

# Sustainability goes mainstream: How health and wellbeing is changing real estate

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## ABSTRACT

Much has been written about how technology is disrupting the property market in terms of new information and services, but relatively little has been said about what this means for green buildings. This article shows how technology is democratising sustainability, giving ordinary individuals extraordinary new powers and, in the process, creating new markets and opportunities for forward thinkers.

**Keywords:** sustainability, technology, health and wellbeing, disruption

## INTRODUCTION

Health and wellbeing is the world's biggest social trend. Real estate is the world's biggest asset class. Many of the most sought-after jobs today did not exist a decade ago, and most of these are in technology. So what happens when these three worlds meet? We believe that we are witnessing a disruption to conventional sustainability in five significant ways, driven by social forces from outside the industry and facilitated by personal technology.

New technology is empowering ordinary people to both generate and consume data about the environment in ways never seen before, and to make a stronger connection between *where* they are and *how* they are. As a consequence, sustainability is changing from a focus on what we do to the environment to what it does to us. There is a new crowdsourcing of environmental information through new channels, allowing the public wider participation in an area once reserved for experts; real-time information is becoming increasingly important and available; transparency about building performance is gaining ascendancy; and demonstrating sustainable performance is moving from a costly, technical exercise to one that can be done easily in-house at virtually no cost at all.

The previously unmeasurable is now easily recorded, and smart companies see not just risks but whole new markets emerging. What we are witnessing is not mere citizen science or democratic sustainability. It is game-changing.

Property represents 60 per cent of global assets and exceeds, by one-third, the value of all other traded equities and securitised debt instruments *combined*.<sup>1</sup> The market for wellbeing products and services is one of the fastest growing in the world, and is now estimated at three times the size of the pharmaceutical industry.<sup>2</sup> Many of the most sought-after jobs today did not exist a decade ago; among them are app developer, cloud computing specialist, big data analyst and social media manager.<sup>3</sup> This raises a critical question: What happens when the world's biggest asset class encounters the biggest global trend and the introduction is through emerging technology?

We have been considering this as part of the WorldGBC's *Better Places for People* campaign and through the UKGBC Wellbeing Labs, a series of knowledge-exchange and implementation workshops. Based on this work, we believe there are some significant changes underway in sustainability.

## A MARKET READY FOR CHANGE

While content has changed in important ways, the *process* for achieving green building certification has remained largely the same for three decades. Information is still collected, assessed and reported out by a professional class of sustainable experts at a particular point in time, usually the design stage. Information about building performance, particularly on-going conditions, is not readily available and the market reflects largely a business-to-business (b-to-b) model. To the non-expert, the process may appear complicated and remote, with a value proposition that is not well articulated to, or understood by, the general public.

Contrast this with information about outdoor air quality that is increasingly online and free.<sup>4</sup> Much of the data is collected by experts, but now it can also be generated by ordinary people carrying personal, low-cost environmental monitors during a typical day.<sup>5</sup> Data is presented simply on a map and is easily understood and available on mobile phones. Perhaps most importantly, the information is influencing behaviour, as customers increasingly use this type of information in determining where they want to live, and how much they are prepared to pay.<sup>6</sup>

What would happen if the new tools being used to monitor the external environment were simply brought indoors? It would create all kinds of new risks and opportunities for companies, both owners and tenants. It would be a game-changer and, in fact, it is beginning to happen. The UKGBC is closely following these developments and working with member companies to understand the ramifications of a more participatory kind of sustainability. We anticipate significant changes to the traditional green building model, as sustainability becomes more personal, democratic, immediate, transparent and (virtually) free.

In a world where people are increasingly aware of what they put in their body, they know relatively little about what they put their body in. Even commercial green buildings, which are more transparent than most, do not have the consumer-friendly profile associated with other kinds of green products, which tell people what they are made of and why they are good for them. As a consequence, the consumer market for green buildings is underdeveloped, even though in other industries green and healthy products are thriving.<sup>7</sup> It is still difficult for typical building occupants to know how and why the green buildings they are sitting in are better *for them* than the conventional property across the street.

Historically, gathering data about building performance has been costly and difficult, with equipment that needed operation and interpretation by experts. However, new personal technology is enabling ordinary individuals to collect and disseminate environmental information *on their own*, through consumer-friendly environmental monitors and mobile phones. They can measure, understand and benchmark a range of environmental criteria known to impact health and wellbeing — air quality, light and noise levels, temperature, humidity etc. They can do this while sitting at their desks with only a few plug-ins; plug-ins that manufacturers are trying to incorporate into the next generation of phones so no additional devices are necessary.<sup>8</sup>

With an inexpensive device and an Internet connection, the entire world can now see environmental conditions at a specific postal code.<sup>9</sup> At the moment, most reporting is about external environmental factors (such as air quality), but new initiatives are underway to publicly report indoor conditions as well.<sup>10</sup> Add this to the predicted multiplication of sensors, and see that when it comes to sustainability it may not be long before everyone can know just about everything about everywhere.

## WHERE AND HOW

What if it were possible for consumers to make a connection between *where* they are and *how* they are, and then be able to measure and communicate that connection? This was something we identified in our work for the *Better Places for People* campaign, where the mission is to expand the demand for green and healthy places by making people aware of the impact sustainable environments have on their health and wellbeing.<sup>11</sup> The campaign's work products, most notably the Metrics Framework, seek to expand general interest in sustainability by making its benefits more personal and understandable, as well as less costly and technical.

We realised early on in the campaign that our Framework was situated in a changing and favourable milieu. Virtually on a weekly basis we witnessed the introduction of new products that allowed us to not only measure the physical environment we inhabit, but also our biological and mental responses to it.<sup>12</sup>

With the UKGBC Wellbeing Labs we have been working with companies to use low-cost environmental monitors and devices.<sup>13</sup> A number of organisations in our programme were able to make small but important improvements based on information that would have been unavailable to them just a couple of years ago. The ability to communicate quantifiable good performance to colleagues (and prospective employees and customers) is just one of the many benefits of the new technology.

Social media has opened a whole new world on buildings, so it is now possible to understand the performance of commercial buildings using sites such as TripAdvisor and Glassdoor. With the right search terms ('bright', 'noisy', 'clean', etc) and a few hours, it is possible to map an entire market of buildings based on what is essentially a free post-occupancy evaluation. Professionals can take this one step further and identify the teams (architects, FM providers, etc.) in

buildings that perform well (according to users) and this information can be valuable in vetting future project teams.

Thanks to technology, wearable sensors allow children walking to school to do the work once reserved for scientists.<sup>14</sup> Coming to the market are inexpensive products that instantly reveal all kinds of critical information: the quality of water coming from the tap; the amount of chemicals in the air; the levels of pesticides in your food. The products are new and will certainly have limitations (questions about accuracy remain), but over time they will improve and could, like the phones they plug into, become normal, indispensable parts of our everyday lives.

## TRANSFORMATION

The ability for people to understand their immediate surroundings through technology is having a transformative effect on sustainability in five significant ways as we set out below. Greater participatory forms of sustainability will create new opportunities and services and, most importantly, enable better environments and healthier people.

### Personal

The health and wellbeing agenda flips our concept of sustainability on its head. It is about internal rather than external impacts and hence enables sustainability to be 'owned' by the providers of indoor environments. Health and wellbeing affect everyone, can be understood by everyone, are sought by everyone. Health and wellbeing are basic and fundamental — you know when you have them and when you do not. Engaging with sustainability on these terms is easier for most people.

With health and wellbeing, we are seeing a shift in interest from what we do to the environment to what it does to us. Without the technology to measure (and understand the impact of) immediate environmental

conditions in real time, it is likely we would not be seeing the interest in health and wellbeing in buildings we are currently witnessing. We have had the capability to measure internal environmental conditions for decades, and have long known that environmental conditions impact individual health.

What is different this time is that people have the ability to discover information about themselves, by themselves and for themselves. It is personal technology (monitors, apps, online platforms and social media) that is enabling this. An interest in health and wellbeing, coupled with new technology, has shifted the conversation from *the* environment to *my* environment and enlarged the audience for sustainability.

### Democratic

A couple of years ago, how would you know about the indoor environment? How would you be able to tell others about what you had found?

It is not just about mapping the physical conditions for wider public consumption. There are apps that allow you to map how you feel by place.<sup>15</sup> The quality and amount of data about place on social media provided by ordinary individuals is astounding.

The companies now gathering the most information about actual conditions inside buildings are only about a decade old. They are not construction and real estate companies, they are technology and service providers. While technology ostensibly represents a threat to established practices and services, the upside to this (and opportunity for existing bodies and experts) is to engage with an audience that is far larger than it has ever been.

The technology coming to the market enables a veritable army of sustainability recruits who can take action in places where historically it has been lacking: in existing buildings, in secondary stock, beyond HQ offices, in schools and smaller types of

buildings for occupants who did not have the resources for experts or sustainability accreditation. It is now possible, thanks to technology, for all types of people in all types of buildings to have the kinds of information that was generally procured in high-end commercial property.

### **Immediate**

The gap between design and performance is well known in sustainability circles, and (rather surprisingly) accepted as commonplace. But what would building occupants make of poor performance were they able to know? How might they use this information?

Interestingly, we are beginning to see new environmental monitoring technologies used strategically, with owners measuring conditions before tenants move in (to mitigate risk) and tenants monitoring conditions in advance of a rent review (to be able to challenge building performance and credentials) or as part of due diligence. Any potential occupant in any type of building carrying a simple device can now perform a number of tests during a typical walk-through, including light and noise levels, temperature, humidity and air quality. They can have the results before they leave the building.

Simple technology and online platforms are emerging to provide real-time information about the quality of indoor environments. New certifications, such as RESET, address concerns about design-based credentials.<sup>16</sup> The benefits of providing real-time environmental information are obvious, from enabling better management decisions to providing more accurate information at the time of a transaction.

### **Transparent**

What technology promises to do is make certain elements of building performance more accessible to the general public.

Any visitor to a building, be they an employee or customer, can easily measure and publicly display online the objective physical conditions within a building. Social media sites are now making subjective assessments of commercial real estate more available, so that prospective employees and customers know much more about the experience of being in buildings. Up until now, it has been very difficult to answer a very simple question: what is it like in there? It is really astounding how little people know about the places where they spend the majority of their lives. In the same way that purveyors of other products entice consumers with the promises of health, we would expect that providers of healthy spaces will soon recognise there is a market for a more health-conscious consumer of places. With that will come a greater flow of information about how a specific building's performance can enhance human performance.

### **(Virtually) free**

Green buildings are found mostly in cities, among corporate clients, and in top-level commercial buildings. Smaller companies and non-corporate organisations can have difficulty gathering the resources or making the business case for a formal certification.

The opportunities for more kinds of companies and organisations to strategically engage with sustainability at a more accessible price point are growing rapidly. Since the technology does the monitoring and assessing, conducting a review of environmental performance is easy and can be done in-house.

As sustainability becomes a lower cost and less technical exercise, it likewise represents a better value proposition to many different kinds of organisations. We are witnessing a DIY element to sustainability thanks to personal technology, as more kinds of companies feel empowered to do at least some of the work on their own.

## WHERE ARE WE HEADING?

It is important to recognise that the changes to the built environment are coming from outside the industry and are the result of larger technological and societal trends. The drivers are undeniable. Some of the biggest players in technology — Apple, Google, Microsoft — are making major moves in the built environment, including apps to measure personal health and environmental conditions and online platforms about healthy building materials.

It is also important to note that experts are and will continue to be central in green building certifications. Consumer monitoring technologies may be more available, but they do not have the accuracy of professional equipment, nor do they provide the kinds of analysis and remediation guidance most companies need. The accuracy of personal technology means that devices are best thought of as indicative rather than authoritative, although we can expect them to become more reliable over time.

New companies in industries such as food and beauty are upending traditional leaders by appealing to a consumer who is making connections between sustainable products and better health. Already consumers are interested in what they put in and on their body and making the healthy choice. This is not traditional, altruistic sustainability — it is personal and self-interested and, as a consequence, green and healthy products are increasingly outperforming the market.

As more and more sensors get placed in everyday items such as mobile phones and wearables, it is clear that better information will enter the marketplace. Technology is disruptive, but it is also constructive. Think of the opportunities for ordinary individuals to make healthier choices based on information they never had before. Think of how new knowledge will create changing expectations from government, industry and the public. Think of the new-found capabilities

for professionals of all kinds to profit personally by benefitting everybody.

The smart companies will do what they always have done and that is take the previously intangible and make it profitable. They will not respond to the market that is — they will make the next market to come. Already, there are new companies in the real estate industry that are using online platforms, new data streams and a customer-friendly approach to displace conventional actors and practices. This ‘proptech’ revolution is just beginning, and as yet there is a gap in effectively communicating sustainability information. This is very likely to change as companies seek to appeal to a more general audience that is increasingly discerning and receptive.

Real estate has been called the last imperfect market in the world, but this label may soon become obsolete. Technology has and will continue to empower consumers to make better, more informed choices about places that impact them and their families. This is already affecting the attractiveness of some kinds of properties and being reflected in the prices they command.

In other consumer markets, products that promote health and wellbeing outperform conventional products by miles. Although the market for healthy real estate is just emerging, why would we expect anything else?

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