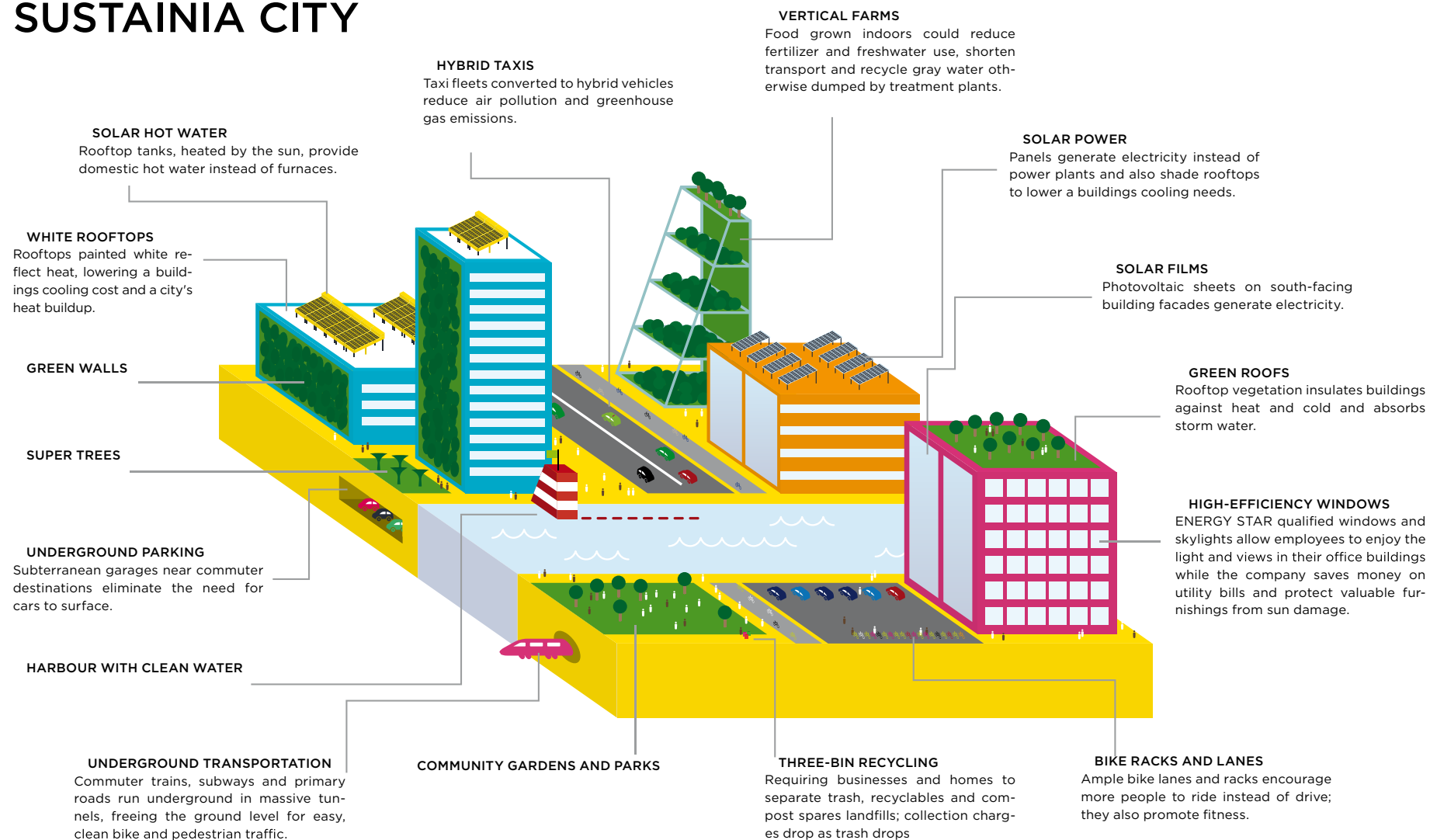


By Flemming Borreskov

SUSTAINIA: The Sustainable Society of Tomorrow

Sustainability has, for too long, been about constraints. It has been about the things we must forego in order to avoid destroying our fragile planet, but imagine if this stigma could change. Could sustainable living become desirable and worth striving for, not because of moral obligations or fear of the future, but because sustainability offers the greatest liveability?

SUSTAINIA CITY



(This illustration is inspired by: Scientific American, September 2011)

Welcome to Sustainia

The Sustainia project does just this. It presents a clear vision of what a sustainable future is, and how its citizens - 'Sustainians' - lead better lives than that of our own. In the *Guide to Sustainia*, gone is the 'doom and gloom' approach to preaching about sustainability against the backdrop of Earth's demise. Instead, Sustainia offers a positive vision of a sustainable society that could be realised as early as 2020.

What is Sustainia?

The Sustainia project is a platform that allows a global community of civil society, businesses and experts to collaborate in developing sustainable technologies and solutions, as well as motivate and inspire decision-makers and ordinary people. It aims to motivate decision-makers by showing online the sustainable society that could be built if different sectors, companies, scientists, politicians and civil society worked towards a common goal.

Sustainia addresses efficiency and environmental improvements in four areas: cities, homes, energy and transportation, and offers insight into how individuals can become involved. Some will argue that many of Sustainia's concepts are unrealistic, but all of the solutions introduced are based on today's technologies. These concepts draw on tangible forms of intelligence supplied by authoritative sources, such as leading universities, think tank organisations and multinational corporations. Sustainia maintains that a sustainable society is within reach, and that it is a matter of implementing and disseminating solutions already at hand.

Building Sustainia

Essential to the success of Sustainia is collaboration. Sustainia's vision was created in close collaboration with corporations, organisations

and experts. With the addition of international organisations and political leaders – such as the UN Global Compact and Arnold Schwarzenegger, Honorary Chair of the Sustainia Committee – the movement houses a team dedicated to enabling action, rather than merely talking about it.

As a result, Sustainia is the ‘go-to’ place for those with sustainable solutions and the motivation and desire to take action.

However, for change to happen, communication with decision makers and leaders alone is not enough. Sustainia has the potential to engage a far wider audience. Recent developments, such as the Arab Spring, highlight the importance of online communities as drivers of change. Social media and online activities are at the heart of building global awareness of Sustainia.

Destination Sustainia 2020

The consistent failure of the United Nations to implement breakthrough actions in order to mitigate climate change is a painful reminder that political negotiations on this topic are moving too slowly. Politicians alone cannot solve sustainability problems, nor is there a quick fix to the challenges faced by the global community. All sectors must be engaged and, for this to happen, a common goal is needed and Sustainia could become that catalyst to achieve a sustainable society by 2020.

People are often confused about sustainability and what a sustainable future looks like. This confusion limits the scope for tangible achievement. Sustainia eliminates confusion by relating its vision and values in an open and inviting way. People need to be able to relate to sustainability and grasp it to equate the concept to an improved quality of life. It is only through a clear, holistic vision and collective effort that sustainability – ‘destination Sustainia’ – can be reached by 2020.

- 1 pg 70-71: Illustration of a typical city in Sustainia. Image courtesy of Realdania.
 2 pg 72-73: Illustration of a typical home in Sustainia. Image courtesy of Realdania.

VISIT A HOME IN SUSTAINIA

GREEN ROOFS/GREEN WALLS/ ROOFTOP GARDENS

Incorporating green walls into a building's design offers a host of benefits: added insulation, reduced stormwater runoff, absorption of pollutants, natural habitat for birds, bees, and butterflies and reduced outside noise.

ENVIRONMENTAL LABELS

Like nutrition labels on food, green building labels offer easy-to-understand data and performance metrics for building materials. The labels will become increasingly common for housing products globally.

WINDOWS

Maximum daylight and ventilation ensure optimal indoor comfort and minimal energy consumption. In Sustainia, we use windows that allow natural ventilation without a disturbing breeze, and that let in the light while shading us from the glare.

SOLAR PANELS

Rooftop solar panels will provide most, if not all, of the electricity used in your house⁷⁰. Sourcing renewable power onsite, and not from a distant conventional power plant, reduces transmission losses, slashing emissions and preventing the burning of fossil fuels.

INSULATION

The walls are insulated with aerogel, or “frozen smoke” as it is sometimes called, a nano-technological wonder and the world's lightest and best-insulating material due to its molecular structure. It will save energy and money, and help improve the indoor climate. Remembering that a low-energy building uses at least 50% less energy than a standard building⁷² underlines the importance of insulation. A growing body of research⁷³ shows that better energy efficiency in buildings, in particular insulation, is one of the most cost-effective measures to reduce CO2 emissions⁷⁴.

ENVIRONMENTALLY FRIENDLY PAINT

To reduce indoor air contamination and the spread of allergens, use only environmentally friendly paint. Use of lead paint was responsible for neurological problems and even deaths of many children throughout the last century. Until recently, nearly all paints on the market contained volatile organic compounds (VOCs) – chemicals that evaporate as the paint dries and gives drying paint a chemical smell. Even after these paints have dried, small amounts of VOCs continue to be released for years. These chemicals are known to exacerbate respiratory allergies and are harmful if released to the environment.

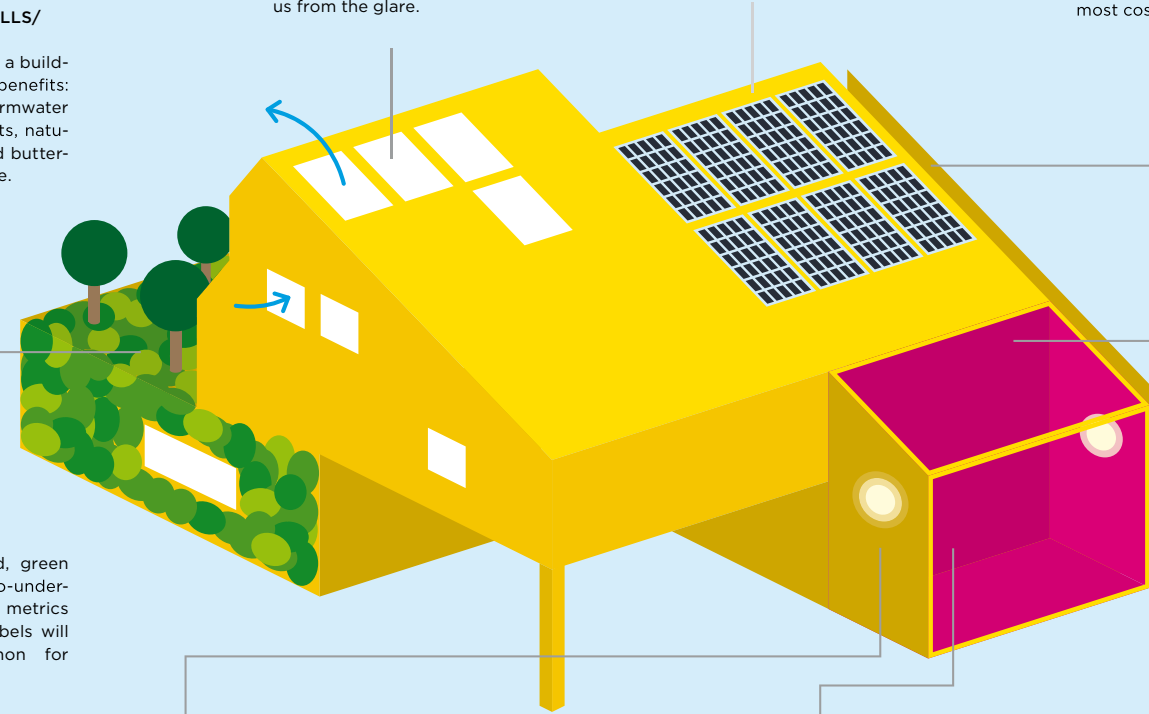
In Sustainia, we only use low and zero-VOC paints. This paint does not contain chemicals that can make you sick. It is good for you and the environment. And the price is competitive.

LED LIGHTS: (INSIDE AND OUTSIDE THE HOUSE)

LED lights, for applications in homes and businesses, became mainstream beginning in 2010. Previous problems in design and distribution were corrected. LED lights started out pricey, but prices came down quickly as the technology improved and manufacturers scaled up production. Consumers also became savvier about accounting for the life-cycle cost of the products they buy, as well as the long-term pay-off of using a more sustainable lighting alternative⁷¹.

SELF-CLEANING PAINT

New options available are photocatalytic paints and other coatings, which actually remove local air pollutants from air in a room or outdoors. These paints or coatings have anti-microbial, de-odorizing, self-cleaning, and anti-pollution properties and a low-VOC formula. The dry paint or coating cleans itself by destroying bacteria and deflecting dirt that might build up on its surface⁷⁵.



“City dwellers produce much less carbon dioxide than their suburban counterparts. They live closer, and are more likely to use public transport and many people love living in the city. The cultural diversity and endless possibilities in cities has attracted billions of people in recent decades.”

⁷⁰ MacKay, D.J.C. 2009. Sustainable Energy - without the hot air.
⁷¹ Environmental News Network. www.enn.com
⁷² www.rockwool.com
⁷³ http://www.rockwool.com/energy+efficiency/the+role+of+insulation/economic+gain
⁷⁴ http://top10greenbuilding-products.com/2011/greensulate/; http://www.ecovatedesign.com/greensulate/
⁷⁵ http://www.sciencemag.org/content/331/6018/746.abstract

Cities in Sustainia

The world is entering an age of increasing and rapid urbanisation. Cities today are home to more than half of the world's population. By 2020, the proportion of people living in cities, as compared to residents of non-urban areas, will have increased substantially. Urbanisation, however, is both a challenge and an opportunity.

Cities can champion the low-carbon age as innovative drivers of sustainable economic growth. In Sustainia, cities are retrofitted to improve the quality of life. They are intelligent and employ technologies that enable better energy use, water consumption, transport and communications. Building on best practices for urban renewal and retrofitting, and drawing on lessons learned in new eco-city projects, Sustainia presents what a sustainable city, in the not so distant future, can look like.

How then do cities in Sustainia differ from the cities of today? Firstly, they are built for people, not vehicles. In Sustainia, transport is no longer limited to congested and polluted streets. Rather, Sustainians use walkways, bicycle paths, bus rapid transit, high speed trains and electric cars. These forms of transportation displace and discourage our overuse of oil-dependent automobiles. In Sustainia, engines are not dependent on oil from unstable states, instead, they rely more on batteries fuelled by the sun, the wind and tides, or biofuels derived from non-food sources, such as recycled newsprint.

In Sustainia, people are the key to change. Besides being a sustainable society's greatest economic resource, people add value to cities by bringing their skills, ideas, and diversity. Citizen involvement is vital to the development of Sustainia's cities as research shows engagement and environmental performance to go hand-in-hand. Citizens, thus, are a powerful force to be reckoned with, and can be empowered to be real change-makers.

Principles for Sustainia City include:

- White-painted roofs that diminish "heat island effect"
- Solar water heaters on buildings (heating water uses 17% of energy in buildings)
- Bicycle friendly infrastructure
- Improved energy efficiency in buildings
- Clean waterfronts offering public access
- Attractive and efficient public transportation
- Recycling made easy
- Private and public rooftop gardens
- Parks and/or gardens within a five to seven-minute walk for all residents
- Photovoltaic sheets on south-facing buildings
- Underground parking near transport hubs
- Infrastructure for an increased electric vehicle fleet

Homes in Sustainia

A sustainable home is about ensuring quality of life for its residents – Sustainian homes are smarter, healthier and energy self-sufficient. Existing buildings are retrofitted and new buildings are constructed to support the comfort, health and wellbeing of occupants. Homes in Sustainia incorporate varied sustainable solutions, from rooftop solar panels to smart control systems that give real-time information on energy and water consumption.

Many people today live in unhealthy homes. Common environmental stress factors include overuse of air conditioning, and inadequate lighting and ventilation, which can be detrimental to both physical and mental wellbeing. It is worth noting that indoor air is up to four times more polluted than the air outside. Furthermore, people in the urbanised world spend nine out of every 10 hours indoors.

Homeowners in Sustainia are more than just consumers of electricity and heat. They generate their own energy by means of renewable sources – such as rooftop solar panels – and can sell surplus energy using smart technology.

Therefore, Sustainia's smart home solutions must do two things: reduce energy consumption and make life easier. These solutions allow greater personal control of temperature, water use, lighting and ventilation, and provide real-time information on the energy demands of appliances, and when it is most efficient to use them. They are readily available in many places around the world, and are subject to continuous development.

There are infinite ways to make homes more energy efficient, healthy and intelligent. The *Guide to Sustainia* highlights several of these features, such as smartphone-controlled automatic bath solutions, and 'all off' buttons for home cinemas.

Principles behind Sustainia Homes include:

- Better designed buildings far outperform non-sustainable buildings
- Better lighting improves the endorphins we need to feel happy and content
- Renewable energy technology, such as solar panels or solar water heaters, offer good economic savings
- Better indoor air quality fosters better health and well being
- Increased real-time information on energy and water usage changes consumption behaviour
- Building sustainably is easy and cost effective

From Dream to Reality

A sustainable future might seem impossible and, for many, the obstacles will seem too great to overcome. Sustainia is about breaking down this stigma by envisioning and providing a platform with which to build a better tomorrow. Realising this potential will remain a huge challenge and the size of the task is daunting. However, there must be an awareness of the possibilities at hand, regardless of how much work has actually been done. Sustainia is not a utopian dream; it is a factual vision that is achievable by 2020.

Sustainia draws together solutions and know-how from around the world in order to shape tomorrow's sustainable society. It welcomes front-runners from all sectors – whether they are businesses, organisations, knowledge institutions, government agencies or individuals. It offers a critical mass of best practices and knowledge in one place, with experts capable of bringing greater scale to solutions already created.

As a founding member, I truly believe the Sustainia project will enable change and inspire concrete action. In the words of Antoine de Saint Exupéry, "If you want to build a ship, don't drum up people to collect wood and don't assign them tasks and work, but rather teach them to long for the endless immensity of the sea."

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We need to make sustainability more tangible to grasp by developing a new narrative and language to communicate about a desirable sustainable future.”



Flemming Borreskov is the CEO of Realdania, a strategic philanthropic foundation based in Denmark, with the objective of initiating and supporting projects that improve the built environment, and subsequently improve the quality of life for the common good. In addition, he is President of the International Federation for Housing and Planning; Vice Chairman of the Danish Architecture Centre; Chairman of the Steering Committee of the Strategic Urban Governance master class programme for Danish urban executives; Green Growth Leaders Founding Father and Councillor; Founding Father of Sustainia; and Member of the World Cities Summit 2012 International Advisory Group.