

[BARACK OBAMA]

BARACK OBAMA IS A TRANSFORMATIONAL LEADER WHO HAS SHOWN THE WORLD THAT, AS THE FIRST AFRICAN-AMERICAN PRESIDENT OF THE US, STATUS QUOS ARE THERE TO BE BROKEN. BUT HOW HAS HE ACHIEVED SUCH SUCCESS?

BELIEVE IN YOUR CAUSE

President Obama had his work cut out working his way up through institutions lacking in ethnic diversity. Through hard work, he became a Civil Rights lawyer, a politician, and eventually the most powerful man in the world. Belief is the key to Obama's strategy, publicised in his popular campaign slogan, 'Change we can believe in.'

EVERYONE DESERVES TO BE HEARD

Despite heavy political opposition, Barack Obama is a dedicated proponent of marriage equality. In 2015, he legalised nationwide same-sex marriage, the first US president to do so. Obama has shown us that no one should lie beneath the line of equality.

SERVE YOUR COMMUNITY

Barack Obama spent his early adult years conducting a variety of public services. After college, he moved to Chicago and worked together with local churches and civil rights movements. Obama believes that we can connect people by recognising the similarities, rather than the differences in us all.

SPEAK FIRST

The 44th US president is often lauded as an inspiring orator. His public addresses feature a signature, firm baritone. "One voice can change a room, and if one voice can change a room, then it can change a city. Your voice can change the world," he said. It would be hard to deny that Obama's voice has indeed made changes in the world.

KEEP UP THE MOMENTUM

Obama preaches a dedication to our choices, and moving past the minor problems. "The future rewards those who press on," he said in 2011, responding to those who criticised his propositions to provide aid to Americans hurt by the financial crisis. "I don't have time to feel sorry for myself. I don't have time to complain. I'm going to press on."



live

BARCELONA

A PLACE IN THE SUN



GO SOLAR, OR GO HOME

Bordering the eastern sunny fringe of Spain, Barcelona is determined to make as much use as possible of the 28,000 hours of sunshine it receives every year. Barcelona has reduced carbon emissions by making solar energy a requirement by law. The city is paving the way for widespread use of renewable energy, and more than 20 cities in Spain have already followed its lead, writes **Mostafa Al Shalchi**.

In a groundbreaking push for sustainable energy, Barcelona has chosen to legislate solar energy, rather than simply encourage it. Since 2000, all new buildings in Barcelona, as well as those undergoing major renovation, have had to install solar panels on their roofs to provide the majority of their hot water. Sustainability regulations called Solar Thermal Ordinance require solar panels to be fitted to all large buildings by law – the aim is for all buildings to heat 60 per cent of their own hot water.

COMPACT METROPOLIS

Barcelona is the first city in the world to be awarded the Biosphere award, which distinguishes it as a leader in sustainable tourism. Despite its small size and restricted building space, the city is committed to providing tourism that matches sustainable, environmental, cultural and socio-economic management criteria. A constricted area stretching from the western mountains to the famous Port of Barcelona, the city is recognised as one of the world's most effective 'smart cities'.



HOT AND COLD

Barcelona features a district heating and cooling network, which sources energy from an energy conversion plant that turns urban waste into renewable fuel. Spanning several kilometres underground and connecting at least 70 major buildings, district heating has reduced yearly carbon emissions by 22 per cent. The cooling system relies on a 5,000 m³ cold water storage tank, which stores water sourced from the nearby Mediterranean sea – another initiative that makes sustainable use of the environment's vast resources.

CLEAN TRANSPORT

Eighty per cent of travel in Barcelona is by public transport, bicycle, or on foot. The city council constantly works to keep its infrastructure updated and efficient in hopes of eliminating the public's reliance on personal vehicles. Barcelona is also the only city in Spain with automated underground trains, part of a long-term plan to automate at least 40 per cent of the network through driverless technology. Six million journeys are made per day in this bustling city, most of them through clean and safe travel alternatives.

BY CHILDREN, FOR CHILDREN

In 2001, the city council introduced an environmental education programme to schools within the city. Barcelona School Agenda 21 ensures entire communities surrounding schools get involved in providing sustainable solutions, and stay committed to the wellbeing of the environment. The city council aims to draw the educational community into participation with its sustainability initiatives. This has inspired similar effects around the city; in the last 30 years, green spaces in the city have increased by 150 per cent.



style

FIRE FIGHTERS

Elvis and Kresse produces luxury bags and accessories from discarded fire hoses which they procure and renew themselves. It's a beautiful, rich material, full of history and potential for creative design. For these innovative designers, landfill is an archaic idea of the past, writes Mostafa Al Shalchi.

London Fire Brigade, Old Town Croydon, 2004. Piled on top of the building are long coils of decommissioned fire hose. After 25 years of action, the material has simply become too damaged to repair. Its eventual fate is landfill – that material graveyard for objects no longer useful. Its utility doesn't escape the eyes of everyone, however. In a chance encounter with the London Fire Brigade, design expert James Henrit and entrepreneur Kresse Wesling notice how beautiful and sturdy the material is. They begin to invent a variety of consumer products from satchel bags to billfold wallets, all made from regenerated fire hose. The material crossed them by sheer luck, but their initial impressions

set them on course to running a business that becomes an esteemed international brand, manufacturing products both beautiful and environmentally sustainable. But their momentum doesn't stop there. Driven by an obsessive drive to push their boundaries and discover new usable items, they begin to claim more and more materials, scouring nationwide collections of disposed goods and so called by-products. "The challenge is the same every time," they say. "What can we do to prove value, change perception, and respect these resources?" The pair has so far rescued over 200 tonnes of disposed material, and continues to imbue their handmade products with both the lustrous quality and honourable history of these reclaimed materials.

TRANSFORMING LUXURY

"This isn't just about luxury," insists co-founder Kresse. "At this point, when environmental problems are so acute, and the time we have to solve them so minimal, I don't see the point in starting any kind of business that isn't environmentally or socially sustainable." Producing ethically-sourced goods with "story-laden materials of incredible character," Elvis and Kresse is pushing for a societal state in which landfill becomes a thing of the past, where the notion of luxury can be disentangled from the idea of rarity. To achieve this, the company aims for complete sustainability in all facets of its business. The products are even packed and shipped in materials they've themselves renewed.



"THE PAIR HAS SO FAR RESCUED OVER 200 TONNES OF DISPOSED MATERIAL."

ACROSS THE WORLD

This ubiquitous devotion to challenging the accepted notions of utility means many have identified with their message and method. Elvis and Kresse is now an international brand with worldwide



reach, currently exporting to the EU, USA, Canada, Brazil, Hong Kong, Singapore, Japan, South Korea, Australia, and New Zealand. Their wide-reaching success is lauded by the UK government's

'Exporting is Great' initiative. But the company refuses to let its growth detract from its purpose. "Elvis & Kresse will always be a problem solving tool," says Kresse. "Partnerships and growth won't affect that aspect of our DNA, but they could affect our scale."

GIVING BACK

Despite its growing popularity, the company is not satisfied with judging its success by profits alone. It also considers how much raw material is converted, and how much money it can give to charities. To Elvis and Kresse, all three of these factors are equally important in determining success. 50 per cent of their profits are donated to charities and other initiatives related to the materials claimed, with the Fire Fighter's Charity receiving half of this total. Giving back is deeply imbued in their ethos, starting



with the design of the products. For Elvis and Kresse, the material in question and the existing problem must determine the response. "It seems ridiculous to me that any aspiring entrepreneur would think in any other way," says Kresse. "My advice is always the same - there are many problems to solve in this world. Build your business around a problem; design your business to be the solution."

tech

tomorrow's World

We live in a time of exponential technological growth. Rapid research developments mean industries are being transformed at an unprecedented rate, from transport to the food we eat. Here are four technologies that could soon redefine the world as we know it. By Mostafa Al Shalchi.

WIFI HELIUM BALLOONS

Google's Project Loon, aptly named for its craziness, aims to provide WiFi to the 5 billion or so people who still do not have regular access to WiFi. These are large helium balloons elevated 11 miles up in the air, using patch antennas to transmit signal. They're powered entirely by solar panels. These 'Loons' are directed by complex software algorithms

which determine which gust of wind is best for each balloon to catch towards its destination. These instructions cause smaller balloons inside the Loons to inflate and deflate, pushing the device in carefully calculated directions.

Google has partnered with companies in France, Sri Lanka, and Indonesia amongst others in a bid to make this technology as widely available as possible. They've already been tested in rural areas in



New Zealand, where they've become a recognisable feature of the skyline.

THE SOLAR-POWERED PLANE

The Solar Impulse 2 is a 2,300kg plane powered entirely by the sun. Its earlier model was designed to fly for 36 hours without fuel. The updated model, first flown in 2015, remains airborne for five whole days. Beginning their journey in March 2015, Swiss pilots Bertrand Piccard



and André Borschberg became the first people to circumnavigate the world in a solar-powered airplane. Equipped with 72 metres of solar-powered wingspan, this machine promises an eventual alternative to fuel-based flight, currently estimated to be responsible for 705 million tonnes of CO₂ emissions per year. Solar Impulse 2 uses stored energy to fly at night. The plane is carefully engineered to make the most of the sunlight it converts to energy, prompting it to gradually descend to an altitude of 5,000 feet in evenings to avoid exhausting its reserves.

MECHANICAL POWER TREES

We know what wind energy harvesting currently looks like: giant mechanical windmills often nestled between expansive pastoral fields. But this may be set to change – tree-like structures could soon act as smaller, less obtrusive power plants. These mechanical energy-conversion trees could offer a viable alternative to wind energy farms in areas where physical space is too limited. They're also symptoms of the changing aesthetics of sustainable energy initiatives. The trees are simple in appearance, sporting a few branches around a trunk of variable size. No leaves are needed – the branches themselves harvest kinetic energy from wind, seismic, or human movements. The project remains

in early stages, with primary research being conducted at Ohio State University in the US. Early applications could see the technology being used to power structural sensors on buildings and bridges, and eventually provide power to entire cities.

IN VITRO MEAT

Planet Earth is accelerating towards a protein crisis. We have an insatiable hunger for animal meat, but the meat industry, whose injustices are already widely documented and protested against, could not possibly accommodate the current rate of population growth. In Vitro meat may be the solution to this impending crisis. In 2013, Dutch scientists managed to produce edible lab meat using tissue-engineering technology. Though it's relatively expensive to produce right now, figures predict that, if widely adopted, lab-produced meat could reduce the carbon emissions of traditional meat production methods by 90 per cent. This effectively negates the problems the meat industry causes – environmental damage inflicted by supply chains, agricultural land shortage, animal cruelty, etc. The taste of lab meat is reportedly indistinguishable from animal-sourced meat, and is able to be augmented with additional nutrients that normal meat couldn't provide. We may be a few years away from widespread implementation of lab-produced meat, but this technology could forever transform our food consumption.