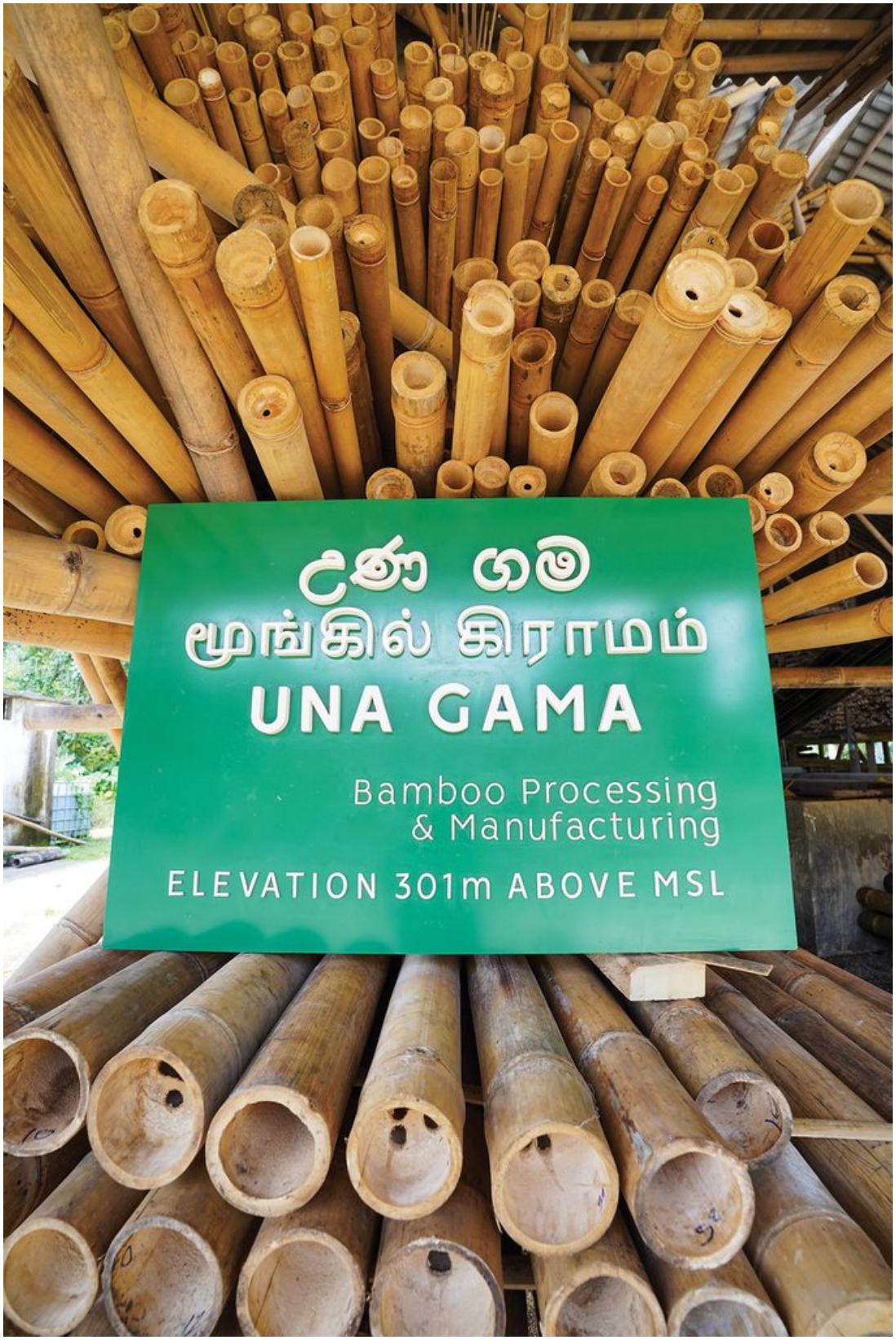
Una Gama: A New Chapter in Sustainable Construction

Posted on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மூங்கில் கிராமம்
UNA GAMA
Bamboo Processing
& Manufacturing
ELEVATION 301m ABOVE MSL

Una Gama or Bamboo Village, where a new proposition is steadily growing while the people of Akarella are finding purpose and direction.

When the people of a remote village in Ratnapura believed they had little to be recognized for, two visionaries saw an opportunity to put Akarella on the map by championing bamboo as a strong, sustainable construction material. Through Una Gama, they are promoting bamboo construction and introducing Cement Bamboo Frame Technology (CBFT) to Sri Lanka, opening up new possibilities for the community.

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Photography: Rasanga Dissanayake and Dinesh Fernando.

It was almost an act of naivety that led Aoife O’Sullivan and Julien Bailly, two foreigners living in Sri Lanka, to question why the country’s abundant bamboo was not being used for construction. Why not explore its potential themselves? Little did they realize the challenges that lay ahead.

Their curiosity took them from Ahangama to Bali in 2019, where they attended an intensive two-week program at Bamboo U, gaining an understanding of the entire process, from harvesting and carpentry to construction. Initially intended to support a personal building project in Sri Lanka, their plans were put on hold by the pandemic and the subsequent economic crisis.

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> Sri Lanka and demonstrating bamboo’s potential as a construction material.

Their vision, however, persisted. A turning point came in 2022, when they invited Jorg Stamm, a renowned German bamboo master carpenter, to conduct a workshop for ten local carpenters. The experience revealed the wider potential of bamboo as a construction material and, more importantly, the opportunity to transfer specialized skills to local communities, creating livelihoods while harnessing a resource that grows abundantly in Sri Lanka.


Julien Bailly, Co-Founder and Director, Una Gama.


Aoife O’Sullivan, Co-Founder and Director, Una Gama.

In 2024, they established Una Gama in Akarella, with operations commencing in March 2025. Today, they are at the forefront of promoting Cement Bamboo Frame Technology (CBFT) and bamboo construction in Sri Lanka and demonstrating bamboo’s potential as a construction material.

The factory employs a team of 25 from Akarella, sometimes up to 40. Akarella is a remote village where generations had previously worked in the tea processing and

later cinnamon processing factory that now houses Una Gama. Men and women work side by side in a labor-intensive process that involves treating bamboo poles in a boron solution, drying and grading them, and later, they make construction elements like dowels, slats/splits and flat bamboo for ceilings and shingles by hand.



The raw green bamboo poles before treatment.

When Una Gama first began, the villagers had little understanding of bamboo construction or the quality standards it demanded. With no local examples to demonstrate what was possible, building that understanding took time. Through training and hands-on experience, however, the team has developed the skills and confidence to carry out their work. Being part of the same community has also fostered a strong sense of camaraderie, which extends to their relationships with Aoife and Julien.



Employees cleaning flattened bamboo with water.

Jorg Stamm impressed upon Aoife and Julien that developing bamboo construction in Sri Lanka would require addressing the supply chain. A dedicated facility was needed to collect, process, and grade the raw material, much like a conventional timber yard. As they recalled, they began to wonder, “Are we going to be the ones to do this?” Having already acquired considerable practical knowledge, they sought further expertise and approached the Base Bahay Foundation in the Philippines, a global leader in bamboo-based research and technology supported by The Hilti Foundation. Two years of discussions followed, exploring how best to establish the industry in Sri Lanka, from funding to infrastructure. The Hilti Foundation subsequently provided financial support to help bring their vision to life.

Their first bamboo harvest in Sri Lanka took place at the Peradeniya Botanical Gardens, a milestone for the duo, who had long admired the gardens. Securing permission was no easy task, given the age and value of the bamboo clumps. However, under Aoife and Julien’s guidance, the team demonstrated how careful

harvesting and pruning could benefit the plants. From there, harvesting expanded to locations across Kandy and Hatton, with much of the bamboo sourced from the wild.



The treated poles stand in the open in what is described as a drying rack alongside flat bamboo on the ground.

Harvesting bamboo in the wild is a challenging and potentially dangerous operation that requires considerable skill and care. Ideally, the poles are cut just above the first or second node. While this is relatively straightforward in a plantation, where the clumps are more accessible and orderly, harvesting in the wild is far more complicated. The aim is to cut as close to the ground as possible, sometimes using a chainsaw to make a second cut, leaving only the first node. This prevents water from collecting inside the remaining stem, which could otherwise cause the roots to rot.

The challenge is that the older bamboo poles are often found deep within the clump. Harvesters therefore have to work their way into the clump to reach the mature poles. These plants can grow to heights of 100–110 feet, even though they are eventually cut into manageable lengths of around 20 feet. Cutting them at the base requires considerable pressure due to the bamboo’s weight and height. If a pole is cut incorrectly, it can suddenly spring out under pressure, posing a serious risk of injury.



A large tank of boron solution in which the poles are immersed for initial treatment to draw out the sugar in the bamboo.

Ensuring safety in the field was therefore one of their biggest concerns when they began harvesting. Training the harvesters to understand how to approach each pole, where to cut, and how to manage the pressure was an essential part of establishing the operation.

Only mature bamboo poles, ideally three to five years old, are harvested for construction. Younger poles have not yet developed the necessary woody structure, or lignification, to provide sufficient strength. Treating a two-year-old pole cannot compensate for this natural process, which must be completed while the bamboo is still growing. Harvesting too early also disrupts the cycle, leaving fewer mature poles for subsequent years.



Poles being removed from the boron solution, with the solution being allowed to drain out.

To ensure responsible harvesting, Una Gama has a dedicated field manager for each area who supervises harvesters and identifies suitable poles. Since much of the bamboo is sourced from the wild, the team uses visual cues and color-coded tags to track the age of individual poles. Their aim is to establish a system in which every pole harvested over the next two years is at least three years old.

During our visit to Una Gama, workers were turning green bamboo poles in a large tank of boron solution, where they remain for 14 days. The treatment draws out the sugars in the bamboo, which attract termites, making the poles more resistant to insect damage. The solution penetrates the bamboo’s inner pith, removing the food source on which termites thrive.

Once treated, the poles are transferred to a drying rack, where they are arranged to receive even sunlight. This stage is not simply about drying but also about achieving a uniform yellow color through natural sun bleaching. The poles are then left to dry for a further two months before they are ready for construction. During this process, they are graded by size – small, medium and large – as well as by their straightness and suitability for construction. Those that do not meet the required standards are rejected, while the rest are moved into storage. The treatment facility and the adjacent racks are constructed with bamboo, a 480 square meter industrial structure, with the capacity to process 2,000 bamboo poles a month.

The craftsmanship involved in bamboo construction is far more intricate than it might appear. Every pole must be selected for a specific purpose, with particular attention to its nodes, which are the strongest points. Cuts are therefore made about three fingers from a node, ensuring that both ends of a pole used in construction terminate at these strong points. Since no two poles are exactly alike, considerable time and skill go into matching each one to its place in the structure. The same care applies to joinery, where poles cannot simply be selected at random; each joint requires careful measurement, selection and fitting.

Building on the expertise they had gained from overseas, Aoife and Julien partnered with the University of Moratuwa to study four bamboo species found in Sri Lanka, including yellow bamboo and Dendrocalamus hookeri. The findings have confirmed their suitability for construction, with some species demonstrating strength comparable to, and in certain cases exceeding, that of structural hardwoods. For Una Gama, this research provides the scientific evidence needed to establish the quality and potential of locally sourced bamboo.

Sound design and engineering are essential to the durability of any building, making reliable material data critical. Armed with the university’s findings, the duo are now better positioned to promote CBFT. Their next goal is promote the adoption of bamboo ISO standards, and eventually have bamboo recognized in Sri Lanka’s building codes. Discussions are already underway with the Sri Lanka Standards Institution. Meanwhile, they continue to work with several key collaborators – Base Bahay, The Hilti Foundation, Good Life X, Asali Bali, the Mahaweli, and the University of Moratuwa.



Model of a CBFT wall and frame system at Una Gama.

Having trained local carpenters with timber-working experience, Aoife and Julien have seen how readily their skills translate to bamboo construction. Their craftsmanship is evident in a beach club in Negombo for a leading Sri Lankan hospitality group, an eco-retreat and wellness camp in Belihuloya, and an eco-luxury wellness retreat villa and jungle chalet in Ahangama. Their advocacy is also gaining momentum. In February, Una Gama will build a pavilion at the Sri Lanka Institute of Architects Conference, alongside a stall showcasing their CBFT construction system.

As Aoife and Julien work to establish bamboo as a credible building material, Jorg's words during the workshop have proved remarkably prophetic. Recognizing their determination, he predicted that they would end up building for others long before constructing a bamboo home of their own. That is precisely how things unfolded.

Una Gama, Akarella.

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