Day 26
" Biomimicry "
Greeneer Challenge

Project Green Challenge

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Biomimicry

Biomimicry is great concept and a totally unique phenomena that human civilization has learnt right from stone age. We humans also have a great piece of brain. And that's why only we learnt, observed deeply and then mimicked the already existing biodiversity.

Biomimicry is basically learning the way animal do something and then implementing that idea in a machine or anything else to derive the desired results.

"I got to know that you all are mimicking us, is that true ??"

"Mimicking my technique is not easy, how will you do it ??"

We already did it...

Have you all ever wondered that living in an open environment, witnessing all types of weather conditions suffering the worst disasters and then human interference even after suffering so much wear and tear still somehow the tress manage to withstand all these circumstances and have a age that is greater than your and mine.

But how ??

Here is how.....

"We have that inbuilt, but how did you guys managed ??"

To withstand forces that would break them, trees have evolved a strategic way of growing: they form their wood to compensate for those forces. As a trunk or branch grows, it will adjust the size and number of different kinds of cells, the thickness of cell walls, and the compounds within them.

"Please continue, it sounds interesting..."

More about their structure

In hardwood trees, that results in rings being thicker on the top side of branches, stuffed with lots of stretchy cellulose fibers to accommodate the downward pull of tension. Softwood trees build up the lower side of branches with rigid lignin to resist the crushing stress of compression. In all trees, structural support is highly adaptable, working at odd angles and curves, and built right into the material used for construction, at the micro scale.

"You guys seems to be smart, now I am afraid of your intelligence !!!"

The issues

Recognizing the strength and flexibility of wood, humans——like birds and beavers before us——have long used it for construction.

But when using wood, we have tended to focus on supporting our structures at the macro scale, using large, straight beams and planks that concentrate intense pressure at specific points and follow relatively limited design options. To use more fluid shapes and designs, and to avoid weak joints, we've developed energy-and-resource-intensive materials like reinforced concrete, fiberglass, and plastics.

There hasn't been a good way to get the sustainability of wood and the functionality of composite materials at the same time.

"So what you guys have developed ??"

Strong by Form

Architects and inventors at Strong by Form have devised a manufacturing process that mimics the way trees themselves shape their materials for structural performance, opening up revolutionary possibilities for the forms wood construction can take.

It starts by cutting wood into small flakes. Then, design software arranges the direction and distribution of flakes to bear the loads that the material needs to support. Advanced robotics then lay down the flakes with a bit of binding resin, matching the prescribed three-dimensional pattern, using minimal material to get optimal performance..

Their process

Since Strong by Form's manufacturing process uses wood flakes, not sawn timber, it can make use of a wide diversity of tree species, and a greater proportion of each tree, including smaller branches and parts with irregular forms.

Strong by Form's engineered lightweight wood product reduces the amount of material needed to build structures and the costs to transport them, yet the material is strong enough to become an alternative to highly polluting materials such as steel, aluminum, concrete, or fiber-reinforced plastics, in buildings, vehicles, and furniture.

"You people are quite impressive, now even I am impressed !!"

Answering their questions

Strong by Form's theory that " less we need and more we have " it basically means that the kind of material they use and the way they use it has immensely reduced the amount of material needed to build a house. And on the other hand not sticking to one kind of wood that is Sawn Timber, now they can use various kinds of trees in different proportion hence they have more and they need less. And this thing is so compelling.

And secondly my perspective towards nature has changed drastically because now due to Biomimicry we are not " using " our Nature but instead we are " learning from them. And that why we realised that how intricately our nature is designed. And hence we understand that we need to take care of them with so much care.

"Hey, please answer my question also, how has your perspective changed towards us ??"

"What was the most compelling thing you learnt from us ??"

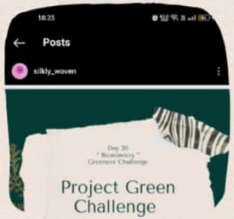
Let's answer him too

"Hey, one last question, will you be able to apply this Biomimicry in your life ??"

Yes, of course. We didn't realised that there already so many things and habits mimicked or inspired from nature. But mimicry is not only things but in practices too.

I'll tell you how, my mother always make notices that a Cockroach dies. You observe it closely and you will find that the cockroach strives for his life till the last breath, he never stops and gives up but Instead he will try hard and hard and find his way back to life. And that is why my mother teaches me that we should learn the determination that the cockroach has towards his life. And we should not give up at any cost even at the last breath of our life.

Thanks



We humbly request you to search for @Silkly_woven on the Instagram because we can't attach the link here due to size of the PDF.

@silkly_woven

" They are so inspired that have taken one more example of Biomimicry but that's is on Instagram. Hence please check out the another example too. "