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ECO.COUNT

Connect the Dot to Carbon while you save on Costs...

A Chance Meeting with CRISP Professionals ...

Stories of Savings

ALTTECH FOUNDATION

AltTech.Foundation is a not-for-profit, for-industry Trust with Ecophoria as its executing arm.

Connect the Dot to Carbon while you save on Costs...

Another year passes. With a lot of grim news on the climate front. The UN Secretary General who has tirelessly been warning the world of impending doom if we don't act, said in his message for the new year that the top 10 hottest years on record have occurred in the last ten years with 2024 being the hottest. "This is climate breakdown—in real time. We must exit this road to ruin—and we have no time to lose. If only 100,000 projects in India treated 1 m litres a day as alternate water [*see SOS #1 of a company which harvests 1.2 m litres a day*] and moved away from groundwater extraction [with bore wells] and avoided purchase by tankers or municipal water, that would be a reduction of 600 million CO2 KGe. The saving in cost of purchase can be phenomenal.. One manufacturing plant with 30+ acres of land in Hyderabad is set to save ₹80-90 lac every year with a net zero water plan that AltTech Foundation is rolling out for them. The low-carbon alternate water they will secure—with long term water security and assuredness—will be about 50 m litres every year. The water is low on TDS, requires very little treatment and so they save on costs of softeners, while they secure independence from external sources. Way to go.

A Chance Meeting with CRISP Professionals ...

It was a chance meeting. The incoming president of ASHRAE, Bangalore, Dr Srikanth, called one morning. "Can we invite you to speak to an earnest and committed set of corporate professionals who are primarily facility managers of commercial buildings across cities in the country." The date and slot suited me and I agreed without hesitation, for it would give me an opportunity, I thought, to narrate some of these powerful stories, and would get some few of them at least to resonate with these values of solutioning sustainability with good economic gains also being part of the green deal.

It was a meeting of about 30 trained minds, all of them occupying positions of decision-making in companies with large bills for food, water, energy. The platform that CRISP [Council for Realty Infrastructure & Services Promotion] has created has unified facility management professionals across India with one mission: to build a culture that supports knowledge sharing. What started with 5 individuals who saw the need for such a forum about 5 years, now enjoys a robust base of over 1000 members.

CRISP and AltTech quickly saw the synergies that could be potentially created with an MOU that will help support the framework for accelerating adoption of green solutions across the board.

Part of the agenda that the two institutions will explore are:

1. Secure green building rating for any of their buildings. Swiss RE surely deserves a platinum under the EB rating system. Many others will want to gain this.

2. Offer Solution Frameworks for green infrastructure for water or energy from the AltTech Foundation for managers to take the next step on engaging. This will enable members to make informed decisions on sustainability needs.

3. Enable green financing where a company is convinced of the tangible benefits of such water or energy assets but don't have the cash flow to support the decision.

4. Invite members of CRISP to share stories and presentations at speaker sessions and panel discussions on the WOW Action Forum once a month, to essentially secure greater participation from professionals who can gain from the powerful narratives that CRISP professionals will share.

‘People Show Up Because They Like What They Get!’

There was someone who graphically described what we do at AltTech. “I could say you’re are not dissimilar to a gourmet restaurant. The tables are limited and the chef decides the menu. People show up because they like what they get. Over time they bring others along as well and a community grows.” And then he asked, “Does this sound like the experience your team has had?” We could not give him a straight answer. As we said in the last edition, it takes time for us to persuade people that the sets of solutions we engineer could work for them...

So, what is that we offer that makes it akin to a gourmet experience? We leverage data analytics to optimize usage and design effective solutions, of water or energy. We tailor solutions, including water command centers and storage optimization that is learnt from the deep traditional wisdom of the masters of water architecture in India. To us, ‘technology’ is sometimes an approach adopted centuries ago for catchments, or for treating of waste water. We employ innovation that keeps an eye on long-term operational and environmental benefits for a land and for the organisation. To build such committed and sustainable engineering excellence that drives every project with a focus on positive impact is at the heart of it all for the team. We can work together. We can create a sustainable future for generations to come.

‘Technology’ that is not today’s

Here is a short video clip. It appears to be something from another western country. What is surprising is that right here in India there are so many such stories dating back 500 to a thousand years... Between 1592 and 1600 the Amer fort was built in Man Singh’s reign with a Water lifting system that uses a rope and pulley system and a sakia wheel to lift water from Maota Lake to the fort. About 3000 feet as head between the distance and the altitude. Amber had a cooling system for the diwane khaas with waters running under the floor and vents at intervals. The remnants are still there for us to see. If we could learn to replicate this system, or use the symphonic system that was in practice in many cities until the 1970s, there would be a major saving in energy and the cost of distributing water.

Why Carbon is so crucial if it's just 0.04%?!

The first jotting in this edition talked about CO2 Kg emission and possible ways of reducing with things that you and I do on water or energy efficiency.

Most of us know CO2 levels in the atmosphere are higher than ever before, and are causing the planet harm. How much is CO2 as a percentage of the atmosphere? Few know it's less than 0.04%. And Carbon is 27% of that minuscule 0.04%! Why then is Carbon of such great concern if its presence is as infinitesimal?

Of every one million molecules in the atmosphere, 424 are CO2. It can be hard to imagine how a chemical compound that makes up such a small fraction of the atmosphere—less than 0.04%—can be responsible for so much global warming. Yet focusing on the fraction of CO2 in the atmosphere can blind us to just how big a change this represents.

Consider your daily cup of coffee. Its power to raise your alertness, energy and heart rate comes from caffeine, which, by coincidence, is present at around 400 ppm. Small amounts of powerful substances have big effects.

When it comes to something as large as our atmosphere, a small fraction like 424 ppm actually represents a truly massive number of CO2 molecules.

Consider a one-liter bottle full of air. At "standard temperature and pressure" (0° C at sea level), that single liter of air contains 2.7 x 1022 molecules: 27,000 billion billion molecules.

What's 424 ppm of this bottle of air? It's 11.4 billion billion molecules of CO2, of which almost 4 billion billion were added by human activities. And any infrared radiation trying to get through our bottle—which is how the Earth gives off heat into space—will have to run the gauntlet of all those CO2 molecules, each one of which can absorb infrared light and keep it from escaping to space.

And that's the number of CO2 molecules in just one liter of air.

So don't get distracted by how small a percentage 424 ppm is: this is still a mind-boggling amount of CO2 we've added to the atmosphere, and a monumental change from the 280 ppm humanity has experienced for most of our history.

Well, if there was less CO2 in atmosphere would it be fine. That is also a threat, for it means less heat bouncing around the atmosphere, and colder temperatures here at the surface.
It's a fine balance. And we are pushing it to the brink. The more we build to make that meaningless resource called money, the greater the risk we run of losing what we have as life giver.

A Man Who Presaged Green Concerns 3 decades ago...

Back in the mid-1980s there was simply no one who even thought there was something called climate change. The phrase did not exist. In the mid-1990s people laughed at builders who created residential homes which relied largely on rainwater to meet its needs with an elaborate water plan. It was heartening to one such remarkable doyen of energy who has imagined, designed, strategised and steered the implementing of many million units of savings in energy. U V Krishna Mohan Rao has led from the front energy audits for a staggering number of nearly 10,000 buildings. He worked on sustainability solutions in the mid 1980s when 'green' was merely a word for a colour. The data base he has of such buildings is priceless. In his younger years, he had the rare privilege of a brush with greatness with eminent leaders like M K Raju and C K Prahalad.

In this picture, Krishna has to his left a water champion UVS Rao while Hariharan Chandra looks on.

Most Millennials and GenZs won't even know of these great men who strode the professional horizon on sustainability and management for nearly 3 decades starting with the 1970s. Today, Krishna was feted by friends at a private gathering when he turned 70.
As India wrestles with the challenge of switching to renewable energy, and to scale down energy use with 'efficiency' and 'productivity' [and there's a world of difference between the two] many old-timers raise a silent salute to this remarable man. Krishna, Life has just begun for you at 70! Live it up, as you inspire many hundreds of young professionals!!

A Trail Blazer in Sustainability

Brahmanand Mohanty (right) has been among the few hundreds in the world who have intensely pursued solutions for sustainability for forty years. 'Trail blazer' is not a word that can be used for most leaders, but for Brahma this fits the bill. From his work in France, Laos, Bangkok, and other parts of Asia and Africa, he has been tirelessly pushing solutions for energy conservation with process and methodology that the world has learnt from him. The word 'sustainability' was first used in 1987 in the Brundtland Report of the UN Commission, also known as Our Common Future. But years before that a young Brahma was tinkering around with solar devices and understanding the nuances of an imperilled future. 'Climate change' and climate action were not words that had entered the regular lexicon at the time.
Hariharan Chandra caught up with him at a meeting in Chennai. He's as sad at the alarming lack of understanding in a world that is obsessed with bigger cars and homes and in pursuit of goals that destroy more than they create.

STORIES OF SAVINGS

A Training Centre in Nagpur takes to Net Zero

It is a 30-acre campus with 400 residents in the heart of India at Nagpur. At first sight the land is undulating with a bit of green. The buildings are conventional and do not occupy a big part of the land... Their requirement for water is at about 50,000 litres. The centre has grown over time, and no one thought of having to do any significant water plan for there was [and continues to be] enough water they are able to draw from the borewells. There is no threat, as yet, of the borewells going extinct. There is water they are able to draw. For how many more years, is the moot question.

A quick huddle told us that the annual demand, at the current daily water use, is 18 m litres. Nagpur has a relatively rainy climate with high precipitation levels, averaging 1230 mm of rainfall annually. Nearly all of it falls in four months [June to Sept] with October receiving a bit of the residual rainfall. This is in contrast to say, Bangalore, that also receives about 1200 mm rainfall, but secures this over 8 months with even a spread between April and November every year.

So, what does this mean? This training centre can go net zero on wate with the rain-months clearly being 100% borewell-water-free, while in the winter and the scorching summer months, there will be dependence on either borewells, or on a bunch harvesting structures that can give them the daily water they need.

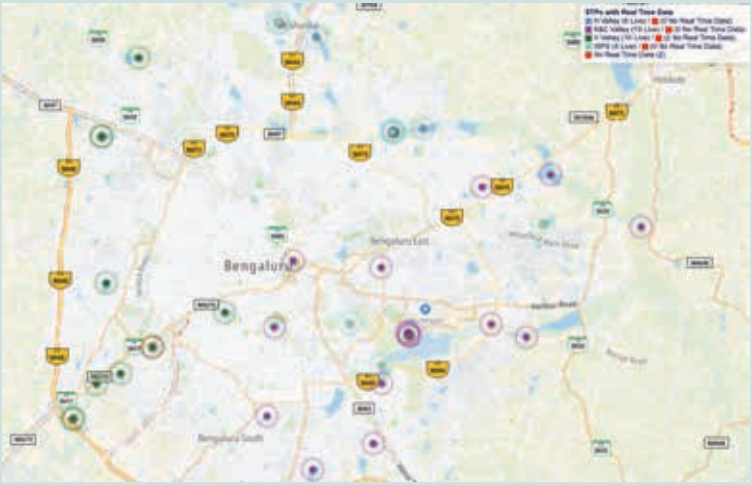
Water demand in a year @ 50 KLD	18 m litres
Waste Water in a year, after accounting for 10% losses in distribution`	16 m litres.`
Current Purchase cost	₹ 27 lac @ 15 ps./litre.
Low Carbon Water facility with 50% use for the property's various non-potable needs like flush tanks, and garden water	9 m litres. Cost saving : ₹13.5 lac.
Carbon Tonnes Reduction a year:	300 tCO2e
Payback of Capital cost on the Green Water Infrastructure:	18-20 MONTHS

Bangalore Water Board set to build 17 more Sewage Treatment Plants!

This featured as a news item at the start of the year. Setting up such tertiary treatment plants with massive pumps for stirring and agitating waste water, is one of the biggest hoaxes played by engineers on industry. Organic matter in such waste water does not need pumping. I cannot imagine a bigger stupidity than this. Who stirs a Lake Victoria or the oceans and seas? All processes happen there in a way there is a fine balance. We are all obsessed with capital cost, operating cost. All of these can come only when the principles of the process (not claims) merit consideration.

I only hope to be wrong. It will take some sort of a miracle to fix the mess that the entire world is in, when it comes to waste water and sanitation. The next time you read a brochure for a waste water treatment system, think of why we need to be using such systems. How should we make a decision when it comes creating a solution for 500,000 or a million litres a day of waste water discharged from any building.

Will we at all value the basics? Or will we seek glory without substance. No one is an exception, this writer included.



The real-time BWSSB dashboard of operational STPs across Bengaluru