**READING**

**Ten quirky ideas for making our cities more sustainable**

From glow in the dark trees to underground bike sheds and solar powered bins we look at some of the more left-field solutions to help make our cities more liveable

City living has many upsides, but a sustainable lifestyle is increasingly not among them. Pollution, traffic and loss of green spaces are just some of the daily trials that city-dwellers have to deal with.

Step forward the inventors. We consider 10 of the wackier solutions to making our cities more liveable.

## **Pop-up parks**

Today’s cities sometimes look like they’re built more for cars than people. The pop-up park is a simple idea. Take an empty parking lot, a pocketful of change and a pot plant or two, and make yourself your own private park. The **PARK(ing) project** kicked off as an arts experiment in San Francisco a decade ago and has since spread across the world. Temporary urban farms and ecology demos are just some of the ideas to have emerged out of the movement, which celebrates a day of action every September.

## **Subterranean storage**

Not all urban dwellers are hooked to the car. Bikes are ever more in vogue. The question is: where to keep it safe? Tokyo-based engineering firm Giken Seisakusho has come up with a concept for a solution: an “eco-cycle, anti-seismic underground bicycle park”. At just seven metres wide, the cylindrical storage facility buries deep enough into the ground to house 204 bikes. Owners can retrieve their bike at the touch of a button, with the automated system delivering it back above ground in around 13 seconds.

## **Glow in the dark trees**

When most people think of trees that glow in the dark, Christmas baubles and fallen pine needles usually come to mind. Not Daan Roosegaarde. The Dutch designer/artist has comes up with a “bioluminescent” plant. The experimental technology splices DNA from luminescent marine bacteria with the chloroplast genome of a plant to create a jellyfish-type glow. Trials are underway to create an industrial-scale version of the [biomimicry-inspired technology](https://www.studioroosegaarde.net/projects/" \l "rainbow-station)that Roosegaarde hopes could one day replace conventional street lighting.

1. **Footfall harvesting**

Every day, hundreds of commuters and shoppers in the east London neighbourhood of West Ham cross the elevated pedestrian walkway close to the underground station. Few probably notice the springiness beneath their feet. Fewer still connect that five-millimetre flex in the rubber surface to the powering of the streetlights above. The paved flooring is decked with smart tiles that capture the kinetic energy from pedestrians’ footsteps and convert it into electricity. Pavegen, the UK firm behind the innovation, has installed a similar system at London’s Heathrow airport, among other international locations.

1. **Supertrees**

It had to happen eventually: man-made trees. Singapore’s Gardens by the Bay has a small copse of them. Up to 50 metres high, these steel-framed ‘supertrees’ not only have flowers and ferns growing up them, but their metallic canopies act to absorb and disperse heat too. They’re equipped to harvest rainwater too, as well as provide air ventilation for two “climate-controlled biomes” (large conservatories, in other words) below. 11 of the 18 trees also boast solar panels along their ‘branches’.

1. **Water-producing billboard**

We live in a consumer world. And so we don’t forget it, advertisers wallpaper our cities and highways with banks of billboards. Researchers at Lima’s University of Engineering and Technology have come up with a billboard with a difference. Using a system of condensers and filters, it traps the humidity in the air and extracts the water vapour to produce around 96 litres of drinking water a day. The public can help themselves to it for free.

1. **Neo-walled gardens**

Gardens stopped being just the preserve of people’s front lawns long ago. For a while, garden roofs were all the rage. Now, it’s all about walls. Drawing on advances in hydroponics, the facades of a growing number of libraries and offices, shops and hotels, are bursting into flower. One of the firms at the forefront of the “living wall” boom is UK-based firm [Biotecture](http://www.biotecture.uk.com/). The company’s “vertical gardens” can also be seen gracing the Taj Hotel in central London and the exit wall of Edgware Road Tube Station, among other locations. Aesthetics aside, green walls are credited with reducing air pollution and improving air quality.

1. **Algae-powered building**

To prove the dynamism of the “living wall” concept, look no further than Hamburg’s [International Building Exhibition](http://www.arup.com/News/2013_04_April/25_April_World_first_microalgae_facade_goes_live.aspx). Instead of sweet-smelling flowers, the south-facing facades of the zero-carbon apartment complex are laced with green-tinged algae. The walls’ external fabric includes a “bio-skin” of hollow grass panels on which the algae photosynthesises and grows. Periodically, the algae is harvested from the walls and fermented in a biogas plant to produce electricity.

1. **Smart rubbish bins**

Forget gas-guzzling dumper trucks and smelly skips. City authorities around the world are now turning to solar-powered “trash compactors” to keep litter off the streets. The 150-gallon capacity rubbish bins are equipped with a motor that pushes down the rubbish when it nears the top. The motor is powered by solar panels embedded in the lid. The newest [Bigbelly](http://bigbelly.com/) bins include a wireless monitoring system that notifies rubbish collectors when the bins are full.

1. **Spray paint**

Finally, desperate times may sometimes call for desperate measures. That’s clearly what was going through the mind of authorities in Chengdu, one of China’s fastest-growing cities. To brighten up the place, the municipal landscaping department has taken to spraying the yellowing grass green. Use of the non-toxic green spray has now spread to Tianjin and a host of other cities in China’s north-west.

1. **Match the definitions below with words from the introduction to the article.**

Dwellers leftfield trials sustainable upsides

1. radical, experimental, unconventional : leftfield
2. positive aspects of a bad situation : upsides
3. using methods that do not harm the environment : sustainable
4. painful or difficult experiences : trials
5. people who live in a particular type of place : Dwellers
   1. **Find the key words for your half of the article and write them next to the definitions.**

**ideas 1 to 5**

1. popular and fashionable (two words) : in vogue
2. able to withstand an earthquake : anti-seismic
3. connects two things to form one piece : delivering ?
4. bright (referring to brightness that is produced without heat) : glow or bioluminescent
5. flexibility : springiness
6. caused by movement : kinetic
7. a small group of trees growing close together : a small copse
8. leaves and branches that form covers high above the ground : canopies
9. take in a gas, liquid or other substance : absorb
10. spread, or make things spread, in different directions over a wide area : air ventilation

**ideas 6 to 10**

1. large boards for advertisements in an outside public place : billboards
2. the amount of water in the air : water vapour
3. a place that usually belongs to a particular person or group : Gardens
4. using something that you have gradually gained or achieved (two words) : Drawing on advances
5. fronts of buildings, especially ones that are large or impressive : facades
6. the beautiful qualities of something : Aesthetics
7. energy, enthusiasm and determination to succeed : dynamism
8. plants that have no roots, stems or leaves and grow in water or in other wet places : algae
9. very large metal containers used in the building industry for waste – they are carried away by a truck when they are full : rubbish bins
10. fixed firmly in a surface or object : spread ?

**GRAMMAR**

**Adjectives vs. Adverbs: Choose the correct answer for each gap below**

1. Jack spoke confident(confidently/confident) to the audience urging them to elect him president of the union. He knew he had a good(good/well) chance of winning the election.  
  
2. Melanie  quickly(quick/quickly) ate her lunch. She knew the meeting was  important (importantly/important ) and she didn't want to be late.  
  
3. Sophie lived in Thailand for several years. She speaks Thai  fluently(fluent/fluently), and she knows the culture very  well(good/well).  
  
4. The  hot(hotly/hot), humid weather made it difficult to enjoy the tropical beach. Miriam seemed more  uncomfortable(uncomfortable/uncomfortably) thanrelaxed.  
  
5. The entrance examination is extremely(extremely/extreme) challenging. Very few people make it into the  prestigious(prestigiously/prestigious) medical school.  
  
6. This airline's complete(completely/complete) lack of organization is astounding. I have been very  petient(patiently/patient )up to this point, but I am going to lose my temper if you don't find my baggage immediately.  
  
7. The young girl sings amazingly(amazing/amazingly) well for someone her age. Her performance was  spectacular(spectacular/spectacularly) to say the least.  
  
8. The skies became surprisingly  dark(darkly/dark) as the moon moved between the Earth and the Sun. As the eclipse progressed, the people in the streets stood  silently(silently/silent) waiting for the sun's warmth to return.  
  
9. Although Beth speaks  softly(soft/softly) and seems quite  timid(timidly/timid), she is the leading expert in her field. Don't underestimate her abilities.  
  
10. After the medieval cathedral was  tragically(tragic/tragically) burnt down last year, the city   quickly(quickly/quick ) rebuilt it stone for stone. It looks exactly the same as it did before the fire.  
  
11. We  gradually(gradually/gradual) noticed changes in Diane's personality;

she became quiet(quiet/quietly) and withdrawn from her friends and family. We finally realized that we had to do something about her drinking problem before it was too late.  
  
12. Nicole grew  tiredly(tiredly/tired) from the hours of overtime at work. It became quite   abvious(obvious/obviously) that she needed a long vacation.  
  
13. The tomato plants grew  quickly(quick/quickly) in the rich soil. Mrs. Ficara intended to use the homegrown tomatoes to make her delicious(deliciously/delicious) tempting lasagna.  
  
14. Mr. Tanzer  generously(generously/generous) donated $1,000,000 to the law school's scholarship fund. With this money, they will be able to help low-income students cope with the  increasing (increasingly/increasing) cost of education.  
  
15. Tim is  well(good/well) known for his sense of humor. Last Saturday, when he told the joke about the fireman and the school teacher, everybody there started laughing  uncontrollably (uncontrollable/uncontrollably).

**LISTENING**

**Listen to the podcast and answer the following questions in the most appropriate way:**

1. How are Smart cities defined in the podcast?

They are defined as seeking technological solutions to urban problems.

1. Who is Anthony Townsend?

He is from New York university and the writer of an up coming book called smart cities.

1. What criticism does he move against Smart Cities?

To sum up, he fears that all the data collection, linked to the use of smart city technologies, create a form of unhealthy spy from large companies.

1. Why is he being skeptical about the technology of Rio de Janeiro’s operation center?

Because, according to him, the government could watch videos in particular to control people.

1. Why are a lot of cities turning to technology industry, according to him?

Because it’s of great use for the management.

1. What happened in 20008? (mention three events)

- The world camed 50% urban for the first time

- The number of things connected in the internet passed the number of persons connected on the internet.

- The recession.

1. How did companies like IBM or Cisco react to the economic crisis?

They start to cooperate with governments data base and launch a campaign to encourage cities to do more data collection to improve their management.

1. Why is Anthony worried about big companies being involved in the development of Smart Cities?

For him, the problem is that companies wich make these systems don't just develop them and then leave it to the cities. Then, they remain involved in the data collection. Furthermore, the data doesn’t remain stored in the city concerned, it is elsewhere, sometimes even in other countries, outside the government juridiction.

**Define the following words and expressions that are heard in the podcast:**

1. **Facility : a device, a system to do a task.**
2. **Ripple effects : create implications beyond the system initially concerned.**
3. **A great deal : a good operation, lucrative.**
4. **Video feeds : the image stream coming from the surveillance.**
5. **Constituents : Constituting a whole.**
6. **Tackle : approach, tackle a subject.**
7. **Urban fabric : What constitutes a city.**
8. **Recession : Slowdown or downturn in economic activity.**
9. **Outsourcing : subcontracting, hand over the management to someone else.**
10. **Outweigh : eclipse, weigh heavier than...**
11. **Legacy : The heritage.**