

# Transcript of 'Building Sustainability into Project Management'

## Season 3, Episode 8, Transforming Tomorrow

[Theme music]

**Paul:** Hello and welcome to Transforming Tomorrow from the Pentland Centre for Sustainability in Business. I'm Paul Turner.

**Jan:** And I'm Professor Jan Bebbington.

**Paul:** It's one thing to declare a Climate Emergency. It's quite another to do something about it. Lancaster University has net zero targets for 2030.

How do you manage a project like that? And what are the challenges that come from being one of the first universities in the country to take action?

[Theme music]

**Paul:** How good are you, Jan, at managing your projects?

**Jan:** [laughing] Well, perhaps ask my co-authors. Sometimes good...

**Paul:** ...oh, I have, [Jan laughs] and they said not very good. Should do better. Will find a new partner next time.

**Jan:** Yeah, well, it's, it's all in the planning, isn't it? So, um, uh, as we are recording this, I'm waiting to hear whether or not we've got a, a funded project.

So we have like all sorts of pre-plans about how to put it together and then things sort of head off, and then you're always having to adjust as you go along as well, 'cause there's unexpected things that happen.

But yeah, I try to be good, but I'm not sure how good I am.

**Paul:** Is it the academic equivalent of no battle plan, surviving contact with the enemy?

**Jan:** [laughing] Something like that, yes.

**Paul:** Yeah. Project management. There's a whole lot to it. And one part of that is going to be around aspects such as net zero and how to build sustainability into projects...

**Jan:** ...yeah, because that's a big, that's a big plan to have and then a big plan to execute.

**Paul:** Yeah. And it's not as easy, as anyone who's ever tried to manage any kind of project, no project is ever as easy as just writing down this is what's going to happen, and then watching it happen.

**Jan:** Yeah. Although I will come back onto watching it happen, 'cause I've watched bits of this project happen, and been very, very excited by it.

**Paul:** Which project? The podcast...?

**Jan:** ...no, [laughs] you know what we're talking about...

**Paul:** ...the podcast that we'll talking about...

**Jan:** ...keep moving forward. Keep moving forward, man. [laughs]

**Paul:** The project that we'll be talking about, we are in this podcast, you mean...

**Jan:** ...yes, indeed...

**Paul:** ...yes...

**Jan:** ...yes, indeed.

**Paul:** Because today we're gonna be talking about some of the projects that take place here, at Lancaster University. And one of them in particular does have a very big sustainability angle.

In fact, it's not so much of an angle, as it's, the whole thing...

**Jan:** ...yes, it is, indeed...

**Paul:** ...is around, around sustainability. Um, so it's gonna be interesting to do that.

And we're joined for that by Anna Cockman, who is the Head of Estate Development here at Lancaster, and she's part of the team overseeing the construction of...

**Jan:** [dramatic gasp]

**Paul:** ...our net zero energy centre.

**Jan:** Cool stuff.

**Paul:** It feels like you were making the head movements to go...

**Paul & Jan:** ...dun, dun, duuuun...

**Paul:** ...but you didn't make the noise.

**Jan:** No...

**Paul:** ...well, can you do it now? Can you just do it?

**Jan:** Dun, dun, duuuun...

**Paul:** ...yeah, it wasn't as good as I was expecting.

**Jan:** No, oh well.

**Paul:** It's fine. Welcome, Anna.

**Anna:** Thank you.

**Paul:** Can you tell us a little bit, Anna, about yourself and your background and how you came to be here at Lancaster?

**Anna:** So, I've been at Lancaster now since 2003, so quite a long time. And prior to that, well I did a degree in Psychology with the view that I wanted to work in the prison service. [laughs]

So, um, my career path has taken a few, quite dramatic, different turns since I graduated. But while I was at university, I made a lot of my friends were doing media related courses, and I kind of got quite interested in that and that took me into working for the BBC.

So when I graduated I worked for Radio Five Live. That was my first job...

**Paul:** ...ah.

**Anna:** Um, in the marketing and communications team.

And then I moved across to work into television for BBC television on their, um, promotions team. So we were essentially making, um, essentially adverts, but obviously the BBC, don't call them that, but for their programmes.

Um, and also all the little, uh, channel idents. So if you remember on BBC two, there used to be a lot of kind of animated twos that did various things, and I used to work on all those.

**Paul:** I remember them well, yeah...

**Anna:** ...Yeah...

**Paul:** ...the, the, the bouncing twos of the springs, and then I remember the old ones, right? The paint being...

**Anna:** ...yeah, the paint, and...

**Paul:** ...poured over the top of it.

**Anna:** ...and then there was um, there was a little kind of dog that barked, a blue fluffy two, that barked...

**Paul:** Oh, yes, yes. That bounced about as well. Yeah.

**Anna:** There's a few with my hands in them for one reason or another, we had to have hands. So, so my hands appeared in a couple of those.

But anyway, I did that for, um, about five years, and then I kind of got the travel bug, so I went off to Australia. Um...

**Jan:** ...my, my commiserations...

[Jan and Anna laugh]

**Anna:** I'm sure, as a Kiwi, that's not what you wanted to hear, but, uh, I, um. Basically I'd kind of had enough of London life and wanted a different thing. And then when I came back to the UK I decided not to go back to London and to come back to my hometown, which is Lancaster.

And I obviously, with not a lot of media in Lancaster at that time, and obviously the Salford setup wasn't there either, I had to do something different. And actually production management, which is what I was doing at BBC and project management, have a lot of synergies.

**Jan:** Hmm.

**Anna:** So I came into the university to work on the development of the Management School expansion, which is now known as Lancaster Leadership Centre, and has since been kind of consumed by the bigger LUMS West Project.

**Paul:** It's where I sit.

**Jan:** Yeah...

**Anna:** ...oh well, there you go...

**Paul:** ...not right now. [everyone laughs]

Obviously I'm not in a different building, but where I sit generally at my office, that is where I sit.

[Jan makes sounds of agreement]

**Anna:** So yes, the three lecture theatres, and ...

**Paul:** ... so you're responsible. So any complaints I have about my office...

**Anna:** ...mmm...

**Paul:** ...I need to...

**Jan:** ...don't listen to him, Anna...

**Paul:** ...whilst this is going on...

**Jan:** ...don't listen to him...

**Paul:** ...I'm gonna make a list. [Anna laughs]

**Jan:** ...don't listen to him...

**Paul:** ...I can pass them on...

[everyone settles down]

**Paul:** But before we then get onto project management specifically, I wonder, just going back then to when you worked in media and such, having worked at places like the BBC, was sustainability ever a thing you heard about back then...?

**Anna:** ...no...

**Paul:** ...in the early two thousands?

**Anna:** No, definitely not. No, no.

And actually, when I think back about the operation, you know, the BBC's obviously, I mean, it's probably shrunk somewhat, but back then, you know, I'm quite embarrassed to say how much waste there was going on. And there was an awful lot of money being spent on, on things that, you know, the probably license fee payers would not have approved of.

And I think they've clamped down on all that in the last sort of 20 years quite substantially. And the BBC is not as kind of big as it used to be, but no, it wasn't a thing and it wasn't even a consideration, I'm, I'm ashamed to say.

**Jan:** I think it is now, for sure.

**Paul:** Yeah...

**Anna:** ...yeah, it definitely will be now.

**Paul:** Yeah, yes. Um, obviously that behind-the-scenes operations, but I imagine it also reflects the number of programmes that are on our television that relate to such topics.

**Anna:** Mmm.

**Paul:** Back then, you might have had the odd David Attenborough documentary about nature. Now every documentary about nature has the last 10 minutes explaining A, how they've done it, or B, this is the reality of life for these animals now given climate change, et cetera.

That will be the same throughout the whole organisation, I dare say.

**Jan:** What I also like about, um, TV programmes, and not that I'm a great watcher of the soap operas, but people do recycling on soap operas...

**Anna:** ...mmm...

**Jan:** ...which is, you know...

**Anna:** ...mmm...

**Jan:** ...just like, again, keeping it all together.

**Anna:** ...yeah, role-modelling, yeah.

**Paul:** Harking back to a previous episode, did they ever recycle on Shortland Street?

**Jan:** I believe they did. [laughs]

**Paul:** You believe they did. Good, good to know...

**Jan:** ...good to know...

**Paul:** ...the New Zealand soap operas are keeping up with the recycling. Is Shortland Street still going?

**Jan:** No, I don't think so. I think it's done.

**Paul:** Sad, sad days. I'm amazed that there wasn't more news about that, on the normal mainstream channels...

**Jan:** ...well, we are where we are.

But what I really like about that background is that psychology background must be really important as well...

**Anna:** ...yeah...

**Jan:** ...in terms of understanding, you know, people approach change...

**Anna:** ...exactly...

**Jan:**...how you need to bring people forward. So, so I think that's a, it's a really nice sort of movement across a career where what you learn at university you take forward and build on and develop further.

**Anna:** Yeah, absolutely. And I think as a project manager, there's a tendency to think it's kind of all about kind of process and, you know, milestones and kind of charting progress against a, a Gantt chart or whatever.

But for me, you know, project management is far more about relationships, communication. So the, the projects that I've managed that have gone really, really well have been when the team has had really good relationships and, and real, genuine collaboration.

When relationships break down, usually the project really suffers and the outcomes are not great. So the psychology element of my kind of background has, has really assisted me with that, yeah.

**Paul:** Before we get into the specific project you have worked on, can you just tell us then what exactly project management is? 'Cause it's such a nebulous term...

**Anna:** ...it is...

**Paul:** ...I come from a town where we have a shipyard, and it seemed that just about for a five, ten-year period, everyone would leave any other profession and go to work at the shipyard as either a project manager or a project engineer, no matter what their previous job was...

**Anna:** ...yeah...

**Paul:** ...and if you ask them what they did, I don't think any of them gave you the same answer...

**Anna:** ...no...

**Paul:** ...so I'm wondering as far as you are concerned, [laughing] 'cause it might be a different answer to them as again, what, what exactly is involved in project management?

**Anna:** I mean, I totally agree with you there, Paul, because it has become a term that's used as a sort of catchall for a, a zillion different kind of variations. And not helped by programmes like The Apprentice, where they're all calling themselves project managers, the contestants on there, and you think, well, that's not really doing our trade any kind of favours whatsoever.

But in my view, um, and certainly the team we have here, um, the project management role is very much about being the kind of absolute core to every project.

So they are essentially a conduit between, um, the design team, if you're going through the design phase on a, on a project, this is about construction project management now...

**Paul:** ...mm-hmm...

**Anna:** Um, so you've got your design process, your client, your stakeholders, and then eventually a contractor.

So that, that project manager really has to be the key, uh, contact for all of those individual elements of a project, and they have to keep the communication flowing between all those different people.

And keeping a really close eye on, on basically risk, on programme, on cost and communication, uh, consultation. So, um, really good project managers are always thinking about what, what other people need and what other people need to know, and closing out those kind of feedback loops as well.

'Cause, in design process, you have a lot of input from various different quarters, and it's really important at that point to bring people in and make them feel heard and give them agency in the project.

If you then ignore what they're saying and never feed back to them or explain to them why perhaps their contribution hasn't been incorporated, then you



disenfranchise them and you've lost them forever. So they're not supportive at that point.

**Jan:** And from even how you've started this conversation, I can tell you like your job, which is always a great bonus for us, isn't it?

So what, what do you love about the role and what do you find most challenging about it as well?

**Anna:** The bit I love, and the bit that's most challenging, is that every project is completely different.

So my first project here, the first one, so when I did the Management School project, I was working within the faculty then, so I was kind of their end user side. When I joined Estates in 2008, my first project was the um, Learning Zone and a big upgrade of the Faraday Lecture theatres. So every project is completely different.

So for example, I also did the initial refurb of the library, back in 2015-16. That's still one of my favourite projects because we had a great team. We completely transformed the building. It pushed the university's rankings up because the students loved it.

It was a very a transformative project and it brought in sustainability elements. So we put the tree in there, and then we went on in phase three to put living, um, walls in there. So that was, that's a great project.

But, you know, then you move through to, I worked through the delivery of the construction of Health Innovation Campus. And then the next thing you know, you know, I'm on a solar farm. We're doing solar farm, and now we're doing the biggest energy centre in the UK/Europe possibly.

You know, so every single project is very different, so they never feel repetitive. And that's really challenging because I'm not an engineer, and I'm not an architect. You have to know a little about a lot, I suppose. Uh, and that's what's fun about it.

**Jan:** I can see Mastermind, and your specialist topic is, you know, Projects at Lancaster University...

**Anna:** [laughing] ...yeah..!

**Jan:** [laughing] ...you know, all the elements of it...

**Paul:** I know they have niche topics on Mastermind, but that's really, really ...

[Jan laughs]

**Anna:** ...that's very niche...

**Paul:** ...pushing the envelope...yes, yeah.

**Jan:** Okay, fair enough.

**Paul:** I think that whoever succeeded, Clive Myrie, I was gonna say, whoever succeeded John Humphreys and I'd forgotten, but yeah, I don't think Clive Myrie would be...

He'd be reading out on your special subject. What on earth are you...?

**Jan:** ...there's other ones have more niche, I think it'd be great fun... [laughs]

Sorry, sorry. Carry on.

**Paul:** You, you're diverting us.

So some of these projects obviously have sustainability angles...

**Anna:** ...mmm...

**Paul:** ...the net zero centre, the solar panels, the wind turbine, when that was built.

But, how does sustainability fit generally into project management? 'Cause I imagine it's got to be a consideration no matter what work it is that you are doing.

**Anna:** It does now. Yeah. I mean, um, for a few years now, we have been, well, we worked on the Estates strategy back in, we were working on it in about 2001?

And essentially that's taken the university in a completely different direction, where it was acknowledged that, you know, given the declaration, um, of the climate crisis that we were going to stop building unless it was proven to be absolutely essential, and there was no alternative way of providing that space.

The mantra now is kind of reuse, recycle and repurpose the space. Uh, and because for 20 years we've been building pretty intensively, and we know how damaging that is for the, the, you know, the climate and, and the planet. So,

um, we now assess the works that we're doing in terms of carbon assessment, and we are reporting that up to our project executive.

So each large capital project has a project executive, which is essentially their governance board. And we report through there during feasibility stages of, of what the kind of carbon calculation will be for, you know, option A, option B, option C.

Very rarely are we going forward and saying, well, we need to build a new building here. And that was a big debate with the Management School project, because initially there was an intention for that to be another new building.

And clearly we're not, we're repurposing the existing.

**Paul:** ...mm-hmm...

**Anna:** ...instead.

That does come at a cost, a carbon cost, obviously, but it's a lot less damaging than building new.

**Paul:** To keep outta the messaging that's gone out about the rebuild of the oldest section of the Management School has being about how this is more sustainable than building a new one...

**Anna:** ...mm-hmm.

**Paul:** There's the recognition that obviously, yes, there is going to be an impact, uh, of the fact you're doing a rebuild at all, and then that balances out on having a building that's either A, eventually gonna fall down, or B, be so old and decrepit no one wants to be in it but ...

**Anna:** ...mm-hmm...

**Paul:** ...yeah, it's the key part of the communication, which again, ties back into your former life in marketing communications, knowing that you've got to tell people these messages about what exactly is going on...

**Anna:** ...yeah...

**Paul:** ...with regards to the sustainability when you're doing big projects now.

**Anna:** Absolutely. And why decisions have been taken, you know, because it's not always immediately obvious to onlookers as to why something's happening. And, you know, it may be, uh, quite confusing.

But I think, yeah, the messaging has to be clear and you have to think about, you know, all the potential queries that those stakeholders may have and, and what their kind of angle is on it.

The Net Zero Energy Project, though, is the first Infrastructure project where they're doing, we're doing a whole life carbon assessment on it...

**Paul:** ...mm-hmm...

**Anna:** ...and we believe that's gonna provide really important data for this. Not only for the sector, the construction sector, and the higher education sector, but also potentially for government in terms of carbon assessment through construction.

'Cause amazingly, the supply chain is extremely inexperienced in, in reporting, um, their own kind of carbon...

**Paul:** ...mm-hmm...

**Anna:** ... usage. Which is, which is a challenge when you are trying, as the client, you're trying to report on it.

**Paul:** So what is a life carbon assessment then for one of these big projects?

**Anna:** The whole life carbon assessment involves speaking to every single supplier on a project, and obviously on this project that is literally hundreds and hundreds of suppliers. Assessing their own processes and, and helping them to understand what those processes are, uh, doing in terms of carbon usage.

So, it's their manufacturing process, their logistics process, you know, their, their transportation, et cetera, et cetera. So everything really that happens before their product comes to this site.

So there's some horrendous, horrendously massive spreadsheet that's capturing all this. And there's a team within the contractors team who are just dedicated to supporting the supply chain. Which you wouldn't, hopefully in 10 years time you won't have to do that because the supply chain will know how to do it themselves.

But they're using some software called One Click to capture all this data...

**Paul:** ...mm-hmm...

**Anna:** ...and eventually be able to report on the, um, the overall calculation.

**Paul:** Does this then allow you to work out how long it will be before the amount of carbon you've saved by having this Net Zero Energy Centre will add up to the amount of carbon that's being expended in building it?

**Anna:** Yeah, exactly. Unfortunately, that's the catch-22. You don't really know at the start of the scheme.

You can't categorically say, you know, that this is how much we're gonna save because you don't really know exactly how much is gonna be used.

**Paul:** ...mm-hmm.

**Anna:** But there's a there's a focus and a proactive approach in terms of trying not to utilise products and, uh, materials that are coming from the other side of the world. You know, trying to use local labour, trying to encourage schemes like carshare, agile working, those kind of things, because we're obviously bringing hundreds of people to site to build the build. And that's obviously, has a, has a cost.

**Paul:** And I know from having discussions with someone who's involved with things such as solar panels in the past as well, when it comes to things like the solar panels...

**Anna:** ...yeah...

**Paul:** ...it might be that there are more efficient ones come along so many years in the future, but it's not more efficient to keep swapping them out every time a more efficient model comes along.

**Anna:** No, exactly. And um, and one of the other challenges is that a lot of this technology, and talking about solar panels, is manufactured in places like China. And that comes with its own challenges.

So looking, looking at the manufacturing process, how are they being made, who are they using to make them? You know, all those questions. And it's sometimes quite challenging to get those answers depending on, uh, the source.

But you know, there are so many factors to be considered in all this when we're badging this as a Net Zero Energy Centre. But at the end of the day, we know that we are having to expend carbon to make it happen...

**Paul:** ...mm-hmm...

**Anna:** ...and that is a tension there, obviously.

**Jan:** And this might be a really good time, 'cause we've sort of alluded to it, but now I think we need to open up the box of what is the, the Net Zero Energy Centre?

'Cause I know it's got many elements to it, so our listeners, I'm sure will be really interested to, to know about those elements and how they fit together.

**Anna:** Mmm. The, when the university declared a climate emergency in 2020, um, it committed to achieving, um, net zero for scope one and two by 2030. Hence, we then need to, to look at where our kind of main kind of carbon emissions are. And the, uh, the vast, vast majority is the, uh, consumption of natural gas, which, which fuels our heat network.

So we've got an original heat network, which was constructed in the sixties, which is fantastic because that's a really, um, that's a really useful tool for us to use. 'Cause we can actually repurpose that, which is great. We don't have to start building that from scratch, which would've been extremely expensive, and, um, yeah, climate-damaging.

So we, uh, currently fuel that with, um, eight megawatts of gas boilers in the existing energy centre, which is located behind the Spar shop on campus. The thought then was right, how do we take the campus off its dependency on gas heating?

So we, uh, commissioned a feasibility exercise and looked at our alternatives, and they were things like ground source heat pumps, hydrogen options, various different things, and we ended up with an air source heat pump solution.

So the Net Zero Energy Centre is being built to house an array of air source, and a few water source, heat pumps. So, the idea being that we will take the district heat network off the gas and it will be driven from the new energy centre, uh, which is obviously powered by electricity rather than gas.

**Paul:** How much of our energy requirement will this Net Zero Energy Centre provide then?

**Anna:** In terms of the heating, a hundred percent. So we currently supply about 60 to 65% of our buildings with the existing heat network...

**Paul:** ...mm-hmm....

**Anna:** ...and once we've expanded the heat network, which those of you on campus will have seen, there's a lot of trenches appearing, have appeared. Hopefully we're getting to the end of that work. But there's huge pipework going, a huge amount of pipework, about four kilometres of it have been sunk into the ground. And that will expand our district heat network to service about 95, 96% of our buildings...

**Paul:** ...mm-hmm.

**Anna:** And the new Net Zero Energy Centre will service all of it. So the gas boilers will be turned off.

**Paul:** Mm-hmm. And so will it even be a case we'll have surplus energy to provide back into, I don't know if you have a national grid for heating...

**Anna:** ...no...

**Paul:** ...or is it just all gonna be, the heating's just gonna be contained...?

**Anna:** ...yeah, no, it just, it just sort of services itself. You don't, you don't create surplus.

We've got the thermal stores...

**Paul:** ...mm-hmm...

**Anna:** ...which I know Jan was here, [Jan laughs] the exciting delivery of the first three of those. And they will hold hot water. So they're basically a resilience kind of store that just uses as much or as little hot water as is in demand.

Obviously in the summer they'll be probably quite full. And in the winter, the hot water will just be pumping around and servicing all the buildings.

**Jan:** That makes sense. And, um, uh, we bumped into each other on campus because the stores are huge and so they, um, we've just got three of them. We'll make sure in the show notes, we have pictures of them so you can sort of see how big they are.

But as they were coming onto campus, it was a Friday night, so me and a few pals [laughs] had a picnic to watch them come in. And I wanted to get there early 'cause I felt sure there'd be lots of other people having a picnic. As it turned out, [laughs] it was your team and us four were the only people. But it was fantastic. I mean, just, yeah, I know, I need to get out more...

[Anna laughs]

**Jan:** ...I, I accept that...

**Paul:** What you get up to on your weekends never ceases to amaze me.

[Everyone laughs]

**Jan:** It was, it was amazing though, seeing, 'cause they, they needed to be guided off motorway 'cause they were just so huge...

**Paul:** ...mmm...

**Anna:** ...yeah...

**Jan:** ...and then coaxed through the, the campus and, are now up at the centre.

**Paul:** Have you been up to them where, where they are now, where they're stood up...?

**Jan:** ...yeah...

**Paul:** ...because now they're stood up, they are quite spectacular...

**Jan:** ...yeah, yeah...

**Paul:** ...and yet really huge. I've walked along the Woodland Trail that we have here on campus and you can, like, see them from wherever you are on that Woodland Trail...

**Anna:** ...from space... [Jan laughs]

**Paul:** ...but when you are right next to them, they are just enormous, and it makes you realise just how much is going to be stored within them. And just why they needed to close down half the roads between here and Timbuktu, or wherever it was that they were manufactured and delivered from. That is, yeah, it's, it's amazing the scale of it. And it demonstrates how big a job this is.

**Jan:** Yes. And is that like, from a technical perspective, I know that this is likely to be the biggest, um, air source heat pump array in the UK.

So it's technically, it sounds like it's, it is breaking barriers and breaking new ground as it is being put together. Is it?

**Anna:** Yeah. I mean, I think, um, the engineers who are designing, who've designed it have said it is, it is very, uh, innovative in the way that the kind of



array has been designed with the combination of air source and water source, but also the fact that we are extending the district heat networks.

We have a, we have a network as I've mentioned, and we're extending it now. There's a, the, the quandary for us there was, well, do, you don't really want to connect a new heat network with an old one, but you want them to work as one.

So the solution, after much head scratching, was to put an interconnector into the existing Energy Centre One. So we've, um, we've had to decommission our CHP, our Combined Heat and Power unit and make space in Energy Centre One for a new interconnector, which will ensure that the whole of the district heating network, old and new, works as one.

But they don't, they're not actually connected hydraulically. Because what you don't want is the new, the old system, which is probably not as clean and shiny as it, you might wish it to be, will then contaminate the new. And that causes issues with pumps and so on.

So that's, that's really innovative. Um, and like you said, the scale of this is, is, you know, unusual.

**Paul:** You've mentioned that there are lots of different people who are working on this, different companies, providers coming onto campus, et cetera, in terms of the carbon footprint.

But what about in terms of what they're learning from this? Are they gaining expertise when it comes to projects such as this, that they're going to be able to employ elsewhere, and that might benefit this university or might benefit other organisations? And is the university learning things from this project that are gonna benefit us as well?

**Anna:** Um, yeah, I mean, absolutely. [laughs]

I mean, every day on this project is, is a school day, as the cliché goes, because I mean, I knew absolutely nothing about heat pumps when I started this job.

And, you know, to be completely honest, the, the prospect of this project was pretty daunting because, um, the other thing that's driving the programme quite hard is the fact that there's external funding involved. So the Green Heat Network Fund, which is, uh, government funding, you know, comes with timescales.

And when we first got the funding, the, you know, the timescales are incredibly challenging. So yeah, so we, we've got a team, so we built, we had to build a team very quickly and we had to make sure that we had the expertise in the team. And it's quite hard building expertise when you sort of don't know what you don't know. If you see what I mean?

So there is quite a lot of expertise around heat pumps in the consultant sort of um, sector, but it's limited. And on this scale and with the complexity of an old system versus a new system and how you bring them all together, that was definitely a challenge.

And it took me a while to realise, along with some of my consultants, that there were gaps in the, in the team in terms of fully understanding the manufacturing process and the commissioning process for these very, very large heat pumps.

So I started fishing around, um, for another level of quite niche expertise in heat pump technology. And I was told that the, the world leaders are the Danes. So, um, you know, heat pump technology is very advanced in Denmark. So we employed a Danish company to, to become sort of very specialist advisors and help us.

And obviously that's fantastic for my other consultants 'cause they can then improve their understanding from learning from the Danes. The contractor who's, who's got an awful lot of, um, internal kind of expertise in it, but they also had only recently started manufacturing heat pumps themselves.

They've put lots in, but they weren't manufacturing them, and they've recently turned into manufacturers themselves. So they were also very, uh, keen to have the Danes on board.

That's quite exciting, 'cause everybody's kind of learning and, and the collaboration kind of culture is enhanced in that sense.

**Jan:** And if you can't do it at a university, where can you do it? I mean...

**Anna:** ...yeah, exactly...

**Jan:** ...it feels like very much our, our core business.

**Anna:** Precisely, yeah.

**Jan:** So, um, so once this is all commissioned and it's operating, are you gonna pop your feet up, have a cup of tea...? [laughs]

**Anna:** [laughing] That would be nice, yeah...

**Paul:** ...is the Cup of tea going to be heated by the new...?

[Everyone laughs]

**Anna:** A cold cup of tea...

**Jan:** So, so what's next for you and, and your team in this space?

**Anna:** We, we're sort of heads down on this job at the moment. But, we would very much like to be able to deliver a, potentially, another turbine. You know, it'd be nice for the University to reach a position where it is self-sufficient in terms of its, um, energy generation.

It's, it's not fun negotiating input increase with the, with the DNO, it's very difficult to get the grid to increase your import because they are trying to expand at a, a very fast rate and they have so, so much demand that they can't really keep up with.

So if Lancaster can be more self-sufficient, that would be great. So the solar farm, once that's energised, will, will, um, provide about 30% of our current demand. But of course, once the new Energy Centre goes online, that will eat up a lot of that, so we'll then need to supplement with something else. And that, in the northwest of England, the magic answer is probably a wind turbine.

**Paul:** Mm-hmm.

**Anna:** Which we've not been allowed to build for a number of years now. We have no approval of funding at this point, but that would be my, my ideal,

**Paul:** I'd like to see a second wind turbine by the side of the motorway that ,anyone who's ever driven past Lancaster University sees Bowland Tower on one side and that giant wind turbine on the other.

**Jan:** Yeah, yeah, yeah...

**Anna:** ...yeah...

**Paul:** ...another one would be good.

**Anna:** Makes us stand out, doesn't it?

**Jan:** It does.

**Paul:** It does.

**Jan:** Well, I think we're...

**Anna:** ...which you need to, in this market...

**Jan:** Yeah. I think in the, the environmental performance of campus league cables, we, we do really well...

**Anna:** ...yeah. We do really well...

**Jan:** ...because of that investment a long time ago in the first wind turbine, and then this progressive topping up things...

**Paul:** ...mm-hmm...

**Anna:** Exactly, yeah.

**Paul:** Well, Anna, thank you very much for filling us in on so much about what's going on here with regards to the Net Zero Energy Centre, but also about sustainability and project management itself. Thank you.

**Anna:** You're very welcome. Nice to meet you both.

[Theme music]

**Paul:** Jan, do you feel that when it comes to project management that now, compared to 20 years ago when Anna was there, there is more when it comes to sustainability?

**Jan:** Ah, for sure.

And I think we focus on the, the, uh, conversation with Anna on the, like the carbon footprint, the whole life carbon assessment, but also in project management, thinking about where things are produced, what kind of labour's involved in producing them through to, you know, other people on other podcasts have talked through to rare earth metals, et cetera, et cetera...

**Paul:** ...mm-hmm...

**Jan:** ...so I think sustainability now infuses that whole set of practices.

**Paul:** It does. And then we're seeing what we're doing here and we've had people, again on various podcasts talking about the work that goes on here at Lancaster University. Whether that's embedding sustainability through the curriculum, whether that's educating everyone and trying to get more sustainable practices, or whether that's, like today we're learning about the

Net Zero Energy Centre, the work that's going on there, the work that's going on with the solar panels.

You know, the desire for wind turbine number two, fingers crossed, that does happen one day and not in the too distant future, but it all ties together to, to give an overall picture of how every aspect of life at university ties in with sustainability.

And that's an element of project management in itself.

**Jan:** Yes. And there's a really amazing scholar called David Orr, who always used to say that the buildings are teaching at the same time as we are teaching.

So our students who come to the University will, um, particularly while they, at the moment they're seeing holes in the ground, but in due course, they'll come to understand that the heat they're experiencing in the lecture theatre or when they're staying in accommodation on campus, is actually being generated in a particular way and stored in a particular way.

So that's sort of a whole holistic approach to education, which isn't just what you're hearing, but what you're living at the same time.

**Paul:** When you said the buildings are teaching, I've got some kind of nightmarish vision of AI [Jan laughs] being embedded in the walls, and students just walk into the lecture theatre and the walls start speaking to them.

What also worries me, is there are almost certainly some people in charge of university budgets somewhere that will hear that and say, now there's a thought...

**Jan:** [laughs] I think you got the wrong end of that stick, but I'm quite, it's quite a thought, but we'll bring you back on, back on track.

**Paul:** It wouldn't be very sustainable to have all that going, I'm telling you that for nothing.

**Jan:** No indeed. We know that from an earlier podcast this season.

But I mean, I, I just find it hugely energising to think of these things.

**Paul:** Yes. And we can see how new expertise is being built in the teams here at Lancaster, in the people that are carrying out these projects. So they know more and more about how they operate.

And we might be one of the frontrunners in this case, of doing this with the Net Zero Energy Centre. People are gonna follow us and they'll benefit from the expertise that is gained from this. And the people who follow them will benefit from all of that expertise. The more expertise you build. The more sustainable it's gonna be, the better it's going to be.

So yes, we may end up with something that's not as sustainable as someone who does this in 20 years, but they'll benefit from our learning.

**Jan:** Absolutely. And I think also, sometimes it's easy to be cynical that you sort of declare something and nothing happens, but I know for a fact that a lot of us work is coming from that declaration of a Climate Emergency in 2020. Which is something the university felt moved to declare, but also our student body campaigned for, for the university to, to, to declare that emergency, and it has meaning. And this is one of the outcomes of that process.

**Paul:** Yeah. It's a practical result of it. And, there was a lot of cynicism, maybe, when the university declared that. What's it actually going to do? Is it just declaring it 'cause everyone else is declaring it? Is it all words? Is there actually gonna be any action?

But no, there's definitive action here showing that that's what's happening. It's not, doesn't always have to be just hot air and empty promises.

**Jan:** Nah, makes you proud. Makes you proud.

**Paul:** Well, talking about hot air and empty promises, shall we talk about language next week?

**Jan:** Okay.

**Paul:** Yes. Maybe less hot air, maybe more constructive grammar.

**Jan:** Okay.

**Paul:** Maybe language that can help communicate the sustainability message better?

**Jan:** Well, that sounds a really nice follow on from today.

**Paul:** Yes. Let's speak to Florencia Lujani, and she's from ACT Climate Labs.

She's gonna be talking to us all about the language of sustainability in communications, in advertising, all across the board.

I think that's gonna be a great conversation.

**Jan:** I look forward to it.

**Paul:** Well, until then, thank you very much for listening. Goodbye for now. I'm Paul Turner.

**Jan:** And I'm Professor Jan Bebbington.

[Theme music]