

BUILDING COMMUNITIES FOR A ZERO CARBON FUTURE

Converting niche to normal



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“The key thing with choice is facts; facts and data. So many people just don’t have the facts. It’s about taking knowledge and making people more aware in order to make more informed choices.”

Emma Osmundsen, Exeter City Living

Foreword

On 15th March 2019 Exeter City Council, declared a commitment to make Exeter a Carbon-Neutral City by 2030 and others in the South West, including Bristol, have done the same. In July 2019, the Climate Change Act 2008 (2050 Target Amendment) Order came into force. This put into effect the May 2019 recommendation of the Committee on Climate Change, making the UK the first major economy to set a net zero emissions target in law with the aim of eliminating the UK's adverse impact on climate change by 2050.

The South West has long been home to businesses creating new ways to reduce our contribution to global warming but these targets provide a new impetus and opportunities to work towards a net zero future for the region.

The real estate and construction sectors are significant contributors to carbon emissions. With the target now set in law, what does this mean for the built environment and for all of those who work in the sector? Much has been achieved already with the British Property Federation reporting there has been a 20% reduction in emissions from non-domestic buildings and a 17% reduction in average household energy consumption between 1990 and 2016, a period where the economy grew by two-thirds, but it is widely accepted there is now a real need to accelerate change.

Trowers & Hamblins brought together a group of property experts in planning, design, transport, development, housing and energy to discuss the challenges, potential solutions and best practice not only for Exeter and the South West but also for the rest of the UK.



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Roundtable event

Attendees

| | |
|------------------------------------|--|
| Central | Patricia Brown – Director (Chair) |
| Vectos | Mike Axon – Director |
| LiveWest | Russell Baldwinson – Executive Director of Development |
| Carbon Green Consulting | James Blackburn – Director |
| AWW Architects | Kara de los Reyes – Co-Lab Studio Lead |
| Mi-Space | AJ Eaton – Divisional Director |
| Cornwall Housing | Chris Franks – Director of Homes and Investment |
| Exeter Science Park Limited | Harvey Gardner – Head of Property |
| Arcadis | James Halse – Director |
| Exeter City Living | Emma Osmundsen – Managing Director |

Hosts

| | |
|-------------------------------|------------------------------------|
| Trowers & Hamblins | Chris Rundle – Partner |
| Trowers & Hamblins | Oliver Williams – Senior Associate |

“We’re talking about deep complexity. Complexity and contradictions amongst government, ultimately we need clarity.”

Patricia Brown, Central





Communities: Mobility and social interaction

If Exeter is to meet its 2030 zero-carbon target then there will need to be fundamental changes to how (and how much) people move around. Currently, petrol and diesel vehicles dominate as both public transport options and public chargepoints are limited, particularly for those who live in the city's rural hinterland.

However, this doesn't mean investing in better public transport is necessarily the only answer – indeed creating a public transport system that is viable for rural areas is hugely challenging. Instead, one solution may lie in a growing trend for participating in a sharing economy.

Cars spend far more time parked than being driven which is highly inefficient. Car sharing services through which you can rent a car by the hour, and ride-sharing accessed via apps, are growing in popularity among the younger generations, particularly in London. Could this work for rural communities?

"If you're looking for one out of the 50 things you could do, one of them is creating the environment so that you can make the best use of the sharing economy. That might be buying rides, that might be sharing rides, that might be in fact not riding at all," said Mike Axon, Director at Vectos.

AJ Eaton, divisional director, Mi-Space, added

“Personal transport will change dramatically over the next ten, 20, 30 years but ultimately to this sort of Uber society where you have automated electric vehicles that you don't own.”

Kara de los Reyes, Co-Lab Studio Lead at AWW Architects, raised a concern “We need to seriously consider the waste stream, this can potentially be a big issue as a result of retrofit and replacing old technologies with new. We need to move from a throwaway society to a more circular economy. This may be the first hurdle that needs to be addressed.”

Creating the right environment includes changing people's mind-set, particularly among the older generation. The consultation for the new Langarth garden village near Truro is a good demonstration of this.

James Halse, Senior Account Leader at Arcadis explained that it started with a travel study that showed the number of people travelling in and out of Truro between 9am and 5pm was, per head of population, the second highest in the UK. On the plans for Langarth: “We had the older generations saying: ‘I want two parking spaces outside the front of my brand-new house in this garden village’. Then we went to a primary school and asked the children: ‘What do you think the village looks like?’ and they drew a road with lots of bikes on it. No cars at all.”

Transport choices are mostly driven by convenience rather than environmental considerations. Sharing vehicles may go part of the way to offering a convenient alternative but the cycles painted by the children suggests another option. This doesn't just mean pedal cycles but electric bikes and e-scooters. The latter are classified as Personal Light Electric Vehicles (PLEVs) and not currently road legal in the UK, if they were, they would help give people a greater choice.

But what if people needed to travel less in the first place?

Digital infrastructure could play a crucial part, with good quality internet access it makes it easier for people to work from home – something more and more people are doing, at least part-time.

Taking this idea one step further would involve addressing key economic drivers particularly for communities living outside cities like Exeter and Truro which traditionally attract a large number of commuters.

Aside from the job opportunities, one deterrent from working from home is the lack of social interaction but Axon suggested developing community work hubs could be a solution, particularly in the new garden villages, three of which are planned for the South West.

People also travel to visit friends and family and for activities which aren't available on their doorstep. "Social interaction is very important to us so how would you create that social interaction but actually reduce your movements and activities at the same time?" asked Russell Baldwinson, Executive Director of Development at LiveWest.

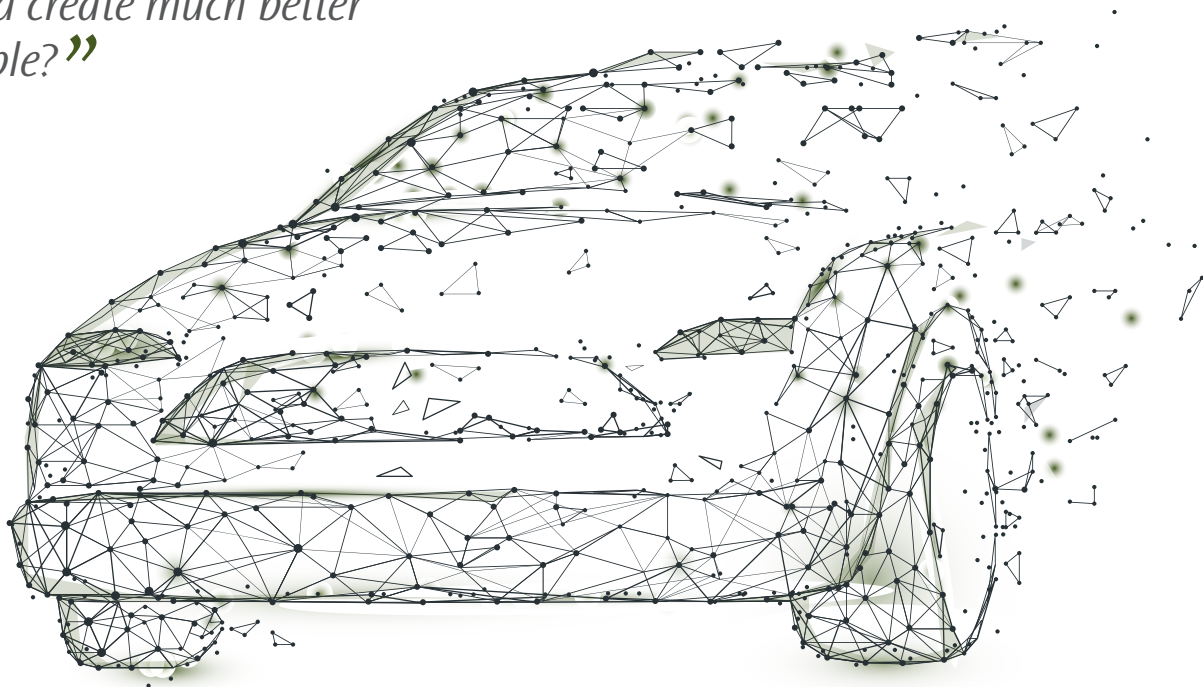
And there is also the growing ageing population to consider. Travel may be a necessity to access medical facilities and support services as well as maintaining that vital interaction to combat loneliness. Perhaps a different approach to placemaking and community infrastructure may be required.

For Emma Osmundsen, Managing Director at Exeter City Living, there is a need to focus on placemaking not just in the cities, but in a rural context.

Lessons can be learned from the past. The increasing complexity of modern living and working has accelerated human impact on the environment. "How people would have lived 100-200 years ago was completely sustainable and we have created a problem that we are now trying to resolve by looking forwards when the answers might be in looking back," commented Chris Franks, Director of Homes and Investment at Cornwall Housing.

Reducing the carbon emissions from travel is one of the most difficult challenges in achieving the net zero target. This is particularly true in the South West region. The real estate sector has a crucial role to play in reimagining a blueprint for our interconnected communities that rises to that challenge and still delivers the social cohesion on which those communities will thrive.

“ Why don't we create a fabulous place to live and work that's got a mixed community, mixed facilities and that is much more liveable and you reduce the time for travel and create much better lives for people? ”



Buildings: The drivers for change – incentivisation

Around 40% of the UK's carbon emissions are attributable to the built environment (see UKGBC [ukgbc.org/climate-change/](https://www.ukgbc.org/climate-change/)) and to address that requires fundamental change, but how might that be achieved?

Shareholder returns and profit are a powerful force and, for some at least, the financial benefits will need to be demonstrated.

Oliver Williams, Senior Associate at Trowers & Hamlins, makes the point: "It needs a much bigger shift when it comes down to construction costs rather than this whole culture of a race to the bottom and the cheapest is the best."

The key will be how and what incentivises the property industry to make changes: sticks like tougher regulations, carrots such as tax breaks or relaxation of planning rules, or the simple market driver of customer demand.

In some cities around the world, a radical 'stick' approach has already been applied to the built environment. New York is an example, where the city council has enacted its Climate Mobilisation Act. The centrepiece of the package is a bill that requires buildings over 25,000 sq ft to reduce carbon emissions by 40% in 2024 and then 80% in 2030. Fines are issued for missing those targets and rise over time.

“In 2024 it is probably just about affordable for developers and building owners to simply pay the fine but by 2030 it will be eye-wateringly expensive, ”

said Patricia Brown, Director, Central. For the city, there is a bonus above the reduction in carbon emission as it is estimated that the retrofit programme is going to create in the region of 260,000 jobs.

Could a similar scheme work for Exeter and the South West? Perhaps.

Baldwinson thinks part of the solution should be to offer choice: "If you say to developers, landlords or commercial organisations you would have the choice of six things and you have to do four of them. You're never going to get all six, but you will get some of them, and it's about prioritising what the different elements are. So you've got to get to ten points, this one's got two, this one's got one, this one's got three, this one's got half, a bit like the old code for sustainable homes, but it's about giving them choices, getting them to make that cultural change."

The problem remains the lack of a clear trajectory for improvements in the minimum energy efficiency requirements. This is potentially a big problem when planning the long-term retrofit of existing buildings to make them sustainable, particularly as they make up the vast majority of the UK's stock.

Building owners might invest in upgrading windows and insulation and think it is sufficient when that doesn't go far enough to meet the targets in the long term. More comprehensive retrofitting is more costly.

Osmunden questioned whether assistance might be required to ensure retrofits were sufficient for the long term and suggested positive incentives might help mitigate the costs. In Vancouver, for example, to help meet carbon reduction targets developers can build taller or use a slightly larger footprint.

“I think it's a great opportunity for local authorities and even for central government to look at sophisticated policy levers that will deliver a win-win, ” she said.

These types of top-down policy drivers will inevitably be part of the answer, but what may prove a stronger incentive is a shift in values (and therefore demand) from end-users. The younger generations – the tenants, homeowners, workforce and business leaders of tomorrow – are increasingly more focused on environmental issues.

Harvey Gardner, Head of Property at Exeter Science Park pointed out that graduates have started asking questions about sustainability and carbon footprint when looking at where to work: “That is quite a powerful thing. If you want to employ the best young graduates you’ve got to offer what they want and meet their expectations.”

The environmentally aware younger generation are already influencing some businesses behaviour and choices. Big corporates like Google and Amazon are opting for low carbon buildings with a focus on well-being as they recognise the commercial advantage. “I think sophisticated companies will be driving this more,” said Osmundsen.

And policy drivers aimed at those end users may also be a part of the picture. It has worked in the past; increasing car taxes has changed car-buying choices. James Blackburn, Director at Carbon Green Consulting, said “This is a climate emergency, I think the stick is necessary. What is needed is behavioural change, if a consumer is informed and therefore asks those questions when they buy their new home developers will realise what they want.”

The question is how to empower this movement to provide the fundamental shift in demand that is needed to unlock the pace of change required.



Values and value – how do we value value?

Policy changes could help mitigate some of the cost but, as already suggested, this needs to go hand in hand with a change in culture within the industry. A good starting point could be in how the built environment is valued – and what is valued.

For example, at the moment the UK doesn't have a green premium, a means of demonstrating the value of building sustainably. If there was data freely available to demonstrate that a BREEAM outstanding rating will add to the capital and rental values it would be a big incentive.

There is also a lack of clear evidence on the operational performance of the sustainable buildings that are being delivered (i.e. how far the projections used to assess the green credentials of a building at the point of design or construction translate into reality for the future owners and occupiers). While some Councils are seeking information through post-occupancy energy usage reporting, this needs a more centralised approach.

“I think we need to have a lot more hard evidence that allows valuers to make decisions that incentivise people to build good buildings,” said Chris Rundle, Partner at Trowers & Hamlins.

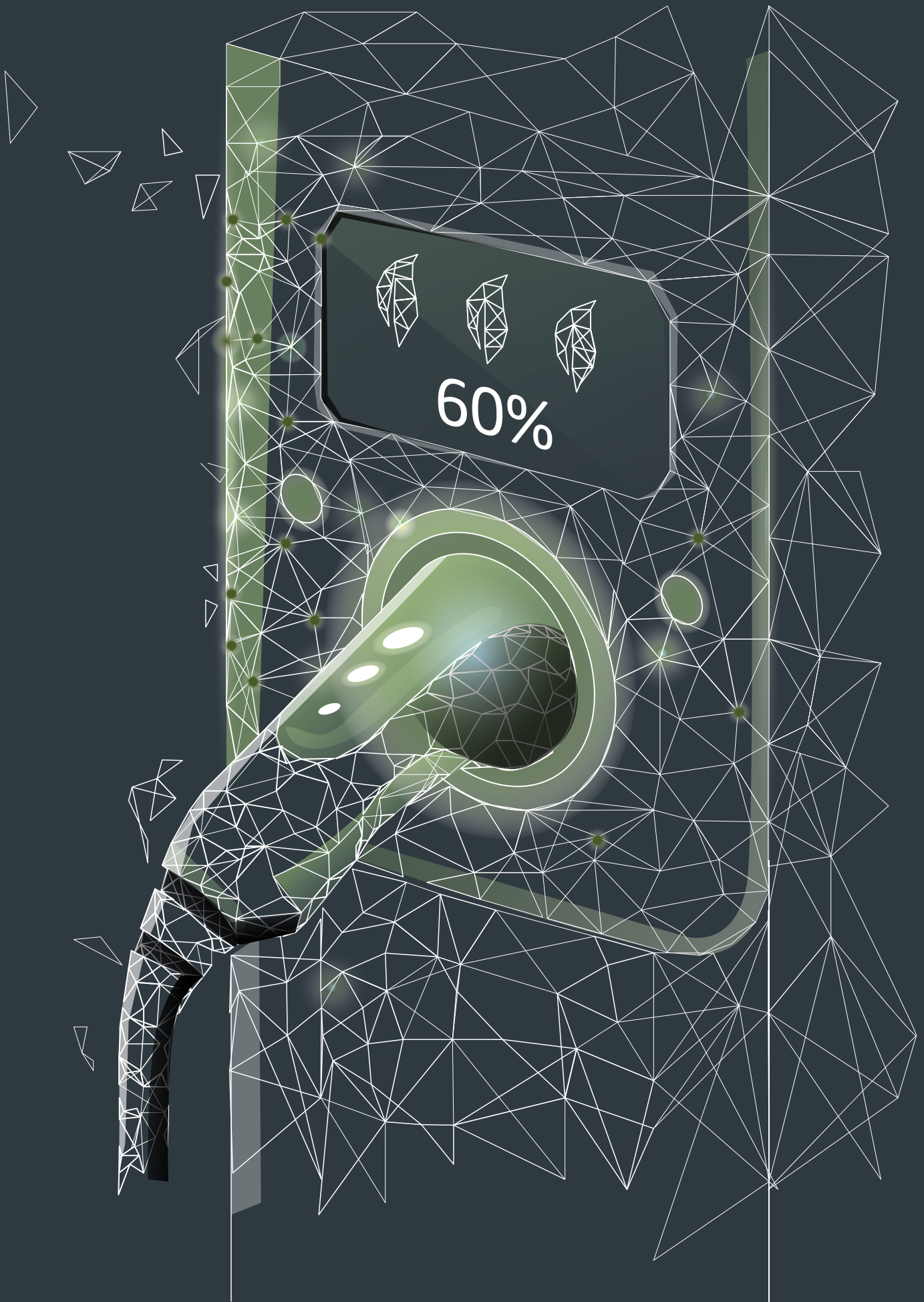
Making data on sustainability available to inform and educate demand from consumers, employees, investors and funders is critical to achieving the rate of change required, suggested Rundle.

Osmundsen agrees “The key thing with choice is facts; facts and data, and so many people just don't have the facts. If we look at the way in which people's tastes and food choices have really shifted relatively quickly, a lot of that is down to the fact that there is new labelling, there is greater choice, there is greater awareness and I think it's about taking that knowledge and making people a lot more aware for them to make informed choices.”

There is also the separate question of how to reflect the impact on value of a building's surroundings. Franks pointed out that homes in villages with a pub and a shop cost more than those in villages without such amenities.

“People will pay a premium so it's not just that the house itself which is sustainable but the village is sustainable as well and that's where developers need to think more holistically,” he said.

At the community level, what is still harder to recognise in a consistent way is the more intangible, and often long term, social and environmental impacts of a development, for example, better air quality and green space that can help improve physical and mental health within communities using those spaces, reducing the dependence on public services. Incorporating that broader range of values – social and environmental (see Trowers & Hamlins Real Value report for more) – would focus attention on the wider role the built environment has to play, not only in reducing carbon emissions but also in building happier, healthier communities.



Inventions

Considering the ambitious target that Exeter has set of becoming carbon neutral by 2030 the roundtable delegates were asked by chair Patricia Brown what inventions they would like to see that would help the City fulfil this commitment.

Osmundsen is interested in the impact on the built environment on physical, mental and spiritual well-being. "My ask would be, some form of labelling or certification in terms of healthiness of the buildings and spaces. But my big ask is to go back to basics. We can deliver over 90% energy efficiency just through building physics. We don't need any fancy manufacturing products or chemicals, let's use the sunlight and then let's maximise what is naturally already there and let's get back to basics and then use our precious resources for what we really need them for."

Eaton also points to using what we already have: "The biggest challenge we have is the storage of renewable electricity for longer periods. We are rich in the South West in terms of renewable electricity production, but in the summer we produce more than we can use and in the winter we have the reverse, with high demand and lower yield from technology like solar PV. Current battery storage solutions only stores electricity for relatively short periods and the game changer will be the affordable storage of renewable electricity over a longer periods. Technology such as hydrogen is still being developed to tackle this problem and a scalable solution is required to deliver a true carbon neutral solution."

Rundle adds "I think demand is going to be key and if we are going to get to where we need to get to quickly enough we need data. I think something which allows you to go into a building and instantly assess where it is on the carbon reduction scale would be fantastic."



Highly efficient battery storage

"The ability to have PVs on in every house in England with some battery storage, on top of no fossil fuels whatsoever. I think it would get us there, that's what I would go for."

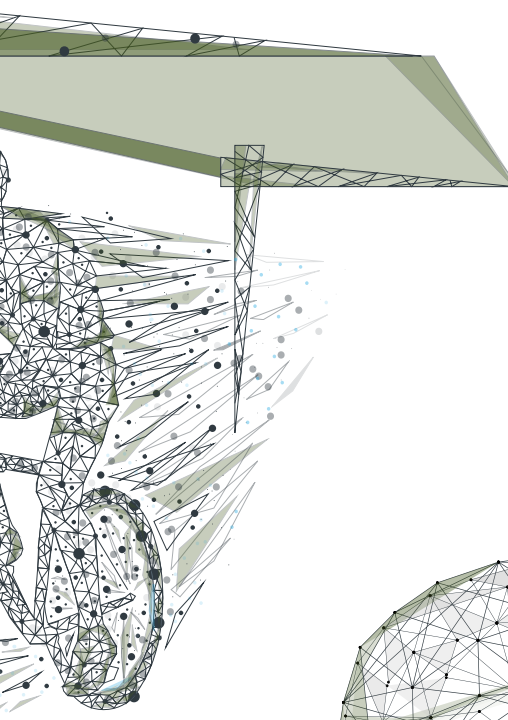
James Halse

A big stop button

"My invention would be a big stop button for the whole world just to stop manufacturing, stop making stuff, stop the economy, just for one day, or maybe a week and see what inventions come out of that and what kind of communities form out of that because I think that's what we need, ...just a little pause."

Kara de los Reyes

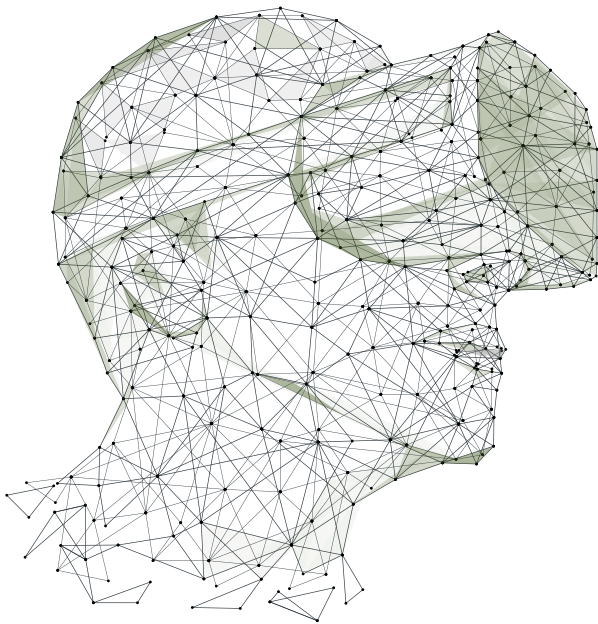




Weather protected cycle paths

“I am thinking weather protected cycle paths and that’s an innovation we can pencil in. I’d love doing that”

James Blackburn



Virtual reality

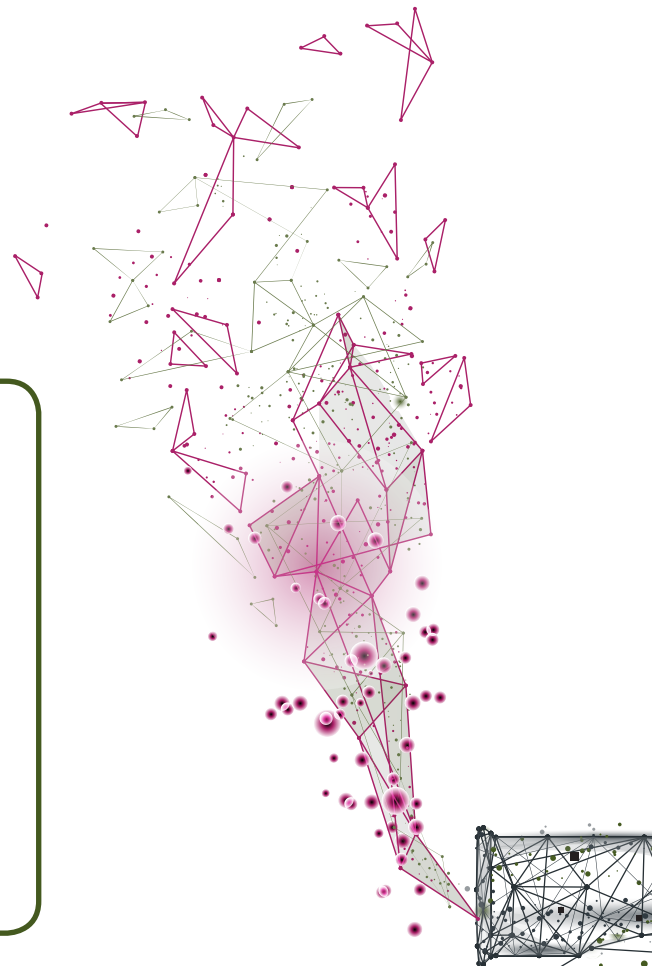
“Some form of technology that enables you to actually meet and interface with other people in some form of virtual real time so if we all were to sit in this room but actually be in our workplace and see one another around the table.”

Russell Baldwinson

Making exhaust fumes visible

“Living in London, as I do, I sometimes wonder if everybody could see their exhaust fumes, they would actually understand just how much they’re polluting. I know we wouldn’t want the air to be full of coloured gas, yet if people could see their exhaust fumes – say light purple means light emissions, while really deep purple means ‘get that car off the road’, then it could make an impact on behaviour and sense of responsibility.”

Patricia Brown





Matthew Gingell, Oxygen House – Viewpoint

We need to apply a systems-thinking approach to how we achieve net zero in a city. The problem is too big, complex and uncertain for one organisation or sector to solve alone. Particularly when it comes to sustainable development.

Building sustainable communities, not just homes, is key and that starts with landowners and the land promotion agreements they sign. If we embed green long-term sustainable thinking into those agreements this will have a lasting impact through planning and construction. Green banking covenants and corresponding lending rates are also key to drive market behaviour.

There is some incremental improvement and some great initiatives underway, but we collectively need to accelerate the scale and reach if we are to make a real difference within the 11-year window, which the IPCC have stated we have left.

As David Attenborough commented before the commons select committee: “We cannot think radically enough” [when it comes to climate change]. We need to consider all the enablers, levers and barriers to transition to net zero communities and it is great that we will have the opportunity to do this at the Carbon Neutral Festival being run and planned by Exeter City Futures in partnership/conjunction with Exeter City Council.

We need to discuss and come to a united decision on whether local and city councils form a Future Generation’s Scrutiny Committee, whether energy efficient buildings should pay lower business rates, and if we need a new estate in land for solar roof tops. Other ideas which need considering include creating a city decarbonisation zone (similar to regeneration zones), and banning diesel cars from the city to reduce air pollution, and so on.

These are critical decisions that need to be made and businesses and communities must be engaged to support and promote them. It starts with everyone in the city agreeing that we are not willing to postpone the problem and then working in a collaborative and innovative way to ensure we have the focus and urgency to act on them.

Final word

The property industry is innovative when it comes to finding solutions to problems and that will play a huge part in helping Exeter, and the UK, achieve the net zero target but a fundamental change in thinking is required.

Modern infrastructure, along with sustainable travel plans, construction methods and materials and smart data will all play their part, interwoven with thoughtful and creative placemaking, but the pace of delivery will, to a large extent, be driven by how quickly the wider public take climate change on board as a genuine priority and demand change.

Perhaps as a society, we need to look at living a little more simply and more patiently, moving beyond what is most convenient and quick as we have become accustomed.

“I think policy only looks at a very short period of time and we could learn from indigenous people who plan for generations: How is it going to affect our children's children?” said de los Reyes. Rundle agrees:

“Solving the problem will involve looking both forward and back.”



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