

Nickelbricking

(Based on a TV show developed by Sleepydog Limited)

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Abstract. Murder investigation in a post-cataclysmic San Francisco.

Keyw'ords. LiSA, Nickelbricking, kite power, zero-gravity spheres, SANDbox. Science Fiction Prototyping, Technology Innovation.

Introduction (by Toby Moores)

Sleepydog is a TV and games company. We also have a strong track record in mobile and social TV. The merging of media silos requires new TV shows to have a strong back story to capitalise on the 360 nature of today's output.

Our submission is part of the back story for a detective show. As they say in Hollywood, think Bones in a Bladerunner future. It is set in a future San Francisco 10 - 15 years after an earthquake/tsunami destroyed most of the infrastructure. Since the inception of this project, events in NZ and Japan have brought this problem in to sharp relief. Our thoughts are with them. We hope that in some small way our ideas may be of help.

We assume that Silicon Valley would jump at the chance to reinvent the Bay Area. They have the cash and intellectual horsepower to do so. We have assumed they would borrow from Object Oriented Programming (modularity, effectiveness not efficiency), Web 2.0 (granular addressability of content, above the level of a single device, users add value, open APIs, innovation in assembly, designed for mixability, some rights reserved) and Green Tech (mother nature knows best) movements rather than their future replacements.

We think that different solutions would evolve at different rates depending on need, cost and availability of alternatives. We are inspired by the juxtaposition of flying cars and bicycles in Bladerunner as well as the overused William Gibson quote "The future is already here, it's just not evenly distributed." We have broadly held back transport infrastructure like LISA, whilst pushing up smaller, cheaper tech like the zero-grav bots.

Inevitably as the back story to a TV show, production and narrative constraints play a part in our story and occasionally divert us from the possible. In CGI it is easier to draw in lines and circles than more complex shapes thus kites lines and ski lifts. Future-looking cars are either expensive or look rubbish, so best replaced with urban quads and their agricultural cousins. Pressure on budgets caused us to look at alternative sources of finance including AFP (Advertiser Funded Programming). We believe there is an opportunity to provide a showcase for future tech projects being

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explored by the transport and energy sectors. Below is a summary of the influences and inspirations for our story world.

ZERO-GRAV BOTS. Created by the good people of our story, this is both an misnomer and a provocation. We assumed these would be aerostats made from a sandwich of different aerogels (<http://en.wikipedia.org/wiki/Aerogel>). This would include metallic, carbon, silica and SEAgel (<http://en.wikipedia.org/wiki/SEAgel>) variants. The desired effect is to create neutral buoyancy and data gathering properties. We imagine propulsion would come from a directional impeller.

Aerogels can be hydrophobic or hydrophilic. They have been used by NASA to gather space dust. Doping and noble elements add to their capabilities. They are being used in semiconductor, superconductor, super-capacitance and fuel cell applications.

Instinctively the related nanobots feel more like plankton than insects in body plan. We have not considered this further.

SANDBOX (or MURDER ROOM). We wanted to draw a line between the present day murder wall and the holodeck of Star Trek fame.

Inspired by Japanese Tatami mats, we imagined a standardised grid of the crime scene. A detailed scan would allow it to be projected onto a matching room back at the station (or elsewhere - see mini IMAX below). This might be back projected onto the walls, which are also magnetic whiteboards or smart boards. Later they might be multi-touch surfaces. Layers of meta data can be added in situ and pivoted like a spreadsheet.

Initially we dealt with uneven surfaces with compacted sand sculpted to the topography of the ground if required. This led to silica beads (to allow colour), then ionisation and finally the addition of computational intelligence.

Separately, we also imagined a cooking hob based on Microsoft's surface computer. This gave us Hexels (from pixels) for the micro heating elements. This evolved in to holographic elements and then merged with the silica beads above.

Perhaps the hexels (silica beads) are made from a different combination of aerogels. We felt we were heading towards a crude but credible hard-light solution.

TRANSPORT. Cheap, lightweight, ready-to-go transport was essential. Bikes, motorbikes and quads replaced cars and buses on the buckled terrain. We imagined NFC pads in the bumpers and side pods. This enables clusters of Quads to cede control to a lead bike. This would facilitate communal travelling or fuel saving benefits.

Our Bladerunner inspiration above begs us to inspect flying cars. The most pragmatic solution we have seen is the parajet car. This combines a road legal dune buggy with a parasail. We imagine that it could easily be adapted to work with a quad bike. (www.youtube.com/watch?v=s7qg31NxmQ&feature=youtube_gdata_player)

We are influenced by the human network nodes in Howard Rheingold's Smartmobs and the discourse on sidewalks in Jane Jacobs' The Death and Life of Great American Cities. We see a social capital benefit from the improved interaction density of neighbours freed from the confines of their cars.

Informed by the use of kite power on ocean going cargo ships (<http://www.skysails.info/>) we are enamoured of kite powered ferries as a more efficient system than sail. Static kites can also charge the batteries for low wind days. See Saul Griffith's TED video.

(www.ted.com/talks/saul_griffith_on_kites_as_the_future_of_renewable_energy.html)

LISA (younger and smarter than BART) was built with 2nd hand cable cars and ski lifts (inspired by the other BART acronym Best Available Retrofit Technology). The ability to cross difficult terrain, including water was vital. De-clutching allowed the ski cabins to switch lines, stop or join up with a cabin train, as desired.

LISA's standard specs for the chassis and an Open API approach allowed businesses and consumers alike to add their own cabins or use the public system. It made sense to allow bikes and quads access to the cabins.

The wrap-around glass walls made a perfect 360 screen, leading us to a mini IMAX and potential use as a mini murder room for an overworked detective. Combine this with the current trend for wifi on trains and the coffee shop office and you can imagine the mobile office of the future.

ENERGY. The grid is a 1-and-many contributory system. This is our own hybrid of broadcast (1-to-many) and social networks (many-to many). The state and individual can be both producers and consumers. So you can contribute with pedal power or stored energy if you wish. This lead us to LISA gym cars, where commuters could pay for their commute with a spinning class.

NICKELBRICKING. This is a system designed to remove vast quantities of rubble, create work opportunities and restore civic pride. Taking a few bricks a day to a drop off point cleared the mess and earned credits.

Our own social derivative of minimum viable product is minimum viable engagement. This is the smallest action of civic participation which builds trust and social capital amongst a community. The individual can engage as their circumstance dictates.

Recognising the human intelligence at the node, the ability to route round damage, and the packetised nature of the emergent system, the parallels with the internet are interesting. This was quickly adapted to move parcels and other items around.

2. Nickelbricking (by Mike Atherton)

"Welcome to LiSA Rail," the pleasant female voice rang out along the platform at Civic Centre and UN Plaza. I usually caught a pod up top along Castro, but the police report said that this is where Jones had boarded. So for today at least, I was playing tourist. I boarded the first run of pods that came in and was joined by a family, who were so covered head to toe in San Francisco branded crap, that I knew they were from the Mid West. Taking a seat at the far end of the pod, I began to run through what I knew about Richard Jones.

He was 42 years old, richer than God and a shoo-in for the next round of Mayoral elections. He was married to a woman a whole year older than his only daughter. He and his ex-wife were still on good terms. Good enough for her to still be chairing the board at FRAGMENT, the company that Jones had created from scratch, literally from the ruins of San Francisco. He enjoyed vintage computing, parasailing and was a co-partner in a small winery in Nappa.

He was also very dead.

There was a soft jolt as the adjacent pod de-clutched and began to climb the hill towards the Presidio, its occupants getting their mountain bikes ready.



Figure 1. The LiSA Sky Tram

As we swung towards Market, a descending pod filled the space. This one was occupied by a couple still astride their quad bikes. The family sharing the carriage with me had turned on the local info but it was audio only. Directional reception made sure it was nothing but a slight hum from where I was sitting. But the father caught my eye and asked in an accent that was pure Missouri,

“You mind, son?”

I shook my head. “Throw it up on the window if you like”.

He looked down at the seat control, confused. I leaned across and threw the selected program up on the window for him. Instantly the quad couple in the next pod disappeared as a tourist guide of the Bay Area filled the screen.

“Cool!” said one of the kids.

The father nodded his thanks and I relaxed and watched them plot their day. I was wondering if Jones had spoken to any tourists on his final morning. By all accounts he

was a pretty personable guy. He still rode public transport for one thing. But the police had already exhausted that avenue and weren't pursuing it anymore. They believed they had their man. They just needed to find the weapon.

Which is where I came in. The cops were taking their time and the suspect's lawyer was pushing for release without charge. I'd studied the case and the police work was solid but without the weapon - an old fashioned automatic - the guy was going to walk. Mrs Jones, Ms Jones and the former Mrs Jones had hired me to find that gun. So here I was tracing a dead man's steps.

The Pod had begun to swing back to Market. I moved towards the door and it automatically slowed to let me off. I waved to the kids and stepped out into the California sunshine.



Figure 2. A Zero-Grav analysis unit

That was when the swarm engulfed me and I went blind.

“Hey Brautigan!”

I looked up as the mist cleared and waved resignedly at the blue and silver sphere, a little larger than a golf ball, that was looking down at me.

"Hi, detective".

Speaking turned out to be a mistake as I felt a couple of the lingering nano-bots drop into my mouth. I tried to crush one of them between my teeth, but it was already back in the air having swabbed my inner cheek. Well, the SFPD was welcome to my DNA as long as they didn't take away my licence. The same female voice that had called my name replied as a red sensor on the swarm hub blinked a 'good morning' at me.

"What are you doing in my crime scene, Brautigan? The family hire you?"

"You should be a detective," I replied dryly as the last particles of the nano cloud cleared and dispersed. "You found the murder weapon yet?"

There was no immediate reply, but I could hear detective Joanne Mitchell sipping on her coffee from somewhere up on the 2nd floor of the SFPD building. Right now she was looking at a perfectly rendered 3D replica of a poorly paid private eye, standing somewhere near the body of Richard Jones.

There was no chalk outline of the corpse like in the old movies, but I knew from the police files that Jones had fallen almost immediately as he exited the LiSA pod. I'd also been in enough SANDboxes back when I was in uniform to know that Mitch would be accessing the scene on a granular level until she caught a break. She'd be manipulating the scene with a large budget at her disposal and probably unlimited man hours, considering who the vic was.

All I had were my instincts... and enough money for lunch, if I stopped by the Pineview Diner where a waitress called Lucy was sweet on me. At least I think she was sweet on me. It could have been pity. But I figured being out in the real world was my *only* advantage. The cops had every virtual angle covered and super-processors, feeding from the largest criminal database in the world, running down all the angles. I was either going to stumble across something incredibly obscure or something so obvious that the tech had missed it. Didn't happen often, but it did happen. I nudged the conversation along a little.

"I was asking if you..."

"I heard you. Not yet." The sphere sighed. "Normally I'd give you a hard time, but this guy is as guilty as sin and I don't want him back on the street. If we get to lock him away because of you, I can deal with that. Plus you never know: if you turn something up, we can maybe release a new investigative parameter into the system, based on your unique skill set. Call it the Roach."

"Thanks for not giving me a hard time, detective. Do you mind if I walk on or do you wanna swab me some more?"

"Get out of my murder room, Brautigam. You lower the tone."

I got out.

A murder room was what a good cop like Mitchell called the SANDbox. The SFPD doesn't make a big show of them, but they've become the backbone of most investigations. Used to be, the jokes about cops involved donuts. These days it's about how long they stay in the office and explode if sunlight hits them. Most police work is done in a cubicle. One of many reasons I quit. Although not *the* reason. Right after the quake, the military had tried to send mechanised units into the Bay Area. But regular army work is not the same as police work, especially back when there was so much search and rescue to be done. I was still a cop and it's one of the few things I'm actually honest-to-dog proud of. To 'Serve and Protect' really meant something. For a few months at least.

Once the army pulled out and the Police Force was stretched to breaking point, the geeks in Silicon Valley stepped up. San Francisco was barely hanging together when it suddenly became a kind of nirvana for technical innovation. First came the spheres to help with police surveillance and then the nano swarms. No surprise that the cops didn't want to give that kit up once the city was back on its feet. But it wasn't all technology led. Some folks just had to whisper a good idea into the right ear. Which brings me back to Jones. He was the guy who came up with Nickelbricking. If I was writing this down I'd add a little trademark symbol right there.

Huge as it is now, it started small, spread by word of mouth and then, when people and news crews could see what was happening, it spread like wildfire. Simple idea. Probably saved the city as well as a few lives. I know it helped foster a new-found sense of community, one more important than the 'law and order' the police were eventually back to taking a hard line on.

You see a brick you pick it up. You deposit it at a ReGen centre from where it gets recycled into the rebuild – and you get a nickel. Once that had become popular, Jones had set to helping the owners of the mostly-demolished wooden Victorians, to ensure the new quake-proof materials were available and that their rebuild would restore some of the most iconic structures in the Bay Area back to their former glory. Nickelbricking became the catch all phrase for community sharing of expertise and resources. And all that success lead ultimately to the FRAGMENT corporation.

I could see their head office off in the distance, housed as it was in the old TransAmerica building. Probably the only tall building in the city that survived the Big One. Fitting somehow. Right now, if another quake of that size hit, the projections say that 95% of the city's buildings would survive. I of course have my office in the other 5%. Another reason I walk the city and spend as little time there as possible.

But the main reason I walk the city is that I miss my old beat. I was the only cop on the SFPD who would rather use my feet than jump in a car. And, when LiSA's first convertible pods were linked up, there was no need even for the cars. Not that they'd been in much use post quake. The reason the LiSA was designed around the size of two

quad bikes is because everyone seemed to have them once the regeneration scheme was in full effect. I admit I never got the hang of them but the LiSA can get you anywhere these days. And when the rent's a little behind, as it is this month, seriously consider doing all my work out of them, like the suits do during the commute. But I have cat. So there's that.

The park is new. One of the new launch parks for the energy kites. So half of the lot is fenced off and filled with bright orange cables that reach up into the sky. In San Francisco there's always room for contemplation and even now, before noon, there were five or six people reclining on the grass and looking up at the kites doing their thing. Some of them had the latest Apple products pointing at the giant kite turbines, that were themselves almost obsolete. I'd read this morning that an even lighter, more energy efficient kite would be off the production line this time next week. The blue and silver winged angels that were hovering over the city would then be brought back down and shipped to some city where they could still be productive. Chicago perhaps.



Figure 3. Kite power

Technology in this city had a short short lifespan. So why the old fashioned automatic? A gun like that attracted attention. Not just the noise of the thing, but the bulk, the look... nothing said amateur like a 20th century weapon in a 23rd century homicide. The guy the cops had pulled even had powder residue on his hands. That and the bullet taken from Jones would be an instant conviction... once the gun turned up. I sat heavily on the bench and pondered my next move.

I was still pondering late into the afternoon. I had nothing. If the gun had been dropped anywhere between the body and where the perp was arrested, then the tech sweeping every inch of the ground, every property along the route, every storm drain, would have found something. My neck was hurting. I turned to watch a guy wearing the blue and silver uniform of the kite company roll up on a quad. He carried his bag over to the fenced off area and slipped inside. As I watched he pulled something metallic from the bag and held it out to the bright orange cable. WHOOSH. The thing, a metallic disc shot up the cable and was lost almost immediately, but I saw the kite it was heading for dip. Not a lot, but just enough to acknowledge the weight. This, like so much in the city, was something new. And what does a good investigator do?

"Hey, buddy."

The guy turned and smiled. "Afternoon. Something I can help you with?"

"Just curious about..." As I was talking he tossed another disc at the next cable, it attached itself and again with the WHOOSH. "...well... that."

He leaned into the bag and brought out another disc. This one he passed to me. I'm so used to everything being built of aerogel that I wasn't expecting the weight, and almost dropped it.

"Telemetry for the kites until the new models get here".

I passed the disc back to him. "I was reading about them. Faster, lighter, smaller, right?"

"Oh all that, but the main reason these ones are being retired so early is the onboard relays are shorting out. This is the workaround. Don't tell anyone I told you that."

I nodded as if I knew what he was talking about. He didn't buy it.

"The bats. We're not allowed to kill any bats."

Now this I knew about. Until the first kite turbines had launched, the mascot of the green tech industry here in California had been wind turbines. But the one thing they never cracked was how to stop killing bats with them. The kites were not only cheaper, more energy efficient and prettier... they were also mobile. The cables still caused a small problem for bats and drunk pilots occasionally. But detailed studies of flight

patterns meant that the kites could be deployed in corridors that actively avoided our nocturnal friends. They still brought down a Cessna every few years, but that was always pilot error, so not something the company could allow for. There are very few studies into the proximity of bars to flying schools. Maybe that's what I'd look into next, since the detective thing wasn't going too well.

"New design on the data modules meant the antennas were too close. As soon as the kite's airborne the first swoosh and the modules touch and fuse. These replacements are the old design. With a kick."

"The delivery mechanism?"

"The delivery mechanism. Someone figured out the fused antennas were magnetising the carbon fibre-metal composite in the cables, so rather than moulding the old design in aerogel and pulling each kite in individually, they moulded them with..."

I hazarded a guess. "Nickel?"

"That's right... how'd you guess?"

I pressed my luck. "You're not by any chance swinging by the Duboce Park next?"

It took another 30 minutes for Leo - did I mention his name was Leo? - to deploy the new modules and we only had maybe an hour of light left when we got to Duboce. It then took fifteen successful module replacements before we hit the jackpot. I was only half watching as Leo let loose the disc, distracted by a black lab and its blonde owner, but my attention swung back around when Leo let out an annoyed huff.

"This one's not working"

A sensor in Leo's hand displayed 15 little green lights... and one little red light that I could have kissed.

"What now?"

"I'll have to bring this one down."

By the time the kite landed, its wings had folded in on themselves sixteen times, so it was no more than a child's toy. Leo gently pushed it over and we both saw the problem straight away. The replacement disc had been stopped from connecting to the fused module by a small-caliber nickel plated Browning semi-automatic pistol.

"How did that...?"

As if in answer, a series of LiSA pods swung down on the other side of the barrier. Far enough away not to interfere with the kite farm, but if the commuter talking into his phone in the third pod had decided to toss a weapon, it'd reach us easily. I pulled out my phone and called Detective Mitchell.

"You got it?"

The sphere didn't look any different from the earlier one, but I heard a slight incredulous tone in her voice. "I got it".

I held the gun up carefully suspended on the end of a pen. I'd seen cops do this in old movies. I was smiling because for once I looked cool.

"Shame. We'll take it anyway".

My smile dropped. "Shame?"

"Sorry Brautigan. The guy confessed not twenty minutes ago".

"He confessed? Who confesses?"

"He does apparently. He asked for a burger and a shake and then gave it up".

"Damn!"

"Said the gun was his grandfather's. Looks old enough. He tossed it out of a pod, but we're still trying to work out how we missed it".

"You were looking in the wrong direction." I dropped the gun into my coat pocket. Contamination be damned.

"Be nice of you to drop that off anyway. It'll save us sending a unit out."

"Sure. Why'd he do it?"

"Claims Nickelbricking was his idea. That Jones stole it and never did right by him".

I let that sink in for a moment. "Anything in it?"

"Brautigan, I just don't care. Bring the gun in. I'll buy you a drink".

"I'll buy you one. I'll still get paid for the gig".

"Ask for cash. Just in case".

The sphere moved back up and darted off amongst the moving LiSA pods and back on to automated patrol, once again piloted by a beat cop. I stood for a moment watching the different pod lines interact and suddenly felt exhausted. The old gun was a dead weight in my pocket. I wanted to get rid of it. Behind the LiSA system I could just make out the lights starting to come on in the remains of the Golden Gate Bridge. The sun was setting and I caught a flash of white as a flock of kites on the other side took up a new position over the bay. Above them the stars were just starting to make an appearance as I finally turned around and headed towards the SFPD.

It was a lovely night and I decided to walk.

THE END

3. The Summary (by Mark Hilton)

When imagining future technology, we believe that you should not take the easy way out by ignoring human culture, wiping the slate clean and starting from scratch at some random point in the distant future. Heritage will always be part of any future. By creating a story world and strong, realistic characters, we can investigate potential technology further (and have great fun doing so). The tech should always be useful and relevant to the world we have created... never frivolous or for its own sake... and have its heritage in the present day, working alongside other technology that remains virtually unchanged from the 21st century (a quad bike will always be a quad bike).

'Nickelbricking' should inspire any creative individual to imagine technology that would fit our story world. Put yourself in a post-quake, 23rd century San Francisco – imagine you are there today. Add to that the proximity of Silicon Valley and the open-minded boldness that has always been associated with San Francisco. So much is broken. Buildings and iconic structures - homes and work places – but most of all, the infrastructure. So when it comes to coming up with fixes, anything goes. There's no such thing as a dumb idea. San Francisco becomes a frontier town, a land of opportunity. Technology is bound to take leaps in unexpected directions. But any new technology has to have a practical purpose – the LiSA cable car system with its iMax interior, the zero-grav spheres, the kite power stations etc...

Sleepydog had great fun coming up with a whole bible of new technology that fits snugly into our story world - so much more than has made into this short story. We hope that the ideas in 'Nickelbricking' will get you thinking.