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The TecEco Times
Keeping you informed about the eco-cement project. Issue 19 24 April 2002

Patents Looking Good

Good News! - We are in the process of final examination and at this stage it looks like we shall get an international patent with all 17 claims! Our attorneys, Freehills, Carter Smith Beadle said in a letter to us dated 4th April, 2002 "….this is a very favorable opinion and has concluded that all claims are novel and inventive-congratulations!

We have taken out a PCT for the combining of reactive magnesia with other hydraulic cements and geopolymers. The combination can be in virtually any proportion and at the high Portland cement end of the scale the hydration of magnesia results in the formation of brucite which replaces Portlandite, (consumed in eco-cements by pozzolans such as fly ash) providing a means of proofing concrete against corrosion because of it's low solubility. At the other end of the scale, with high proportions of waste and reactive magnesia, and particularly in porous or semi porous materials, the magnesia not only hydrates, but carbonates, completing the thermodynamic cycle by reabsorbing the carbon dioxide produced during calcining and becoming magnesite and again. Because magnesite is quite strong and often fibrous and acicular it is an excellent mineral for cement and holds a large proportion of waste. If the wastes contain silica and alumina and are at all reactive they also in time combine as a result of surface hydrolysis at high pHs. (The hydrolysis of alumina and silica both increase markedly over pH 9.) The result is a new potentially low cost material - eco-cement - that is recyclable, carbon dioxide neutral or even a net sink (if waste carbon based fibres are included for example), of high thermal mass and containing a great deal of waste (Bricks for example can have over 90%). As a means of immobilising end of process wastes eco-cements are also useful because of their low cost, low solubility (especially of brucite) and thermodynamic and kinetic stability given the conditions on earth today.

Beating the Carbon Habit

The September World Summit on Sustainable Development in Johannesburg looks likely to get bogged down in "North South" friction. Can Tececo stop this in time by broadening the debate on sequestration away from just forestry with our practical solution to fight Greenhouse carbon?

There is a strong possibility that the focus will be lost on reducing atmospheric carbon dioxide if the discussion at the World Summit on Sustainable Development in Johannesburg on September 2-11, 2002 deteriorates into a developed versus underdeveloped or "north – south" debate. Tececo are keen to widen the debate because we have developed a new carbonate cementiceous material that could reduce production of CO2 by well over 20% and is also potentially a net carbon sink.

The new recyclable, low cost cement developed by TecEco (www.tececo.com) is of high thermal mass and can incorporate high proportions of waste, it absorbs carbon dioxide in porous or semi porous materials such as bricks, blocks, pavers and mortars and with the inclusion of waste organic or carbon based fibres can even be a net carbon sink. TecEco eco-cements are the first high thermal mass, low embodied energy cementiceous materials making possible very low lifetime energies.

The footprint of the built environment is enormous as according to the Australian Federal department of Industry Science and Tourism buildings are responsible for some 30 % of the raw materials we use, 42 % of the energy, 25% of water used, 12% of land use, 40% of atmospheric emissions, 20% of water effluents, 25% of solid waste and 13% of other releases.

The TecEco technology is substantial solution to global warming and waste utilisation. We also believe that offering technology providing cheap housing and utilising large quantities of waste to less privileged countries is far more attractive than trying to limit emissions. TecEco eco-cement technology therefore offers a way for underdeveloped countries to ratify Kyoto with positive economic outcomes and brings the focus of action to the cities which have the largest environmental footprint and where more people can be involved in positive action.

The Enviro 2002 Conference

John attended the Enviro 2002 conference last week in Melbourne and it was quite something. It was held in conjunction with the World Water Conference and World Waste Conference in what is referred to as “Jeff’s Shed” and the conference center on the city side of the river Yarra.

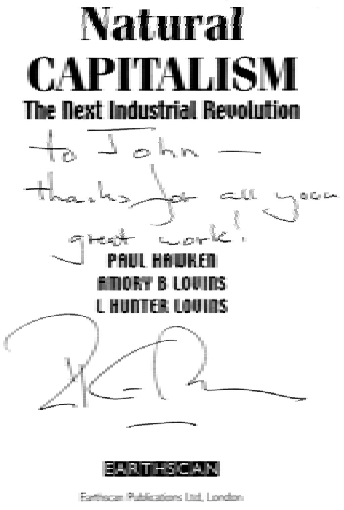
The conference/convention was attended by around 6,000 people from Australia and overseas. Some of the outstanding thought leaders and trend setters speaking at the Enviro 2002 Business of the Environment Conference included Paul Hawken (author of the Ecology of Commerce and Natural Capitalism, USA), Gwen Andrews (CEO of the Australian Greenhouse Office), Professor Bill Rees (author of Our Ecological Footprint, Canada), Greg Bourne (Regional President/Director, BP Australia), Tricia Caswell (Executive Director of Global Sustainability at RMIT University) and many others.

More importantly the opportunity arose to wear out another pair of shoes and wreck my poor feet getting around some three hundred stands. I collected a lot of business cards and handed out many more. What I learnt was:

1. There are many more uses for eco-cement technology involving end of process wastes such as sewage ash, sludges etc. that I thought possible.

2. Existing solutions do not capture such “end of pipe” waste very effectively – for example organics and many salts prevent the setting of OPC.

3. I need a secretary!



John Meets Paul Hawkin

I had the opportunity to wave one of our bricks about in at least two speeches and captured some attention. After Paul Hawkins talk I had a chance to chat with him and yes – I purchase another copy of Natural Capitalism. I could not resist the opportunity to have it personally autographed by Paul.

What is Wrong With the System for Assessing Startups?

Why doesn’t so much good creative innovation make the light of day?

Some of the answers lie in thinking laterally or outside the box as Edward De Bono would have us do.

The thinking patterns of those who assess innovation need to change. The problem is that too much emphasis is placed on standardized thinking patterns drawn from the past. A rather

standardized business plan and a budget that “fits” are considered the most important. They are important but result in limited thinking. An analogy - what is more important – all the glossy brochures or a test drive in a car before purchase. The test drive of course! There is very little original thought. New experiences are cross-referenced against old and solutions dug up from the consciousness of past experience. This framework for straight-jacket thinking needs to be elevated a little from the podium of past experience and the truth of an innovation or invention exposed. Issues such as the economic concept of utility, the creativity and ingenuity need to be considered. In other words - the widget is more important than the business plan describing it. For a new observer the wood needs to be seen to understand how the tree stands up. This will be hard to accept for a lot of consultants, accountants and governments bureaucrats comfortable in the zone of dry economics. But what matters is the final outcome. Too many good inventions and sound innovation sink under the weight. Like the puff fish it is all show, not the real animal.

There is no doubt that the whole innovation business has become somewhat of a gravy train for accountants, consultants and lawyers and many in government. In many cases business plans and budgets are actually put offs to real help (I have had a number of people on the gravy train actually admit this to me). It is all just so inefficient. Some of the most hopeless innovations and inventions of all time receive equal attention as some of the best in this level playing field of mediocrity set in a dry economic climate. In the meantime government resources are squandered and there is nothing left to assist those innovations or inventions that are truly worthy make it. The whole process could be so much more efficient if those innovations or inventions that have a logical truth about them, that have obvious utility receive more attention than those that are mediocre at best. Besides - all would benefit.

JJ’s Column[1]

This month we have begun to receive a larger volume of traffic from search engines (Mainly Google, Yahoo! Netscape Search and DMOZ.org) The main cause I believe is the growing number of links(Google listed sixteen). The top number of referrals this month (other than Google) came from the Alternative Technology Association (www.ata.org.au).

Linking to www.tececo.com or one of its mirrors is a great way to promote the TecEco eco-cement technology without having to actively seek out people and contact them.

TecEco have software that gives us information about where website visitors came from. If a lot of visitors come from your web site and we find a link, we will mention it in the next TecEco Newsletter as a ‘reward’ to raise the awareness of your company. If you run a relevant website you may be interested in exchanging a link with us.

I am in the process of creating a new website to help widen the debate on sequestration (removing CO_2 from the air). Everyone is encouraged to become involved - not just big corporations. The central theme will be broadening the debate away from forestry. By the next newsletter the site should be up and running at www.CO2Busters.org

This month the website has had a few changes and additions:

- Ecology.com has been added to the links page.
- A broken image problem on the CSIRO dbce appraisal was fixed. Also on the downloadable images section of documentation 1 or 2 broken links were fixed.
- A new graphical site map is available (Made in Visio 2000).
- Chronological History of TecEco and Chronological History of TecEco’s Website have been created and are in the process of construction.

[1] For those who our wondering, JJ is John Harrison’s 12 year old son and TecEco’s webmaster and information systems manager.