

Sustainability technology will change our lives and buildings



By [Werner van Antwerpen](#)

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Buildings are moving from bricks and mortar into what previous generations considered science fiction. Technological innovations to create buildings that are more sustainable are being driven by our need to create better spaces for people that are resource-efficient and save costs too.

Intelligent lighting

LED lighting was a game-changer for greener buildings. Today, LED lighting costs have reduced so much it has become mainstream. So the question worth asking is what's next for lighting? The answer is mind-blowing. Lighting in the future won't be just a device that gives light, but a technology that integrates into a system providing sophisticated data. The light itself will only be a by-product. The future of lighting will include devices that sense, record and take action. Lighting will measure the temperature of a room to control air conditioning. It will serve as a smoke detector in emergencies. It will also sense motion and even be able to tell the direction in which a person is walking. This could, for example, help to analyse the flow of shoppers in a mall. It will be able to detect barcodes on products, then pass this product information back to its manufacturer to show where the products are used or consumed.

Rooftop solar



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Rooftop solar has arrived in a big way. As the prices of solar PV are coming down, panel manufacturing efficiencies are increasing. Solar power in the property industry is becoming increasingly relevant. In the '90s, Telkom had the monopoly over telecommunication in South Africa. Then a disruptive technology came along to make telecommunication more mobile and changed the whole industry forever. In the energy sector we have an energy provider that provides electricity in a centralised manner. However, solar is making the electricity industry mobile. Will private energy companies challenge Eskom? I think so.

Transparent Solar Glass (BIPV)

Glass technology is a science on its own, but couple it with electricity generation from the sun and you have an amazing solution. Glass technology is progressing at a startling rate. Transparent glass that can generate electricity is already with us. In the next few years, we will see demand increasing for building integrated photovoltaic (BIPV) technology. This growing demand will drive down the cost of materials that can turn a building's facade into a solar power generator. Solar energy generating glass, and similar innovations, will begin appearing more and more in new building construction.



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CO2 soaking waterproofing

Reducing greenhouse gases is on everyone's mind, especially with COP21 recently concluded in Paris. This sets the stage for a rise in products that absorb CO2 greenhouse gases. This technology is already used in waterproofing products, for example.

Battery storage

Battery storage today is where LED technology was three to four years back. The cost of battery storage is likely to fall so much that it will become more feasible to run your own electricity generation plant at home than tapping into the main supply grid.

Waste-to-energy technology

The cost for vacant land is becoming more and more expensive. So is the cost for dumping waste on landfills. Coupled with the rising cost of electricity, this is resulting in innovations to produce electricity from various types of waste.

EV charging stations

Electric vehicles are here to stay. While not yet mainstream, in the next few years several motor manufacturing companies will produce plug-in hybrid vehicles on their standard models. They will have an electrical engine supplemented by a range extender using petrol. Properties offering charging stations for these vehicles will have a competitive advantage.



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Water generation

Water is a big concern for most of us, even though the price of water is still relatively cheap in South Africa. Technology that generates and purifies water from a humid environment is already in use. We will see this technology in large-scale applications and buildings soon, especially near coastal regions.

Green building certification

While not strictly a single technology, it is increasingly difficult for businesses to justify occupying or buying a building that isn't green-certified or benchmarked. This is already the case in several countries around the world where landlords struggle to sell a building because it doesn't have sufficient certification standards.

ABOUT WERNER VAN ANTWERPEN

Werner van Antwerpen is the head of sustainability at Growthpoint Properties. His mission is to ensure that Growthpoint's properties are on the forefront of technological innovation in their drive towards greener buildings. He is passionate about creating a more resource-efficient built environment. Van Antwerpen has a doctorate in nuclear engineering as well as several international degrees.

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