



USING “MIND YOGA” TO CREATE SUSTAINABLE LOW-COST HOUSING

by Patrick San Francesco

Yoga, as most people know it, is all about health through ‘asanas’. This aspect of yoga is marketed as it is popular. Unfortunately, scant attention is paid to the enhancement of the Spirit through ‘mind yoga’. The Spirit, if enhanced, controls the mind, which in turn controls the body. My motive for writing this article was not to showcase the PET bottle structure, but to demonstrate that even a mind untutored in the sciences, can put forth solutions that have not occurred to those who are expressively schooled for the purpose.

I am NOT an architect, nor am I a civil engineer, scientist or technician of any kind. I am just an ordinary person with the implicit faith that every problem has a solution. Thus ‘equipped’, I proceeded to address the problem of PET bottle waste disposal.

When Polyethylene Terephthalate (PET) products were introduced, PET was heralded as the ‘miracle material’. PET was lightweight, yet incredibly strong and durable. What wasn’t taken into account, was that the durability and longevity of PET would pose a problem when it came to the disposal of the used PET products. Shredding and melting were some of the solutions offered. Melting PET exposed one to carcinogenic toxins unless safety measures were followed. These precautions were difficult to implement in third world countries.

It was then that I thought of turning the bane (longevity and durability) into a boon. By tightly packing the PET bottle with common earth (mud) and recapping it, I created a ‘brick’ that was extremely durable and eliminated both the carbon footprint caused by conventional baked clay bricks and the carcinogenic toxins caused by shredding and melting.

The next question I had to address was stability. The glass-like, smooth surface and cylindrical shape was in direct contrast to the rough surface and block-like shape of the traditional baked clay brick which offers considerable traction when cemented together. Faced with this dilemma, I tried various configurations of interlocking the bottles to gain maximum stability. Once the bottles were cemented together to make a wall, the protruding bottle necks were linked together with nylon 6 fishing net. After

linking the bottle necks, the nylon fishing net was then stretched across to the opposite facing wall and linked to the bottle necks of that wall. The stretched fishing net between the two opposite walls served to replace the tor steel bars in the concrete roofing. The linking of the walls to the roofing with fishing net, served to create a homogeneous structure of incredible strength and stability.



These PET bottle structures, besides being low cost and of incredible strength, are also a means to empower the unemployed, aged and infirm. We involve the local communities to collect the bottles, which are most often found on the streets, taking care of the waste management aspect and providing employment to the bottle collectors. The bottles, once collected are handed to the aged and infirm in the area and given the task of filling each bottle with earth for a fee, commiserate with the local wage structure. This concept, besides empowerment, helps restore their dignity and sense of self-worth.

The first ‘bottle brick’ school room was constructed in 2010 in Kishangarh, New Delhi. (www.samarpanfoundation.org) I had not yet conceived the idea of using nylon fishing net. Thus, only light roofing was used in the construction. Spurred on by the success of the Kishangarh school room, I began to experiment

with different configurations of bottle placement to achieve increased stability. It was then that I thought about nylon fishing net as a stabilizing medium.

The fishing net is approximately 1% of the cost of the steel that would normally be used. This has a great impact on the overall cost, making the structure extremely affordable. But what was left to be seen, was the ground reality. Would it pass the battery of structural tests required to make this concept available to the public? So, I built a prototype using the fishing net and asked a professional wrecking company how long it would take to demolish the structure. Assuming it to be a conventional structure, they estimated 30 minutes as the maximum limit. You can imagine their consternation, when at the end of 4 hours there was still one wall standing!



Emboldened by this result, I built a similar structure in the CSIR laboratory in Chennai, India, and subjected it to seismic testing. To my utter amazement, the structure was still standing even after 18 simulated earthquakes ranging from 1.6 to 9.8 Richter. ([click here to view on youtube.com](#))

Further structural tests were carried out by CSIR in Pretoria, South Africa, and I am happy to say that all the requisite tests were passed 'with flying colors', including the daunting fire test. A normal fire test requirement for a conventional single floor structure is typically 800 degrees centigrade for 30 mins, after which the wall usually collapses. My PET bottle/fishing net house structure (as it was commonly called) was subjected to 1,020 degrees centigrade for a period of 2 hours and was found to be un-compromised in structural strength.

In September 2015, I was invited to present my unique bottle house construction technique to the UN Academic Impact Symposium. ([click here to view on youtube.com](#))

Having the PET bottle /fishing net house fully certified, I have gone on to build schools, homes and hospitals throughout India, South Africa, Malawi and Nepal.



<https://samarpanfoundation.org/projects/44/hospital-bali-island>



5ft water tower constructed entirely out of PET bottles and fishing net.



Recently completed two-story maternity hospital in Chinsapo, Malawi, to be commissioned in July 2019.

To further demonstrate that the PET bottle structure was not a 'flash in the pan', but a true use of mind yoga, I will shortly be announcing a solution to world hunger—a complete and wholesome food that is available and free for all!



Patrick San Francesco is an internationally recognized humanitarian and world-renowned energy healer from Goa, India. He is the chairperson of the Samarpan Foundation, established in India and also operating in South Africa and Malawi. He is the pioneer of a unique earthquake resistant and affordable green building technique. This new construction concept has been internationally certified and is being implemented globally. The unique new building method was presented to the UN Academic Impact Symposium in September of 2015. Patrick is also the recipient of the prestigious Mandala Award, presented by the Rubin Museum in New York City in 2011. His mantra is Love, Peace, Happiness, Kindness, Simplicity and Clarity.

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