

The self-sufficient city

Herbert Girardet

The characteristic of a truly sustainable city is, first and foremost, that it powers itself entirely by means of renewable energy systems. Herbert Girardet encourages us to make a quick switch to renewable energy to power our houses, our urban transport systems and our daily way of life.

...What are the three qualities that should characterize a sustainable city?

The impact on the planet today is primarily from urban consumption patterns. Cities leave an enormous ecological footprint on the global environment. They take up huge areas outside themselves in order to supply the food and materials we take for granted in our daily urban life. The characteristic of a truly sustainable city is, first and foremost, that it powers itself entirely by means of renewable energy systems.

Copenhagen is in the lead worldwide as a city where a large proportion of its energy is derived from wind power and increasingly from solar power systems. These are examples for cities of the world to learn from, in making renewable energy the main energy supply.

The great challenge for decision makers, politicians, and energy makers is to quickly switch our energy supplies to renewable energy. Not only to power our houses, but to power urban transport systems and the daily way of life.

Secondly, it's important for cities to adopt a circular metabolism. In nature, waste materials are absorbed beneficially back into the local environment as nutrients. Cities don't do that. They work by way of taking resources from one place and dumping them somewhere else causing damage to nature. We need to turn this linear process into a circular process instead.

The recycling of particularly organic waste is important for the sustainability of large cities. We need to meet this challenge and create a metabolism that mimics natural systems. Materials and products that we use need to be biodegradable. Plastic, which does not decompose easily, can be produced so that nature can absorb it more effectively.

For instance, waste from households is primarily organic. Even so, a lot of it ends up in waste dumps on the edge of the city where it produces methane gas for many years thus causing further damage to the climate. This cannot continue.

In Denmark, a large proportion of the organic waste that would otherwise end up in the waste stream is being taken out and composted into soil again, so that it can be put back into farmland. This is an important part of the sustainable city. Organic waste must become part of the organism of food supplies to cities. In the future it will not be possible to grow food unless you recycle the nutrients. You cannot grow crops without phosphates, so it's particularly important to extract these nutrients from waste and sewage, so that they become nutrients for a sustainable agriculture.

The third primary characteristic of a truly environmentally sustainable city is carbon neutral transport systems. Modern transport systems primarily run on fossil fuels and this cannot continue. The way forward, albeit a challenge, is to find ways in which wind and solar power can be used to supply electric vehicles. Cycling and pedestrianization is also very important. In Copenhagen, we see how the combination of pedestrianization, cycling and reduced reliance on the private car has made a big difference in making Copenhagen a much more sustainable city than it was 20 years ago.

...What are the three challenges that top the to-do list in cities around the world?

One of the challenges is to combine the creation of environmentally sustainable cities with benefits to society. There are some interesting new opportunities here. Typically, we see a surplus of people all over the world who are not finding jobs, particularly in very large cities. London has tens, possibly hundreds, of thousands of young people who cannot find jobs.

The opportunities and breakthroughs in renewable energy combined with the need for cities to become much more energy efficient create a staggering potential for new jobs. In Germany alone about 270.000 new jobs have been created in the last nine years by adapting to solar and wind power. Combined with retrofitting this creates a substantial new industry.

Another important issue is not just the economics and the environmental aspects of sustainability but also what one might call cultural sustainability. It is critically important to have the flow of ideas and to include the way people think into city planning. Decisions affect our daily lives.

One of the big problems in modern democracies is that we are only asked to manifest our views every four-five years when an election takes place. But, in a world where sustainability and concern about damaging the world fatally is becoming such a big issue, it is of critical importance to voice our views much more actively today and to use them in decision-making.

For instance, in the Brazilian city of Porto Alegre the city government decided to involve the general public in the budget setting process. People started considering what the money should be spent on. On better schools, better transport systems, playgrounds and so on. This was a creative process where everyone was asked to participate with their views and ideas on how to do this. By way of process Porto Alegre has become a dynamic city. Suddenly people think about these issues on a daily basis.

On one hand, we need to have creativity and initiative on the local level but we also need national policy. Without national policy we are not going to get changes rapidly enough. A lot of positive changes that take place at the local level come from the general public's influence on national policy.

The example of feed-in tariffs for renewable energy wind power in Denmark came from public discussion and public demand. When you see renewable energy systems springing up across Europe this is commonly initiated by national initiatives.

The more promising things that are happening in cities around the world are quite often driven by enlightened national policy deriving from democracy and lively discussions within a country.

In countries where there is rapid urban growth taking place there is a challenge to create new cities that are designed as eco-cities considering energy efficiency, renewable energy supply, circular metabolism and urban agriculture right from the start. However, the bulk of cities that will exist in 50 years are already built. London is already there and so is New York, Tokyo, and Sao Paulo and they need to function differently in the future. Cities must stop taking such enormous quantities of energy from the planet. We need to retrofit.

For London to be a sustainable city, it needs to reduce its energy and resource consumption by three quarters. That is a huge challenge but also a huge opportunity. It means new jobs from recycling, from renewable energy, from retrofitting buildings, from creating electro-transport systems and so on. It's also possible to think of the solar suburb; retrofitting the fossil fuel suburb into renewable energy systems; solar systems and wind power within the suburb to power not only houses themselves but also to power electric vehicles.

I think the great challenge for the architect and the city planner today, is really to internalize the message that we cannot take the energy supply to our cities for granted. We need to make sure that it comes from renewable sources. It's critically important for the architect and the planner to re-conceptualize their jobs to include energy issues and particularly renewable energy.

Freiburg in Germany is a city that has shown a way forward with regards to energy consumption. When you look at Freiburg, there are now many buildings with solar roofs, particularly south facing solar roofs that can now supply more energy than they actually would need for their own daily use. This is feasible; buildings and cities becoming power stations, rather than users of energy. This is a tremendous challenge. And we need the right legislation for it to become mainstream.

...What are the three most promising initiatives that would make living in cities more sustainable?

In our present world, particularly in Europe, we take the unlimited access to food for granted. But food supply is becoming a big problem.

One example of a remarkable development is the urban agriculture of Havana in Cuba. When the Soviet Union collapsed in '89, trade stopped and they had to come up with new ways of feeding their cities. They turned unused land within the city into little farms. A response to a crisis situation turned into new opportunities to create a high degree of food self-sufficiency. When you go to Havana today the whole city is covered with small cooperative farms that are cultivated by people from surrounding apartment buildings. Tens of thousands of hectares of land within the city are now turned over to growing crops for the local people.

You can find similar things in Dar Es Salaam in Tanzania, which has similar urban agriculture projects, but also Accra in Ghana and in many Chinese cities. Urban agriculture is a very important part of the future of cities.

One can certainly find many good examples of how cities are doing better now than they might have done 10-15 years ago. In Freiburg, a German city of 200.000 people, there are more solar roofs than in the whole of the United Kingdom, which has 60 million people. These are extraordinary developments driven partly by national policy and partly by local initiative.

About Herbert Girardet



Herbert Girardet was born in Germany. He went to the UK as a student in 1963 and decided to make his home there. Herbert Girardet is a social anthropologist and cultural ecologist and now works as a writer, consultant and filmmaker. His main focus in recent years has been the sustainable development of cities and contemporary lifestyles. Herbert has produced 50 documentaries on human environmental impacts all over the world. As consultant, his clients include UN Habitat, the Greater London Authority, the London Development Agency and the Corporation of London and the cities of Adelaide and Vienna. He is the Director of Programmes at the World Future Council and a consultant to Arup on the development of the Chinese eco-city Dongtan. He is a recipient of a UN 'Global 500 Award for Outstanding Environmental Achievements' and an honorary Fellow of the Royal Institute of British Architects.

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