

THE TALE
OF THE
FORGOTTEN
BUILDING
AND THE THREE
ENGINEERS



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*Cathy Hayward with Andrew Wood and
Steve McGregor*

Illustrated by Dave Hopkins



FOREWORD

The traditional maintenance industry isn't working. It's inefficient, has low service levels, and a poor reputation. Industry research from the Building Services Research and Information Association (Bsria) over 15 consecutive years shows that most customers are unsatisfied with the performance of their maintenance provider when measured against the same 10 KPIs. The sector is also suffering from an acute shortage of engineers, largely because it's seen as an unattractive career.

With 40 percent of the UK's carbon emissions coming from buildings, the industry is being challenged to deliver more sustainability. There's no route to net zero without significant changes to our built environment. And with 80 percent of the 2050 building stock already in existence, the pressure is on to achieve net zero through upgrades, renewables and better maintenance. Our industry is ill-equipped to support this revolution.

Something has to change.

The Tale of the Forgotten Building and the Three Engineers is the story of how our built environment has been failed by the traditional approach of the UK maintenance industry. But how, through smart technology, we can deliver lasting change and prepare our built environment for the journey to net zero.

Andrew Wood and Steve McGregor

DMA Group



PART
I



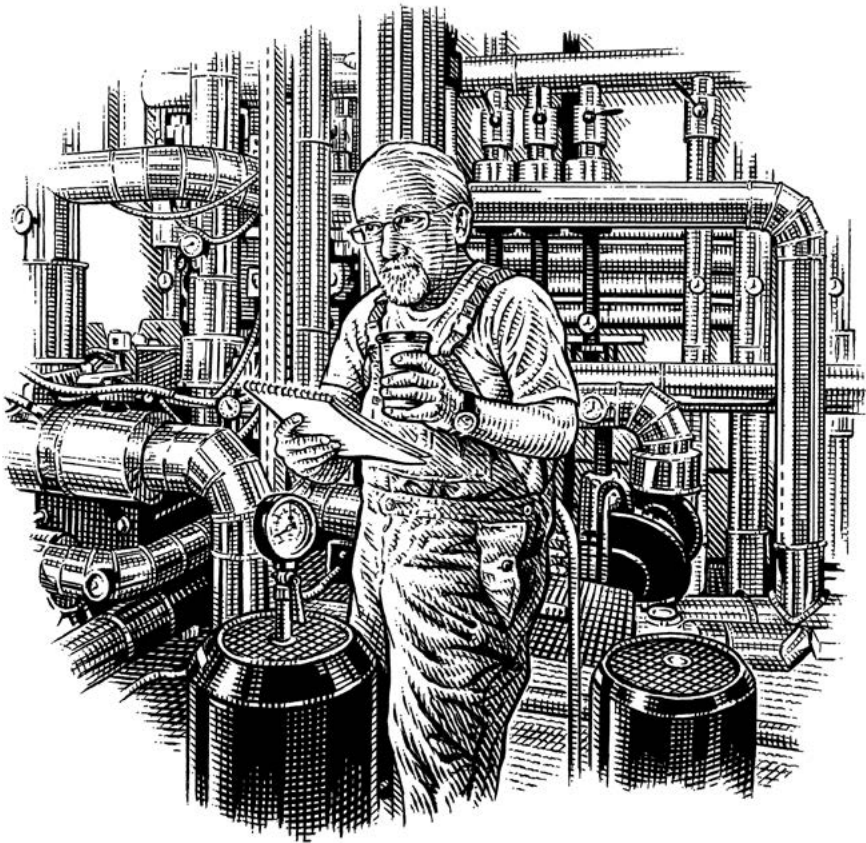
The newly-opened building with the pale blue façade and the white louvres stood just slightly out of town on the way to the motorway. It was the UK headquarters of a multinational consumer goods company and a local landmark. The company logo, imprinted on a flag, fluttered importantly from a flagpole on the top of the building.

Thousands of people streamed in and out of the revolving doors every day. Groundsmen tended the immaculately-landscaped gardens while a car park manager made sure only the most senior people used the VIP spaces at the front. Inside, teams of cleaners made sure everything sparkled. The décor was plush, the furniture expensive. The top floor was reserved for senior people, with thick pile carpet covering the floor of the large private offices where people spoke in hushed tones. The building was proud to play such a significant role in the company's history and people's lives.

A young maintenance engineer called Tony visited the building in his little white van with red livery quite regularly. He'd check the building's inner workings and tweaked things here and there. He spent a fair amount of time sitting in the plant room with a mug of tea listening to the sound of the pumps, chillers, boilers and air handling units. The building knew he was making sure everything sounded ok. That was his way of checking things. Sometimes, he would lay his hands on the plant to check for vibrations and heat.

The building liked the engineer. He always seemed to know what was going to go wrong before the building did itself. He visited at regular intervals and always knew what he was going to do –

although he'd often disappear again to get the right tools or spare parts. When Tony was on holiday or ill, nobody else seemed to know the building quite as well as him. The other engineers would spend ages sifting through paper record sheets to work out what the problem might be and what Tony had done before. And when Tony came back, he'd mutter that they didn't know what they were doing and he'd put things right. The years passed and he eventually retired. But nobody else replaced him.



Over the following few years, the building could feel itself starting to deteriorate. Parts of it began to ache, and hauling the lifts up and down every day made it quietly groan. There was something somewhere deep inside making a whirring noise. The building wasn't sure where it was coming from but it knew it hadn't always sounded like that.

But the building still felt useful. Once the cleaning staff had left in the morning, the office workers arrived and parked their cars in the little white boxes all around the building. They hurried through the creaky revolving doors, across the tiled floor, waving at the receptionist. They spent the day buzzing around inside the building, using the stairs more now that the lifts were so often broken. They sat out on the roof terrace, despite the cracked tiles, chatting and smoking. They pinned charts on walls and talked about targets. They hunched over computers and dripped cups of coffee on the carpet tiles which had replaced the original thick carpet. They sat around in the basement staff restaurant sharing food and laughing and joking. At weekends and at night, when no-one came except the security officer, the building missed the hubbub.

In the dead of night, the whirring sound deep within the building sounded louder. And it worried the building. No-one else seemed to hear it. And if they did, they didn't mention it. The building wondered if it would ever get fixed and missed Tony.

A few years later, there was a different kind of buzz in the building. People stood in small groups with worried expressions on their faces. The building heard the word acquisition and understood that

they were fearful about their jobs. A courier arrived with a large sign and gave it to the receptionist who shrugged and asked where Tony was. No-one seemed to know. Eventually, the receptionist and the man on the third floor who always seemed to be helping other people, tried to hang the sign outside the building. They drilled holes into the building's façade which the building knew would be difficult to repair. They covered up the old logo but the sign flapped in the breeze and the building worried it would fall off and hurt someone. It knew Tony would have done a much better job. The building wondered what it all meant.



Despite all the talk of redundancies, people kept arriving every day and buzzing around. Gradually though, the building realised there were fewer coming in and out. The laughter wasn't so loud in the restaurant and sometimes there was only one solitary smoker on the roof terrace. Eventually one floor was entirely empty, just ghost-like desks and chairs. One of the targets charts had slipped off the wall and fluttered across the floor. But the heating stayed on because only Tony had known how to change it. The parking spaces at the front, which the building knew were reserved for the senior people, were never filled these days. The weeds grew between the cars, the gardens became overgrown and the building continued to ache and decay.

There was only one lift left working now. The other three had been long since taped up. But the building could feel that last lift beginning to strain and one day, after a large group of people squeezed in, the building knew it wouldn't work again. The building wished Tony would come back. He would sort out all the aches and pains and make the building more useful again.

But the final lift breaking turned out to be the best thing that could have happened. Because the man on the third floor phoned up one of the senior people from the new company with the sign over the front of the building. The one which was now listing dangerously. Everyone could hear him shouting about how they worked in a hell-hole and had been forgotten. The building thought he was quite unkind. After all, the building was doing its best to keep going despite no Tony to support it.

The senior woman on the other end of the phone sounded puzzled and kept asking the man on the third floor for the address of the building. The third-floor man became more and more impatient. There was no record of the building at all in the new company's asset register it seemed. They didn't even know the building existed.

The building felt very sorry for itself. It had been entirely forgotten. That evening, when everybody left apart from the security officer slowly doing his patrols, the building settled down for the night and wondered how much longer it could keep going. Everything ached now. The pale blue paint on the front had almost entirely peeled off. The whirring noise inside was deafening. Everything was cracked, stained or decaying. It felt like it didn't have long left.

But the next day, as the sun began to creep up over the side of the building, there was more activity in the car park than there had been for years. Shiny new cars were parked in the VIP spaces. Another white van, a little like the old engineer's van, was parked next to them. People came onto the building's roof and opened the plant room, where nobody had been since Tony had left all those years ago. The building listened as the VIPs in suits told the new engineer that they'd had no record of the asset when they took over the old company. The new engineer, a man called Terry, rolled his eyes behind their back as if to say 'how could you possibly lose a building of this size?'. And the building thought he might quite like Terry.

Terry listened, not just to the people in suits, but to the building itself. He put his hands on the plant and seemed to feel what was going on. The building felt soothed. He talked to the VIPs about the remedial work and the significant investment needed to get it all working properly again. The suits sucked their teeth but Terry talked about the importance of safety and statutory compliance in 2011 and they were soon nodding again. Terry took out a notebook and started jotting down notes. He talked to the suits about PPMs and SFG20 and they nodded again and then eventually left. As they walked down the stairs, the building heard one suit say what a dump the place was. The other grunted but said the building was owned by the company with the new sign, and was in a great location. It could be a real draw for people to work there. Back in the plant room, Terry picked up Tony's old mug, blew off the dust and smiled. The building smiled back.





PART
2

Ten years later, two engineers are out on a job together. One is Terry, an experienced engineer who's worked for the maintenance firm for a long time and seen everything there is to see in building maintenance. You name it, he's fixed it and he loves a good chat. The other is a new apprentice called Katy. It's her first day on the job and she's come straight from a BTEC in engineering at the local college. Terry was told by the boss to take Katy under his wing and show her how it's done.

Terry picks Katy up from her mum's house in town and they set out for their first job. Terry checks his work app which tells him the best route to get to the job bearing in mind the traffic, the maintenance needed and what he needs to complete the job.



There are even some images of the plant and some readings so Terry knows what he's going to be faced with. He shows Katy the data and explains what they're going to do. Terry knows he has the right skills for the job, the right tools and parts in his van and he's not too far away. There's no need for him to ring the customer and tell them he's on his way, because they've already had the automated ETA text and can see exactly where his van is, who's coming and their technical skills.

Katy's rather nervous – especially of Terry who has all the answers and seems very confident. On the way to the job, Terry regales Katy with his war stories – tales of what life used to be like as a maintenance engineer, what he likes to call the good old days when there was little health and safety requirements and engineering was all about getting your hands dirty. Katy looks down at her own hands, more used to playing her Xbox than being covered in grease, and wonders if this is the job for her. Her tutor said that engineering was technology-driven, but that doesn't sound like what Terry does.

When they get to site – a pale blue building with white louvres standing on the edge of town on the way to the motorway – Terry checks his phone again, chooses the parking space the app tells him to, and talks Katy through what they'll be doing and what tools they'll need.

'Don't you need to look at the problem first?' asks Katy, glancing at the app.

Terry shakes his head. 'Nope, the app shows me what the problem is through these images and even a video so I can hear the sound it's making. So I'm pretty sure I know what needs to be done.' He looks down at his mobile and flicks through to another screen and holds it up so Katy can see. 'There are also sensors on each asset which give me data on temperature, humidity, vibration and noise. So sitting here in the van is almost as good as being in the plant room.' He grins. 'I can't fix it from here but I can do pretty much everything else.'

They get out of the van and Katy follows Terry into the building. They go through security, say hello to the receptionist and climb up to the roof. Terry shows Katy the plant room, talks her through each asset and then shows her the problem – it's with one of the pumps.

'The data on the app is showing me that it's probably bearing degradation,' says Terry. He explains how they're going to fix it.

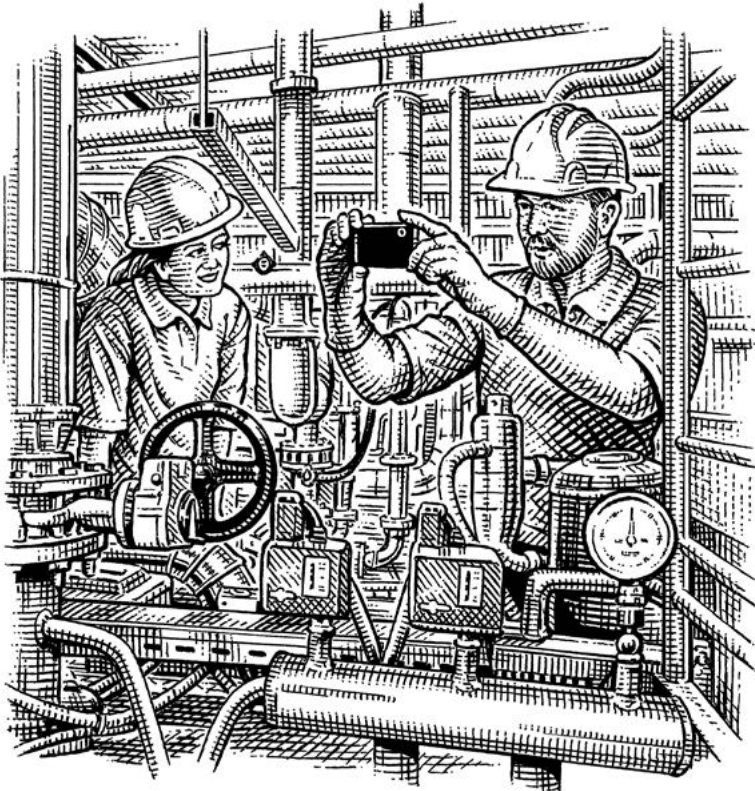
As Terry works, Katy watches him and asks about the app he keeps looking at.

'It's basically replaced all the paper we used to use. I just check the app and I know what jobs I have, where they are, what specific service tasks I need to do and what parts I'm likely to need. It knows my experience and qualifications and if they need someone with different skills, then it'll tell me that too.'

'It looks quite cool,' says Katy glancing at the screen.

Terry nods. ‘When they first brought it in, I was pretty suspicious of it. I thought the boss was trying to track me.’ He laughs. ‘But actually I waste much less time faffing about and I get a lot more work done. The best bit is that I get paid automatically for my over-time. I don’t have to fill in forms or keep phoning up payroll. It’s made my job a lot easier. And, before I start any of my jobs I have to work through all the health and safety questions because the app won’t let me progress until I have. So it keeps me safer too.’

‘That makes sense,’ says Katy. ‘It must make the customers happy too.’



‘Yeah,’ says Terry. ‘They’re much happier, which means they don’t call up the office asking when I’m going to arrive because they can track my van and see what’s happening. If I’m at the wholesalers collecting a part, they can see that too. And they know when a problem’s fixed, because I take a few pictures on the app and close the job off. They can also go into the app and rate us. If we get great customer feedback we get vouchers and it lights up our dashboard.’

‘So have you been to this building before?’ asks Katy looking around the immaculate plant room, a stained old mug the only thing out of place.

Terry nods again, as he slides his wrench into his toolbelt. ‘I’ve worked at this blue building for the past ten years. I know it inside out. But when I’m away or if they need a specialist service which I’m not qualified to do, other engineers or service partners will come and do work. Then I can see on the app what they’ve done and why. All that information used to be lost in paper records so if I went to a new site, or an engineer came to a site I knew well, you’d have no idea about the history of the building. It used to take ages to get paperwork from our service partners, but they all use our app now too, so I can see everything.’

‘What did it used to be like before the app?’ asked Katy.

Terry took a picture of the pump readings and uploaded it to the app. As he packed up his tools, he said to Katy: ‘Every morning, we’d drive to the office, to get hand-written instructions

about a problem at a site. There was usually no detail, the person reporting it wouldn't have a clue, there were no images and I'd almost always have to go to site first to just check the problem. Any data I did get was usually very out of date. So unless I personally knew the site well, like I do with this building, then I had no idea which engineers had done what previously because all that info was back at the office in paper record sheets. Often I didn't have the right tools or spare parts with me. And occasionally I didn't have the right qualifications to fix the problem either, so we'd have to send someone else.'

Terry sighed, and opened the door to the plant room. 'Customers got frustrated that things took so long to fix, weren't planned properly and we didn't communicate anywhere near enough so they got annoyed. There was a lot of blame thrown around between our customer service team and us engineers then which didn't help our teamwork. I felt like I was always being chased and nagged.'

'That sounds crazy,' said Katy, following Terry down the stairs. 'Why did you put up with it? Why didn't anyone change things?'

Terry shrugged. 'We didn't know any better. The market had been like that for years and everyone did it that way. My dad Tony was an engineer too working on the same patch and it was the same then, except there were no mobiles so you never knew where the engineer was. It was all very much down to the personal knowledge of the engineer. It got worse as we got bigger and busier

too, but our new app has delivered lots of smart automation, so lots of things that had to be done manually by me or the office just happens now. It's a lot better and we keep growing now too because we're the only company doing it this way.'

They walked out of the building and back to the van. Terry pointed up to the building. 'This place is a classic example. When I came to the site ten years ago, it had been entirely forgotten. One company had acquired another and somehow they didn't know they had this building because it wasn't even on the asset register and it got into a terrible state. There was no PPM being done and the building was completely non-compliant. It was basically a death trap. It's a miracle someone didn't have a serious injury here. With this app and the way we work now, that just wouldn't happen.'

They put the tools in the van and Terry turned to Katy. 'Why don't you drive to the next job?'

'I don't think I'm insured, am I?' said Katy, looking a bit nervous.

'Well let's check, shall we,' said Terry, picking up his phone. 'Nah, you're ok. The app says you're insured to drive all our vans.' He threw Katy the keys and Katy walked slowly round to the driver's side.

'Download the app on your phone and then you can bring up the route to the next job,' said Terry. 'I've got your log-in here.' Katy fiddled around with her phone and was soon bringing up the map. As she drove, Terry looked at what the next job involved.

‘Right, we have some performance issues on an AC unit so you should be ok to handle this. You’ve got your qualifications so let’s get you some practical experience too.’

Katy nodded uncertainly but didn’t say anything. She really didn’t want to mess this up in front of Terry. Once she’d parked up, she looked at the job on the app and saw there was a separate tab where she could look at the best way to fix that particular problem. She read through the instructions and realised she’d done this sort of thing before at college.

She looked up at Terry. ‘I think I know how to do this. I’ll need to check the filters.’

Terry smiled and watched her get out the tools, test gear and the new filters and start work. She referred to the app now and again to look at the past history of the AC unit, and to double-check she was doing the right thing. An hour later, she stepped back and smiled. ‘All done,’ she said.

Terry nodded. ‘Good work. Now, don’t forget to take the pictures and update the app with what you’ve done and then we can close off this job and grab a cuppa before the next one.’

Back in the van as they headed to the café, Katy said: ‘This app is a bit like Amazon isn’t it. It’s literally got everything you need in one place. Without it, being a maintenance engineer in the ‘good old days’ would’ve been like trying to get everything from the high street. All the things you wanted were in different places

and you had to hunt all over the place and sometimes couldn't even find what you needed. Now it's all together and you can find everything you need within a couple of clicks.'

Terry nodded. 'Yes, I suppose it is. I never thought of it like that.'

Katy pulled up outside the café. As Terry popped out to get two teas, she checked the app to look at the next job. She read through the history of the building and the assets as well as the other work that had been done there recently. It wasn't a task that she was familiar with but she had a read of the guidance on the app and thought that with Terry's help, she might give it a go. As she flicked through the rest of the day's schedule, she thought that her tutor had been right. Engineering was technology led. It really was the job for her.





PART
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The building knew that something was happening but it wasn't entirely sure what. A large banner was being erected outside, supervised by one of Terry and Katy's colleagues.

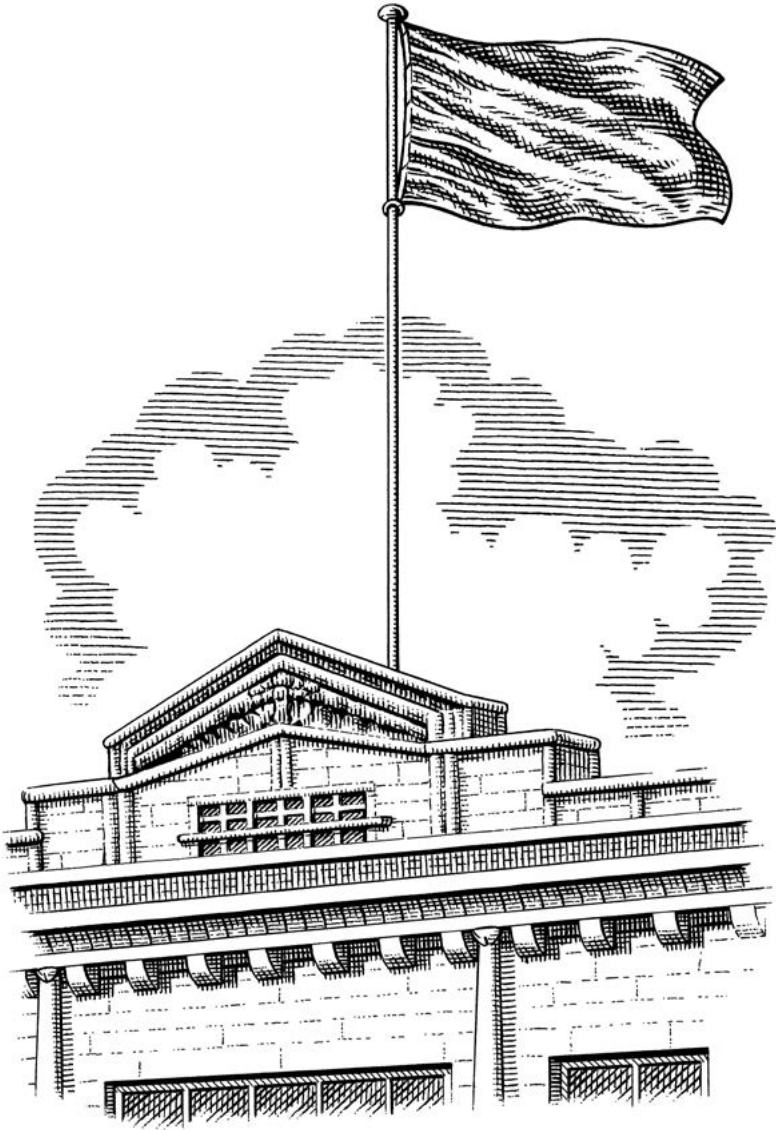
'Sixty years,' someone said.

'And to think they were talking about demolishing it at one time,' someone else responded.

'Well it was pretty out of date, wasn't it. But the refurbishment has given it a new lease of life.' That was Lucy, the new facilities manager. She sounded proud.

The building liked Lucy. She didn't know as much as Terry and Katy about how the building worked inside, but she kept the building looking really good and she'd started the campaign to make the building work better by saving energy and cutting carbon. The building wasn't entirely sure what all that meant, but it knew that it had never felt so well and looked so good. Someone was pulling a new flag up the flagpole.

Terry and Katy arrived in their new electric van and parked around the side of the building. They got out but didn't have any tools in their hands for once. And rather than head straight to the plant room, they stood outside chatting to Lucy. The building watched and waited to see what was going on.



Three large shiny cars drove into the car park and swept into the VIP spaces. People in suits eased out and stood outside the front of the building. Quite a crowd had gathered. There was hardly anyone inside now, they were all standing on the carefully-manicured lawn.

One of the suits was speaking. 'I'm proud to say that our EMEA headquarters has been given not only a BREEAM Excellent rating but also been awarded net zero status. This is an incredible achievement for a building of this age.'

'Especially one that you didn't even know existed at one time,' muttered Terry. Katy laughed.

A small car drew into the car park and struggled to find a parking space. Eventually it squeezed into a spare one and an elderly man slowly got out. Tony. The building hardly recognised him. He walked with a stick now but held his head high as he joined Terry and Katy.

'Glad you could make it Dad,' said Terry, touching Tony on the shoulder.

'Wouldn't miss it for the world,' said Tony. 'I remember coming here in the sixties when this building was first constructed. Never thought it would still be here now and it's set to outlive me.'

Terry looked sad for a moment. 'But that's the power of great engineering. And good technology,' he added and turned to Katy. 'Dad, this is Katy, one of our best engineers. She's been coming to the building since her first day and she's now taking over from me.'

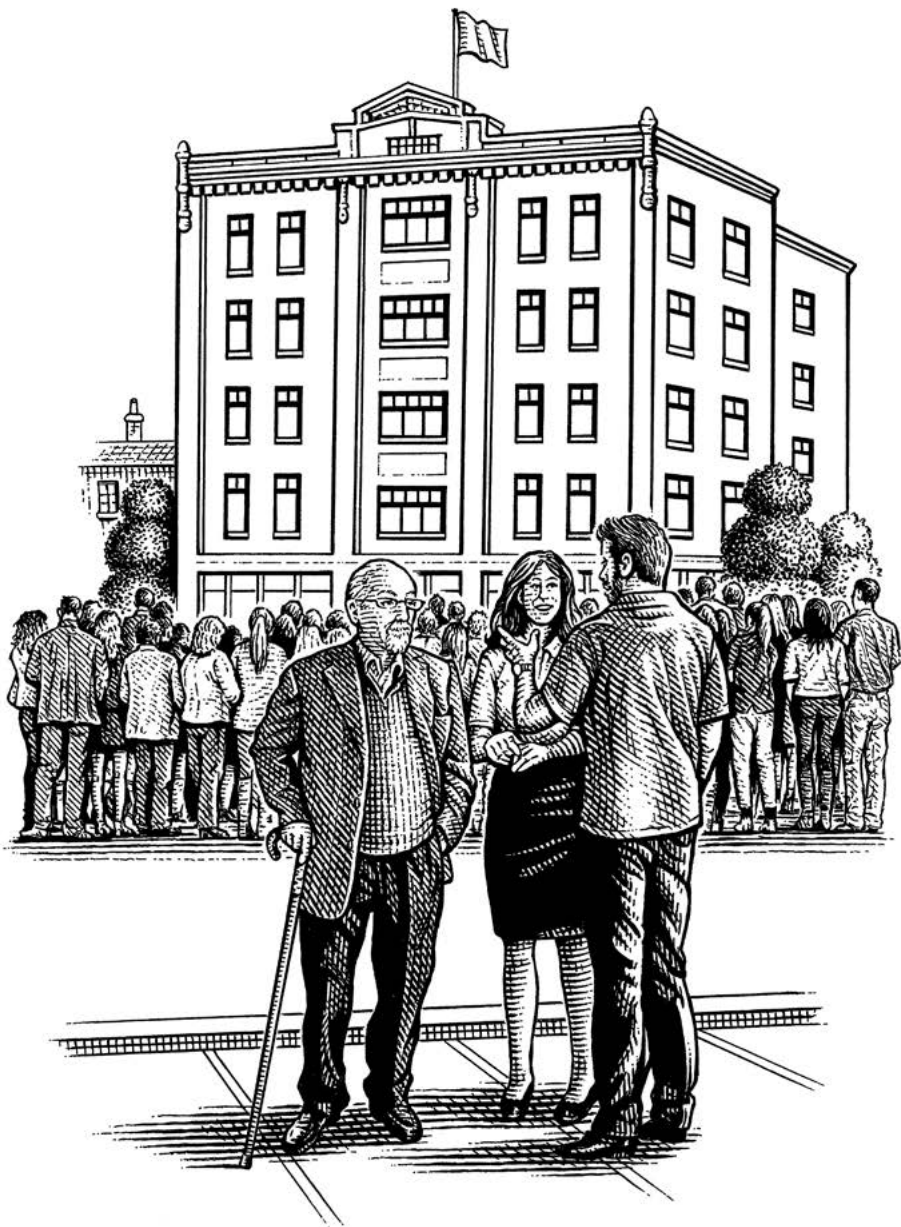
Tony shook her hand and smiled. 'It's good to meet the next generation of engineers. And to know that buildings like this will continue to be well looked after.'

‘It’s essential that they are,’ said Katy. ‘We can’t keep just building new ones when we have all the embodied carbon in our existing ones. We just need to use the technology we have to keep them in great shape for years to come and ensure we run them as sustainably as possible.’

The ribbon was cut and champagne corks popped. The building felt a strange feeling inside. A sort of bubbling up. It was a nice feeling and the building rather hoped that the app didn’t start pinging Katy to look into what the feeling might be.

The building proudly looked down at the crowd of people celebrating its sixtieth anniversary and thought back to when it was first built. How proud it had felt then too when the first people arrived to work there. Everything had changed in that time. The cars in the car park were different. The people who worked inside had changed and they talked about different things now. Even the engineers were different now. Tony, Terry and now Katy. But the biggest change was the technology. Before it had all been guesswork. Now the building knew that its entire history was held in one place and that everyone could look at it anytime, anywhere to see what was happening. It knew that nothing was ever left to chance and that its every ache and pain was recorded and analysed. That was strangely comforting thought the building, and went back to watching the people celebrating outside.





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Our customers, our customer service teams, engineers and service partners can now see the same data anywhere, anytime, on any device in real-time and at no cost. Powered by BiO[®] we have automated all our business processes which will make us the most efficient provider and deliver great service.

We will make buildings more reliable, more energy efficient and legally compliant. BiO[®] will drive the net zero agenda. We will make our engineers' jobs easier, helping them to get the basics right and allow them to add more value – making engineering a more attractive industry to join.

Talk to us about BiO[®] and help to change our industry for good.

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GENERAL ENQUIRIES

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