

Smarter Greener Better Ships

A series of several parallel white lines of varying thicknesses, slanted diagonally from the bottom-left towards the top-right, crossing the text.

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

A series of several parallel white lines of varying lengths and positions, all slanted diagonally from the bottom-left towards the top-right, crossing the text area.

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”

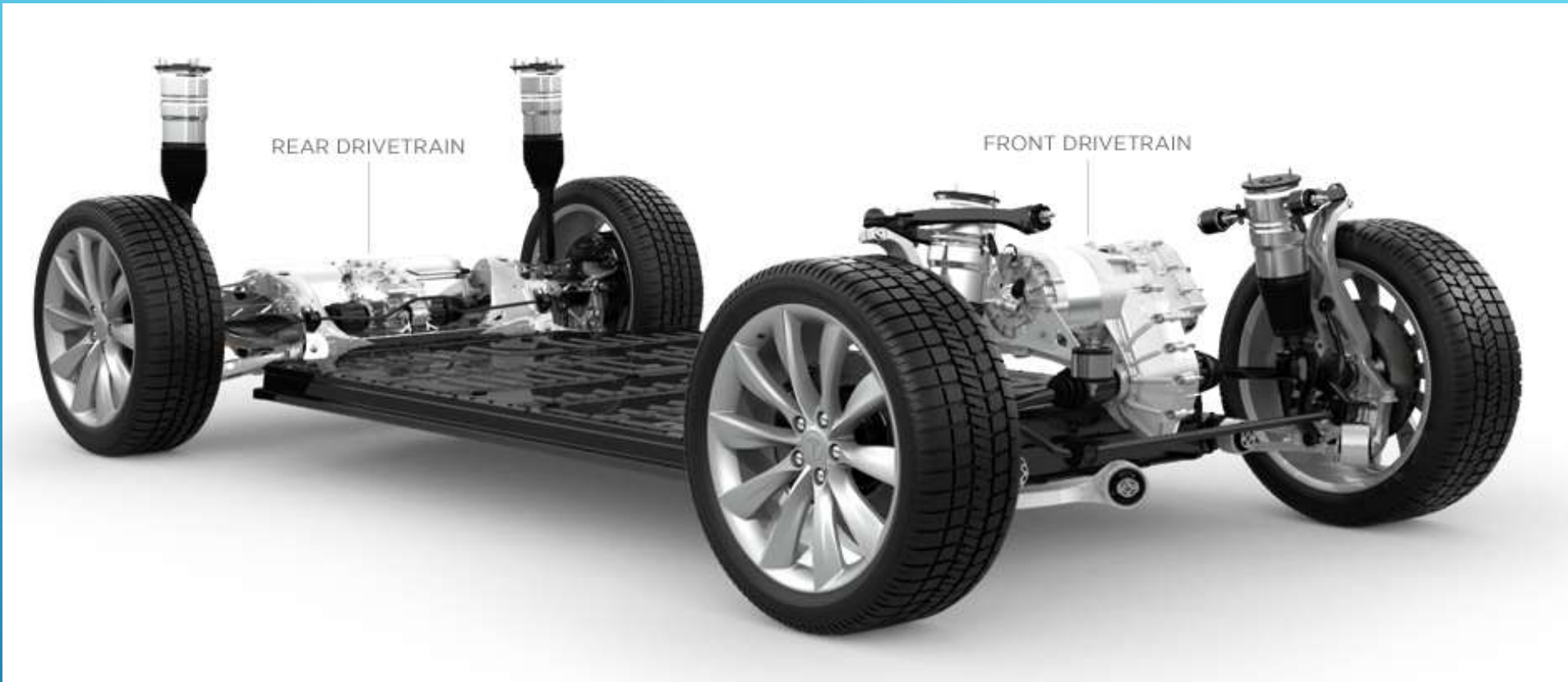
In order to make meaningful change we had to make the products **better and smarter first** with “green” as a pleasant by-product



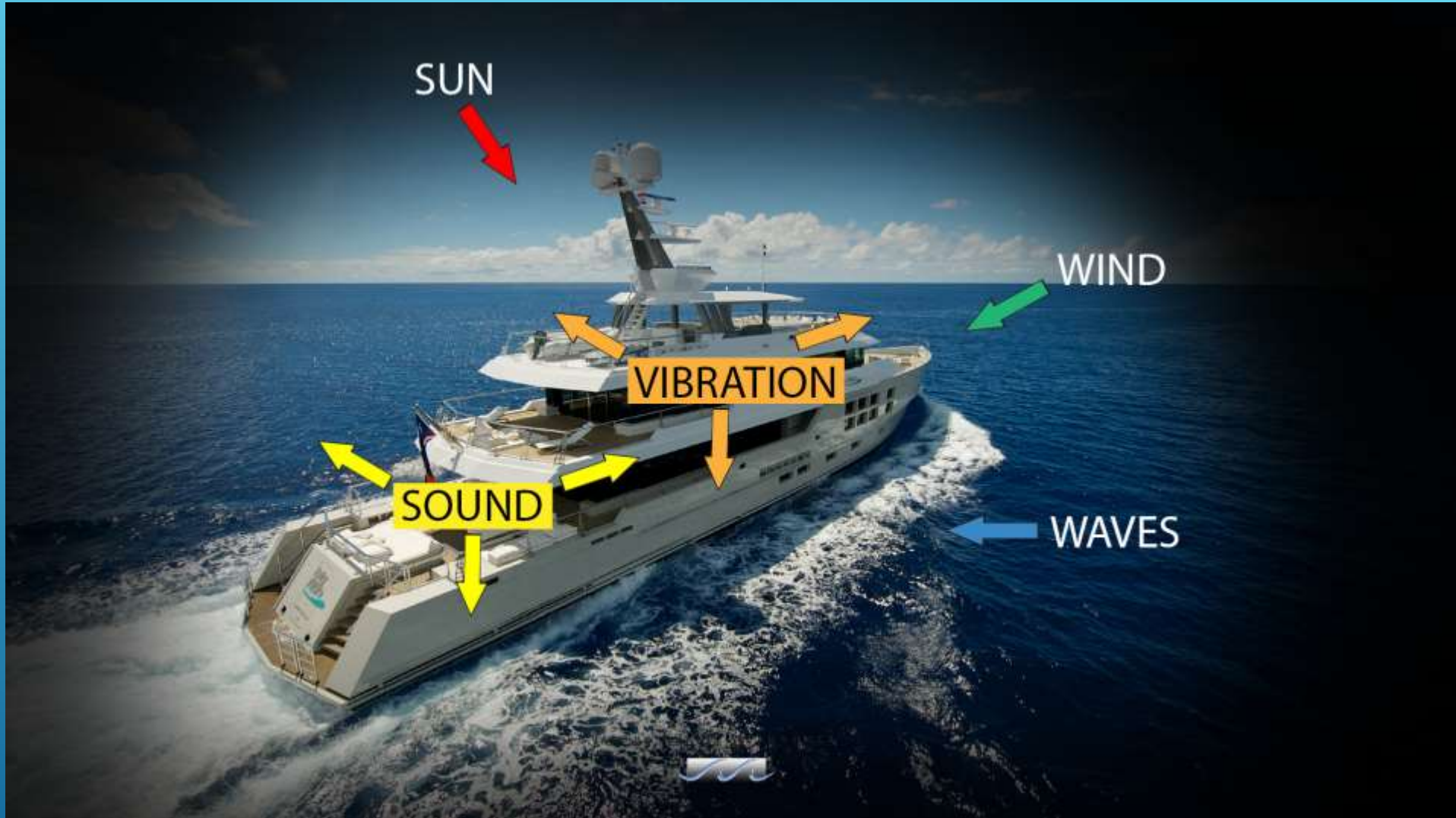
This is the first thing that came to mind (Not our project). From a research standpoint a very interesting ship but probably a tough sell as a Superyacht to your average Billionaire



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. Ie 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

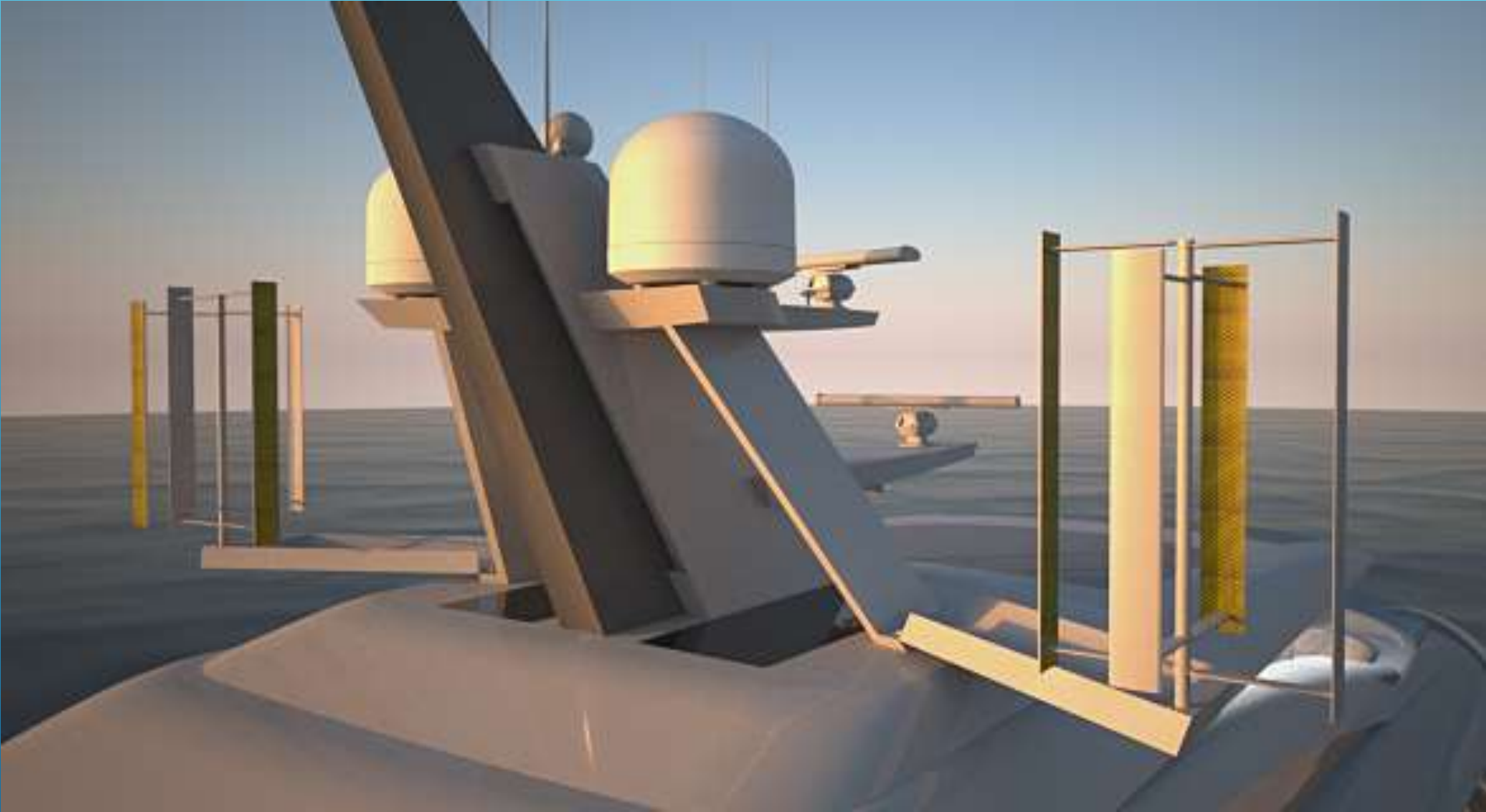
Simply through the use of paint and electrochromic glass and LED lighting we are seeing a reduction in the HVAC needs by 65%

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

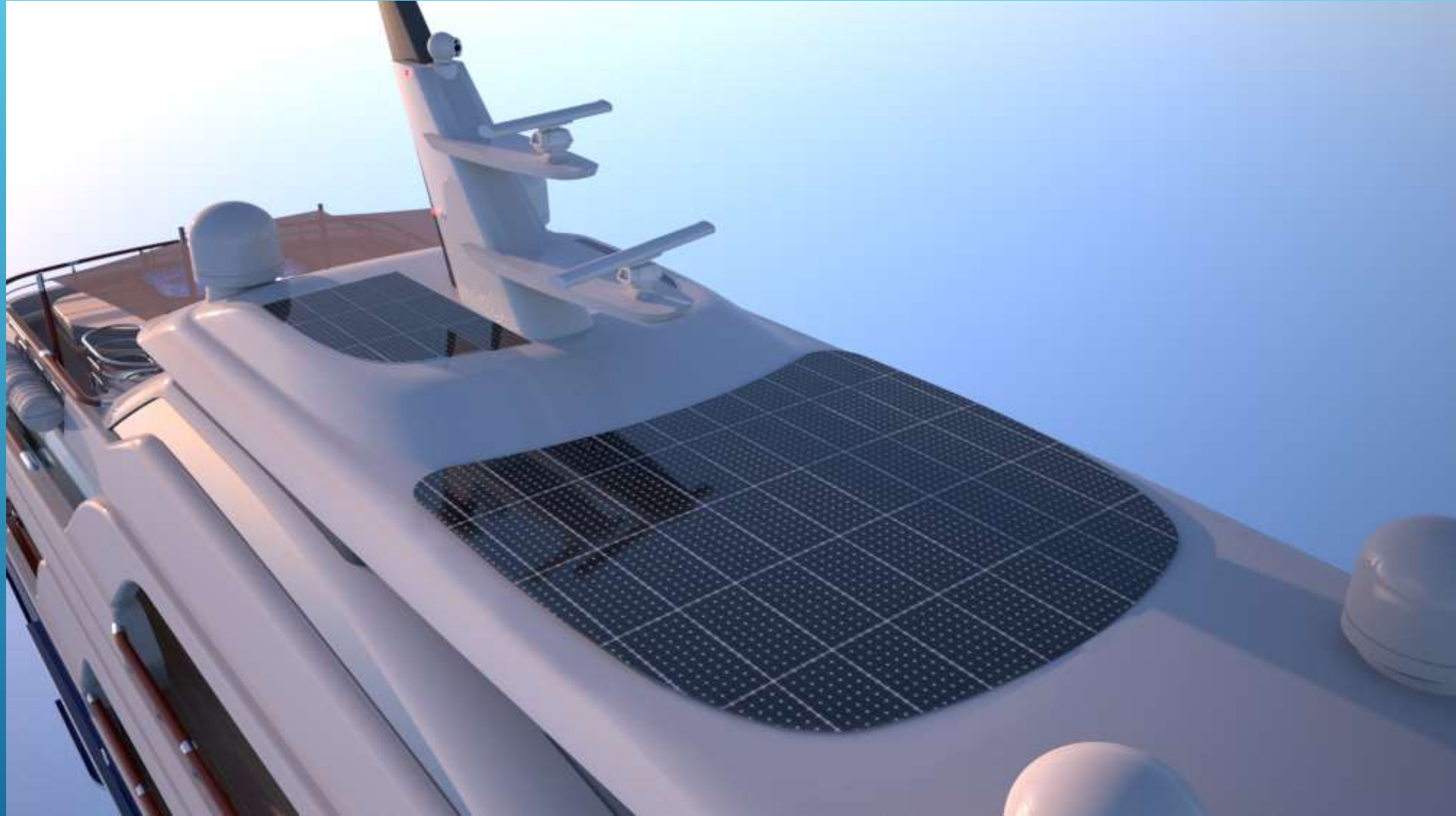
And 30,000 gallons of fuel per year doesn't get burned.

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



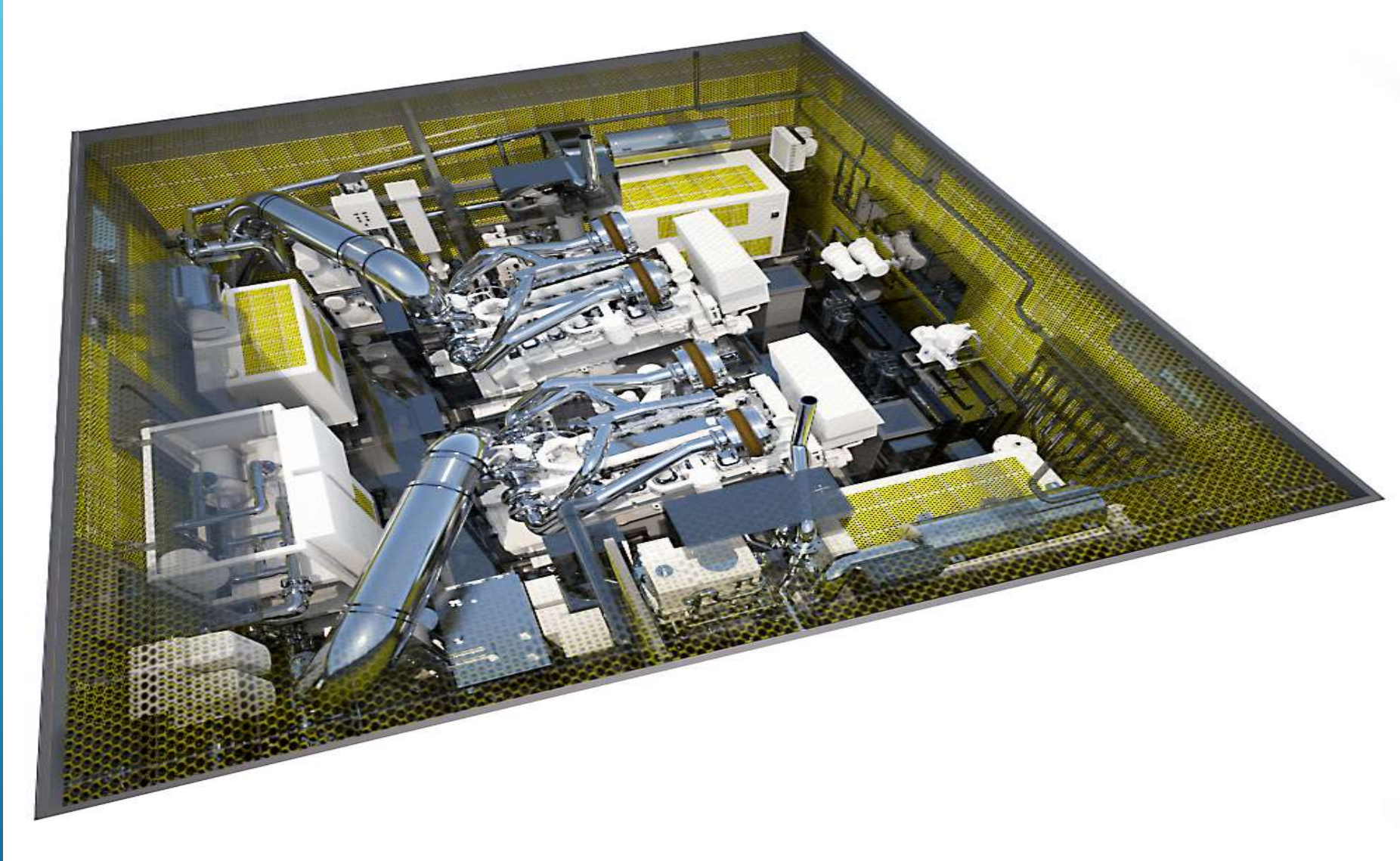
The technology can start to be come part of the design style as in this 42 meter we are currently developing

That was just the obvious savings, we were
now hooked and had to find more

Our latest Green journey began with a T-shirt

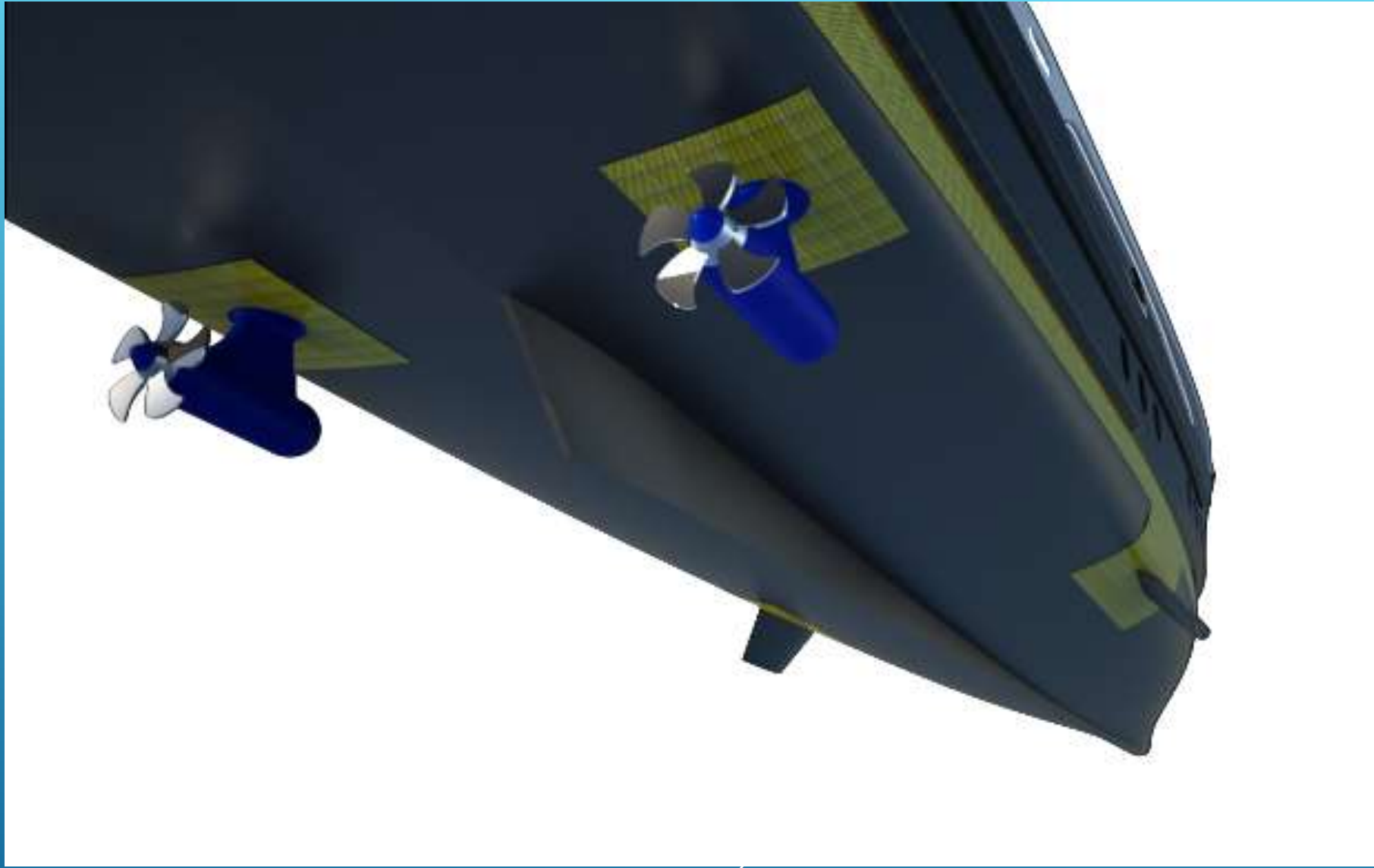


Harvesting Noise energy



12 Kilowatts of power from the noise bouncing around in the Engineroom

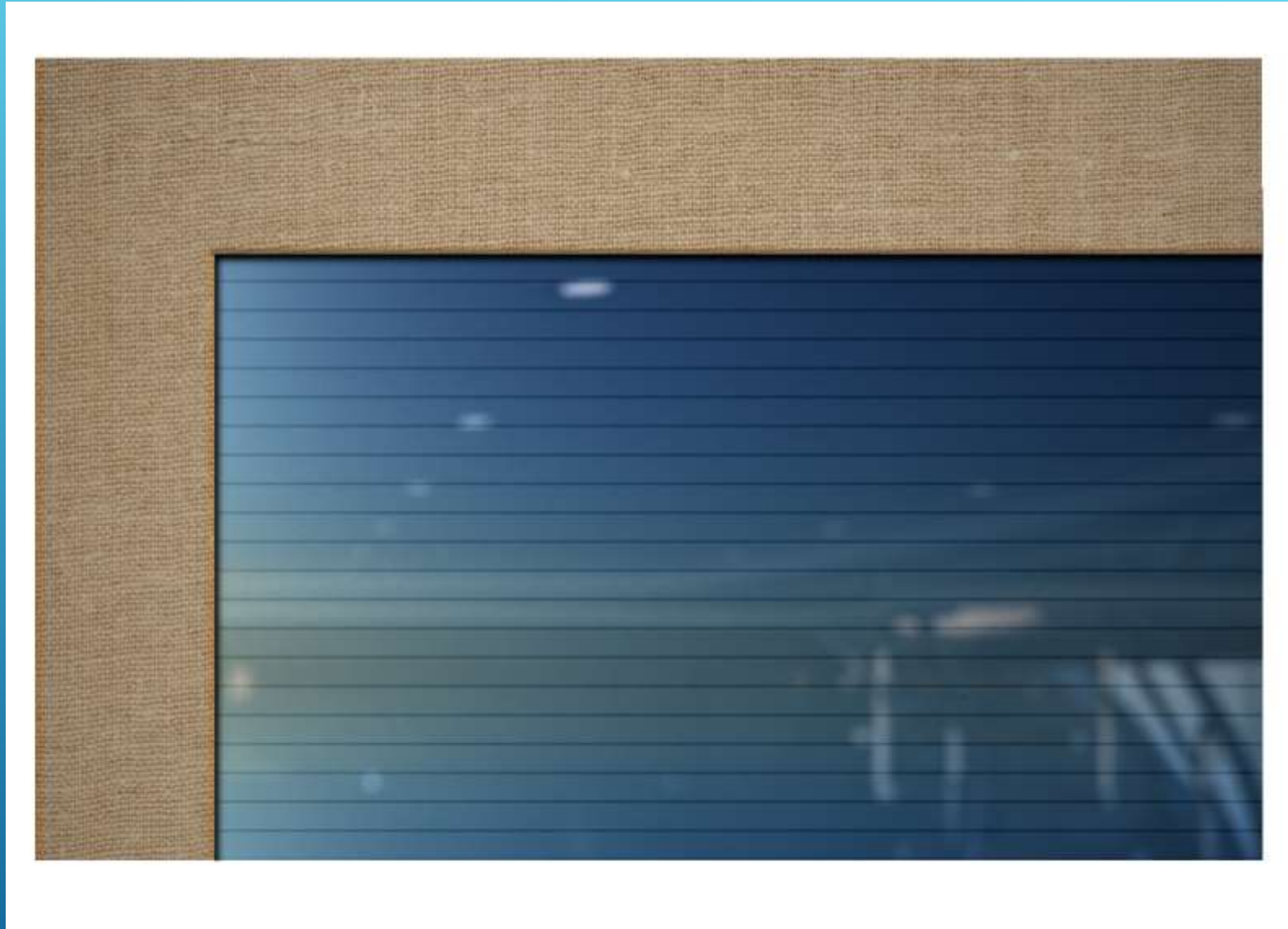
**It is also 12 kw of noise energy
not going into the Owners
Stateroom or the ships structure**



Piezo tiles in the high vibration hull panels



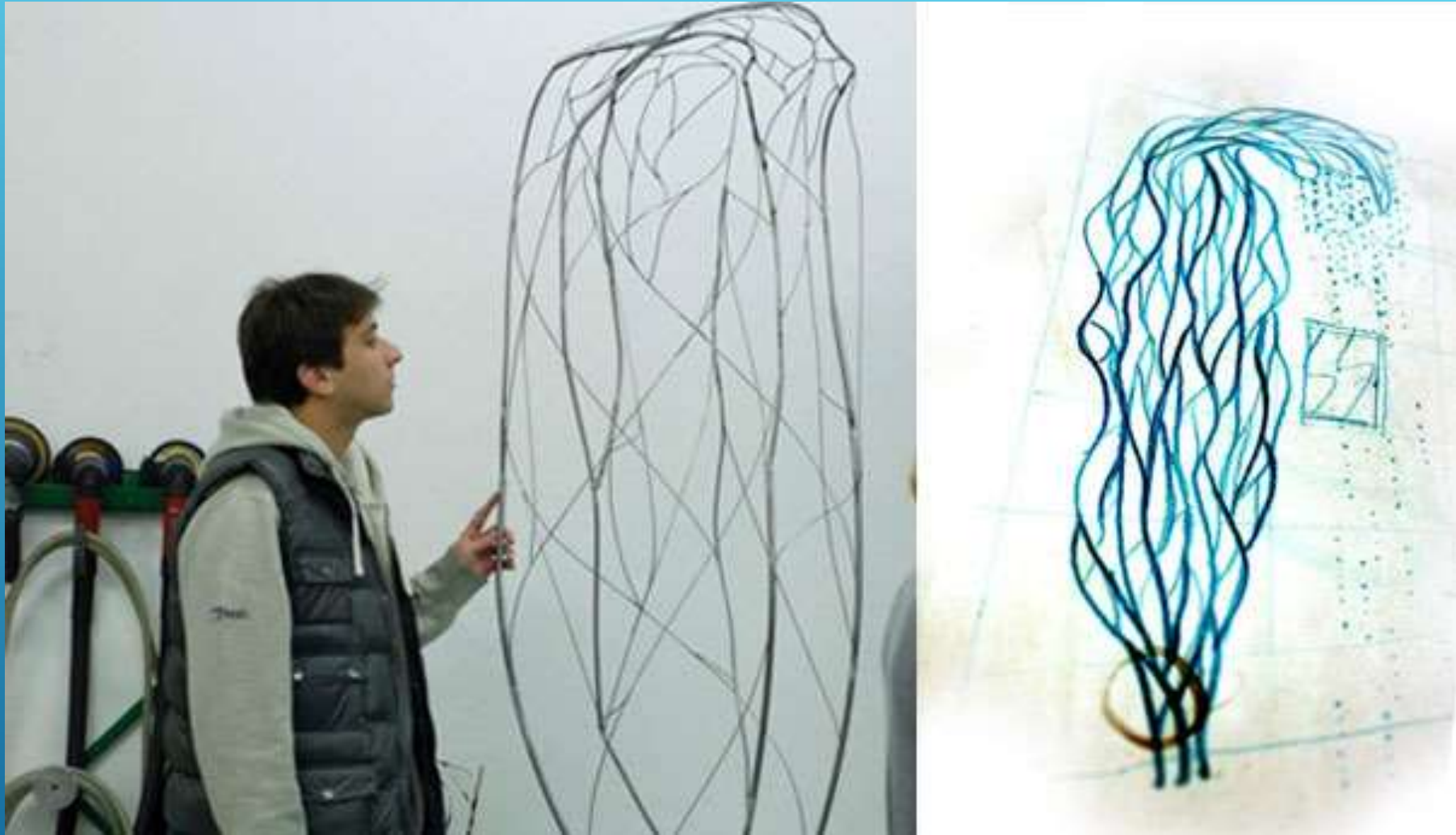
And led to a self powered dancefloor on a 240 foot yacht



Energy Harvesting Awnings

Where else can Piezo take us

The background is a blue gradient. On the right side, there are several white lines of varying lengths and thicknesses, all slanted upwards from left to right, creating a sense of motion or direction.



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

A decorative graphic consisting of several parallel white lines of varying lengths, slanted diagonally from the bottom-left towards the top-right, positioned in the lower right quadrant of the slide.

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

The image features a solid blue background with a gradient from light blue at the top to a darker blue at the bottom. On the right side, there are several white, parallel diagonal lines that sweep upwards from the bottom towards the top right corner, creating a sense of movement and growth.

2010 was better than 2009

A decorative graphic consisting of several parallel white lines of varying thicknesses, slanted diagonally from the bottom-left towards the top-right, positioned on the right side of the slide.

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