

Concept Presentation

TINY FORESTS

Urban Nature Pockets



IVN natuureducatie

Promoter

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What are Tiny Forests?

With climate change, rising temperatures and a greater concentration of the population in urban spaces, it becomes a priority to design and build sustainable, adaptive and smart cities that promote health, safety and activity. Tiny forests are a practical, effective, and participatory solution to address this challenge.

A Tiny Forest is the accelerated creation of a "mini" urban forest that blooms high biodiversity and provides climate resilience. It is established based on the principles of the "Miyawaki method" and with the help of citizen participation.

Thanks to the Japanese Miyawaki methodology, planting a "Tiny Forest" in your city means investing in a future small thick forest, an oasis of biodiversity and very importantly, a climate shelter for the future of the cities.



The Miyawaki method

Back in the 1970s, the botanist and ecologist Akira Miyawaki considered that restoring and protecting natural forest ecosystems was key to maintaining the earth's natural balance. In the course of his career as a researcher he developed, among other things, a method for the restoration of natural forest ecosystems, which is now known around the world as the "Miyawaki method".

More than 2,000 reforestation projects have been planted with this method. The success of this method depends on working correctly with two essential factors: the soil and biodiversity. In this way Professor Miyawaki found the key to reducing and speeding up to 10x times the process of creating a thick and resilient forest.

In recent years this method has reached the cities of the world in the form of "mini-forests" or "Tiny forests". In Europe, countries such as the United Kingdom, Germany, France, Holland or Belgium are already putting the method into practice. For when our Catalan cities?

Value proposition Sustainability, Technology & Education

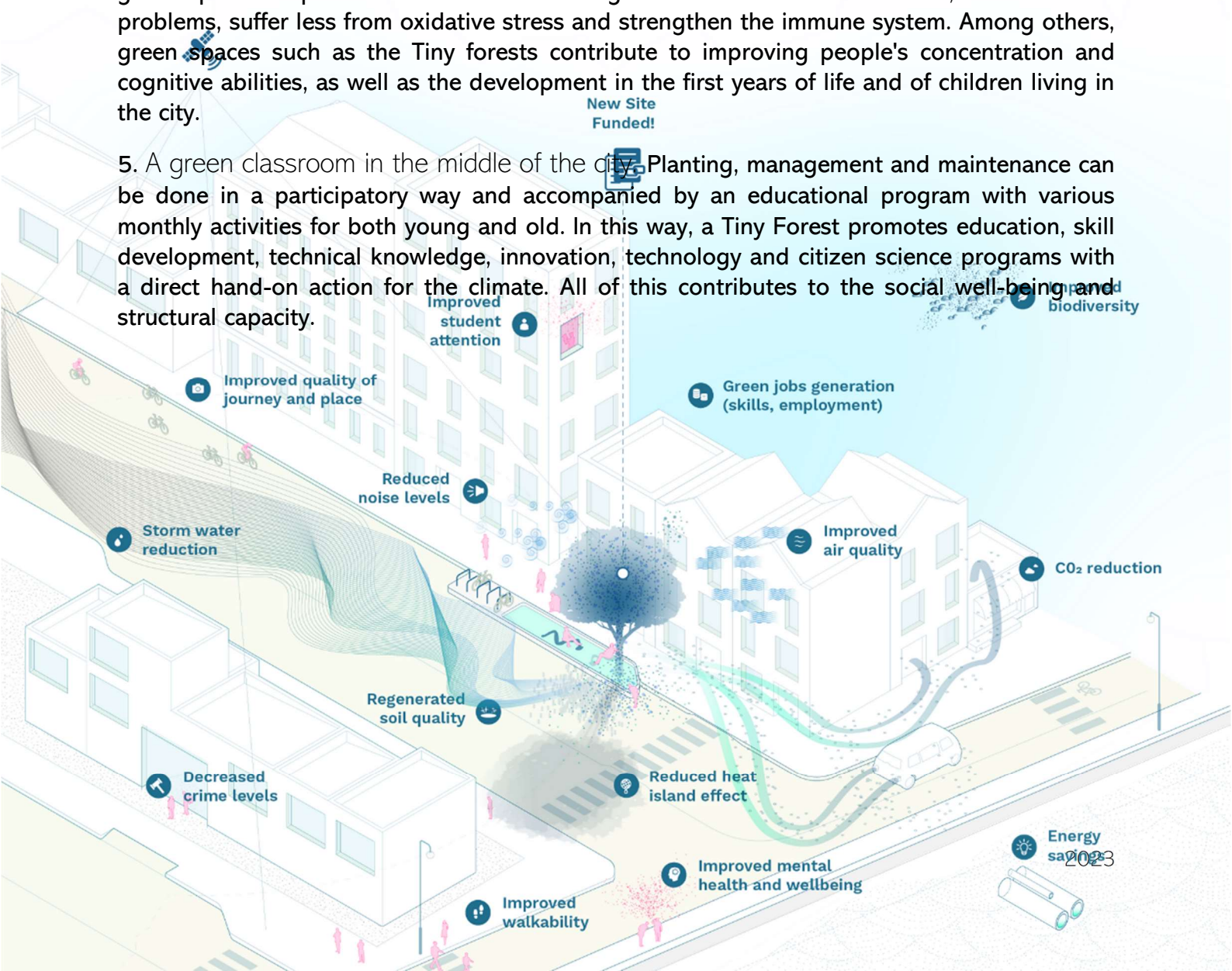
1. Multi-functionality. It adapts very well to different situations and contexts and is designed for schoolyards, neighborhood public spaces, private gardens, clinics and medical centers, nursing homes, as well as degraded land that wants to be restored. Their multifunctional design allows them to be included flexibly and safely in the development of cities, providing the following values:

2. A lung in the middle of the city. Tiny forests, because they are denser, filter pollutant emissions more efficiently than other green spaces in the city and thus increase air quality. They reduce local temperatures and reduce the risk of suffering from the "heat island" phenomenon typical of urban spaces, as well as all the associated adverse effects on health or energy consumption.

3. A carbon sink. A Tiny Forest fulfills a very important function: the capture of CO₂ from the atmosphere, thus reducing the carbon footprint of our cities. In addition, it contributes to achieving the objectives 2030-50 for Sustainable Cities and Sustainable Development Goals 3, 8, 11, 13 and 15.

4. A space for physical and mental regeneration. In recent years, science has shown that green spaces help reduce the risk of suffering from diseases such as ADHD, cardiovascular problems, suffer less from oxidative stress and strengthen the immune system. Among others, green spaces such as the Tiny forests contribute to improving people's concentration and cognitive abilities, as well as the development in the first years of life and of children living in the city.

5. A green classroom in the middle of the city. Planting, management and maintenance can be done in a participatory way and accompanied by an educational program with various monthly activities for both young and old. In this way, a Tiny Forest promotes education, skill development, technical knowledge, innovation, technology and citizen science programs with a direct hand-on action for the climate. All of this contributes to the social well-being and structural capacity.





International Success of Tiny Forests

The Miyawaki method is internationalized when Shubhendu Sharma, then an engineer at the Toyota company in India, meets Akira Miyawaki. The biologist professor comes to the industry to plant a Tiny Forest and it is Shubhendu Sharma, who with business vision and amazed by the idea, studies the method thoroughly and standardizes it, thus creating the company Afforestt with an economical product and successful that has helped to plant native forests in an accelerated way in degraded spaces and urban spaces. This is how schools, factories and gardens in Asia experience substantial improvements in air quality, biodiversity, climate resilience and aesthetics.

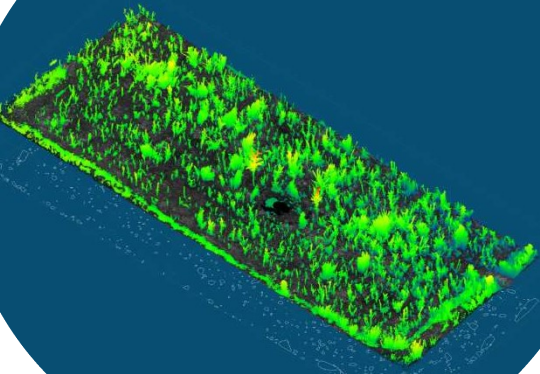
After becoming a mega-trend on the Asian continent, Tiny forests arrive in Europe in 2015. In fact, it is Shubhendu who brings the idea directly to Holland. Since then, companies that promote Tiny Forests have grown in different countries; such as SUGI (Belgium), Miya Forest (Germany), IVN (Holland), Earthwatch (United Kingdom). Between Holland, France and the United Kingdom there are already more than 200 Tiny forests.

The initiative is attracting the attention of local governments, urban planners, and senior politicians. Citizens also applause the initiative for its integral and practical design with a very marked social and inclusive character. Europe is witnessing the birth of the first citizen science program proposal, and several universities are working to calculate the total value – economic, social and environmental – that Tiny forests bring to society. The World Economic Forum defines the initiative as the secret weapon to combat climate change with positive impacts on a planetary, local, interpersonal and individual scale.

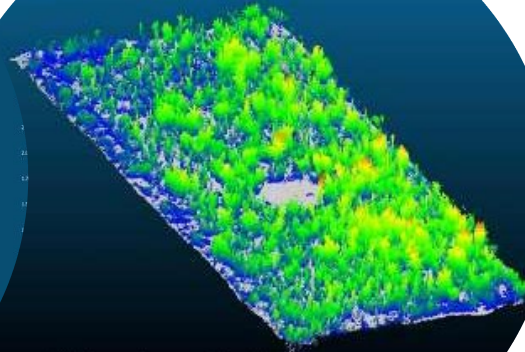
More than a sustainable solution, Boscus Tiny is a regenerative bet that contributes to structural capacity building and strengthens society for today's challenges.



2 Jahre



3 Jahre



Höhen-Zuwachs: 25%
Biomasse-Zuwachs: 209 %

Aina Gascó Hoenisch

What does science say?

The success rate of the Miyawaki method is 85%, one of the highest survival rates in reforestation methods.

Furthermore, several studies demonstrate the impacts of Tiny Forests on the climate, biodiversity and people.

Climate: The researchers found that each Tiny Forest of 250 m² sequesters an average of 414 Kg of carbon annually during the first 10 years. This quota is 3.5 times higher than a regular forest. This means that a Tiny forest of these dimensions sequesters 10 tons of carbon in the aerial part. This potential, however, could be doubled if the sequestration of carbon that takes place in the roots and in the soil is taken into account.

Biodiversity: Volunteer participants in the studies observe more than 600 animal species in Tiny forests and identify more than 300 plant species, including tree species originally planted in the plots and new ones that settled later.

People: Scientists recognize the role of nature-based solutions to help the city resist heat waves and improve water retention. Yet, the greatest value is perceived in the social sphere as the impact on health and the educational value. Boscos Tiny offer the opportunity to acquire technical knowledge and essential skills through learning and practical activities in groups and in real situations.





Care Design With Nature
Landscape-Scale Solutions for Climate Resiliency
Landscapes Regeneration Innovation

About the promoter Aina Gascó Hoenisch

Expert consultant in landscape and sustainability innovation solutions · www.ainagasco.com

Born in Barcelona in 1996, from a very young age she wanted to study planet earth and make new discoveries. One thing was clear: she was in love with the beauty of this world and wanted to preserve it. Fascinated by the contrast between the natural world and the artificial world, Aina grows, studies, and moves to understand the territory and land use conflicts. In recent years, she has been dedicated to bring smart solutions that build more efficient, sustainable and secure systems and landscapes.

Raised where the city ends and the forest begins, Aina finds Tiny Forest to be the perfect solution to combine these two worlds in an integral and effective way. Tiny Forests allows her to act with intention her vision of the future: smart cities where nature plays a fundamental role, providing benefits, beauty and security for the people who live there.

After studying Sustainability Sciences and Climate Change at university, Aina specializes in landscape engineering and ecology, and has been working with innovative solutions for landscape resilience for years. Her interdisciplinary profile leads her to now become an entrepreneur with the intention of being able to combine her passions: sustainability, technology and education.

Aina Gascó has carried out consulting work in urban, peri-urban and rural landscape sustainability for various public and private actors such as the Barcelona Provincial Council, the Global Health Institute of Barcelona, the Catalunya La Pedrera Foundation and La Sargantana. Aina Gascó has also worked at several European research centers studying the impact of climate change on landscapes and cities and looking for innovative solutions.

In fact, it is with science that Aina begins her journey. It was what she wanted to do since she was little. Science provides truthful and high-quality answers, data and information, but Aina finds the work of a researcher unsatisfying. Disappointed, therefore, to see that the dream she had as a child does not fulfill her, she decides to abandon classical science and travels in search of real, practical and effective solutions to face the current challenges as a society.

It is on this trip that Aina discovers pioneering methods and technologies for the construction of landscape climate resilience such as regenerative agroforestry systems, Keyline design or the Miyawaki method. In 2022, Aina plants its first Tiny Forest in Germany.

Amazed by the genius of the Tiny Forests and the Miyawaki method, Aina is convinced that she wants to implement the first Tiny Forest in Catalonia, and all those who must follow it. This is how Aina walks now with a new vision and with technical knowledge in landscaping, as well as with the courage to build the cities and generations of the future.



Care Design With Nature
Landscape-Scale Solutions for Climate Resiliency
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Links of interest

BBC Tiny Forests www.youtube.com/watch?v=y9c_Zlmcqgw&t=70s

IVN Shubhendu Sharma www.youtube.com/watch?v=LyHVQtDtIMk

National Geographic www.nationalgeographic.com/environment/article/why-tiny-forests-are-popping-up-in-big-cities

Earthwatch Europe www.youtube.com/watch?v=rcHXOoXHSds&t=52s

World Economic Forum www.linkedin.com/posts/gpi2050_climatechange-biodiversity-miyawaki-activity-7097793368109301761-5Yn6/

Scientific articles

Egerer, M., & Suda, M. (2023). Designing "Tiny Forests" as a lesson for transdisciplinary urban ecology learning. *Urban Ecosystems*, 1-9.

Franke SK (2023). Tiny Forests by Akira Miyawaki – a possibility for Berlin?. Technical University of Berlin. Master Thesis.

Muller, TD (2021). The Potential of Tiny Forests' Regulating Ecosystem Services for Urban Climate Challenges: Quantifying the Effects in the Netherlands. Master Thesis.

Ottburg, FGWA, DR Lammertsma, J. Bloem, WJ Dimmers, HAH Jansman and RMA Wegman, (2018). Tiny Forest Zaanstad: Citizen Science and determining biodiversity in Tiny Forest Zaanstad. Wageningen, Wageningen Environmental Research, Report 2882.

Schirone, B., Salis, A., & Vessella, F. (2011). Effectiveness of the Miyawaki method in Mediterranean forest restoration programs. *Landscape and Ecological Engineering*, 7, 81-92.

