

# Bulletin

06

Summer 2020

Disruptive  
Innovators  
Network

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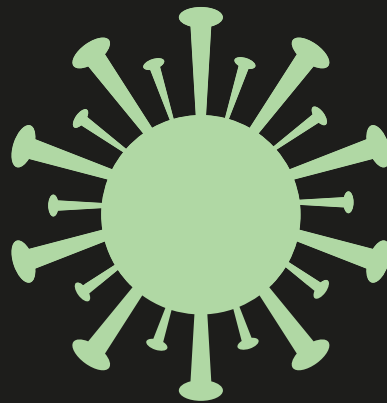
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FROM

EMERGING

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HOUSING**



Ian Wright

# Summer 2020

**D**ear Colleagues welcome to DIN's second bulletin of the year and what a year it has been so far!

In this edition we are focussing on helping members understand what comes next after COVID, with a spotlight on the future of the workspace, and on the greening of IT. I also wanted to share the headline news from our recent members survey. Firstly, a big thank you to all of you who took the time when you would have had other pressing priorities to give us your views and thoughts on what you want from DIN.

## Members survey:

### How would you describe DIN?

The key survey outcomes were as follows:

1. Members join DIN because you want to think and do things differently, particularly to look at innovation beyond the traditional housing sector
2. Members appreciate how DIN gives you the push and inspiration to accelerate and scale your thoughts and projects and change the way you do business
3. Members welcome the sense of community and engagement DIN has created for likeminded leaders who want to explore and experiment
4. Members are loving the challenge DIN is bringing to your thinking and view of the world; "you make me think, you challenge me, you inspire me" was one of my favourite member quotes
5. Whilst members value the online events and networking opportunities, nothing beats coming together face-to-face for the magic to happen
6. For where we go next, it is an almost equal split between a) acting as the sector's tech assessment lead people and b) leadership and c) new business models
7. The final point is the clear call for DIN support in implementing innovation and to connect you to others in the housing space doing similar things

In a challenging year, I have to say this really gave me a boost to know that what we are doing is making a difference. Hopefully, you will notice a lot of the points you have raised being picked up and acted on over the coming months.



### What should DIN prioritise?

#### Virtual site visits

So as the nights begin to draw in, how is DIN going to inspire and support members over the coming months?

Firstly, whilst we can no longer deliver our experiential learning programme of study visits, we are planning to try a couple of these out virtually. Under our Inside Innovation series members will get the chance to see and learn from:

- ▶ AO.com
- ▶ Amazon Seattle

#### DINLabs

One of the things DIN is able to do as a membership organisation is to bring the innovation community together in a safe space to test and learn without the risks of going alone.

We know from our survey that members want more collaboration opportunities. DINLabs will help achieve this. DINLabs provides space to take part in discovery learning projects that will allow us to rapidly prototype solutions to problems — whether that be with a new tech entrant or to test the value of a new business system. Areas of focus already lined up include:

- ▶ Low touch/No touch economy — Augmented reality pilot for delivering repairs and self service
- ▶ Rethinking stock condition surveys — Can thermal imaging work in managing stock assets?
- ▶ Rent arrears as a service model — Is it possible to deliver rent arrears on a service model basis?
- ▶ Future of the workspace — home, office and virtual?
- ▶ Self-managing teams — Can the Buurtzorg model work in social housing?

*Until the next bulletin, stay safe and innovative!*

Ian Wright  
Managing Director, Disruptive Innovators Network

Founding Partner



Delivery Partners



## Theme 1: Emerging from Covid



Sasha Deepwell

# Leadership and learning from COVID 19

Sasha Deepwell is Chief Executive of Irwell Valley Homes

## **W**e already had 'responding to pandemics' on our risk register

The Avian Flu epidemic in 2005 was in our minds when we refreshed our risk register and business continuity plan in 2019. The plan had already been improved due to floods and the horrific fire at the student flats block in Bolton, which was adjacent to our apartments. We recognised that we are now living in an age of epidemics and uncertainty and that we needed to plan for the next incident. This meant that we were well prepared for COVID, although we have learned a lot that we did not foresee.



## **We had already introduced flexible, agile working for staff**

We went live in May 2019 on a radical transformation of how and where we work. We closed all our three (leased) offices, went fully digital and fully implemented agile/flexible/mobile working. We installed a new telephone system (all calls could be answered on laptops with headsets) and started using Microsoft Teams for colleague meetings.

We agreed that every member of staff could use multiple devices for their work, appropriate to the task at hand. We introduced flexible working hours (removing flexitime) and adopted a 'management by trust' approach to colleague management. All of this was led by our Colleague Forum and negotiated with the Trade Union.



Sasha and colleagues using the Soapworks workplace hub

We recognised that colleagues would still need a physical base for problem-solving meetings and to connect with colleagues so we leased a large space in Soapworks, a workplace hub in Salford, with tram and bus services connecting to the areas where our colleagues reside. We have retained a small number of more traditional desks. However, overall, our space is an open plan environment with a variety of workstations open to all on a hot desk basis. The idea was that staff would come in for meetings and use the hot desks for follow up work. We all choose where to sit, based on the activity we are doing that day. There are three meeting rooms (small, medium and large) but most people prefer the open collaboration space we have. Between 30 to 50 staff use the hub every day, including using the space as a collaboration zone for customers.

Notwithstanding the lease cost of our collaboration space, we will achieve net savings of £1 million in office rental costs over five years. We are also reducing our carbon footprint — by reducing our office footprint and lessening the number of colleagues commuting journeys — thus aligning our business strategy towards helping Greater Manchester Combined Authority meet its 2038 carbon neutrality target. Just as importantly, we have improved the work/life balance and well-being of our colleagues.

### **We have learned a lot about how to adapt flexible home working due to the increase in home working caused by the pandemic**

We learned that home-working staff may suffer from an increase in isolation and a reduction in the sense of 'belongingness' to the organisation. Home working can be problematic where staff have small children and, as in this epidemic, schooling and childcare are severely restricted or simply unavailable. We learned not to arrange meetings at school pick up and drop off times.

We learned that staff living in overcrowded conditions or lacking a home office find homeworking hard to deal with. We learned that meetings held by video conference empower introverts and constrain extroverts (which may be a good thing!).

We learned to select the best communications channel for each activity. We started off using a mix of Teams and physical presence for internal meetings, but the use of Microsoft Teams has really taken off and is now the default digital meeting option. We are using Zoom for meetings with residents and they really like it as it gives them a greater sense of access to me and my senior colleagues.

### **We learned to adopt the work environment that suits the task. For example, we learned that creative work and problem-solving meetings can be better/more dynamic face-to-face.**

We learned to adopt the work environment that suits the task. For example, we learned that creative work and problem-solving meetings can be better/more dynamic face-to-face. The Soapworks collaboration space is our response to home worker isolation and the need for some face-to-face meetings and it has worked well. We have introduced a weekly 'live chat' with all staff where managers connect with their teams to talk about non-work issues to counteract the isolation of not being physically together. Colleagues have put on quizzes and meditation sessions and our well-being buddies have contacted their colleagues just for a chat.

### **As a leader, COVID 19 has been a learning experience**

Although we were prepared for COVID, we had not considered the likely length of the pandemic (including a possible 'second wave').

We have handled the immediate crisis very well, but we did not foresee the difficulties in transitioning to a 'new normal' or 'next normal' as this is more likely to be. For example, the fuzzy situation post-lockdown means that front line staff need to make 'on the spot' judgements on when it is safe and essential to visit residents. Similarly, shielding arrangements for residents and staff need to be recognised when we are delivering services.

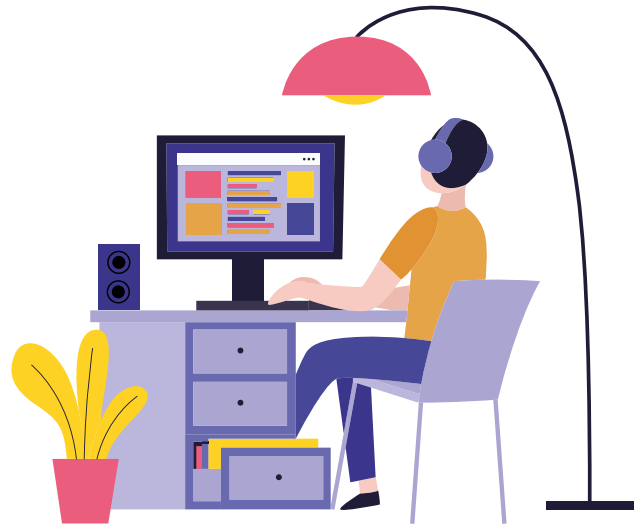


The crisis made me reflect on our purpose.

At a strategic level, COVID reinforced my view that the organisation should be customer, place and property centric. We need to maximise the potential of communities and colleagues and ensure that tackling poverty and inequality underpins everything we do.

At an operational level, we need to reduce the number of visits to tenants' homes and maximise what we do when we do visit. In tackling poverty and inequality, we need to embed this objective in our work around rent levels, service charges and energy efficiency.

The pandemic demonstrated the intrinsic adaptability of our staff and has encouraged me to develop a more bottom-up approach to resolving problems and responding to new opportunities.



## We need to maximise the potential of communities and colleagues and ensure that tackling poverty and inequality underpins everything we do

Our new Customer Offer was agreed, online, by 2000 residents. But we need to spend even more time listening to our customers and offering more choice in terms of services — which we develop on a co-creation basis with residents. For example, we are co-designing our new customer web portal with tenants to ensure that it really does meet what they want from a digital experience, while continuing to provide human contact where this is needed.

I was delighted that we have done so much with external agencies during this crisis. We shared a joint procurement hub with health and local authorities. This enabled us, for example, to aggregate demand amongst sixteen other associations in the Greater Manchester Housing Partnership for PPE and managed the collective procurement process on their behalf.

However, I would like to have collaborated even more. COVID exposed the weakness of our links to the local community, voluntary and charitable sectors, despite our participation in humanitarian hubs across Greater Manchester. We were asked if we could provide money rather than people as agencies were struggling to source funds, so we did. We also need to reinforce our commitment to continuing to break down barriers between our organisation and health and local authorities, especially where we are all supporting the same individuals and families.

On a personal level, digital videoconferencing has made it easier for me to communicate with teams and support individual staff. I need to spend more time doing this!

### I now have a clearer idea of how to prepare for the next epidemic

We need to redesign our contact with tenants to check on their welfare as part of an increased focus on tenancy sustainment and health and wellbeing. We need to go even further in accentuating agile working, underpinned by digital cloud-based technology. We need to strengthen our relationship, and develop better 'role demarcation' lines, with the charitable and voluntary sectors. We should fund and tap into the services they offer — such as befriending — rather than trying to do it ourselves.

## On a personal level, digital videoconferencing has made it easier for me to communicate with teams and support individual staff. I need to spend more time doing this!

We learned that COVID, and potentially future epidemics, hits BAME communities the hardest and that we need to focus our crisis engagement on them. We learned that home is not a safe place for many, particularly women. We also learned from the LGBT community that anxiety and isolation was heightened during lockdown. And a recent report from disabled people identified that the rapid withdrawal of support to them during lockdown has been devastating. The pandemic really has exposed the deep inequalities pre-existing in communities and strengthened my resolve to do more to tackle this. ■



Kursty Groves

# Reshaping the workplace

**Kursty Groves is founder of Shape, a consulting firm that specialises in co-creating the best places to work.**

**There is a clear link between innovation and the use of space in the workplace. My background is as an innovation consultant. I have always been intrigued by the fact that a workplace environment can be a barrier to inspiration, particularly as I come from a design background.**

When writing my first book on the topic, over a dozen years ago, I visited over 50 companies that seemed to value the role of space within the process of innovation. In this book, I uncovered what they did with their spaces to support creative behaviour and activity. My second, and more recent, book looks at the science behind the why space matters for innovation. I found that, as I anticipated, the use of space can play a key role in stimulating creativity and ambition.

The impact of space has on innovation can be defined by exploring the tangible physicality of the space and its 'hygiene' qualities, like light, temperature, colour, noise and so on. Then, on top of that, there are layers that impact on how space encourages people to think, act and interact with each other. Both the 'tangible' and 'intangible' aspects of spatial design impact on innovation.

**There are at least four types of creative space**

I view space from an innovation perspective, not a real estate one like most designers. The four types of creative space that I defined about 15 years ago are:

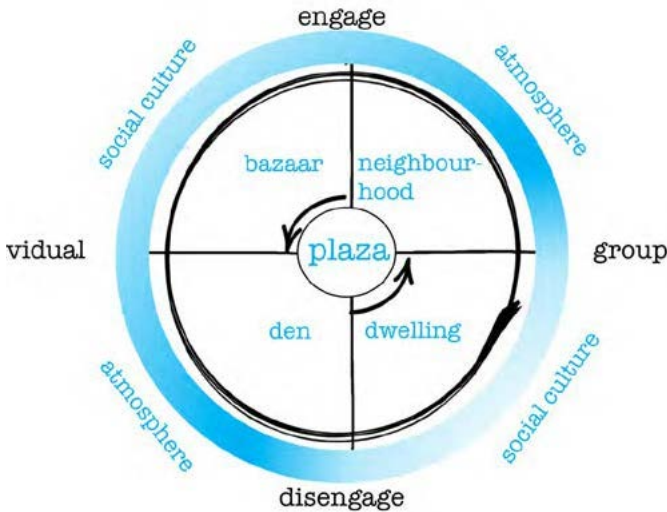
- ▶ **Space to collaborate** — engaging with other people
- ▶ **Spaces that stimulate** — surrounding yourself with information or ideas or going to a place that will stimulate you
- ▶ **Space to reflect** — disengagement, switching off from technology and being alone with your own thoughts
- ▶ **Space to play** — environments that enable social 'play' space which can also accommodate experimental spaces, such as a 'hacker' space or a 'maker' space. It might, for example, be a room which resounds with thoughts and ideas and you do not need to clean it down (e.g. your whiteboard) when your session finishes.

This use of space to stimulate innovation plays out over time again and again. I have noticed more organisations seeking flexibility through the adoption of 'activity-based working'

A recurrent flaw in the way that workplaces are designed is inadequate attention to the whole range of activities being performed.



Nor is sufficient weight given to wellbeing of staff — the physical, psychological, and social aspects of wellbeing that impact on performance. The thinking and play sides of work, requiring quiet rooms and social space respectively, have often been overlooked but this will change coming out of lockdown.



One way of translating innovation into design, is to think about a crosshair x/y axis. Along right-hand axis you have 'engaging' and on the left axis you have 'disengaging'. At different points in the creative process people will need to engage or disengage. 'Engaging' might apply to ideas or people or the external environment. It might involve external research, visits to innovative external sites and building or trialling something. 'Disengaging' activities are those where you need to escape from your work environment to be creative — by going into deep thought mode or releasing creativity by just switching off or going for a bike ride or a walk. Engagement and disengagement are both necessary aspects of the creative process.

**Reshaping the office environment and the culture of work has become a necessity because of the COVID-19 epidemic**

The shift to homeworking has seen huge benefits in terms of reducing commuting time, increased productivity and in many but certainly not all cases) a better work/life balance for employees.

However, this is a result of a mass enforced experiment — lockdown and associated restrictions on human activity — and we are having to learn and respond in real time. There are four key steps in managing the risk of COVID and making the transition to a 'new normal'

**There are four aspects to this transitional framework:**

- ▶ **React** — what are the practical steps we need to take to get people back to the office or help them to continue to work from home?

- ▶ **Reflect** — what can we learn from the experience of our staff during lockdown?
- ▶ **Re-imagine** — what might be possible for us as an organisation and where might it go?
- ▶ **Reshape** — what steps do we need to get there working out the plans to get to the next step, but with that longer-term transition in mind?

Throughout all of this, organisations need to be flexible to accommodate changes in the virus threat level, relaxation or re-imposition of social restrictions and local lockdowns.

Where organisations are getting it wrong is when their response to the virus threat is merely physical — such as the use of hazard tape and one-way circulation systems. Whilst this may be necessary, it may feel like a 'hazard zone' environment and this may engender an alarmist cortisol-raising psychological response in employees. Yes, this is a safe environment, but it is not psychologically safe.

**Where organisations are getting it wrong is when their response to the virus threat is merely physical — such as the use of hazard tape and one-way circulation systems it may feel like a 'hazard zone' environment ... Yes, this is a safe environment, but it is not psychologically safe**

In addition, organisations should be thinking hard about enabling teams and individuals to adapt to that 'new normal'. If the future involves hybrid working, how does that work and what phases do we take people through to get there? When people return to the office environment, how are we going to speak to them — visually and verbally — in a tone that reflects the kind of employer we want to be and the culture that we want to foster?

**'Blended work' to be a key feature of the 'new normal'**

I think we are going to see more of what I call 'blended work', where people no longer work in a fixed location, whether that be an office or workplace or from home or a local 'business hub', but in an amalgam of these. This will involve staff managing their time and workloads in a quite different way. I expect that the 'blended work' environment to be more inclusive and to enable people to attain a better work/life balance. But I do not think there is a 'one size fits all'. Instead, businesses will choose the direction that best equips their teams and people to operate.

**It is short-termism to see the increase in home working solely as an opportunity to save money by reducing real estate costs**

Organisations should re-route at least a proportion of any savings into digital infrastructure, learning events and social activity.

There is no way that the office is 'dead'. Companies that operate on a 100% remote level tend to be digital companies, that started out like as fully remote; their cultures built from the ground in that way. Most organisations are different; they are migrating to a more remote ways of working having established cultural norms in physical space.

Homeworking may be impractical where the employee lacks the space for a home office. In general, productivity may have risen by 40% during lockdown but that is not the case for everyone.

Another aspect of inequality is lack of the experience and capability to deal with workplace stress. There is a big inequality of interaction when some people are onsite, and others are offsite. For example, someone can be on site and have an emotional reaction to a terrible meeting and other colleagues will notice and provide support. Whereas if it happens in a homeworking situation nobody may notice that emotional reaction and the support may not be there.



Moreover, the information and communication bonds are so much stronger where people are in a room together than with the offsite person. If the offsite employee lacks a strong underpinning relationship with onsite staff, problems can occur such as a feeling of exclusion, and lack belonging, trust and understanding.

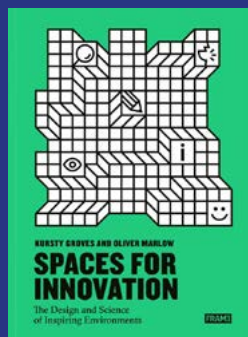
We are learning about these things now and we will see protocol and etiquettes emerge for managing virtual interactions.

The best situation is where an organisation is looking forward and saying: 'this is an opportunity to reinvent and reshape into the kind of organisation that we want to be.' What does that look like? How do we enable that? How do we bring our people with us and manage their wellbeing?

As organisations, we need to ensure that, right now, people feel safe and comfortable regardless of where they are working. But we need to take this enforced opportunity to look beyond the pandemic and reinvent the way that the organisation wants to work. ■

**Click to purchase**

Spaces for Innovation  
by Kursty Groves  
Knight & Oliver Marlow







Adah Parris

# COVID-19 can change the way that we think

Adah Parris is a Futurist, Cultural Innovator, Board Advisor and Keynote Speaker

**C**COVID-19 is giving us a unique opportunity to slow down and reflect on who we are, why we think what we think and why we do what we do

Western society, pre-COVID, was either reminiscent with nostalgia for what once was or fixated on predicting what our future world and selves might look, act and feel like. I question how many were living in the present.

COVID has forced us, as a human race, to live in the present. The past is now unravelling. We do not know what the future is going to look like, let alone how we are going to survive this virus. This new and uncertain world is causing trauma and loss for many.

COVID is also forcing us to reflect on our lives. In a sense, it is like that deathbed moment when we wonder, if we could live our life again, what we would do differently. How would people remember us? Only, in this case, we have so much more living to do. We can take this opportunity to create a better future because, for most humans, the past has not served us well.



The world, at the onset of COVID, is a carbon economy focused on economic growth above any other consideration with systems that force humans to act almost like hamsters on the wheel of global competition. Major economic and social systems have been primarily focused on market share, profitability and shareholder dividends, but that is changing, slowly.

**Our economic and social systems deny human potential**  
Several factors conspire to deny human potential. We have been taught that technology can solve our problems. The terms Big Data and 'data driven decision making' remove the essence of being human in their language and, in many cases, their approach. COVID 19 has enabled us to recognise that technology is only a tool — it is not the answer. A few years ago, I discovered the concept of narrative economics: the story behind the numbers. Data is only a gateway to knowledge. The answer lies in human connections and stories.

Culturally, we are encouraged to look to leaders for answers. We have traditionally followed Joseph Campbell's Hero's Journey in how we tell stories. The leader is a lone adventurer, a solitary hero on a quest. On the way, they meet a guide or shaman who gives them wisdom and knowledge. Emboldened, the leader continues their journey, and we follow. However, COVID-19 has demonstrated that leaders do not have all the answers and that looking beyond their echo chambers of the same pool of 'experts' may yield surprising results.

The systematic process of 'Othering' – to view or treat a person or group of people as intrinsically different from and alien to oneself – has marginalised the voices of so many. The stories of elderly or disabled people, BIPOC (Black Indigenous and People of Colour) communities and young people are rarely heard by those who shape our world. If it has taken a pandemic to connect social housing providers to their neediest tenants, then something was missing before.



Higher than average BIPOC COVID infection/mortality is partly due to the 'kettling' of minority communities into the poorest and most overcrowded forms of social (and private rented) housing. Othered communities are forced into these marginal spaces with very little air or space for self-isolation. These places and communities thus become a Petri dish for infections to spread. We see Othering and kettling again in the primarily BIPOC roll call of the Grenfell dead. The social housing sector needs to recognise this and its responsibility in creating and maintaining this discriminatory and, as we have seen, tragic status quo.

### Collective intelligence is the key to building a better future

Innovation at its most basic level means problem solving. And all humans are problem solvers. Problem solving is like a jigsaw and each of us has a vital piece of intelligence that can solve the puzzle. This is what collective intelligence is about.

### Let us take this opportunity to embrace the diversity of knowledge, insight and behaviours

We can only innovate and solve the housing crisis for everyone if we recognise that each of us has a unique piece of information that is equal to any other perspective.

Collective intelligence has the potential to mitigate unconscious bias and other discriminatory mindsets, beliefs and practices. Even people who are not inter-personally racist are part of a system that benefits some and discriminates against others. By opening our thinking to other views, and the voices of the Othered (deemed to be 'non-professionals') we are designing services for, we are more likely to break down the glass ceilings of institutional and systemic racism. However, we need to also recognise, acknowledge and design for those who do not even know that the glass ceilings exist.

Before making decisions, we need to listen to 'the wisdom of the crowd'. We talk about it but how often do we make sure that our processes actually enable us to integrate that wisdom into our thinking. Let us take this opportunity to embrace the diversity of knowledge, insight and behaviours. This means actively seeking out other sources of knowledge – from our customers and from innovation found outside the sector or independent of Western civilisation.

If we do not do this, how can we say that we are designing for humans? ■



## Theme 2: The greening of technology

# The importance of environmental sustainability in housing

By **Ellen Wilson, Sustainability and Smart Cities Lead, Microsoft Public Sector UK**

**Who could have missed the** **omni-present subject of sustainability over the past year?** Through Greta Thunberg leading the way with the Friday protests and David Attenborough's Blue Planet programmes, the sustainability agenda has been impossible to ignore.



Local authorities and social housing providers are also responding to the concerns of their staff and residents and increasingly acknowledging their responsibilities when it comes to sustainability and carbon neutrality. On top of this, they are looking for innovative solutions to improve both sustainability and the quality of life of their residents.

A recent survey conducted by Microsoft in partnership with UKAuthority, found that 60% of local authorities have declared a climate emergency, Research by Microsoft's Customer Success Unit in July 2019 showed that 80% of Microsoft's largest 500 customers are publicly supporting the worldwide **UN Sustainable Development Goals**, which help organisations prioritise sustainability objectives and develop shared targets and behaviours with their partners, suppliers and customers.

### Technology's role in sustainability

Whilst it is great to see this focus, for it to be successful it also requires embedding sustainability into broader digital transformation and efficiency strategies. Digital equipment and services have a role to play with the aim of sharply reducing energy consumption, extending life cycles, and encouraging recycling and re-use. Internal improvements can be closely aligned to the efficiency agenda, contributing to the way housing providers work to make themselves financially and operationally sustainable long term.

The other strand involves the use of technology and data — taking advantage of advanced analytics, machine learning and artificial intelligence (AI) — to support broader sustainability efforts, particularly in the building of a green critical urban and rural infrastructure. The emergence of the internet of things (IoT) and increasingly sophisticated data systems provide the scope for a more detailed and forward-looking approach to a housing provider's role in transport, buildings and public infrastructure.

## Maintenance efforts could be reduced by using drones to inspect power grids

Looking at sustainability through a housing lens very quickly shows some major areas of opportunity, which some social housing providers have been investing in for some time; for example building and managing homes that are energy efficient and thus reducing your resident's bills. Existing work to build sustainable communities needs to be ramped-up, for example by including sustainable transport options — an area the UK has some catching up to do compared to other European cities.

Housing providers can also look at decreasing their carbon footprint e.g. by adapting their own technology footprint to become more sustainable by adopting cloud computing. Microsoft's cloud services are up to 93% more energy efficient and 98% more carbon efficient than traditional on-premises data centres. But beyond this is a growing range of innovative solutions emerging from our partners — the capabilities of which are increasing daily with the expansion of IoT and advances in machine learning and AI.

### Internet of Things

The use of smart meters and IoT devices to gather data that help manage e.g. water, heat and temperature seems a quick win. Microsoft's partner Iconics is a veteran in this space, having worked with Microsoft in re-fitting our Headquarters in Redmond into a Smart Campus. [The full story can be found here.](#) Iconics are also engaged with a number of housing associations in the UK. For further information please get in touch.

Maintenance efforts could be reduced by using drones; Microsoft partner [e-smart](#) has developed a solution that uses Artificial intelligence and drones to inspect power grids. Similar technology could be used to pick up on heat fluctuations in housing developments.

The concept of a digital twin is in the relatively early stages of its evolution, but it is emerging as a potentially powerful tool in supporting the environmental effort within city planning and infrastructure management.

A digital twin is a digital representation of a physical asset that can harness data to provide information on its design, state, condition and history, and enable the sharing of the data to support informed decision making. It gives housing providers a view of the details and implications of planned changes in a city before the big investment decisions are made.

Infrastructure software company [Bentley](#) has been working with a number of authorities to develop the concept and take it into real world usage, with sustainability being a major factor in its application.



### Remote working post Covid 19

The recent pandemic forced many employers to enable their staff to work remotely, and I feel this is a theme that should continue as we head into the future, thus reducing congestion through travel to offices and improving air quality.

Productivity suites, such as Microsoft 365 and its collaboration tool Teams, now have a wide range of capabilities for sharing and amending files and presentations, and to support conversations between people in different locations which allows true remote working.





**M**icrosoft is heavily committed to sustainability, both in the way it runs its own business and in its engagement with partners and customers.

Since 2012 our operations have been carbon neutral — due largely to an internal carbon tax that funds reductions, clean energy and offset projects. However, in January 2020 we announced our commitment to become carbon negative by 2031 — and to remove all the carbon emitted directly or by our critical consumption since Microsoft’s beginnings in 1975. We will move to 100% use of renewable energy by 2025 and use only electric vehicles on global campus operations by 2030. From next year, carbon reduction will be an explicit aspect of our procurement processes and, via a \$1 billion investment fund, we will accelerate development of new carbon reduction and removal technology.

In April 2020 we also announced our commitment to biodiversity — by building Planetary Computer, a platform that can provide access to trillions of data points collected by people and by machines in space, in the sky, in and on the ground and in the water to improve our understanding of biodiversity and how we can save it.

If you’d like to hear more about how technology can enable housing providers to be more sustainable) you can watch our on demand webcast on [Sustainability in Public Sector here](#)

You can also download our whitepaper “[how green is our digital](#)” [here](#)

Finally please don’t hesitate to get in touch with Ellen Wilson ([elwilson@microsoft.com](mailto:elwilson@microsoft.com)) if you have any questions or comments. ■



Tom Greenwood

## Reducing the carbon footprint of websites

**W**holegrain is a different kind of web design and development agency. We work mainly with non-profit and purpose-led businesses, whose mission extends beyond financial profit. We are the first web agency to look at the environmental impact of websites. We have built a carbon data calculator, which is the first tool that can determine the specific environmental impact of any web page.

**The internet generates roughly the same amount of CO emissions as the global aviation industry.**

Big tech is now recognising the energy conservation agenda. For example, most of the major players have made a commitment to achieve carbon neutrality by a specific date. Microsoft has recently gone further in its commitment to wiping out its historical carbon deficit.

At this point, it is unclear how Microsoft is going to achieve that objective because — beyond planting trees — carbon capture technology is very much in its infancy. However, the Microsoft commitment is ground-breaking.

Even if the company takes 10 to 15 years to eliminate its carbon deficit, the fact that the emissions it creates today are going to be cleaned up tomorrow is more radical than any general commitment to meet carbon neutrality by 2035.

Microsoft's commitment also sets out a new benchmark for tech companies, big and small. I have spoken to a lot of smaller tech companies — of a similar size to us — and they are now committed to the same objective.

#### **All organisations can take steps to reduce their IT carbon footprint**

Procurement is key. Governments can have a lot of impact through their RFP processes. But all organisations — large and small — can specify carbon neutrality in their RFP's and reward IT providers who make that commitment when awarding contracts. The aggregated impact of lots of small actions can make a big difference.

### **Our aim is to develop web products where the environmental impact is tangibly lower, but the user experience is just as good if not better.**

Eliminating in-house data centres is another major step. Data centres are hogging more and more energy. Data centres can consume as much energy as a medium-sized UK town. A typical data centre is an anonymous warehouse. You might have seen one but never have been aware of its purpose. And there a lot of them all over the world.

Adopting cloud computing enables organisations to eliminate their data centres and pass the environmental load to the cloud provider. Cloud providers have intrinsic economies of scale that enable them to better manage



carbon emissions. Moreover, the pay-as-you go nature of cloud provision has an environmental benefit. It limits CPU usage to what is needed, rather than having servers whirring away waiting for the customer to turn up.

Website design or redesign is another contribution that any organisation — large or small — can make. All decisions about design, development and content have an impact in terms of energy conservation and the efficiency of the website itself.

#### **Wastefulness is the root of website environmental issues**

Wastefulness occurs in code — there might be a hundred functions in a code library, but the client may only need to use one or two. Web developers often add in code that is not needed because it is easier than stripping it out. As a result, large amounts of code might be burning energy in a server or at end-user level for no business purpose.

Wastefulness occurs in design — web developers overload the website with images, videos, and animations. Often this is at the behest of the client, who has seen things on other websites that they liked and inspire them. Many images do not serve user well — they reduce the space to add in chat facilities and increase website page loading time.

Wastefulness also occurs in content and production - in terms of creating content that is badly structured or not that valuable to the user.



### Our website development approach embeds environmental testing from the very start

Energy efficiency is built into our creative design and technical decisions. Our aim is to develop web products where the environmental impact is tangibly lower, but the user experience is just as good if not better.

- ▶ We begin by gaining an understanding of the client organisation's commercial objectives. We then seek an understanding of who their users are and what information they are trying to get out of the web page
- ▶ The next stage is to design a web solution that meets these goals but in a more efficient way
- ▶ We take a detailed look at design. We ask, for example, why the client is using ten different fonts where greater consistency and impact can be achieved by, for example, using only two?
- ▶ Images and videos are an obvious area to look at. In general, images and photos tend to involve large files, which increase the carbon load of the website. What is their purpose? Are they cheesy stock photos which add little value to the user? Do they enable the company to better communicate its offer? Do they make the transaction easier for the user?

If the images or photos serve no practical purpose, they should be scrapped. If they add value, and should be retained, we explore the most efficient way of delivering that image. How do we create visual interest with the smallest files possible? That might mean replacing video imagery with styles can be created solely in code — such as shapes, colour and animation deploying CSFs and vector graphics. Vector graphics are like an icon or illustration file which utilises much smaller files than a JPEG and other standard types of image file.

Accessibility is another important topic. If the client organisation fails to consider how the user is going to get from 'a' to 'b' it is wasting their time by causing them to load more pages than they should need to, and increasing their energy consumption

Accessibility is defined as how easy it is to find information, to link to external sources of information and to load the website when the user has (for example) a poor train Wi-Fi connection.



We seek to simplify and streamline content structure and navigation. This enables the user to find things more easily and load fewer web pages in doing so. By offering different navigation routes to known user groups, by mapping out key user personas and determining the key differences in what they think and are trying to achieve, we can make the user experience more efficient and less energy-consuming. In terms of the size of the file and the code, multiple navigation routes have a negligible environmental impact.

### The websites we develop are over 60% less polluting than on average

The websites we develop achieve this impact by virtue of being lightweight and efficient.

Naturally, the degree of emission reduction depends on the individual project. Some websites naturally need to be more visual than others. They might have legitimate reasons for requiring lots of graphics and videos.

However, even where CO emissions are reduced by less than 60%, the resulting website is less cluttered and faster loading which, in turn, results in more users, more hits and more sales. ■

### Disruptive Innovators Network Bulletin

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