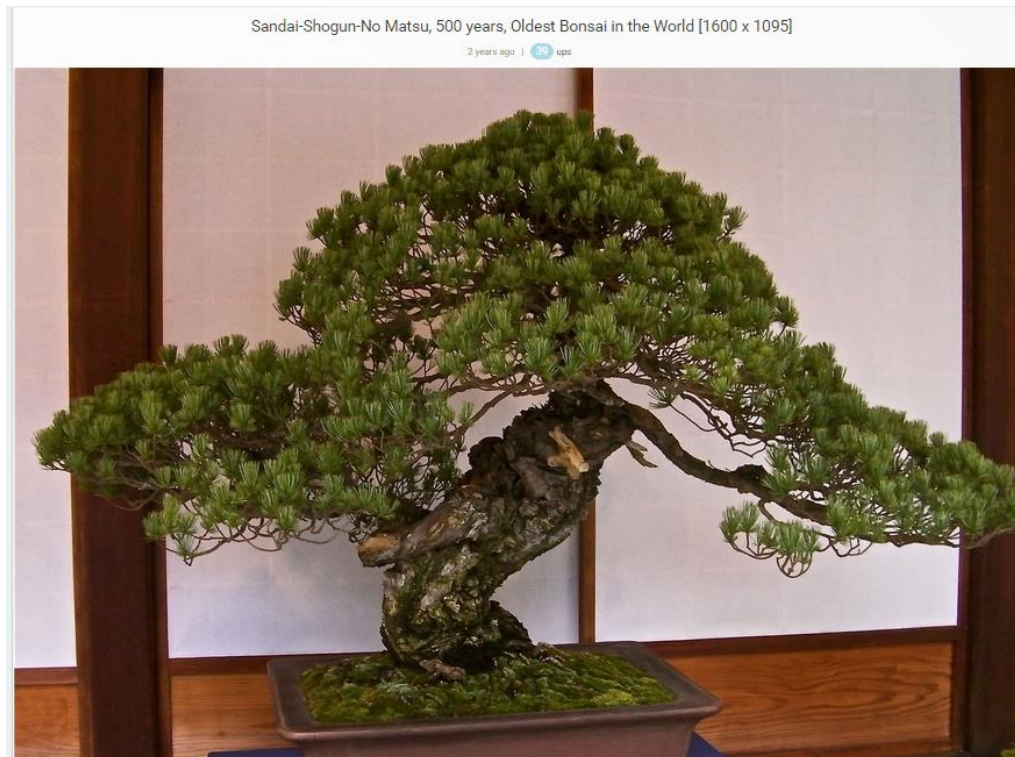


Preface: <https://www.slideshare.net/DanCloutier3/the-energy-picture-in-a-few-graphicspptx>

Chapter One – A Metaphor for Content on our Current Energy Situation

by Dan Cloutier



(Source: <http://www.picrail.com/l/1k57in/sandaishogunno-matsu-500-years-oldest-bonsai-in>)

The Japanese have long had the tradition of bonsai art, appreciating it as a symbol, that life is a struggle. Nature provides the raw elements for the bonsai and humans patiently shape what we can. A mistake here or there and nature might decide not to allow the trees survival. It is a fascinating art form, for analogously showing our ability to influence a small corner or amount of the world, while emphasizing that our control is always shared and intertwined with nature's ultimate control. Bonsai dating to the 17th century have survived to the present. One of the oldest-known living bonsai trees, considered one of the National Treasures of Japan, is in the Tokyo Imperial Palace collection.^[20] A five-needle pine (*Pinus pentaphylla* var. *negishi*) known as Sandai-Shogun-No Matsu is documented as having been cared for by Tokugawa Iemitsu.^{[20][21]} The tree is thought to be at least 500 years old and was first trained as a bonsai by, at latest, the year 1610.^[20] Talk about taking care of one little thing and making a lasting impression!

Throughout the ages, humanity has managed to find many ways to prove what the cumulative power of repeating an action has on a truly global level. For example, history shows that energy consumption has always had an economic and environmental impact, and that occasionally the effect is so extreme it's forced us to make changes to our sources and use of supply. Our dominant reliance on wood up to the mid 1800's, so deforested Europe (and elsewhere) that we were forced to move to coal. Since at least Roman times, being able to locate next to readily available energy sources heavily determined which community's economies thrived and which shriveled. The connectivity of it all is undeniable - we are all connected to and dependent upon nature whether we are aware or appreciative of it.

As we push the planet for more, we back many systems and thus ourselves into corners. After decades of observation, since the 1980's from inside the oil and gas business, I became convinced of the essential need to turn my concern into action, resulting in my launching a company in 2006 to assist with energy conservation. Frequently up against naysayers, I haven't always felt

tremendously influential, but that was and remains satisfactory regardless. The challenge (as brutally summarized by James Kunstler) is: “The basic fact of the matter is that the energy bonanza of the past 200-odd years produced a matrix of complex systems, as well as a hypertrophy in human population. These complex systems — banking, agri-biz, hop-scotching industrialization, global commerce, Eds & Meds, Happy Motoring, commercial aviation, suburbia — have all reached their limits to growth... The financial system is the most fragile of all the systems we depend on (though the others do not lack fragility)... Does anybody doubt that the standard of living in North America and globally is falling, despite all our cell phone apps?”

Nature provides our food, water and energy through an amazingly complex, interconnected system – not humans. This fact is so easy to overlook. Humans shape – nature provides.

Chris Martenson quoted an old saying: “A fish cannot grasp the concept of water...it is all they know”. The connection to our wellbeing and livelihood with our planet is so interconnected – too often we fail to see it. Peter Senge states it elegantly by saying “Accept and embrace that human enterprise is structurally and functionally inseparable from nature”. Paraphrased, Senge goes on to point out that human enterprise is a fully embedded, totally dependent subsystem of the ecosphere. Once we recognize that we are an active part of these ecosystems, our continued survival depends upon us evolving our communities in a way that increases the resilience and longevity of these ecosystems. In this context, resilience defines the capacity of the system to assimilate disturbances without crossing a threshold into alternative and possibly less “friendly” state. A desirable socioecological system is characterized by ‘high resilience’, one able to resist external disturbance and continue to provide biophysical goods and services essential for satisfactory quality of life.

Such is humans’ connection to nature for food, air, energy, etc., which almost seems so obscenely obvious as not needing to mention it, except for the many connections (nexus) that are overlooked by so many, so much of the time and in so many ways. This often-destructive perception comes from a long-held perspective that in order to succeed, we have to ‘rail against nature – to conquer her’. Perhaps the prevailing wisdom should be as the bonsai master well knows, ours is but to read the signs and flow with nature. Humans cannot conquer nature, but when we work with her, everything becomes so much easier. It is a complicated art because her wisdom and intricately evolved systems have taken millions of years to efficiently emerge. The truth is we know so very little, to date, about the earth on which we depend and yet we wonder why our efforts to conquer her are so futile and misguided. Looked at another way, it really does come down to a matter of choice...the choice to learn.

“Do you know what makes a person a genius? The ability to see the obvious. Very few can do that.” –Charles McCarry. But as Socrates warned what is immediately obvious, seldom is the truth...truths lie deeper.

I read prolifically and try to relay the highlights, as is the case in the collection of quotes and articles that make up a monthly blog newsletter we publish through www.artltd.net. This book is the synthesis of that. In a way it is not at all unlike one bonsai enthusiast trying to share his craft with another, except that the variables for a bonsai tree’s health are few in comparison to our energy, environment and economy subject matter. Truth is found within the depth of what is and what can be, similar to the complexity of nurturing the bonsai. Trying to decipher what is prudent tending can be somewhat overwhelming but essential – and so we press on trying to positively influence our small corner of the world. We have and do enjoy excellent success stories which inspire us to continue.

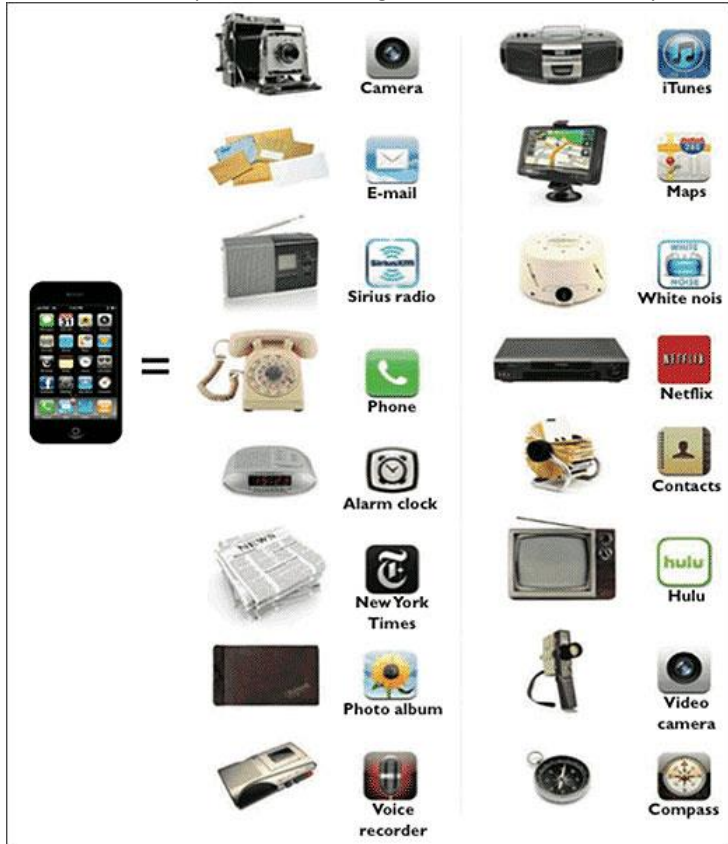
“Not everything that is faced can be changed, but nothing can be changed until it is faced” James Balwin

As we follow the many subject matter experts in this field, we find they express a consistent concern and underlying frustration that not enough information is being assimilated and turned into understanding as to what plans and actions are required now. Many authors and activists lament there is all too little true comprehension of the urgency for action – demonstrated by a high degree of apathy on humanity’s part. Energy and environmental issues are major factors in making our economy sick, right now, and they are demanding to be effectively addressed whether we like it or not. No one disputes we live on a finite planet, with finite resources, but perhaps there the general agreement ends. After that we end up in a never-ending debate on, what are the boundaries of finite and who, if anyone, has the right data? Who, if anyone, is interpreting the data correctly? Is climate change real or more propaganda? Does anyone have a thorough grasp on solutions? What can and will technology do to change the picture and on and on ad nauseam, so much so that it ends up preventing the significant action we so badly need or even worse the wrong actions. We must find ways to cut through that dogma and clutter.



<http://www.newyorker.com/humor/borowitz-report/scientists-earth-endangered-by-new-strain-of-fact-resistant-humans>

A discussion in Natural Geographic suggested one of the few ways to cut through the dogma is to have a 'father-daughter' like relationship, which of course then severely limits one's ability to influence very many. How many of those close relationships can we cultivate? Chris Martenson has cultivated a larger sphere of influence on energy, environment and the economy than most, and he has stated that he thinks a pro-active plan for the masses is unlikely. He believes that we'll continue to race head long into painful circumstances and then as history shows in spades, pain will cause and enable change (if what is left, is inhabitable). He may well be right, but there are still those that think that in this age of technical marvels including science, the internet and smart phones; we still might enable ourselves to be systemic and effectively proactive.



See <http://physics.ucsd.edu/do-the-math/2015/09/you-call-this-progress/#more-1551>

Clearly a great deal that is positive is, in fact, taking place. We are far less destructive in our treatment of the planet than we once were, and we are actively trying not to treat the planet as one big Easter Island. On the flip side, there is also evidence that shows for every ozone layer fix we successfully implement, we come forward with another supposedly innocuous, sustainable technology that proves to also be destructive.

Clearly, there is a great movement of players working to be epically more energy efficient and environmentally benevolent, with for example, LEED and Living Challenge buildings proliferating. These are wonderful demonstrations of attempting to positively influence corners of the world. That said, the debates necessarily rage on as to what is truly green and sustainable (sustainable perhaps best defined as a lifestyle designed for permanence), to determine what solar power and other technologies can really solve – and by when. Are finite rare earth minerals, cobalt and lithium supplies going to cause bottlenecks, etc, etc. And therein lays both the opportunity and the gauntlet! Too many still do not pick up the gauntlet with the excuses that “they” and/or technology will solve it (*whoever “they” are and as if our technology has ever defied the laws of thermodynamics/nature and actually created energy*), or that



nature will provide, *(as if no one has ever discovered personally that nature does not necessarily provide)*. The most common excuse on the list...I recycle, I ride my bike, I vote, I influence so little, I have done all I can! Ignoring real difficulty is foolhardy but pervasive. It is common to watch people react when confronted with energy and environmental challenges in a pattern that is all too predictable: *'I like my lifestyle and I want it to improve, therefore I need to find evidence that the challenges you raise are not real and therefore I can go back to what I was doing'*. A society grows great when people plant trees they know they will never sit under...few (including me) have done all we can. It is small groups of people that have always changed the world and they start with a systemic knowledge of what needs to change, what is really a sustainable intelligent response and then just like they would do if they choose to nurture a bonsai, they get on with it.

Winston Churchill said "A pessimist sees the difficulty in every opportunity; an optimist sees the opportunity in every difficulty."

The opportunity is likely in the fact that we face the greatest change ever, up to and including the industrial revolution! The examples already of those that do not understand it and therefore lost all, are as dramatic as it was for the occupants of Easter Island. *Almost half the companies on the Fortune 500 list in 1999 have fallen off the list since then.* Equally, the examples of success accruing to those with a reasonable understanding of what is the problem, what really needs to be solved are advancing rapidly. The last whaler perhaps wishes instead he had the vision of oil barons and in turn, the movement to kick the fossil fuel habit, suggests some current alternative energy barons look like whalers. The winners will know the answers to questions such as what fossil fuel use will remain over the next 5, 10 and 50 years and what renewable technologies really work, to supply what?

For a time, most everything about fossil fuels and the industrial revolution thrived. That era is not over, but the evolution this era is being forced through is epic and its ongoing ramifications demand understanding. It is incredibly complicated to think through, but essential in the here and now. For example, if peak oil (the point in time when the maximum rate of petroleum extraction is reached, after which it is expected to enter terminal decline) is now, then is it a key reason for what is happening to productivity and the economy? Are gasoline dependent suburbs suspect and if so – what is the opportunity and practicality for walkable suburbs? To be a viable solution, what elements must exist in walkable suburbs (e.g., walkability to work or mass transit, local permaculture food production, etc.)? Which real estate players are creating that solution because they understand the problem and can address it?

Some part of the solution need not be complicated at all...If I own a building, will cogeneration enable me to reduce utility costs by 20+% while reducing my CO² emissions footprint? YES. Why would I not want to do that? Oh gov't policies that are outlawing the use of natural gas. Yikes what can I do?

If we take the time to study the data, we know that peak fossil fuel energy is well upon us (the egregious volume of complex data demonstrates this fact) despite it being one of many things hardly ever spoken of by the legacy media. Throughout this book we will share the highlights of this information, as well as attempting to highlight the huge ramifications such a sea change entails, because we are certain waiting for the 'good ole days' to return is futile. We are pleased and determined to continue to partner with those working to both understand and meet this challenge. The symbol of the bonsai is apt to us, life always has been a struggle and will continue to be thus. Like bonsai art, understanding the craft/solution is full of rewards, joy and beauty. As it always has been...a small sphere of influence is what enables us to thrive.

There is a Chinese curse that says, "May you live in interesting times". We think the curse could also mean "May you not understand the times in which you live!" If reality depresses you, we lack a way to help. A positive person with the wrong map, remains lost with an oblivious, short-term grin on their face. The cognizant, positive person, who has figured out which map is the correct one to use, is able to make intelligent decisions and end up at the right location with a satisfied, long-term grin on their face. It may be challenging and daunting to attain that map in order to develop the best solutions, but that is the mission of our work and we find it to be succeeding.

John of Salisbury said in 1159 "We are (can be) like dwarfs sitting on the shoulders of giants. We see more, and things that are more distant, than they did, not because our sight is superior or because we are taller than they, but because they (can) raise us up, and by their great stature add to ours" (but only for those with the aptitude and who make the effort). If we let Mother Nature assist us, then perhaps we can see farther than just on shoulders of men – we can look from the limbs of ancient great trees! Imagine the giant Sequoia, the few that we have not been cut down, if we climb to the top, it gives us a vantage point equivalent to being on the 30th floor of a skyscraper. Such is Mother Nature's bonsai art, made available to us, if we are smart enough to allow for the thousand years or more it takes such a gift to grow.

Ark is an ancient Hebrew word for "to cover". That is extremely apt as the vision and purpose of our company, coming from our roots in the energy sector, which led us to understand the incredible opportunities in front of us, for leveraging methods for far greater energy efficiency by means and approaches of cover/buildings which leverage passive solar for space heating but also cooling which we demonstrate and have deployed in our demonstration greenhouse co-located on Sprungs corporate campus located in Aldersyde, Alberta and others locations. Greenhouses have many uses, not just for growing produce, but not least of which is for use in commercial building applications such as what Manitoba Hydro has proven with their highly energy efficient

head office, close to the corner of Portage and Main in Winnipeg. This building has proven since 2009 that even in a very cold climate, it is entirely feasible to heat and cool a multi-story tower without the use of fossil fuels. ARK / Sprung Structures can be leveraged to achieve such energy efficiency feats on a new build and as part of a retrofit.

Many faiths revere the Ark of the Covenant, a fabled gold box which covered and protected what these faiths mutually view as values to live by. Throughout the ages they viewed it as symbolically containing a source of energy and resilience. Living well and sustainably is very much our vision and purpose.

Now for a lot of people, when they hear the word Ark, they think first of Noah's Ark. As a bit of a history buff though I have been interested in knowledge that there exists an ancient clay tablet story, that precedes the story of Noah's Ark by something over 1000 years. This ancient story, in an ancient Babylonian/Hebrew language, is today housed in the British Royal Museum see <https://www.theguardian.com/culture/2014/jan/24/babylonian-tablet-noah-ark-constructed-british-museum>.

The Babylonians lived in Mesopotamia (modern day Iraq which was also home to the Garden of Eden). Iraq is anything but the lush green environment it once was. Societies would be wise to fully understand why and proactively avoid repeating such patterns. The Babylonians/Hebrews used the word Ark to mean seeking cover and resilience from disasters and difficulties. Noah's Ark valued all species great and small. In this ancient context we like our corporate name to embody solutions for living in a lush green civilization, harmoniously with nature and in a lifestyle designed for permanence. We strive for that in the products and offerings (cogeneration, greenhouses, etc.) we, with our valued partners such as Penner Farms Services, Sprung Structures and Crown Capital, bring to our customers. If you would like to collaborate on such solutions please contact me at danc@arkltd.net

We hope to have the opportunity to partner with you, because when we work together to understand the challenges and to create the roadmap to success – we all prosper! Bonsai!



