**Mobilising Urban Living Labs to create sustainable infrastructure: podcast transcript**

**Introduction:** [00:00:00] You're listening to a podcast from The University of Manchester

In this podcast series, hear The University of Manchester’s Dr. Nic Gowland interview some of our leading experts about how their research is helping to deliver the UN sustainable development goals for global health, equality and sustainability.

**Dr Nic Gowland:** [00:00:25] On today's podcast I'm speaking to Professor James Evans, Professor of Human Geography and lead of the Manchester Urban Institute, Smart City. James, thanks for joining me today.

**Prof James Evans:** [00:00:34] Hi Nic. It’s good to be here.

**Dr Nic Gowland:** [00:00:37] Today we’ll be discussing your research over the last decade around urban living and creating sustainable infrastructure by using Urban Living Labs as test beds. And we'll look at that in a bit more detail later on. But before we get into that, I'm keen to understand a little bit about the human behind the research.

You as a person, how have you become to be a Professor of Geography? What led you down this path? Were there any early experiences that kind of shaped your career?

**Prof James Evans:** [00:01:03] That's a really good question. I guess one of the things that always led me to be interested in the world around us, I grew up on a farm, so I was always engaged with the natural world, but also how the natural world interacts with the human world. So I had a kind of interest in the environment in general from quite an early age. Then I became very fascinated by cities. I think just because growing up in the middle of nowhere where you didn't have access to anything, cities have always just fascinated me because you can literally access any service, or any product, or any social group, or community so easily. So I think the reason I've ended up looking at urban sustainability is the collision of those two things.

**Dr Nic Gowland:** [00:02:03] That is interesting actually, that life on a farm kind of shaped your interest and fascination potentially.

**Prof James Evans:** [00:02:08] I think so.

**Dr Nic Gowland:** [00:02:12] Brilliant. So, one of the opening lines from one of your recent papers was ‘Cities must change rapidly to address a range of sustainability challenges.’ Before we talk about Urban Living Labs, can you explain what the kind of sustainability challenges are that cities are facing?

**Prof James Evans:** [00:02:28] Yeah, absolutely. So sometimes it seems strange that if you're interested in sustainability, climate change, the environment, that we focus so much on cities, you know, often those things are associated with pictures of polar bears on icebergs, and rain forests. But the fact of the matter is, cities account for somewhere around three quarters of global greenhouse gas emissions. So if we're serious about tackling things like climate change and environmental pollution, we have to somehow change cities. And of course, if we take a slightly broader look in terms of sustainability, that includes social and economic challenges, as well as environmental challenges, cities are also where we should probably focus our attention because upwards of half of humanity now lives in cities. By the end of this century, it will be more like three-quarters of humanity living in cities. If we want to ensure people have jobs and decent livelihoods, if we want to improve people's health, mental well-being, we want to make sure we have functioning communities and social inclusion. These are all things that are best addressed in cities. So of course, it becomes important to understand how cities are trying to address them in these challenges, and how they might address them better. The good news is that cities have always been hotbeds of innovation because they bring concentrations of people and resources together. They tend to be places that generate new ideas, new ways of doing things and put them into practice.

So cities globally generate something like 80% of global wealth. A similar proportion of new ideas and innovations. So, they’re a great place to hopefully solve some of these challenges too, whether it's low carbon, or clean economic growth, or social inequality. Cities should be places where we can develop new solutions to these challenges. And of course, from a sustainability point of view, it's just more efficient having higher concentrations of people. You need less pipes to get water and less wire to get electricity to them. Less roads to move them around. You can have high-quality public transit systems, like London Underground or Hong Kong Underground. So cities are kind of simultaneously the big problem, the big challenges around sustainability are in cities, but they also, I think, hold the answers. They are also where we can solve these problems.

**Dr Nic Gowland:** [00:05:25] I suppose that leads on nicely into the Urban Living Labs. Quite a cool phrase to someone new to this, ‘Urban Living Lab’. Can you explain what is an Urban Living Lab, or ‘The Urban Living Lab’?

**Prof James Evans:** [00:05:37] Yes, that’s a great question. So the Urban Living Lab is a kind of methodology or an approach, that you can use in cities to address specific problems. So it might be that a city wants to develop a new kind of delivery system, in say the city centre. Diesel delivery vans are responsible for huge amounts of air pollution and congestion in city centres now with all the internet shopping. So a city might say, ‘right, this is a problem, how to we fix it?’. What people have realised is the top-down solutions often don't work. So just national government coming along and banning these diesel vans in city centres won't fix the problem. People will get angry because deliveries will be disrupted. So you need a solution that kind of fits the place, and is developed by the people and the key organisations in that place. So what you might do in that case is establish an Urban Living Lab in a specific part of a city centre, so maybe not the whole thing, just the part, to try and come up with new solutions and test them out to see if they work. And you'd involve the delivery companies in this, and you'd involve the local protest groups around air quality. You'd involve the local transport planners and urban planners, so that you could come up with possible ideas. It might be cycle logistics, it might be integrated delivery hubs, it might be just deliveries at certain parts of the day. It might be redesigning apartment blocks so that they have better areas at the ground floor to receive deliveries. So the Urban Living Lab would bring the people together who are involved in this problem, give them space to come up with possible solutions and then empower them to actually try those solutions out, to figure which ones work. And that's the really innovative bit of this. It's about trying things out in the real world to figure out whether they actually work or not. And then the super important bit is once you do come up with a solution that you think is viable in that place and acceptable, you try and scale that solution up. So you then might say, right, we'll now do this solution across the whole city centre, and tell all our friends about it so that other cities can adopt something similar.

**Dr Nic Gowland:** [00:08:22] This kind of research on Urban Living Labs and cities started around 2010. Is that right? When you had a pilot project. Can you tell us about this initial pilot project looking at Urban Living Labs?

**Prof James Evans:** [00:08:33] Yeah. So back then, the idea was much less widely known. The idea of Living Labs actually originated as a corporate approach to innovation in America where companies engaged in product development started realising that they could develop better products, quicker, if they did it in real world environments. So the modern day classic example is releasing Beta apps, so apps that aren't fully developed, you release the Beta version and, and the users pretty much tell you how to make it better. A few places in America, a few cities, started talking about using Living Labs to address urban problems. And at the time I was working with a good colleague, Andrew Karvonen, he's just about to move to Lund University, who was interested in science and technology, and how science and technology are deployed in urban settings. And we both saw this and started finding out about this and finding it interesting and thinking ‘what's going on here?’. How can you transplant a corporate approach to innovation into an urban context? And what is this idea of a living laboratory anyway because a laboratory is usually a scientific kind of space. It’s a controlled environment, not a living environment and certainly not a chaotic messy city. So we came to it being intrigued by it and being highly sceptical of it. Surely this is just hype, like you said, it kind of sounds exciting right? But what we wanted to find out was does it have legs? Is there any actual value to what people are trying to do here? So we did a little project just looking at three or four examples, varied examples from across different cities in the US to see what people were trying to do with these living labs in urban environments, and they weren't called Urban Living Labs then, they were just Living Labs that people were setting up in parts of cities.

**Dr Nic Gowland:** [00:10:59] What did you find then? Were they generally very positive or was it quite mixed?

**Prof James Evans:** [00:11:02] There were pros and cons. So clearly some of them were driven by hype and it was more a kind of just a branding process. But we did find two interesting things. The two interesting things we found, well, were firstly, the fact that they were taking the kind of collaborative approach to planning and problem solving, and anchoring that approach in a specific place. So it's very much place-based innovation. Whether that was in some cases it was just a single building, maybe trying to develop new approaches to engage people with energy conservation. In some places it was a neighbourhood, trying to engage people with new forms of green infrastructure and getting communities to maintain green infrastructure. So that was one thing, placed based. And the second thing that was interesting was some of these places were genuinely trying to test new ideas and learn from them. So monitor their performance in the real world, and that could be their technical performance, like how much flooding does green infrastructure reduce? How much biodiversity does it increase? How much does it offset urban heat island effect, but also the social success as well. Do the people who live there like it? Do they like to look at it? Do they feel more comfortable? Do they get some kind of mental well-being effect from maintaining it as a community? So that thing was what really piqued our interest. Because we're interested in urban sustainability, how you change cities, and it's quite hard changing cities. So that was the thing that really piqued our interest. Does this approach offer a mechanism to kind of transform cities from the bottom up in a really kind of grassroots way?

**Dr Nic Gowland:** [00:13:13] I mean, the concept obviously it sounds like probably in hindsight now sounds like a very good one. You mentioned before about maybe top-down doesn't always work. Are there examples of things almost being imposed on cities that are not positive? Whereas if they'd been tested and Living Lab tested things would have been different?

**Prof James Evans:** [00:13:28] Yeah. I mean it's one of the biggest challenges with transforming cities quickly. So the main motor of change in most of the world is the free market. So it's companies developing products and then selling them en masse. And that's been the approach a lot of funding and innovation agencies have taken. They expect companies… so smart city is a classic. 30 years ago, everyone thought companies like Cisco and Siemens would develop urban control rooms with sensors distributed for out of city and cameras everywhere that you could then control the whole city and manage it more efficiently.

**Dr Nic Gowland:** [00:14:17] That they’d do it, was that the thinking?

**Prof James Evans:** [00:14:20] That was the dream. And once they've developed this product, every city in the world can buy it. Now there's a couple of cities that have those control rooms and no other city has bought them. Cities are different and need bespoke solutions. And you do see some technologies that have caught on as being ‘the answer’ to certain urban challenges. So, bus rapid transit systems are a classic. Developed in South America. They're essentially like tram systems but run by buses rather than trams. So they have lower costs to install in terms of the infrastructure, but they have dedicated lanes and they have raised platforms. So they share some things in common and they do run more efficiently than a normal bus system. But this idea is now being transplanted to cities across Africa and South Asia into urban contexts where it probably isn't appropriate. So in a number of African cities, they’re a lot more densely populated, you can't run enough routes to service the whole population. They’re too expensive. So you see pictures of these very expensive transport investments that have no passengers on them and they've just taken up some of the very little road space that exists. Displaced all the transport that most people actually have to use. So these kinds of standardised ideas aren't always the best.

**Dr Nic Gowland:** [00:16:04] So you then turned your attention to Manchester, the city of Manchester after your initial pilot. Where did your work go with Manchester then?

**Prof James Evans:** [00:16:12] Well, like a lot of research, it was slightly serendipitous. So, we did a small project with the city council looking at the cycle logistics option. Can you start using electric assist bikes to make urban deliveries? And we used or we trialled an early attempt at an Urban Living Lab approach to that in the city. So we engaged, I think over 50 organisations, including Greater Manchester Police, different delivery companies, some of the really small companies that were already doing cycle logistics, plus a load of businesses, small businesses, large businesses, takeaway businesses as well. And it tied in with the upgrade of the Oxford Road, where they installed the Dutch cycling infrastructure, and took the private traffic off it as well. So there was a real opportunity in Manchester around that time to get that infrastructure and investment right and then think about what other solutions you could piggyback on it. If we're going to have this amazing cycle infrastructure, can we encourage something like cycle logistics? So that was the first piece of work we did with the city council around that. And that led into a much bigger smart city project, that was designed to use technology to make cities more sustainable and that had a small logistics component to it as well, but it also had a bigger piece around electric vehicles and trialling different ownership models. So it might not be that companies want to own their own EV delivery vehicles. It might be, they'd rather lease them, whether they're vans, or bikes then actually have them maintained and securely stored by companies specialising in that. And that's one important lesson we learned from that project, which was when we were working with Manchester, but also cities across Europe, was not to reinvent the wheel. So you know, if the technical benefits of EVs and cycle logistics have been proven, and they have now been proven, hundreds of times over, and people tend to like them, whether it's residents or whether it's the people actually using them. Then don't focus on that in your Living Lab, focus on what you need to do to get companies to adopt them.

And that might be focusing on whether a leasing model’s better, if so, what length of lease? What kind of servicing contracts might be best? Do people need a secure storage option or do they not need that? So those are really the open questions now, that the kind of technical side of it and the impacts on air pollution and all of that, have kind of, those questions have been answered.

**Dr Nic Gowland:** [00:19:35] It sounds like your work is quite importantly linked to industry as well, in terms of how they would get support from it, adopt it, things like that.

**Prof James Evans:** [00:19:40] Yeah, that's where it's gone, for sure. That's why, essentially this is all about how you get people, how you enable people to be able to adopt some of this stuff. I mean, my interests back when I did my degree were more in climate change. And you know, whether it was about proving if there’s an environmental problem that we have to address. And then I got interested in what the solutions are but we know what they are now. You know, we have solar panels and electric vehicles and all of this stuff. So the challenge now is that everyone accepts there's a problem. Everyone knows what the solutions are. And yet, you walk through any city and things actually look pretty much like they did 20 years ago. So the challenge is how you get people to adopt this stuff. And that's, where Living Labs come into their own because they actually get into the detail of what is the barrier here to adoption? And it's often things that seem really quite minor and trivial, but they're absolutely critical if they're the reason an organisation can't adopt something.

**Dr Nic Gowland:** [00:21:01] Can you give some examples of that? I imagine, is it not always cost? Is that not always the barrier?

**Prof James Evans:** [00:21:06] It's not always costs, sometimes it is cost. And what you find in that case is often these things, the cost benefit is being done over a very short time period. Whereas more sustainable technologies have a much longer payoff.

Sometimes, I am going to give you a few examples. So you get things like, district heating whereby you have one power station creating the heat, can be sustainably driven, that’s fine. But then you have lots of organisations benefiting from it. There's a question over who owns the district heating, right? So ideally you want shared ownership. One of the problems to this is where you have organisations with different legal basis. So for example, it's hard for a university like ours, which is legally classified as an educational charity, to co-own things with private companies, because they have a different legal basis. Another one from the Smart City project we did was, three different organisations were sharing power. So it's much more efficient if they can share power between them, when one has excess, they can ship it to the other one and so on. This was alright while the project was going because it was managed by a company who were kind of in charge of all of it, but at the end of the project, the company aren't being paid anymore. And there's a question of who then is in charge, who owns the equipment? Who's going to maintain the equipment? Who’s going to bear the risk if something goes wrong? And say the lights go out in a building? And there's no real legal structures or insurance contracts to enable that kind of collective approach. And so these things tend to just be dropped or, or not happen. So for me, the real value of trying things out in real-world environments is they actually get you to the point where you can understand those very practical allergies that actually stop things happening.

**Dr Nic Gowland:** [00:23:29] And that’s what Urban Living Labs helps manage and support then is it? Those kind of technical but important kind of business aspects?

**Prof James Evans:** [00:23:33] Yeah because it's only when you actually try doing things in real life, you know how it is. It's like when you take on a small DIY task at home it all seems very straight forward on the YouTube video, but then of course the wall starts crumbling, or different type of brick, or you got the wrong drill and you know how it is, that's how real life is. But that for me is where, you know, the whole sustainable transition is. We’re at that point where we now know what we should be doing, but when people try it, it just runs into all these kinds of niggling little problems.

**Dr Nic Gowland:** [00:24:15] The work you mentioned around cycling has led to, I think the figures I've got is around 20,000 kilometres of delivery van trips that have been replaced with the e-cargo bikes, which obviously you were involved with that project you were involved with around 26 million pounds of infrastructure investment by Manchester City Council, really impressive projects to be part of. And you're also engaging with cities in the global south as well. Can you tell us a little bit about that and how those challenges are maybe quite different to the cities that we're familiar with in the UK and US?

**Prof James Evans:** [00:24:47] Yeah. So I was lucky enough to get involved in some work in Kampala, which is the capital of Uganda, which was funded by the National Geographic actually. Kampala is one of the most interesting cities in the world. So Uganda has pretty much the youngest population structure in the world, but also one of the fastest growing populations. So Kampala is about 4 million people at the moment and its projected to hit somewhere around 40 million people by the end of this century. So we're talking about absolutely explosive levels of growth.

**Dr Nic Gowland:** [00:25:30] Why is that? Is it mainly migration to there?

**Prof James Evans:** [00:25:32] Yeah. Migration, very young population so lots of people going to be having kids as well. And of course, a lot of the population already live in informal settlements, without proper roads and power supply and water and so on.

So on the face of it, a really different kind of context, you know, transport, there is an even bigger issue than it is here. People really struggle to get around. There's no decent public transport. So you get a lot of informal transport, whether it's minibuses or motorbikes and so on. And we got really interested in the transport question. But, you can apply the same approach. I mean, on the face of it, it's a hugely different context, but essentially the bones of it are the same. You have a city with a population who have a challenge around transport and need better ways to do it. So you need new ways to come up with inclusive ideas that are acceptable to all the people involved, try them out in the real world and see if they work and so on. So we partnered with a charity, a great charity called Walk 21. And ran workshops with planners, decision makers, policy makers, pressure groups, community groups in Kampala, but also in places like Manila as well. So across three or four cities in the Global South and came up with some solutions around sustainable transport, that went into their plans and they are now trialling them. And trying to learn from them to see if they work and if so, can they be rolled out more widely.

**Dr Nic Gowland:** [00:27:30] Is that work still ongoing now? Is that kind of where your future research has taken you?

**Prof James Evans:** [00:27:35] I hope so. I certainly hope so. I mean, we've been doing a small piece of work over the last 12 months starting to focus more on the health and wellbeing aspects of walking in the Global South. And that's just fed into a report from UN Habitat on health and mobility in the Global South, which is going to be coming out hopefully around October, around the same time as COP. We're hopeful that we can develop some further work out of that. I think, you know, that's a massively important agenda. If you could make walking safer and healthier for people in the global south, you'll be improving a lot of lives.

**Dr Nic Gowland:** [00:28:22] A bit of a kind of broad question, towards the end. There's often a lot of scrutiny of how the UK kind of allocates research money and things like that. Can you just explain why this work matters? Why it matters to you and why it matters to the UK and the world, I guess?

**Prof James Evans:** [00:28:36] Yeah. The bottom line for me is if there's a lot of problems facing us in the 21st century as a species. The most cost-effective way to address them is to look at cities, change how our cities are built, how they function, the kind of lives that they enable. We can fix climate change, pollution, health, and wellbeing, social justice, lives and livelihoods. We can fix them all if we get cities right. So we need ways to change cities, and we need to change them in ways that that deliver on all of those kinds of agendas. And don't leave anyone behind and don't alienate the key people. So for me, that's why more attention needs to be focused on how decisions are made in cities and helping cities make better decisions and helping cities essentially figure out for themselves how to change. You know, national government can do a certain amount through the legal framework and policy framework for sure, but that's essentially just an enabling context.

In my opinion, not enough attention is focused on cities, the people who run cities and are charged with maintaining them. They're the real agents who, I think, hold the key to addressing these challenges.

**Dr Nic Gowland:** [00:30:10] I think that's a good place to leave it, James. I found it a fascinating discussion with you, and it just leaves me to say, congratulations on your research over the last 10 years, fascinating and hugely impactful I think as well.

**Prof James Evans:** [00:30:21] Thanks, Nick. That's been really enjoyable too.

**Ending:** [00:30:27] Visit our web pages to find out more about how we're delivering the UN Sustainable Development goals and to keep up to date on our research and its impact across the globe. Go to manchester.ac.uk forward slash research and subscribe to our mailing list.

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