Bamboo Bikes – Made in Ghana, sold from Cornwall

Published: January 6, 2023

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Online version: https://www.wheels-alive.co.uk/bamboo-bikes-made-in-ghana-sold-from-cornwall/



Yao, one of the Roots Bamboo Bikes team, holding aloft a completed bicycle and demonstrating its light weight.

Kim Henson describes an alternative form of bicycle construction which employs sustainable bamboo for the main frame assembly, and provides work for people in Ghana…

(Photographs by Roots Yard/Roots Bamboo Bikes).

My wife and I were recently enjoying a short break in Cornwall when a chance encounter with Jacqueline Ababio introduced us to the concept of bicycles constructed using bamboo. This is something I had never heard of, so I asked Jacqueline to tell us more about it…

She explained that she and her husband Bob, a British-Ghanaian couple, had been living in Bob's home town of Peki, in the Volta region of Ghana, since 2004. They have raised two boys in the beautiful surroundings and community that they call 'home', and have built and run an Eco-Lodge Guest House, 'Roots Yard'; more about this at: www.rootsyard.org

From there they also offer volunteer opportunities within the various community projects that they run.

Before moving on to the bikes, it is interesting to note that Bob and Jacqueline have been involved with many community projects in their locality.

These include re-forestation efforts (restocking the forest that has been depleted by timber extraction and clearing for farming, which is so damaging to nature and devastating in terms of habitat loss for the wildlife). This work will provide jobs and benefit the environment and local community for generations to come.

The couple have also built WC toilets for the local primary school. In addition the pair have constructed a skate park (using bamboo for the main structure), and have sponsored a number of skaters through school, providing fees, shoes and school equipment.

Further efforts have included building and roofing a three classroom block at a local secondary school (in association with the local church, and with help from volunteers staying at 'Roots Yard'), plus the distribution of medical supplies and soft toys to the local clinic in Peki.



The workshop at Roots Bamboo Bikes is constructed from bamboo.

In 2019 the intrepid couple teamed up with ‘Brother Ben’, who is trained as a ‘Bamboo Bike Builder’, and they built a workshop for bicycle construction, in Roots Yard. This is how the family-run ‘Roots Bamboo Bikes’ began, and it has continued as very much a family ‘hands-on’ concern.

With their boys reaching secondary school age, Bob and Jacqueline made the difficult decision to move from Ghana to Britain, and have settled in Lostwithiel, in Cornwall, but are still at the heart of, and very much involved with the Roots Bamboo Bikes project.

The bicycles

The raw material of bamboo used in the frame construction is said to have many benefits, including toughness, flexibility, elasticity and being eco-friendly – not to mention being light in weight. The sustainable material is ethically sourced and fairly traded; it is harvested within five miles of Roots Yard.



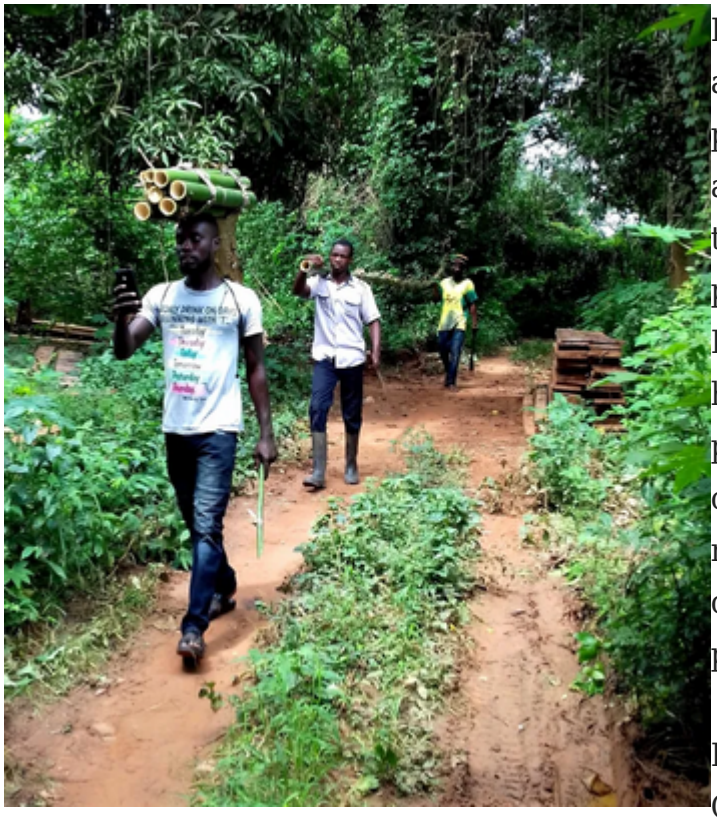
‘Sunset bamboo silhouette’.

In fact bamboo is an evergreen perennial plant of the grass family, and one of the fastest-growing plants in the world. Some species can grow up to 30 feet (9.1 metres) every day – representing a growth rate of 1.6 inches (4 cm) per hour!

Roots tells us that generally bamboo shoots and reaches its full growing height within a single season of three to four months, growing straight up with no branching until the full height is reached.

The next growing season sees branching out at the nodes, and leaves are produced. During this second year the pulpy core of the bamboo pole hardens and strengthens, and during the third year the pole becomes fully mature and suitably hard to use as a constructional material.

This means that after three years you have bamboo to harvest, and it’s renewable; when you harvest it, the bamboo regrows!



Harvesting the bamboo.

Interestingly too, bamboo is said to absorb as much as 12 tonnes of CO2 per hectare per year, compared with trees that typically absorb only 6.5 tonnes of CO2 annually. For this reason the Roots team include bamboo planting within their Grass-Roots Reforestation projects. (Since 2016 they have planted over 250 trees each year, protecting the local biodiversity by concentrating on tropical mix species reforestation, creating local jobs for clearing the land, sourcing the seedlings, planting and aftercare).

It is said that bamboo has a higher Specific Compressive Strength (the ability to carry loads) than wood, brick or concrete, and it has a Specific Tensile Strength (capacity to withstand tension) than steel.

The Kwame Nkrumah University of Science and Technology, in Ghana, has a Sustainable Building Programme for Civil Engineering students, and is experimenting with bamboo as a viable building material. Used in place of iron/steel rods, this renewable material can be used in the construction of lintels in buildings, also for use in foundations and concrete rigidity applications (and Roots Yard used this approach when constructing the skate park, already mentioned, for their local community).

The built-in natural flexibility of the bamboo, when employed for bicycle frames, is used to good effect in providing a comfortable ride, and it absorbs vibrations as the rider makes progress, although sprung front forks can also be specified, as an alternative to the ‘fixed’ variety.

Each frame is individually crafted and, says the Roots team, is ‘An individual work of art’.

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An automotive basecoat finish is applied to protect the frame and allow it to withstand any weather conditions. Roots Yard says that they conduct rigorous strength and stress tests, and offer a two year guarantee for the bamboo frame.

Three frame types are offered, ‘Mountain’, ‘Ladies/City’ and ‘Hybrid’ (which allows for a road bike, touring bike or mountain bike). Each type is available in ‘small’, ‘medium’ and ‘large’ sizes.

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In each case, for those who wish, a ‘frame only’ can be purchased (with the customer adding his or her mechanical specification), or a Roots component kit includes all the parts needed to build the complete bike, or it can be purchased fully built. For the kit form or fully built options, the specification includes mechanical disc brakes at front and rear, seven speed transmission and of course the handlebars, wheels and tyres, etc.

There’s an electric version too, resulting from partnership co-operation with a specialist, Rich, in the U.K.

Taking the Hybrid as an example, the frame only option costs £470, the component kit is priced at £960, the fully built bike has a £1,060 price tag and the fully built electric conversion model will set you back £2,150.

Equivalent specification prices for the Ladies/City version are a little less, ranging from £450 to £2,130, while the Mountain Bike variant ranges from £460 to £2,140.

VERDICT

A fascinating approach which combines sustainability with individuality for the buyer; each hand-made bike produced is unique and special.

In due course I am hoping to be able to test-ride one of these innovative machines, in which case I shall report here on Wheels-Alive about the experience. Stop Press at 15th March 2023… This test-ride has now happened and if you are interested in reading it, please go to: road-test-roots-bamboo-bikes/

Further information:

www.rootsbamboobikes.co.uk

Tel. (Mobile): (07546) 804439.

(Roots Bamboo Bikes can also be found on Facebook and Instagram).

Bob and Jacqueline’s philosophy; they tell us:

‘For every Roots Bamboo bike sold, more efforts can go into our numerous projects in Peki, creating jobs and future potential for our local community’.

They add: ‘We know that African needs trade more than aid, and we try to promote Ghana-made produce wherever possible’.