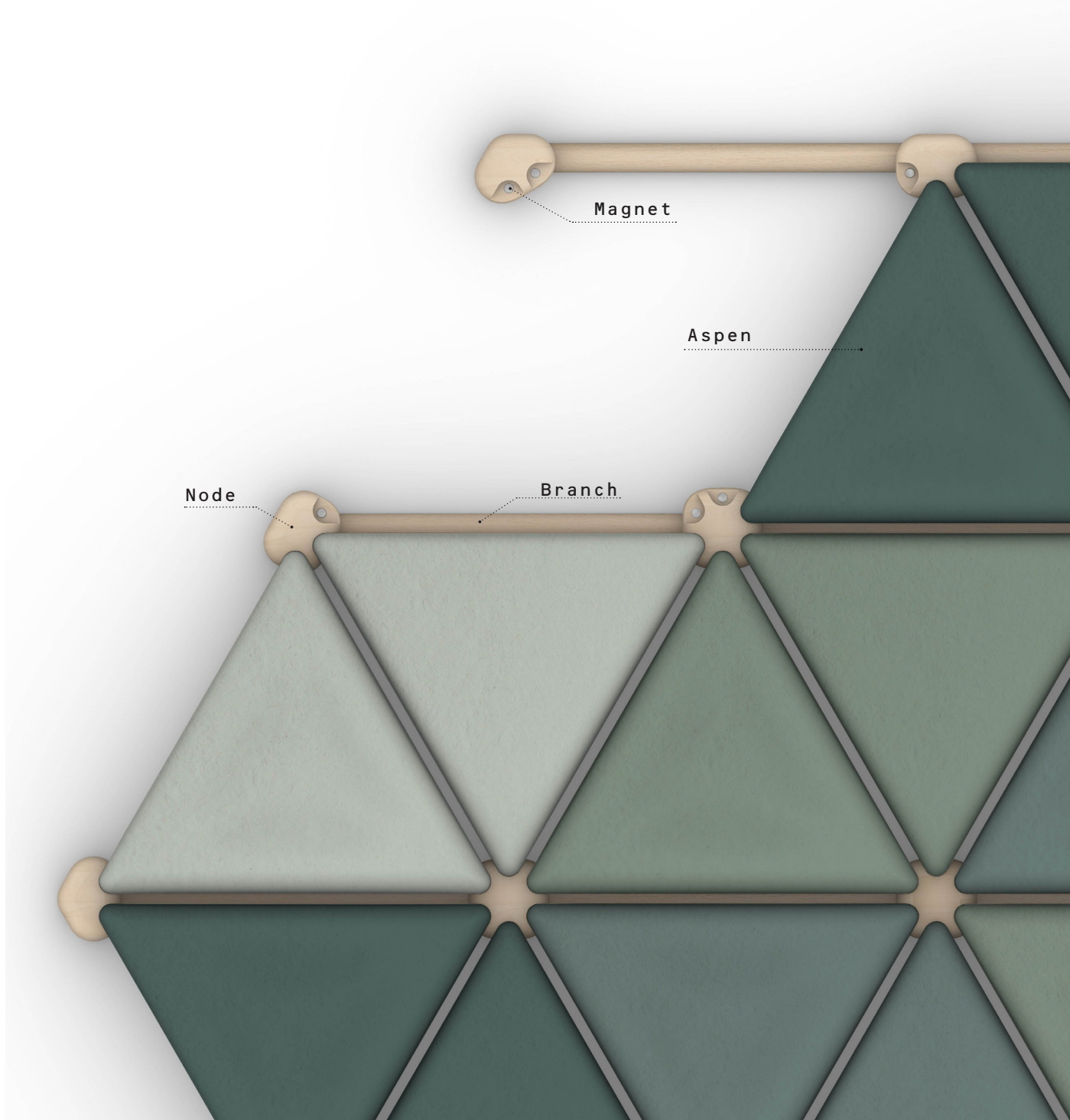
SYSTEM PARAMETRICS	1 SQM OF PRODUCT FEATURES:	10 TRIANGLES 11 NODES + 11 BACKS 3.5 mtl RAILS
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\* Mogu Acoustic panels may present slight dimensional variations as they are subject to the tolerances of the natural production process that characterise and enhance Mogu's products. However Mogu carries out a very strict dimensional control to ensure a dimensional variation of maximum +/- 0.25 cm.

# Product Components

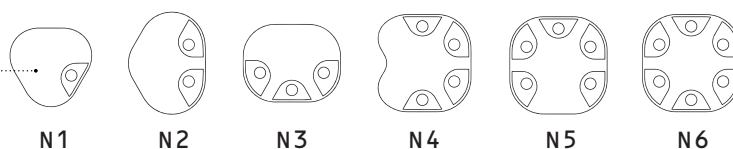
## Overview

The FORESTA system is based on a refined combination of wood batten ("branches") and "nodes". The wood battens are designed to be mechanically fixed to the wall, requiring a minimal amount of wall-perforations. The nodes simply hold onto the rails and, thanks to the integrated magnets, allow for an easy-to-mount approach in regard to the mounting of the ASPEN acoustic modules. Accordingly, the magnetic system incorporated in the nodes makes it possible for the user to easily change the position of each module, granting maximum design flexibility and supporting potential needs for future replacements (if any/ever). The full system is 99% bio-based and biodegradable, it is delivered flat-packed, and can be fully disassembled at the end of the product life cycle, to support regenerative recycling.

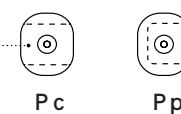


## Components

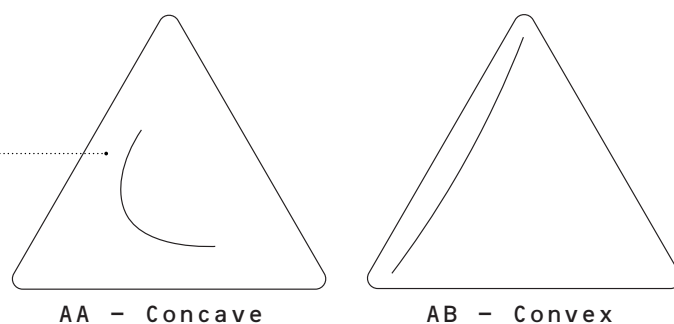
### Nodes



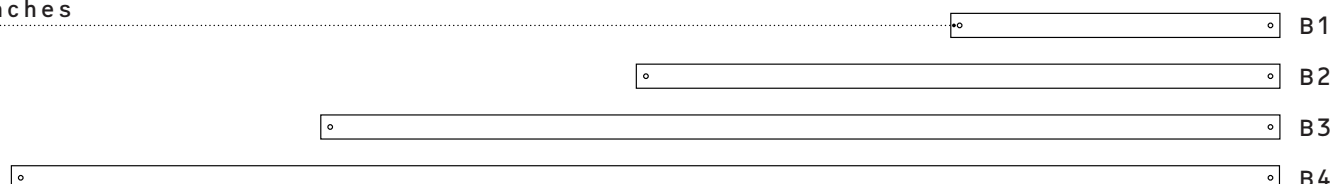
### Plugs



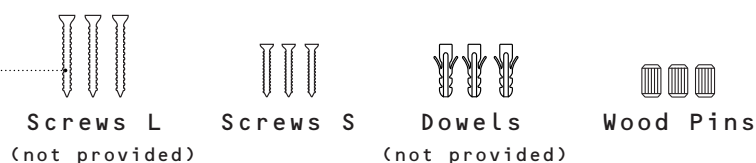
### Aspen Acoustic panels



### Branches



### Small equipment



## Extra tools needed

The installation of FORESTA Acoustic system requires the use of extra equipment not to be provided by Moqu. The list of recommended tools includes:

- Level (1 metre long)
- Tape measure
- Driller
- Rubber hammer or hammer

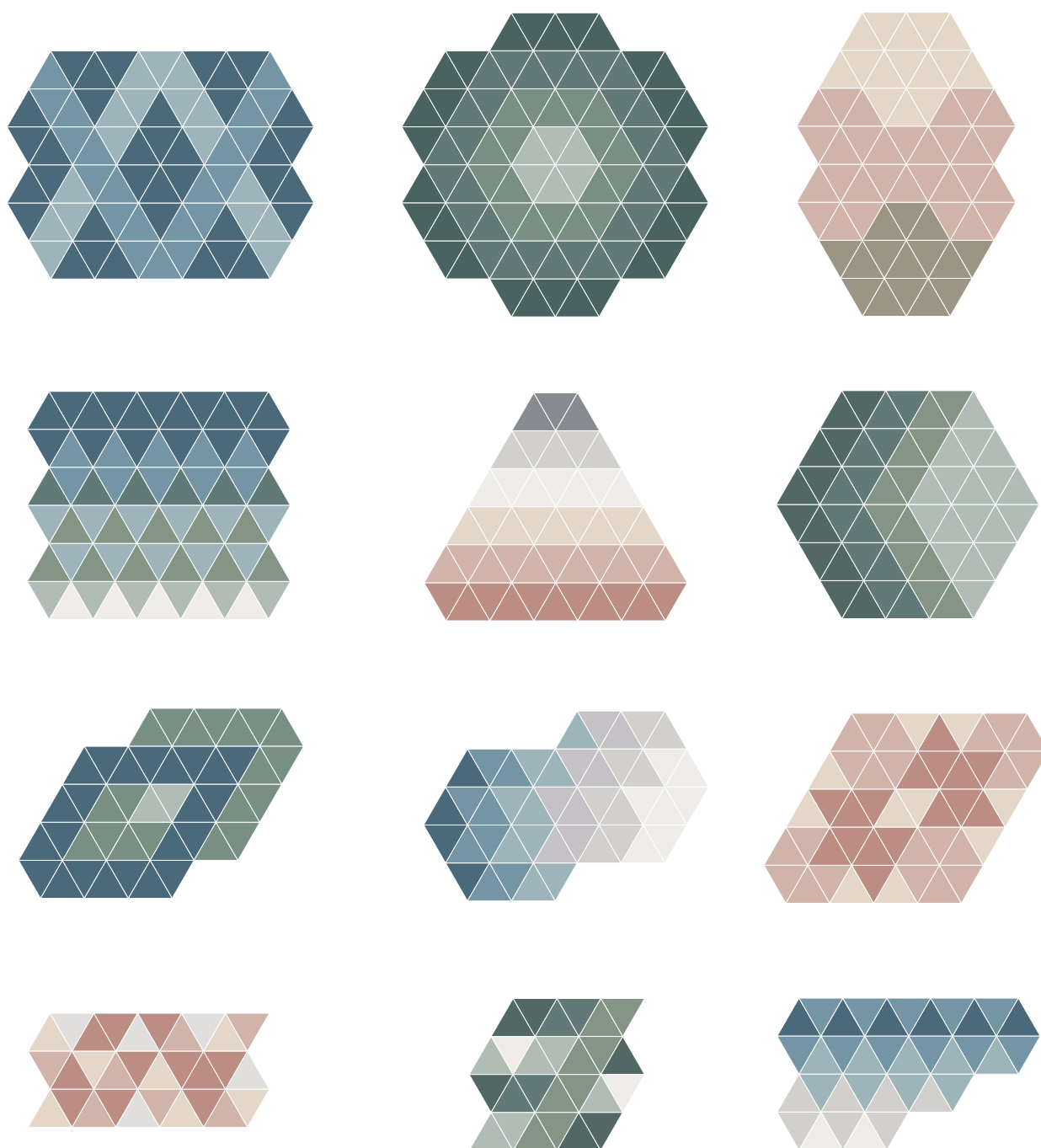


# How to Design

## FORESTA modular assembly

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With the node establishing a consistent formal language, translating between the substrate of the wall and the panels, FORESTA modular system allows and encourages to (re)configure and customize the pattern. Thanks to Mogu's unique colour palette, it is possible to choose from a range of colour themes featuring soft shades and variations of intensity, which is characteristic for natural environments. Through the snap-fit fixing detail the user can rearrange modules easily – following the seasons of use, the mood of the inhabitants or the natural cycle outside the window.

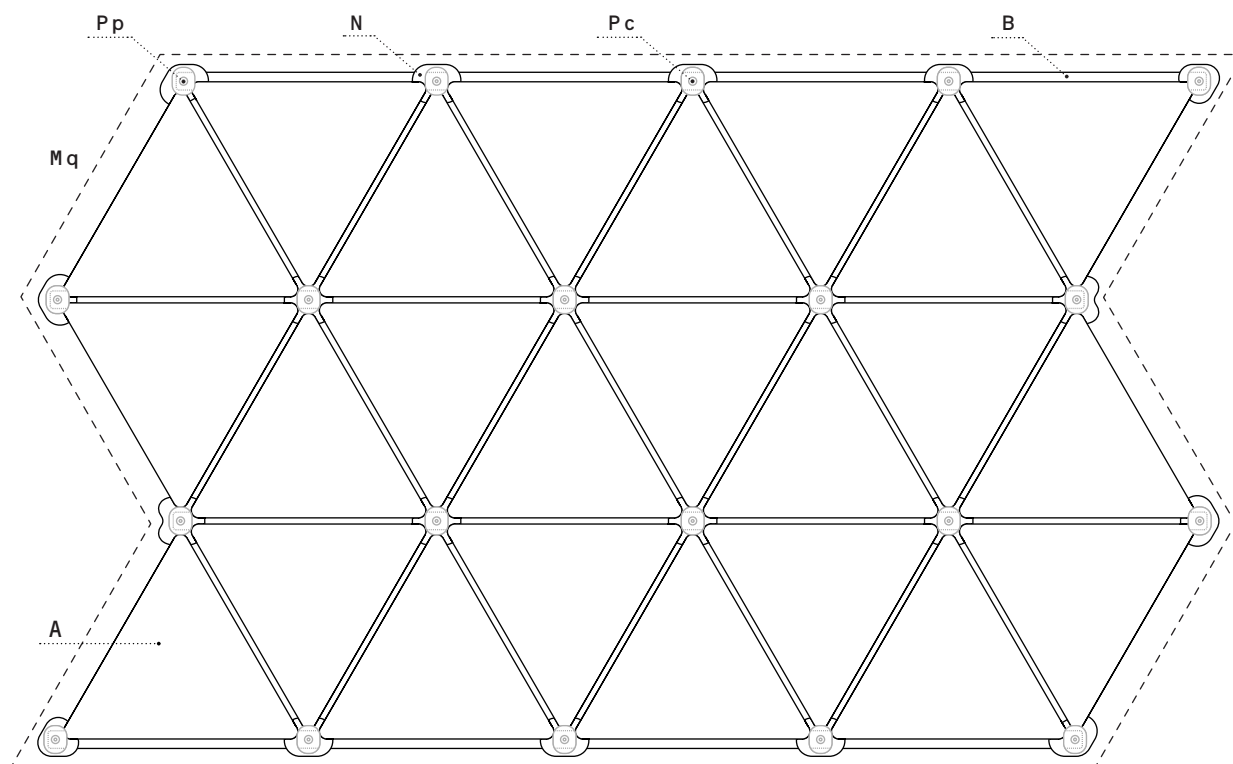


## Parameters

The FORESTA system hybridizes the vernacular materiality of wood with advanced digital fabrication approaches, unlocking the potential of innovative manufacturing processes based on product parametric modeling. The design of FORESTA valorises the infinite possibilities given by digital fabrication and parametric modelling, while minimizing the number of components and achieving a simple, yet flexible system that allows multiple configurations. Even though FORESTA allows for multiple complex compositions, it is based on only few parameters – simplifying the design and installation. In the following pages, please find few examples of how to design and specify your own FORESTA system.

## Legenda

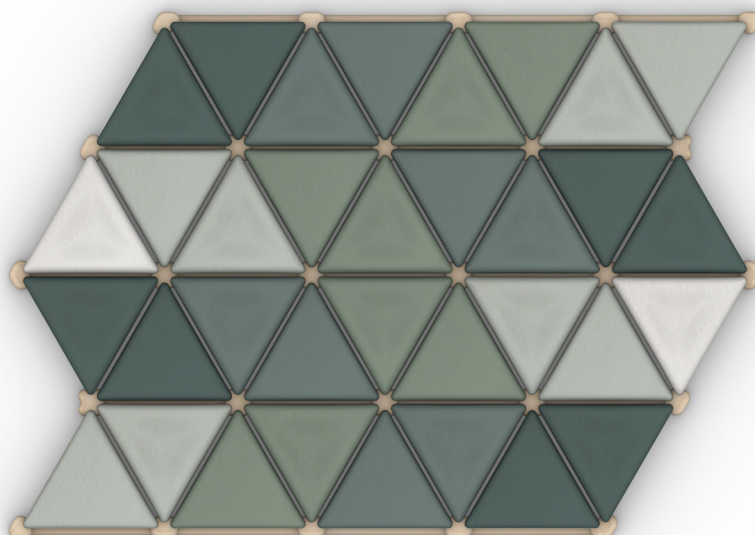
SQUARE METERS	Mq
NODE (1,2,3,4,5,6)	Nn°
PLUG (PERIMETRAL/CENTRAL)	Pp/Pc
BRANCH	B
ASPEN	A



# Composition Examples

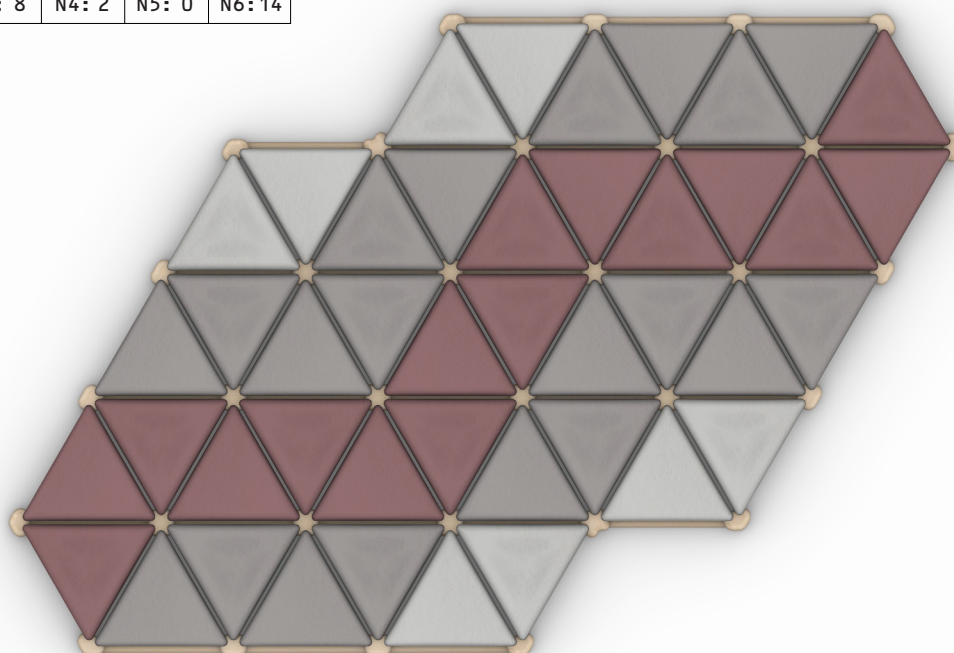
## Small installation

Mq	3.4 m <sup>2</sup>					
A	AA: 17	AB: 17				
B	B1: 4	B2: 0	B3: 2	B4: 4		
P	Pc: 16	Pp: 10				
N	N1: 2	N2: 4	N3: 8	N4: 2	N5: 0	N6: 10



## Medium installation

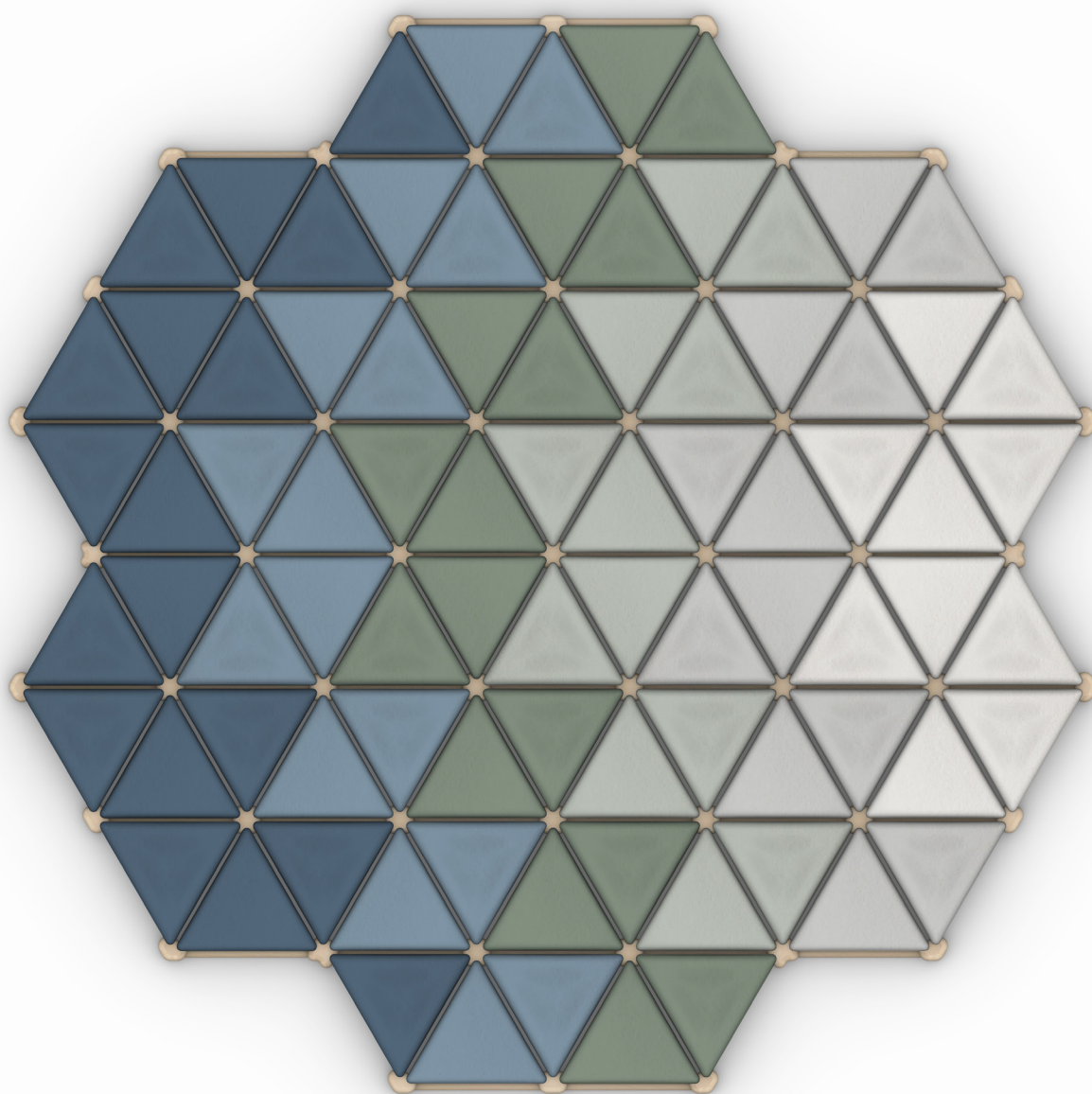
Mq	4.4 m <sup>2</sup>					
A	AA: 22	AB: 22				
B	B1: 4	B2: 0	B3: 2	B4: 4		
P	Pc: 20	Pp: 12				
N	N1: 0	N2: 8	N3: 8	N4: 2	N5: 0	N6: 14





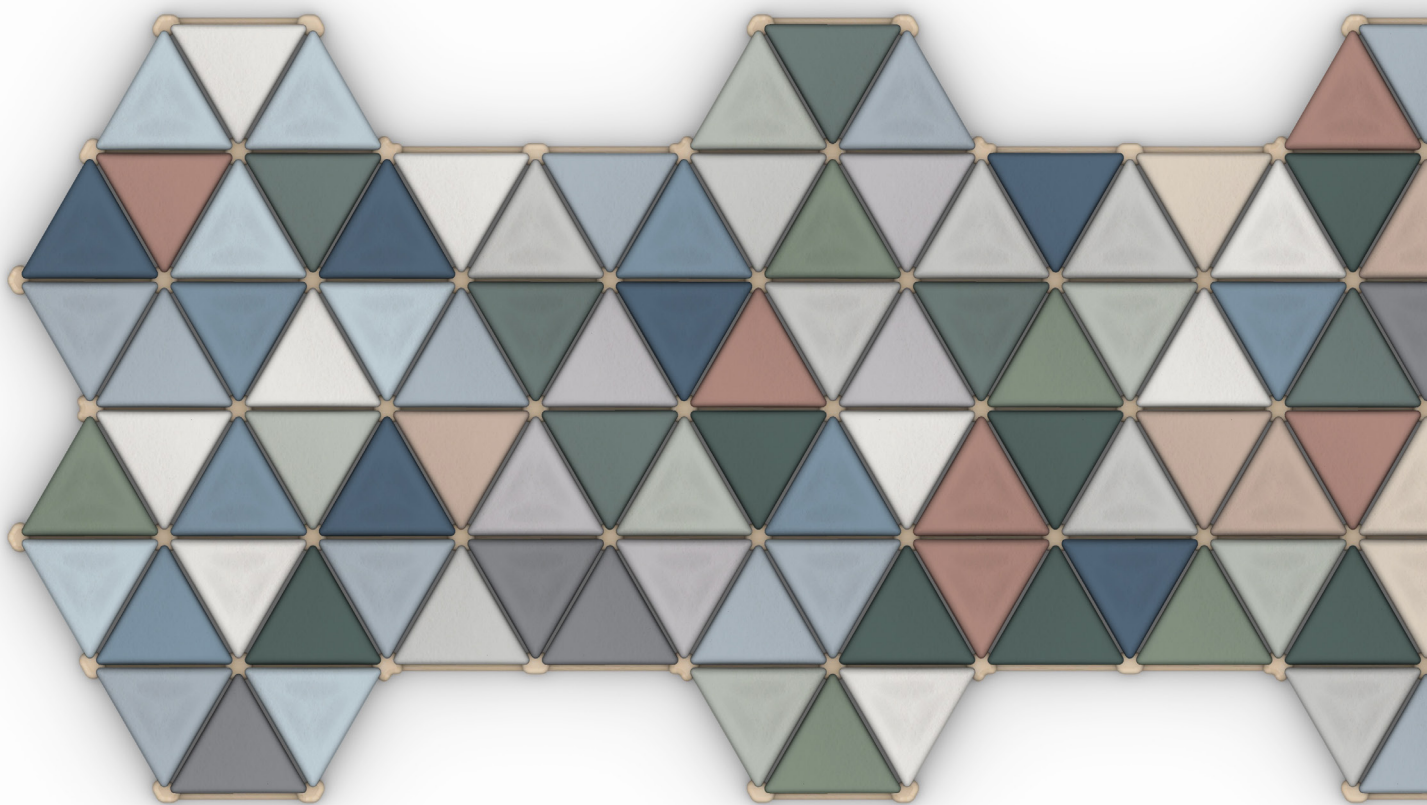
## Large installation

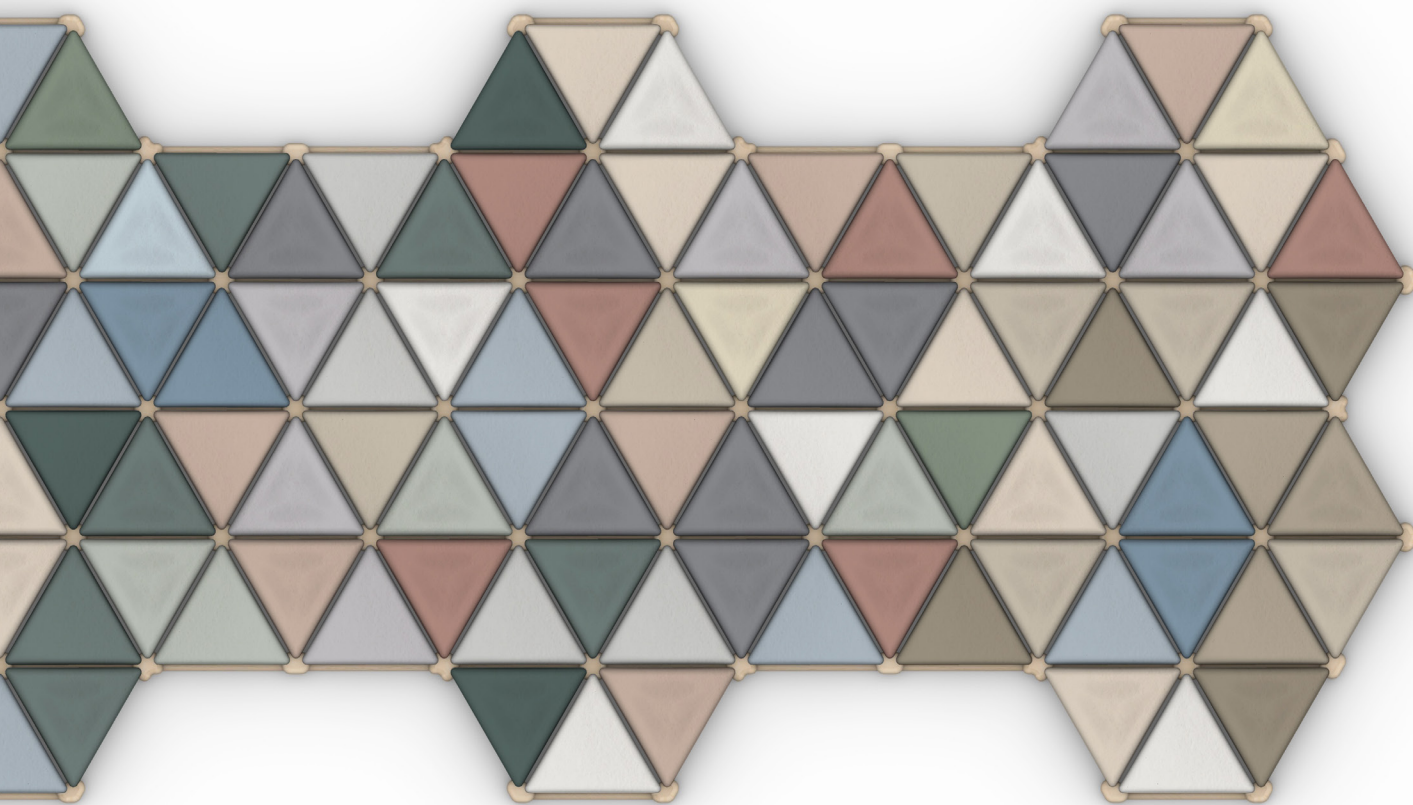
Mq	8,4 m <sup>2</sup>					
A	AA: 42	AB: 42				
B	B1: 2	B2: 2	B3: 8	B4: 4		
P	Pc: 37	Pp: 18				
N	N1: 0	N2: 12	N3: 6	N4: 6	N5: 0	N6: 31



## ExtraLarge installation

Mq	17.8 m²					
A	AA: 89	AB: 89				
B	B1: 10	B2: 3	B3: 2	B4: 20		
P	Pc: 87	Pp: 30				
N	N1: 0	N2: 24	N3: 12	N4: 18	N5: 0	N6: 63

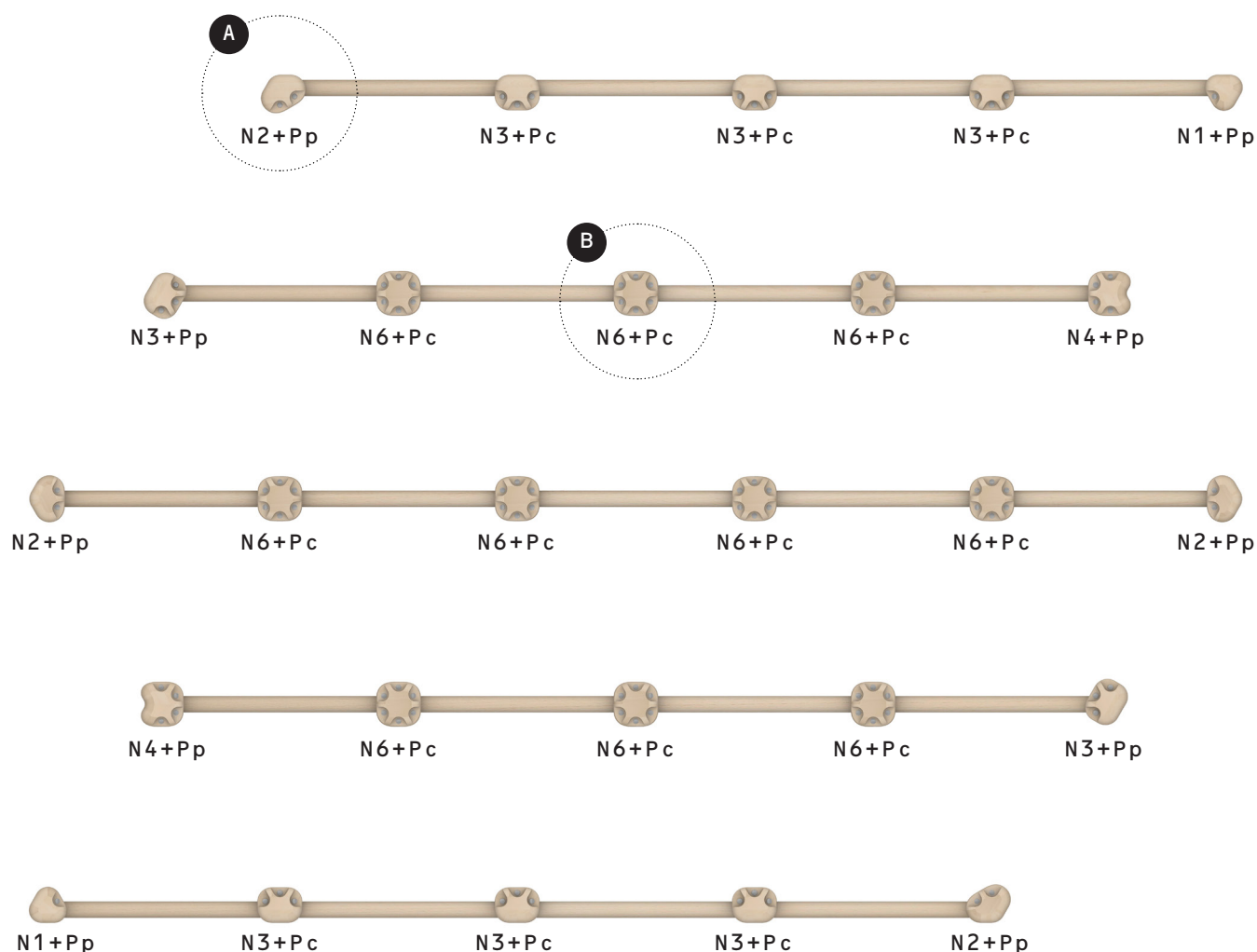




# FORESTA Structure

## Nodes System

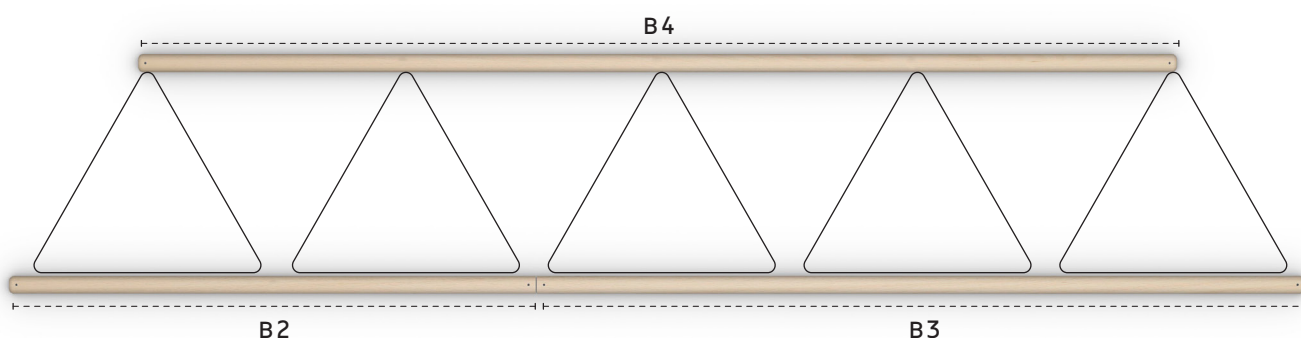
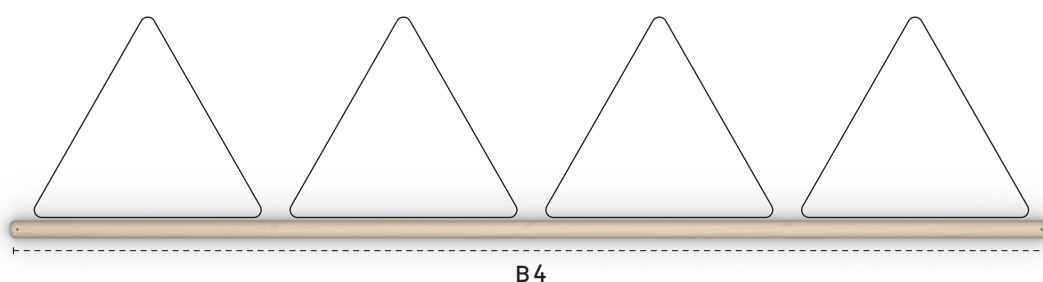
Each node of the system can hold a specific number of Mogu Aspen panel: node "N2", for example, features n.2 magnetic lodging for the acoustic modules, while node "N6" can hold up to 6 panel. Moreover, each node is designed to be simply oriented in every position. Following your desired layout of FORESTA system, we will help you to correctly identify the position of each node. As you can see on the right page, there are two types of plugs that connect each node to the branches / battens, depending on the position of the node in the FORESTA layout. Very simply, if the node falls at the end of each branch (as in the A-circled example), it will require a perimetral plug (Pp); if it is a central node (as in the B-circled example), it will require a central plug (Pc).



# Foresta Structure

## Branches System

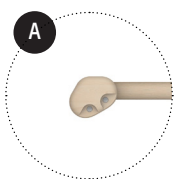
As for the nodes, each branch of the system is designed to support a specific number of panels: "B4", for example, is the correct branch to install up to four panels, while "B3" can support up to 3 panels. The available branches size are 1, 2, 3 or 4 triangles' length. Naturally, each type of branch can be combined to create longer rows of panels. For example (see picture below), to install a row of 5 panels you can align a "B2" with a "B3" branch - the sky is the only limit to your creativity!



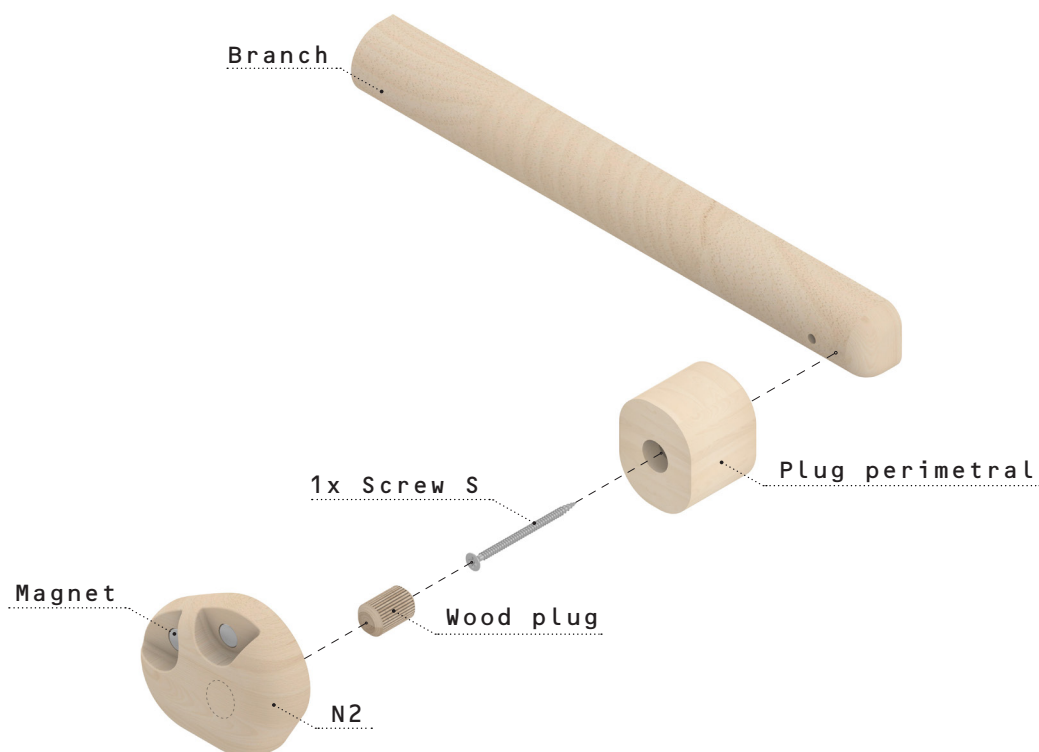


# Exploded Assembly

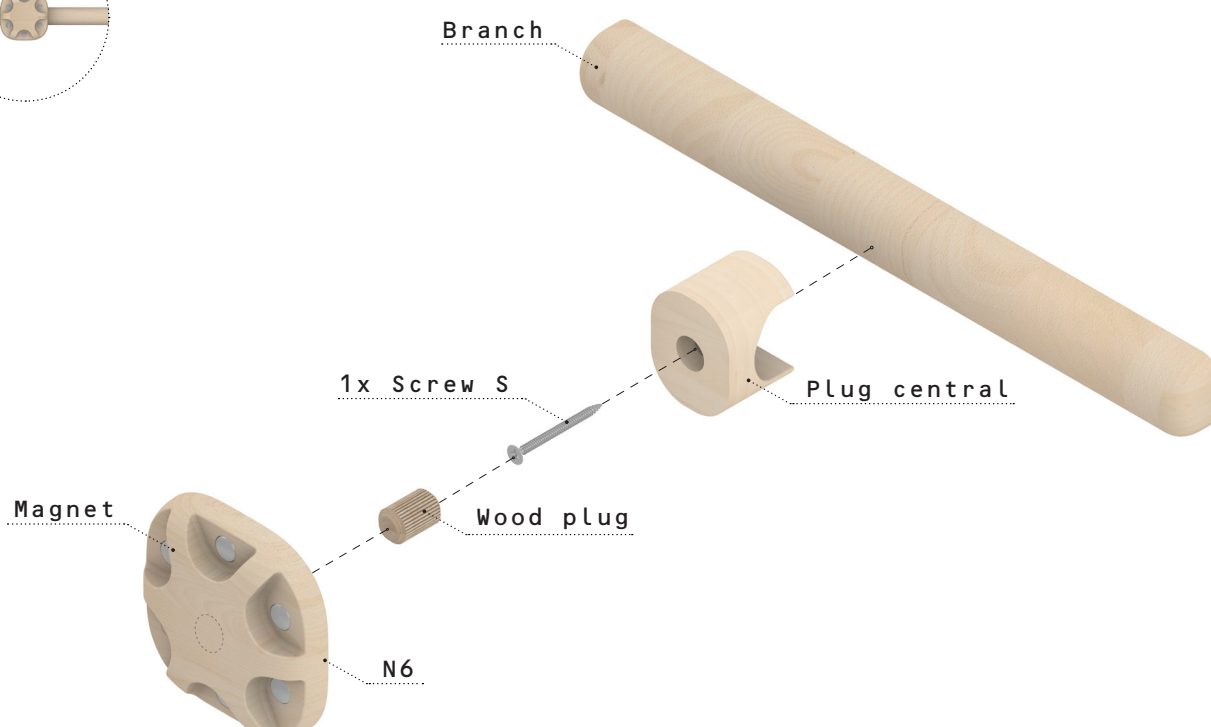
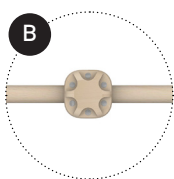
## Perimetral Node



Each branch has two perimetral holes to allow the rail to be attached to the wall. The branches are not pre-drilled for the plugs to allow the correct fixing of the panels, which might slightly vary in dimensions due to their natural origin.



## Central Node



# Installation Steps

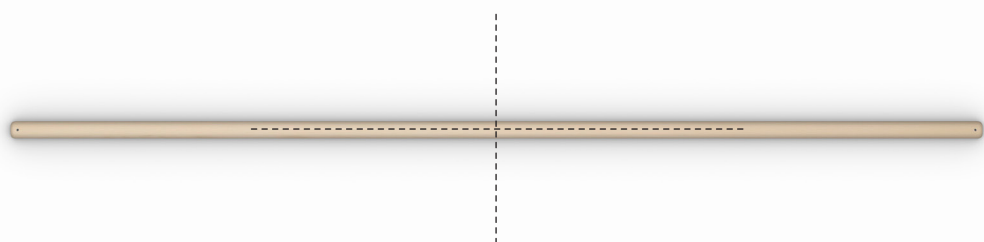
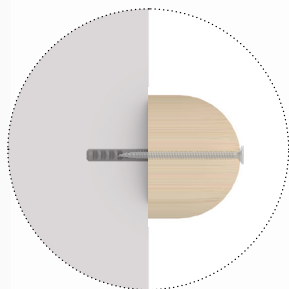
## 1° step

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Place the first branch on the wall. Screw-fix one edge of the branch (right or left), level the branch straight and fix the opposed edge.

Tools needed: level, driller, tape measure

Components: branch, L screws, wall plugs



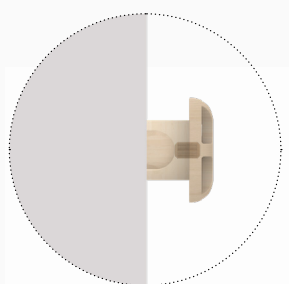
## 2° step

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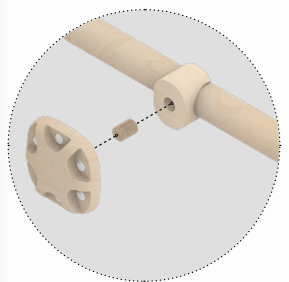
The next rail should be fixed at a distance of 40.5 cm but since our panels follow a natural process it is possible to have a slight dimensional variation. For this reason we always recommend to check the distance between the rails using the panels. It is therefore advisable to take one or better two panels and position them to the structure through the nodes. To get the assembled node you need to attached the plugs to the nodes through the wood pins. When the correct distance of the rail has been verified then it is possible to fix the branches following the previous step.

Tools needed: level, driller, tape measure

Components: branches, L screws, wall plugs, central & perimetral plugs, wood pins, nodes, Aspen panel



Section view



Exploded view

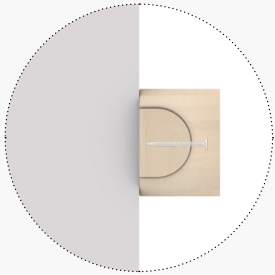


## 4° step

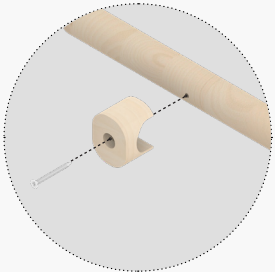
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Repeat the same process to complete the entire row of panels. Our assembled nodes are designed to be fixed to the branches by interlocking but, for additional stability, you can attach the backs to the branches with screws. Due to the softness of the wood there is no need for the branches to be pre-drilled.

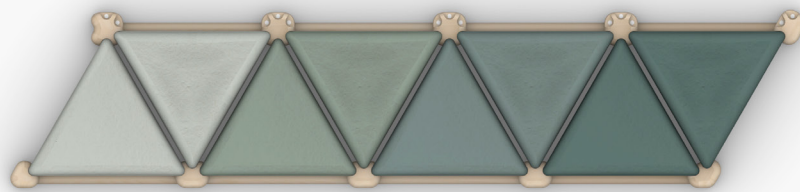
Components: Central & perimetral plugs, wood pins, nodes, Aspen panel, screw S



Section view



Exploded view

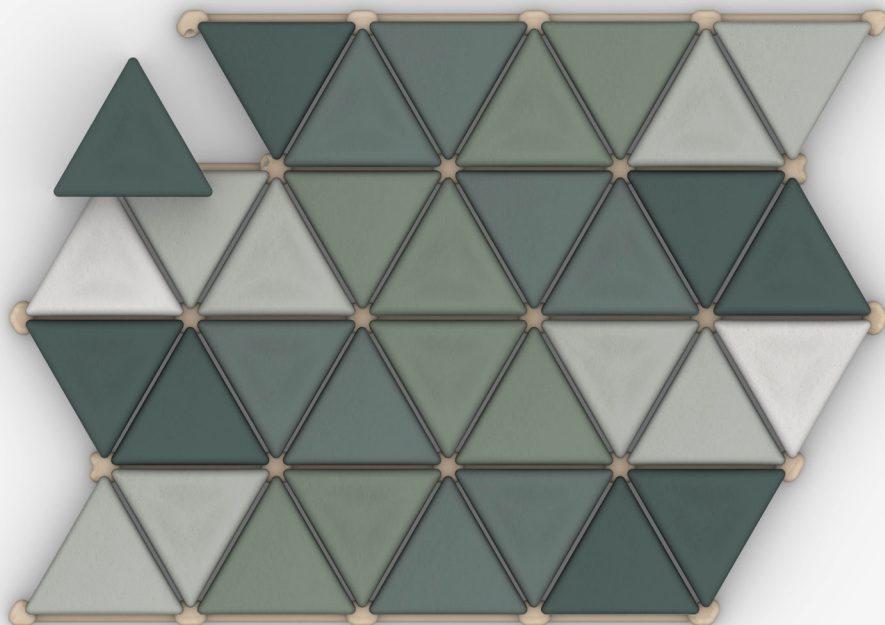
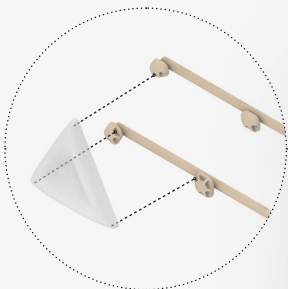


## 5° step

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Repeat the same process and hang the panels to the nodes, following your desired layout! Thanks to the magnetic system, it will be very fast and easy to assemble.

Components: Central & perimetral plugs, wood pins, nodes, Aspen panel, screw S



## Tips & Tricks

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\* Choose carefully the reference point where to start the installation of your FORESTA – it could be the centre of the wall, something fixed on the wall or a door – it really depends on site specific needs!

\*\* Generally, it's better to start from top to bottom to avoid dirt falling on the bottom branches. You can also use a vacuum cleaner close to the wall while drilling the holes and avoid dirt falling on the other branches.

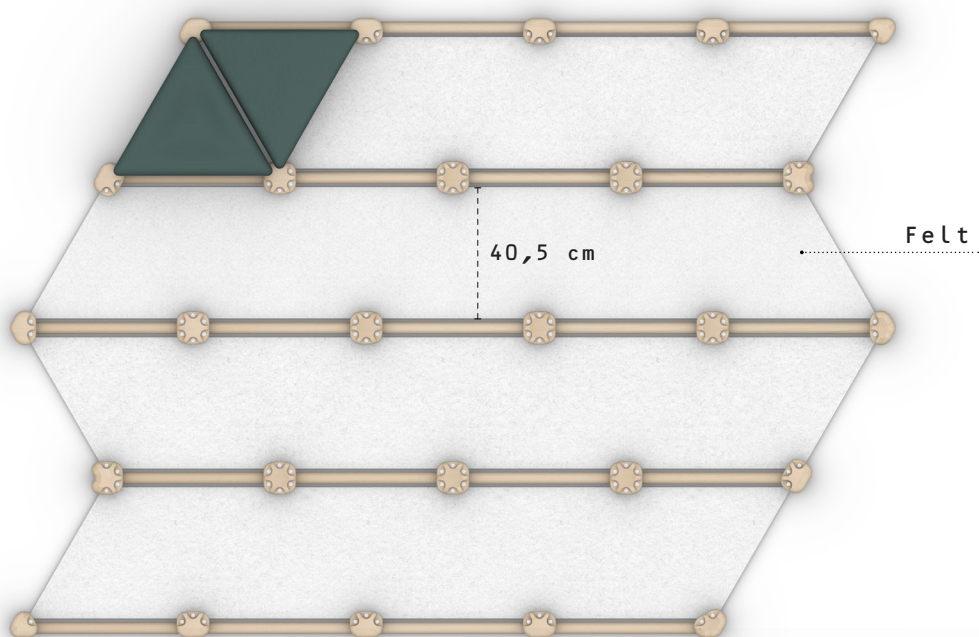
\*\*\* Mogu Acoustic panels, such as the Aspen modules featured in FORESTA, may present natural dimensional variations. Although Mogu carries out a stringent quality control to ensure a dimensional variation of  $\pm 0.25$  cm, some variations can happen. To avoid difficulties in installation, we suggest to avoid fixing the central nodes (N3 / N6) and rotate them slightly to accommodate the slight differences of each triangle. The structural stability of the system will not be affected; however, we always recommend to fix each node to avoid potential damage to the panels after finding the right position.

## FORESTA with backing

FORESTA system can be also provided with a felt backing (t=4.5 mm) to maximize acoustic performance. To install the felt backing, follow the instructions for a standard FORESTA system until step 3, then simply peel off the adhesive and stick to the wall among each rails the strip of felt provided with your FORESTA system.

Tools needed: n/a

Components: Felt backing





# Care & Maintenance

## Take care of your panels

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Remember that sunlight affects any material; therefore, we suggest you to protect your products from direct sunlight and to bear in mind that even materials with good light resistance may fade in time. Take care to always protect your products from liquids and dirt. Always clean up spills immediately, by gently padding the product's surface with a clean towel.

## Cleaning Instructions

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Mogu products offer a unique experience provided by their outstanding innovative character. Their surface, either painted or natural, is delicate, be sure to read the following instructions before cleaning and attend to them carefully. Mogu products are naturally antistatic; hence they will accumulate little, almost no dust over time. Clean them only with a sweeper. Refrain from using a vacuum cleaner, in order to avoid damaging the product and its delicate surface.

Mogu Acoustic panels are not washable. We discourage using any wet material to clean the products. Do not use wet mops, wet scrubbers or steam cleaners as these products may cause irreversible discoloration and damages. Do not use wax, polish, oil soap, abrasive cleaners, steel wool, scouring powder, or any appreciable amount of water. Never use solvents on the materials. Avoid spilling any liquid on the panels. In the event of spillage or small stains on the painted panels, try using a water-moist cloth to clean off the dirt immediately. Let the product dry, leaving it open air until no moisture is visible on the product. Do not rub the panels, because this may damage the fibres composing the material.

## Product Durability

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Mogu Acoustic panels are naturally hydrophobic. However, as it applies to all natural materials, including the wood components of humidity affects the product properties. Never install Mogu products on walls exposed to excessive humidity. Do not expose Mogu products to non-aerated environments. Your newly installed Mogu products are made from natural mycelium and therefore are subject to change from excessive moisture or nonconforming environmental conditions. Remove any standing or trapped water immediately and maintain an indoor relative humidity level below 40% throughout the year. We recommend the usage of Mogu materials only for living environments, and not in kitchens, bathrooms or cellars. Do not scratch, punch or rub the surface to ensure long lasting durability.

## Repair & maintenance

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Any repair and maintenance services must be performed exclusively under MOGU's personnel supervision or by personnel trained and authorized by MOGU. For safety purposes, only original parts may be used for replacing parts relevant to safety (e.g. the fixing system).

## Customer Support

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In case of further questions about your Mogu product and about how to look after it, please contact [support@mogu.bio](mailto:support@mogu.bio). For more information about Mogu and our extended line of products, visit us at [www.mogu.bio](http://www.mogu.bio)

## Contacts

If you have questions  
related to the installation  
of Mogu FORESTA system,  
please feel free to  
contact us at:

[support@mogu.bio](mailto:support@mogu.bio)

[enquire@mogu.bio](mailto:enquire@mogu.bio)

Mogu was founded on the belief that it is possible to employ Nature's intelligence to radically disrupt the design of everyday products, seeking a finer balance between the man-made and the rhythms of the natural ecosystem.

Mogu products are obtained by growing mycelium, the vegetative part of mushrooms, on organic fibres (low-value residues from agro-industrial value chains).

The products are the result of many years of continuous and iterative R&D on mycelium technology, guided by a strong product-driven approach.

