

Sarah Lahey: Sustainable Design Kit

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Sarah Lahey is a designer, educator, futurist and writer. She holds a bachelor's degrees in interior design and Communication and Visual Culture and works as a senior lecturer teaching classes on Design, Technology, Sustainability and Creative Thinking for a design college in Sydney, Australia. With over 30 years' experience working in the industry, Sarah is passionate about the designers who are shaping our cities and environments, reflecting the way we want to live in the 21st Century.

Sustainable Design Kit

Interview with the author

Was there an “aha moment” or a specific trigger that made you decide you wanted to become an environmental leader? Can you share that story with us?

I’ve been an interior designer for over 30 years, and I started teaching and lecturing university students in 2010. At the time I was asked to write content for a subject on sustainability. I asked my students if they believed in climate change — less than half the class raised their hands. So, I thought, how am I going to teach this? What does sustainable actually mean to our industry? Why don’t people believe in climate change; it’s a proven, scientific fact?

In my research I came across the Our Common Future document, also known as the Brundtland Report, in honour of the former Norwegian Prime Minister Gro Harlem Brundtland’s role as Chair of the World Commission on Environment and Development (WCED). The report is dated 1987, and is now over 30 years old, but it gives a clear definition of sustainable development;

‘Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.’

This definition was a great starting point and I thought more people need to understand what sustainable design actually means. My students, who would be designing and building cities and homes of the future, needed to know this definition, because we only have one planet. We need to accept the fact that the Earth’s capacity to absorb and deal with pollutant and contaminants has declined, natural resources are in decline, and that climate change has begun, and this is a scientific fact. Future generations should be able to live full and healthy lives and use the resources that the planet has to offer.

There is a focus on climate change throughout your novel, *Gravity Is Heartless*. Was this a way to explore and express your own opinions on this global issue?

Yes, definitely. The first drafts of the novel were finished in late 2016, long before the wonderful Greta Thunberg inspired a whole generation of youth culture, and much of the world, to get on board with climate change. Teaching sustainable design, I was a climate change advocate often surrounded by sceptics. So, I thought if people read my novel, they might understand more fully what life would be like in a world affected by massive consumption and the impact of burning fossil fuels for energy. But I also wanted the novel to be accessible to the youth culture of today, so it needed to be fun, an adventure, and above all optimistic.

Sustainable Design Kit

How did you arrive at the technologies you present in *Gravity Is Heartless*? How many of them are things you'd love to see created? How many do you fear?

There are so many future ideas that I love, like the luggagebot, essentially a suitcase that follows you around, and developments in 3D printing that allow people to print their own cloths (and just about anything else) if they choose. There are also some interesting sustainable design ideas, like new ranges of eco-textiles, such as piña cloth—made from pineapple leaves. And graphene filters will filter sea water, making it suitable for drinking, so we'll never run out of drinking water.

The older I get the more left-wing socialist I become, so I'm fond of ideas like sourcing energy and water will become the individual's responsibility, and there will be a multitude of innovative and easy ways to do this, thus cutting out corporations. People of the future have also harnessed technological advancements in agriculture and are now growing most of their own food.

But I'm also really concerned about the effect new technologies' have on humanity and the way we live. The definition of technology is the application of scientific knowledge for a practical purpose, and on the surface, this sounds like a fine and reasonable explanation. But what is a 'practical purpose' and how does it fit into a capitalist society with commercial sensibilities and opportunities for exploitation?

We should always be asking, at what cost? What are the moral and ethical concerns that come with technological developments?

Is severe climate change imminent or is there still time to make changes that will yield a different future than the one in your novel?

Severe climate change is imminent, and I fear it will be much worse than we expect. The Thwaites Glacier in Antarctica has begun to melt, and this is a real concern. The collapse of this glacier alone will raise sea levels by well over half a meter.

But I'm an optimist, and a strong proponent of James Lovelock's Gaia hypothesis, which was developed in the 1970s. This is the notion that the whole planet—all the living systems—work as one united unit, keeping everything in a state of dynamic equilibrium. The planet works as a balanced feedback system, which regulates and controls the environment (similar to any living organism, animal or plant). This feedback system is responsible for maintaining favorable life conditions on Earth, and it has the ability to correct minor disturbances or irregularities.

Sustainable Design Kit

Right now, the pendulum is out of kilter, but it's never too late, we need to take action today. We'll need a united ecological mind set to preserve our future way of life. I think ecology is a spiritual necessity, and spiritual experiences are an important fundamental human need.

Is there a lesson you can take out of your own story that can exemplify what can inspire a young person to become an environmental leader?

Sustainable design is a broad and complex topic, and there are many different approaches to how it might be tackled. My advice would be, you can't be across everything, so find the area, or the concept that most resonates with you, and start there. Then seek out unique and unusual ways to get your message across.

For me, it was a coming together of several things in my life that I loved; science, writing and teaching. Given what I knew about sustainable design, I wanted to write a novel set in the midst of a climate change catastrophe, where sea levels have risen, clouds have disappeared, and the planet is heating up. I thought if people read this, they might understand more fully what life would be like in a world affected by climate change.

I set my novel *Gravity Is Heartless* in 2050, one generation into the future, in a world that my children's children would inhabit. I asked myself, what will the world look like in thirty years' time? How will humanity survive the oncoming effects of climate change? But I also wanted the novel to be accessible to the youth culture of today, so it needed to be fun, an adventure, and above all optimistic.

What initiatives are you taking to address climate change or sustainability?

Construction and manufacturing have a huge impact on the environment. As designers, we need to be committed to producing sustainable design by setting up overarching parameters on all our projects. This includes things like, adopting an integrated and communal design approach, and assigning an environmental delegate to large projects.

When specifying materials and finishes for interior projects we must look beyond initial sustainable credentials of a product and also consider broader issues like it's origin and transport (buying local is far better for the environment), how it will be installed, it's lifespan, and end of service life; will it end up in landfill, or how will it be recycled?

Buildings should also be designed to achieve optimal thermal comfort — heat loss and heat gain — with careful consideration given to the site analysis and understanding the local micro-climate. When

Sustainable Design Kit

most of our energy comes from fossil fuel it is particularly important to design buildings that work with the orientation of the site, to optimize solar control. This works to minimize the use of heating and air- conditioning, which often use large amounts of energy. Other elements to consider include –

Maximizing the use of heavy building materials in construction, like brick and masonry, as these act as heat sinks and stabilise interior temperatures. The inclusion of insulation and thermal barriers, which minimise heat loss or gain.

Good air flow and ventilation is crucial in reducing heat and humidity in the summer months. Windows are often considered weak points in thermal comfort, as they allow heat to escape in winter, but they also allow summer sun to enter house, so their position and size needs to be optimised.

Can you share 3 lifestyle tweaks that the general public can do to be more sustainable or help address the climate change challenge?

1. Reduce your consumption; reuse and recycle everything you possibly can and encourage your friends and family to do the same.
2. When you do buy something, do your very best to select sustainable products. For example; the textile industry has a long history of environmental issues and a big carbon footprint, but many companies are striving to create more sustainable fibres, like piña cloth, obtained from the leaves of pineapple plants, or bamboo, which is fast growing,
3. Before you switch on any appliance, light or air-conditioner, pause, and think about where your energy comes from. If it is coming from fossil fuels, then consider if you really need to "ick the switch right now. Can you wait another hour, can you pull on a jacket?

In your opinion what are 5 things parents should do to inspire the next generation to become engaged in sustainability and the environmental movement?

1. Explain what greenhouses gases are and what they are doing to the atmosphere of our planet. Young people are empowered by climate change, but I find some don't actually understand the cost of carbon; what the burning of fossil fuels, farming, deforestation and some industrial processes are doing to the plant. The greenhouse effect is one of the main factors determining the temperature. These gasses in the atmosphere trap heat that would otherwise escape to space, thereby keeping the planet warm. In the 1800s (pre the industrial revolution) carbon

Sustainable Design Kit

parts per million were around 260. Today they are over 400 parts per million, and this is a direct result of our energy consumption.

2. Reduce your meat and dairy intake. If you do eat meat, then buy top quality and keep it to once or twice a week. On any given day there are 1.4 billion cattle roaming the planet and 19 billion chickens (3 for every person), and this is too many.
3. In your daily life, and before you purchase anything, practice the seven 'R's: Reduce, recycle, repair, reclaim, renew, re-purpose, then re-evaluated your purchase.
4. Teach your children to value craftsmanship and turn your back on the poorly designed mass-produced products using artificial materials. Celebrate and appreciate the incredible effort that goes into good design — everything from a drinking glass, to a pepper grinder, or a well-designed chair.
5. Education is key. Learn as much as possible about sustainable design and research the products you bring into your home. Something might appear to be sustainable, but it's also important to understand terms like embodied energy. This is the hidden energy — the energy that is required to make things. The energy that's 'locked up' in manufacturing, and it can have a large ecological impact.

How would you articulate how a business can become more profitable by being more sustainable and more environmentally conscious?

Sustainable design is simply good design. Caring about the environment, your staff and your clients is simply good business. If companies are not implementing sustainable design into their projects, then they are already at a disadvantage. In the last decade the marketplace has changed, and clients are now savvier. They want design that creates healthy buildings. Design that does not destroy or harm the environment or deplete natural resources. Design that strives to reduce material and construction waste.

Clients want to know what products are going into their homes and workplaces. They want to feel safe, and they don't want to be surrounded by toxic chemicals, such as volatile organic compounds, (VOCs) that might leach from non-sustainable building products, such as carpets, adhesives, solvents and paints.

A good ecological building should have little environmental impact. It should strive to achieve optimal thermal comfort, employing solar and kinetic energy sources. It should recycle water and waste materials. These things will reduce the impact it has on the environment, and also save on the on-going maintenance and overhead costs for the client. It's a win, win scenario.

Sustainable Design Kit

None of us are able to achieve success without some help along the way. Is there a particular person who you are grateful towards who helped get you to where you are? Can you share a story about that?

I'm going to nominate Greta Thunberg. She has changed the thinking of a whole generation, and she has changed the dynamics of my classroom. I'm still teaching sustainable design, and these days, when I mention climate change, all the students raise their hands. I feel I have Greta to thank for this.

You are a person of great influence and doing some great things for the world! If you could inspire a movement that would bring the greatest amount of good to the greatest amount of people, what would that be?

Much of the world's wealth is held in property ownership, which makes it difficult, and sometimes impossible, for younger generations, or those with less economic means, to enter the property market. Having a secure home should be a fundamental necessity in the 21st century. The impact it has on wellbeing and self-esteem cannot be under-estimated.

Public housing and social housing projects, where affordable housing is provided by governments, or community sectors, is particularly close to my heart. There is a huge shortage of housing worldwide, not just in underdeveloped countries. Having a roof over your head, in so many ways, changes your life, and many of us in the Western world take this for granted.

There are many not-for-profit organizations funding and striving to help people into affordable homes, and high-profile architects are also getting on board. Last year the UK's most prestigious architecture prize, the RIBA Stirling Prize, was awarded to the Goldsmith Street social housing project, in Norwich. The eco-friendly design was created by Mikhail Riches and Cathy Hawley, and it was the most sustainable of all the projects. This sends a clear and powerful message to the public and private sectors about what's required in the industry today.

Do you have a favourite life lesson quote? Can you tell us how that was relevant to you in your own life?

"We shall need a sustainable way of thinking if humanity is to survive." Albert Einstein 1954

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About *Gravity Is Heartless*

What will the world look like in thirty years' time? How will humanity survive the oncoming effects of climate change? Set in the near future and inspired by the world around us, *Gravity Is Heartless* is a romantic adventure that imagines a world on the cusp of climate catastrophe.

The year is 2050: automated cities, vehicles, and homes are now standard, artificial Intelligence, CRISPR gene editing, and quantum computing have become a reality, and climate change is in full swing—sea levels are rising, clouds have disappeared, and the planet is heating up.

Quinn Buyers is a climate scientist who'd rather be studying the clouds than getting ready for her wedding day. But when an unexpected tragedy causes her to lose everything, including her famous scientist mother, she embarks upon a quest for answers that takes her across the globe—and she uncovers friends, loss and love in the most unexpected of places along the way. *Gravity Is Heartless* is bold, speculative fiction that sheds a hard light on the treatment of our planet even as it offers a breathtaking sense of hope for the future.

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