Smarter Greener Better Ships

As a business model
I design great big yachts for VERY wealthy people
People who want to do “Everything”
People who want to own “Everything”
And Go *Anywhere, Anyhow, Anyway* they want
Typically they are not the most environmentally friendly crowd.
But we felt good about it anyways: We were creating exciting new yachts that extensively used recycled and highly sustainable materials such as bamboo and hemp fabrics.
2006 and 2007 were stellar years for my firm. We had won a string of worldwide awards, the flood gates were open and orders coming in like crazy.
We were becoming known as the “Go to guys” for a green yacht.
Believing that I was “unstoppable” I decided to make a statement of who I was and built a large “Off the grid” home that used every one of the best materials and technology that I could afford.

I was going to set the pace and guilt my clients into changing their wasteful ways.
Sometimes Billionaires can be pretty hard to talk out of their toys
In 2008 the Global Recession devastated the yacht industry as it did so many others.

Our industry worldwide collapsed by as much as 92%
In a two week period in October 2008, our small design office alone had more than $275 million U.S.D. worth of contracts cancelled.
However, we were VERY fortunate that we still had over $100 million dollars worth of yachts to work on.
What was interesting was that virtually every project we had that continued had a strong “Green” agenda mandated by the Owner.
A common sentiment amongst our clients was that
“If what I wanted existed out there then I would buy it,
because every existing yacht out there can be bought for 50
cents on the dollar.”

“What I want is Better and Smarter than what is out there and I
am willing to pay to get it……..”
Probably out of corporate desperation to survive we decided to make our new Mantra and business strategy

“Smarter, Better, Greener Ships”
In order to make meaningful change we had to make the products **better and smarter first** with “green” as a pleasant by-product.
This is the first thing that came to mind (Not our project). From a research standpoint a very interesting ship but probably a tough sell as a Superyacht to your average Billionaire.
We set about trying to find the best example of a luxury product that used technology to make the product “Smarter Better……AND Greener. The best example of a company whose goal were aligned with ours was Tesla Motors
The technology of the car is exceptional, intuitive, Green, and it prospered superbly over the course of the Global recession. What I love about this car is the continuous drive to gain an incremental advantage. i.e. the battery is low so the CG is low etc.
We started to look at the toolbox at our disposal
Solar Reflective paints
Electrochromic Glass
Low E Glass
Thermal insulation
LED Lighting
40% of the “Hotel” power generation needs aboard a typical Superyacht is for Air Conditioning.
In a 200 foot yacht this is roughly 114 kilowatts.

At a fuel burn of 8gph this translates to 60,000 gallons of fuel per year or roughly $300,000 just to power HVAC.
Solar Reflective Paints:

Reduces the HVAC loads by 30% in average use

• Available in every color except Flag Blue
• No power to run it
• Cost similar to conventional paint
• Application can be done in any existing paint facility
• Can easily be retrofitted into existing vessel
• Cooler to the touch on decks etc
• Same warranty as conventional paint
• And it is “Greener”
Electrochromic Glass:
Reduces the HVAC loads by 30% or more in average use

- Solid state system requires 1 watt of power to run
- Completely controls tint from 5% transmission to 95% transmission
- Can eliminate the needs for blinds or in a yacht costly and complicated motorized blinds
- Reduces hot spots in the accommodation
- Costs about 30% more than conventional glazing
- Can easily be retrofitted into existing vessel
- ........And it is “Greener”
The use of Electrochromic glass reduces the heat load by 30%
LED Lighting

A typical 200 foot yacht has more than 4000 light fixtures on board for interior exterior and underwater lighting.

Switching from Halogen to LED saves approximately 75kw of power but also reduces the heat load in the vessel by another 15 percent.
Simply through the use of paint and electrochromic glass and LED lighting we are seeing a reduction in the HVAC needs by 65%.

This means a $150,000 per year savings, and we have made the ship not only smarter and better.

And 30,000 gallons of fuel per year doesn’t get burned.

And so we have made it also Greener.
With a 65% reduction in the HVAC loads it becomes much easier to power the Hotel side of the yacht with alternate means.
In a 73 meter (240 foot) yacht project we are integrating 2 x 10kw Wind Turbines that fold into the mast when not in use to make the structure more aesthetically pleasing.
The same 73 Meter (240 foot) vessel has a solar array on the hardtop producing an additional 10kw of power.
And a helipad that generates 16kw of power
The technology can start to become part of the design style as in this 42 meter we are currently developing.
That was just the obvious savings, we were now hooked and had to find more
Our latest Green journey began with a T-shirt
Harvesting Noise energy
12 Kilowatts of power from the noise bouncing around in the Engineroom
It is also 12 kw of noise energy not going into the Owners Stateroom or the ships structure.
Piezo tiles in the high vibration hull panels
And led to a self powered dancefloor on a 240 foot yacht
Energy Harvesting Awnings
Where else can Piezo take us
Georgia Tech created a Piezo Shower that heats the water simply by the resonance of the piping.
The possibilities are endless and emerging very quickly
All of this emerging technology is great.

But how does make my business money?
In early 2009 we considered ourselves very fortunate.

We still had over $100 million in contracts and the remaining clients fit well into our new “Smarter Greener, Better Yachts” Mantra
What was interesting was that the more we drove our new found Mantra, the more excited the existing clients got and the more new clients came out of the woodwork. The more we got excited by the new Green Technologies that were emerging the more our clients go excited and the more they opened up their wallets to fund making it real.
2009 was a very prosperous year for my firm
2010 was better than 2009
We attribute our survival and success almost entirely to a business strategy that integrates making a Better yacht first with being Greener as a pleasant by-product.

At this point I do not think it would be commercially viable for us to go back to the way we used to build yachts prior to 2008. The clients simply do not want them.

It also happens to be a lot more fun to go to work.