

Food, Energy, Transportation, Urban Design & Climate for an Eternity without Oil!

Proximity, Proximity, Proximity and 100% Sustainability



Our foreparents knew what it took to live on very limited resources, as do both the Republican and Democratic Parties today! We all know that we will soon have to support populations that have quadrupled with the use of petroleum in the last century, on what?

Some believe that we must stock our own shelves no matter what the cost to others, and some believe that the possibilities for technological innovations to enhance the survivability of all are unlimited. I am one of the latter, and there are many just like me – cooperation for group welfare seems to have evolutionary value. But, so too does the, “grab and run with it” mentality. How will our genes survive the next 20 years in our present numbers, to say nothing of the next 2000?!

It can be argued that the components of the genes that make us also made our foreparents in the Year 0, and will make all of our descendents, just in a different combination or recombination of the human pool of those components. Can we not then argue that those genetic components are “eternal”, that a notion of our own eternity will be carried by our children, grandchildren, etc. off into the wild blue yonder of eternity on this planet?

If it is our children, and the women who produce our children, who are the bridges to our own personal eternity, why are these 2 groups also the most abused on the planet? Are the ways that we treat our own children, and those of others, the crucible of human evolution?

That said, I would like to prime the pump of brilliant designs that can lead the world toward the only viable conclusion that I have reached about the future – spending every minute from now until its creation on the design and construction of the world’s first solar based, 100% sustainable global infrastructure for the provision of energy, food and transportation! And, I would like to have vigorous disagreement and contrasting proposals at every step of the way toward that goal!

There is an end to both hydrocarbons and to climates that have provided all that we have used to prosper – scientists are presently measuring how much time we have left before both become uncondusive to human life! So, we can easily see that, on the present course, humanity will run foul of degrading weather – heat, drought, hurricanes, tornados, floods, etc. and of the effects of much steeper energy prices as the petroleum runs out! What can we do now to enable us to avoid those convergent trends for the benefit of the components of our genes for the rest of eternity?

Let’s pump the iron of paradigm change and see what we can find!

1. We will have life on Earth for as long as the sun shines as it does now, so let’s build an infrastructure that relies only on solar energy. It is far wiser to understand that most of the energy that we currently use is from fossil fuels, meaning from the remains of plants and animals that lived millions of years ago. We must convert everything that we do to the direct use of such solar energy, because the millions of years of stored solar energy that fossil fuels represent will soon be absent! In addition, burning fossil fuels returns carbon that was last in the atmosphere 60 – 100 million years ago to our present atmosphere, with the consequences for global climate change that we are seeing!
2. Wind is the most powerful and economical form of solar energy, so let’s also base our infrastructure on wind, in areas where it’s force is both strongest and most consistent. The world’s current infrastructure is much more based on where explorers first arrived and expanded their presence. We now have the quantitative data that can be used to

optimize where, how and when we can build the world's first 100% sustainable infrastructure!

3. Food, energy and transportation provision will all have to be revolutionized, as they all depend highly on petroleum, which will disappear and cease causing the potentially catastrophic global climate change that is currently running away with the future of the components of our genes. What does that revolution look like?

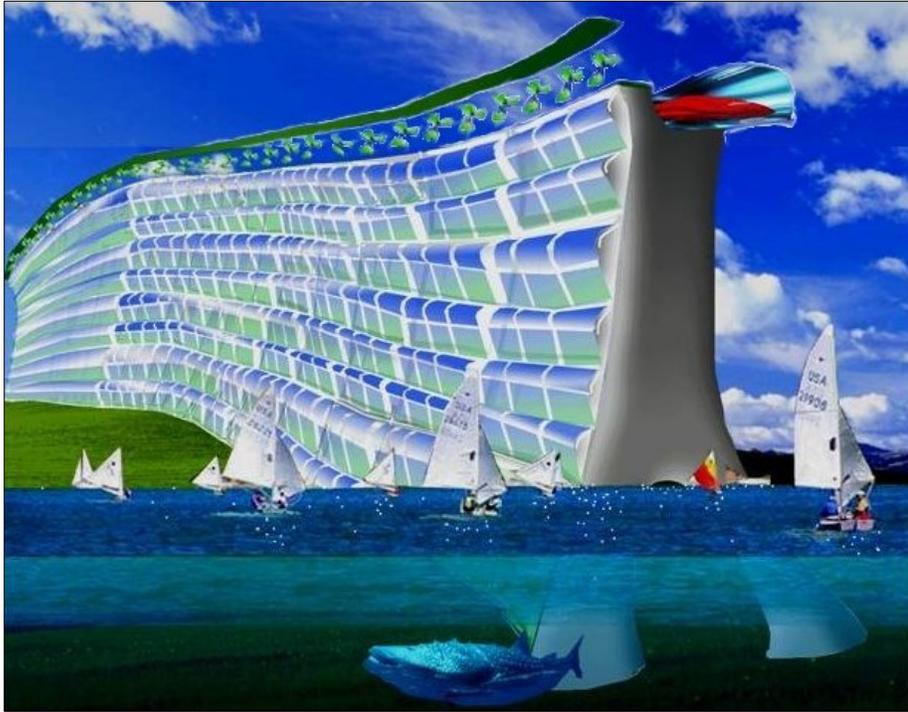
Engineers and designers, throw away your computers, because this future is "outside the box"! We really cannot imagine using any more petroleum, because its continued use will warm the planet catastrophically, and we will very quickly find ourselves in the same position as the Easter Islanders, building monuments to our own extinction!

I have had my own "outside the box" experience when my heart stopped for 10 minutes while I was under a general anesthetic to have my forehead sutured following a car accident in Kenya in 1980. Wow! Imagine waking up to find that you had no more memory, and that you couldn't do any of the things that you had learned as an infant, including walk, speak, play tennis, etc.! It's been a long road back from there!

Let me take a very short detour and recommend that all those who suffer head injury and brain anoxia undertake as much vigorous physical activity as quickly as possible, as the 3.6 miles home from the job that I got within 7 months of the accident, that I covered 92 times within the first 2 years of the same accident, literally put me back on my feet, and gave me tons of ideas for the construction of the world's first 100% sustainable global infrastructure!



There I was, hanging by the tips of my fingers slipping off a narrow wet ledge, miles above any safe refuge as I arrived in a new country as an immigrant in a wheelchair in 1980. But, Hope (and Design) Spring Eternal, even in the most dismal of circumstances, and I rapidly converted my disabilities into the designs for a 100% sustainable future, below, at every step of the way in the 330+ miles that I staggered, walked and jogged.



The seas are rising around the north to south Linear City above, built at right angles to the prevailing westerly winds in the Northern Hemisphere, which is linked to another one across the straits. People are enjoying some sailing in some vintage craft as a whale shark glides by, unseen. Optimism builds a much stronger future than does greed and pessimism!

Everyone can walk from where they live into fields to grow their own food without the petroleum that is required for 95% of our current food production, all are served by high-, medium-, and low-speed trains that use only 1/3 of the energy/passenger mile of modern cars and aircraft, and that can also be powered by the ducted wind turbines, in green, along the roofline! Please, please, please design me a more sustainable infrastructure than this one!

It is my belief that, currently, financiers and Republicans, who are all paid much more than the rest of us, have the tools to look into this future that is bereft of petroleum, with the Sword of Damocles of Climate Change hanging over us all. That is why they are currently socking away all that they can grab to



protect their families – laudable, except that it leaves 90% of the population to die as crops fail and energy costs rise!

Why not consider that we are all subject to the same storm-tossed seas – just as the Easter Islanders were, after all? Why not pool our brain-power to create the world's first 100% sustainable global infrastructure, and spring off the platform of Linear Cities that can provide all that we need from the "eternal" supply of solar energy alone? If any one or two of the people in the lifeboat above tried to save themselves above all the rest, do you think that the boat could ever make safe haven?

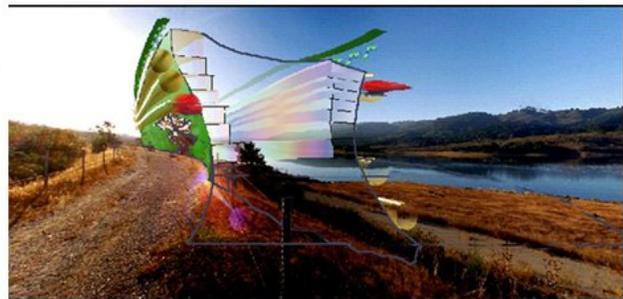
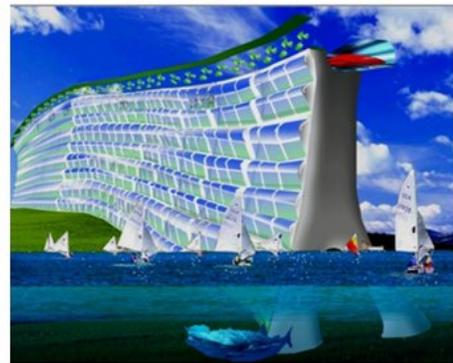
If those 2 lied to convince everyone that they were all working toward the same end, but slipped off the boat just before it was smashed against the rocks of the shoreline to collect all that every member of the crew had hoped to live on to survive, is that much different from the economic situation that America finds itself in today?

If, however, all members understood that the solidarity that worked so well in the circumstances above could be easily transferred to behavior on land, just as the Europeans have learned through their tortuous history, more of us could live free of fear, and able to concentrate on how to make the future work better for all of us!

So, how do Linear Cities work?



They would be built north to south, as indicated by the blue lines on the map above, to connect our existing cities, and to supply those cities with food as petroleum becomes increasingly expensive. As below, we would start 1) with the construction of wind turbines along windy stretches of our north to south freeway network, followed 2) with the installation of high-, medium, and low-speed rail lines, and induction tracks in the freeways to overcome the range problem of the electric vehicles shown. Finally 3) we would construct the Linear Cities themselves, in any number of configurations and designs!



The illustration at B) above depicts an East – West oriented Linear City, in red on the map above, to link the North – South cities illustrated. They could be built along waterways to take advantage of sail-powered transportation, below, because we won't be flying anywhere, and will enable all residents to grow their own food, also below:



Everyone can walk from where they live to their own fields to grow their own food organically and cooperatively:



Transportation without any Petroleum!

I have discussed the use of wind turbine driven high-, medium- and low-speed trains above, but that still leaves most of the country, and most of the world without transportation. What can we do for the children of AD 4000 for more local, and overseas transportation, without the petroleum that currently fuels 95% of our transportation needs here in the USA? And, while the solutions are critical for those 2000 years from now, will they be any less critical within 20 years?



The car above uses a gas turbine – flywheel hybrid that will burn any gaseous or liquid fuel, that serves as a gimbaled gyroscope to keep the car level, and is equipped with the profile and structure illustrated just above to attenuate the shocks caused in collisions from almost any angle, to save the lives of the occupants. In addition, the flywheel delivers power to all 4 wheels electrically using traction control to avoid any wheel spin, and absorbs that power without locking the wheels (a form of ABS) to make the flywheel turn faster, thus saving energy that is lost in almost all cars.

Transportation over Water!

Just as land transportation without petroleum will experience changes in the paradigms used, transportation over large bodies of water will have to change dramatically! Again, we must optimize our use of the wind, with new and surprising technologies, as below:



The Blimpfoil illustrated at the top has tethered reverse hydrofoils that also deploy reverse train bogies that are channeled into/under rail I-beams in port cities so that the Blimpfoil can fly from Kansas City to Moscow non-stop, for example!

All these craft benefit from both GPS and weather satellites, so that they can be directed to fly or sail any number of miles to the north or the south to take advantage of higher speed and more favorable wind streams. The foils can also be equipped with sonic alarms and buzzers to encourage whales and large fish to avoid their path!

The history of civilization is perhaps 4000 to 10,000 years old, of which we are most familiar with the last 2000 years, **which is an incredibly short time!** If you divide that 2000 years by the 20 years that is roughly the period of the "average generation" according to the variety of definitions that are available, we have 100 generations back to the year 0, a date and year that we in the West know well.

Most of us know 5 generations in our own families, from grandparents to grandchildren, including ourselves. If you divide 100 generations by 5, you get 20, so it is only 20 times the generations that we know personally in our own families back to the year 0, **which is absolutely incredible!** It is only 20 times the generations that we know in our own families that include almost all of reasonably recorded history.

We have done an incredible amount in a very short time, from the first sailing ships on the Nile 4000 years ago, the first cuneiform writing in Mesopotamia in 3500 BC, and marks on tortoise shells from China dating from 6000BC, the last of which makes all of human history only 80 times the generations that we know in our own families!

And, if we were to measure in lifetimes of 50 years rather than in generations of 20 years, that multiple would drop from 80 to 32, only 32 times the lifetimes of those that we know in our own families back to the dawn of civilization, and they didn't even realize what they were starting, just as we don't, as we look forward into a future without petroleum and the start of potentially catastrophic global climate change. **Those who cannot dream, cannot advance, cannot survive!**

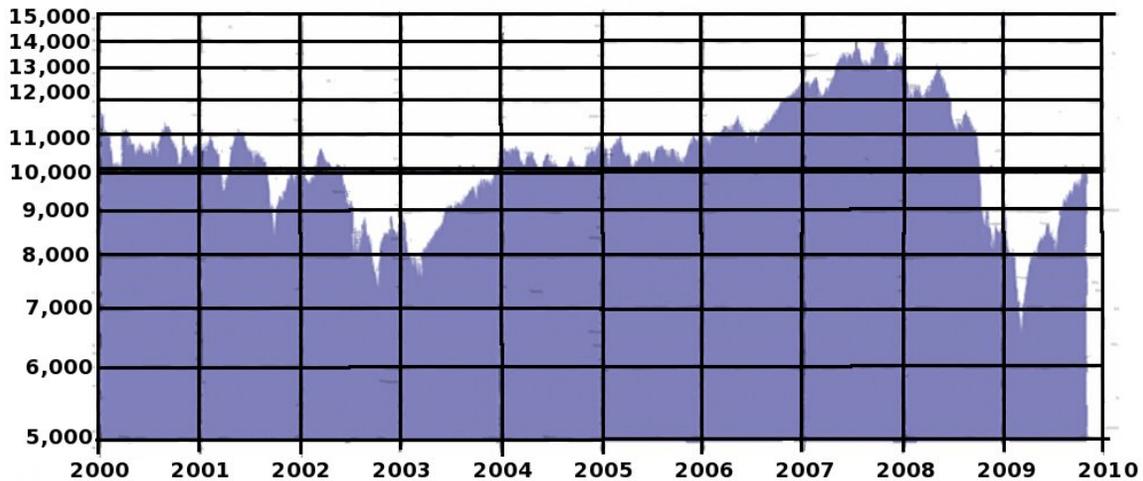
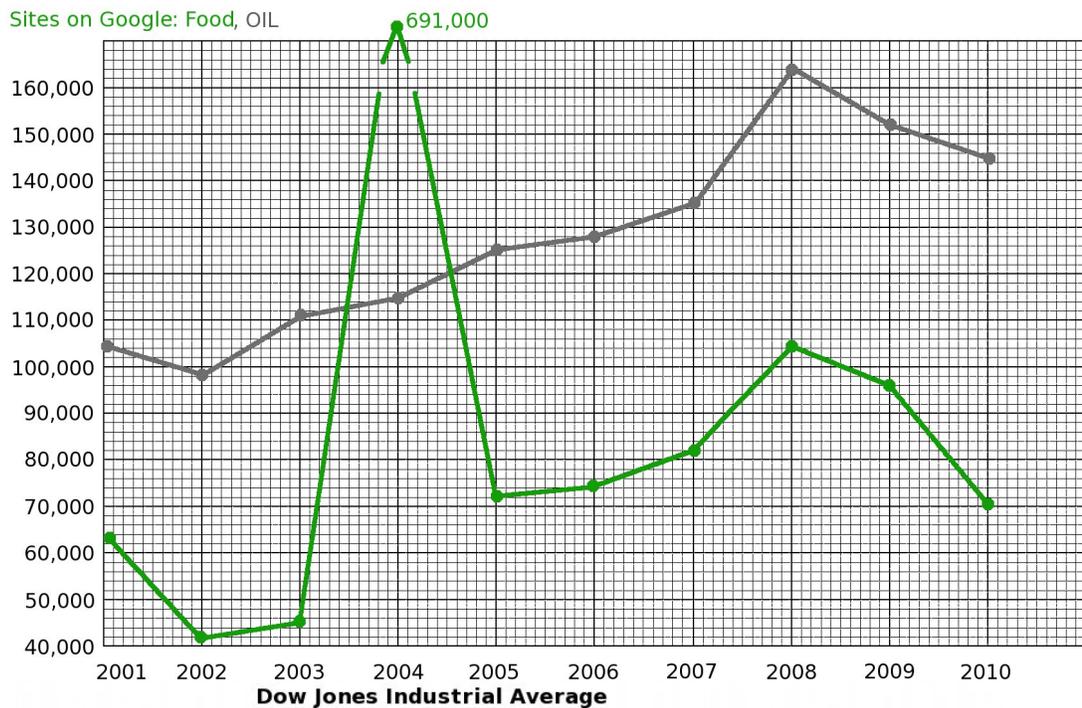
This discussion of generations is important because we can quickly see how important, how crucial, each of the generations in our families is! If one person in that chain had failed to live past the age of 15, we simply wouldn't be here, as are the "ghosts" of those who failed to reproduce.

We cannot cry over our own history, or that of those who are not here, but we can plan for the success of the generations that will follow ours so that they can enjoy life to the full! What can you do for your children and grandchildren to give them both confidence and joy to face their own futures? What insights can you give them from your life so that, at an early age, they can make plans to make their lives and those of their children the most fruitful and enjoyable?

Where will we be when we fall back to the same levels of fossil fuel energy inputs that prevailed 100 years ago? Where will we be in 2000, 4000, and 10,000 years when we haven't had access to petroleum for 99% of that time? The time to act is now, this very minute. Everyone must look up from what they are doing and consider what their great great great great

great great grandchildren might be able to do if we do nothing, in the absence of any systems to provide for energy, food, jobs, housing, civilization, education, and a future for our genes, every one of them!

PS. The following is a comparison between the number of pages referenced by Google for the combination of "Wall Street" and "food production", and "Wall Street" and "Oil Production", and the Dow Jones Industrial Averages for the past decade. It seems that there is a reasonably close correlation between all 4! Let's get some grad students onto this to see whether we can make Wall Street more transparent, so that fewer people lose their shirts there!



What may be interesting in examining the above is that a high occurrence of sites that mention "Wall Street", and "oil production" and/or "food production" in the same article came *after* the crash in 2002-03, whereas it *continued and preceded* the crash this time, to rise far higher still after the crash. So, perhaps Wall Street learned just how important "oil production" and/or "food production" are to world economies, and has done its best to safeguard its own money, and the transfer of others' money into their own accounts to "safeguard" that as well?

Many, if not most, observers of stock markets have said that as the oil supply picture becomes more troubled, market trends will become more volatile. If this is true, then the last 2 very volatile weeks in August, 2011 on Wall Street may be an indicator that the, "lack of new significant oil discoveries confirm that there is an impending oil crisis that will hit the global economy. This would further drive up already accelerating oil prices making it all the more difficult for the US economy to keep the stock market from crashing without preamble. Peak oil prices are set to cause the largest tumble down in the history of the economy." (<http://www.oil-price.net/en/articles/rising-oil-prices-predict-economic-recession.php>).

Inevitably, the world will have to move away from oil as a source for anything. The sooner that we achieve that the easier and least expensive that will be! What will happen to global populations that quadrupled with the support of oil in the last century if we fail? If we can render energy supplies and food production more predictable, steady, and subject to democratic influence, perhaps the world will be able to support more people with less waste and volatility, more predictably, forever!

Therefore Linear Ecocities because, in the end, we must imagine how to manage without a single drop of the oil that accounts for 95%+ of our transportation fuels and food production! As outlined, Linear Cities can more than adequately resolve the inevitable supply problems that energy, food and transportation will very soon see. Do we want to guillotine the prospects that we can offer to our great grandchildren by doing nothing?

I have constructed this model as a goal at the end of the first curve in an oval racecourse. I challenge anyone to provide a better, more sustainable model! At the same time, I am also happy to predict that all of us will not be living in Linear Ecocities like those that I illustrate in 1,000 years and 10,000 years. Just as car, medical and communications technologies have evolved rapidly, the Linear Ecocity will also be subject to rapid evolution, including paradigm change! At least, I hope so!