

In their own  
**words**



From inspiring a new generation of teachers in Ghana to enabling fast-track, low-cost renewable energy in Australia and safely connecting a community in Rwanda, we're changing lives.

**Don't take our word for it.  
Hear from the people experiencing it.**

# In their own words

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# A language we can all understand

**In their own words** connects with the people we ultimately work for, says Group sustainability leader **Davide Stronati**.

Our clients' projects usually run only for a few years, sometimes just months or weeks. But their legacy is generally long-lasting and far-reaching.

Our 13 storytellers talk about the impact a project made on their lives. Some address the 'before and after' affect; others set the context in which it took place; others still share their hopes and aspirations for a better future.

All illustrate a point that is both obvious and complex: Deliberately or unintentionally everything we do is significant, and affects people. We should be concerned about the consequences, good or bad, small or great, of our decisions and actions. Details matter.

Sustainable projects should empower people. Done right, they enable individuals to achieve better lives. Our 13 stories get to the heart of something more abstract that matters to all of us as a company: In a sustainable society, people are free to choose their own path and future.

*"This was their bridge, not a gift from outsiders. From a sustainability perspective, this sense of stewardship is invaluable."*

Ian Towler, civil engineer

## Human stories

Our storytellers reveal the many different ways the word sustainability is interpreted.

For **Greg March**, economic development officer on the KaXu Solar One park in South Africa, sustainability involves demonstrating corporate responsibility towards his neighbours, to alleviate some of the symptoms of acute poverty (p17).

Student **Obi Obiora's** story of sustainability is about overcoming his own and others' negative stereotypes of what a young black man could expect to achieve in education (p13).

*"Our client took their responsibilities incredibly seriously, choosing to collaborate with local people rather than fly in foreign experts, so new skills were retained in the area."*

Mia Fant, environmental consultant

He says it is rare for an engineer to get so close to the human stories of the people who will benefit. It's an experience that has, for him, highlighted the power of community engagement.

For **Imran Azhar**, its about tackling cultural stereotypes and making learning fun, and helping Pakistan reach its potential (p20).

Speaking to some of my colleagues involved in the featured projects offers further insights on what sustainability means. They also highlight the lasting impacts our projects have on us as professionals, doing our jobs.

Civil engineer **Ian Towler** was our project leader for construction of a vital footbridge across the Rutaka Valley in Rwanda (p31).

## A common language

Each of the stories in this publication reminds that change isn't easy. They feature people who go the 'extra mile' and act with determination and passion. Some have battled inequality and disadvantage, showing huge strength and resiliency to create opportunity for themselves and others. This collection of stories is about making sustainability more accessible and relevant. Hearing people's stories, literally in their own words, puts sustainability into language we can all understand.



You'll see we've grouped the stories by outcome themes and highlighted for each one the most relevant UN Sustainable Development Goals. This isn't spin. For us, the SDGs provide a framework within which to plan and deliver – showing opportunities to positively widen our impact or where we must search harder. They encourage us to view what we do more holistically, providing a way to check our contributions to society and ensure we are working towards common goals; a shared purpose across the world.

# Fit for the future

In a world constantly buffeted by natural hazards and human-made pressures, strengthening resilience is crucial.

“We wanted from the start to include energy providers, farmers, industry and environment bodies, so that communities can continue to enjoy the natural habitat far into the future.”

**Sarah Green**, environmental geologist  
working on WRMP 2019 project (p7)

Replenishing Iraq's marshes p5  
Water saving in East Anglia p7  
Climate risks in Shanghai p9





# Defending Iraq's treasures



View Jassim's story of renewal in Iraq



Jassim Alasadi was born in the Mesopotamian marshes and now works to protect them with Nature Iraq. He recounts the fall and rise, and fall again, of these precious waters in the 'cradle of civilisation'.

After the end of the 1991 Gulf War, Iraq's then leader, Saddam Hussain, took revenge on Iraqis who had conspired against his rule. I remember watching in horror as he gave orders to drain the Mesopotamian marshes to flush out the opposition forces who sheltered there.

The insurgents were quickly rounded up, but without the marshes the region suffered terribly. Many of the Marsh Arabs were resettled. It was a human and environmental catastrophe. A whole way of life, which dated back to the ancient Sumerians, all but evaporated.

Over the next 12 years, the population of my hometown Chibayish dropped to just 6000 from 60,000. My father, who ran a supply store, was one of thousands who emigrated. He was terribly homesick away from his beloved marshes.

## Silenced by the regime

During that time, I was working as an engineer with the Ministry of Water Resources. I could do nothing to stop the embankments built to drain the marshes. It broke my heart.

When Saddam's regime fell in 2003, I was still in my ministry role, so I helped to organise the excavators to tear down the earthworks and concrete. When the waters flowed again, there was such excitement and celebration. For the marsh people, this was a dream come true. My father shed some of the first tears.

Now, the population of Chibayish is back at its previous level. Those who depend on the marshes for their livelihood – the rice growers, buffalo breeders, fishers and reed collectors – are back where they belong.

The reflooding of the marshes was one of the first assignments of Nature Iraq, the NGO launched in 2004 to protect, restore and preserve the country's natural environment and cultural heritage. We helped to also develop the New Eden masterplan for the restoration of the marshlands with the aim of restoring the Hawizeh, Hammar and Central marshes to 60-70% of their extent in the 1970s.

Now, we work all over the country, tackling biodiversity and habitat issues. I left my role in the ministry because I felt I could offer more as part of an independent body. The goal of Nature Iraq was close to my heart. Besides, I understand the riches of the marshes, and their relation to the people. They are important culturally, socially and environmentally.

The marshes are home to the Iraq babbler and the Basra reed-warbler, both endangered birds, as well as popular wintering areas for migratory birds in Eurasia, including the Dalmatian pelican, imperial and white-tailed eagles, and the marbled duck – all at serious risk of extinction. To see them return was extremely emotional. Then, in 2009, we confirmed that the Maxwellli otter was not extinct as feared. That was a great day.

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A new threat

The marshes continue to face challenges. Precious water in the upstream Tigris and Euphrates rivers is diverted for industry and agriculture. Meanwhile, a long-term drought is threatening the quality of drinking water throughout the region.

In addition, drainage canals flush salt from irrigated lands into the wetland system increasing the salinity of the area. During the hottest parts of the year, evaporation reduces levels further.

We need a new strategic plan for water resources to guarantee distribution for all different users – agriculture, industry, the oil fields, the environment and households. We also need more engineers and innovation. And yes, we need rain. The health of the Mesopotamia marshes matters not only to Iraq and the Gulf.

It should matter to the whole world. After all, this is where it all began.

“When the waters flowed through again, there was such excitement and celebration. For the marsh people, this was a dream come true. My father shed some of the first tears.”



Project

Biodiversity and social livelihoods action plan, Majnoon, Iraq

Client

Royal Dutch Shell

Expertise

Environmental assessment, biodiversity planning



Linking biodiversity with local livelihoods

The Hawizeh marshlands lie in the northern part of the Majnoon oil field in southern Iraq. They are a Ramsar site – a wetland area of international importance – as well as an Important Bird Area (IBA). The marshlands form an integral part of the wider Mesopotamian marshes, a proposed World Heritage site.

Shell, operator of the oil field at the time, commissioned us to develop a biodiversity and social livelihoods action plan (BSLAP) for the area. Our BSLAP provides a comprehensive framework for all future activities and developments in Majnoon. It also addresses the intrinsic links between the local biodiversity and livelihoods of the marsh communities, built over many centuries.



# Watering the seedbeds of change

Farmer and land agent Henry Cator explains why investment, ingenuity and a shift in attitude are needed to safeguard a sustainable supply of water for the East of England.



We haven't suffered an acute drought in England for many years. But, as we've seen recently in Cape Town, South Africa, a prolonged lack of water can cause immense pain for millions of people. I remember the hot summer of 1976, with its water tankers, standpipes and forest fires. When the next drought comes, are we prepared?

I fear not. One initiative we've taken at Water Resources East, which I chair, is to predict water availability over the next 60 years in the East of England.

It doesn't paint a heartening picture. If we don't change current habits, and the population continues to grow, then we face severe shortages even without the effects of climate change. Yet, convincing people to take action in 2019 for events that will happen in 2080 is difficult. They think: 'It won't impact me, so why worry? Or there's nothing I can do about it anyway'.

On the contrary, there's an awful lot we can all do about it today – and every day.



## No time like the present

It starts with a change of attitude. I sincerely believe that if enough people demonstrate water saving is a priority, then the quantum leaps from science and technology will make it happen. Humans are extraordinarily ingenious and I'm entirely optimistic that we will find solutions.

As a farmer, I create a seedbed to encourage germination and provide the optimum environment to grow, flourish and produce a large yield. I think we have to do exactly the same with ideas for water.

The first step is to store surplus water in the winter. In England's green and pleasant land, all our systems traditionally aim to evacuate water, flushing drinking water out to sea, rather than storing it for times of drought. In simple terms, we need more rain butts. One approach is to incentivise farmers to turn their land into reservoirs. They would stop growing crops and become farmers of water. At a stroke, more water would be available for other farmers, builders, manufacturers and householders.

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### Caring enough

This revolution will need to come from the social sciences as much as the environmental. How do you influence and change behaviour to make people more frugal with water?

The answer is incentives and education. Let's ask farmers, housebuilders and householders: How much water do you need? What if we gave you half that? How would you manage?

Perhaps the farmer would replace a crop with a less thirsty one, the builder would only install greywater toilet systems, and the householder would shower instead of taking a bath. Great. We're on our way.

This may sound fanciful, but I strongly believe that change can come if we all care enough to make it happen. This means becoming more community-spirited, where we're more prepared to help each other unconditionally.

Big picture, not small minds. I don't think there's anything too terrible in that.

### Project

Water Resources Management Plan 2019 supply forecast, East Anglia, UK

### Client

Anglian Water

### Expertise

Water resource modelling, climate and drought resilience, rainfall and runoff modelling



## What if we run out of water?

Anglian Water set us the challenge of delivering a reliable, sustainable and affordable system of water supply to meet multisector requirements across the East of England for the next 60 years. As part of Water Resources East – a partnership of stakeholders in the water, agriculture, power and environment sectors – we used advanced modelling to create a vision for the future.

The water resource strategy we've helped to develop is designed to meet demand from a growing population and adapt to the impacts of climate change. The principles are transferable. We hope to see the framework inspiring strategies in other parts of the UK and across the world.





# Forecast for change in Shanghai

Yu Bian, senior engineer at the Shanghai Water Supply Administration, gives an insight into the challenges and potential solutions to water shortages in her city.



View Yu's Shanghai story

As a coastal city, Shanghai is particularly vulnerable to the effects of climate change, including higher temperatures, rising sea levels, more frequent storm surges, changing precipitation patterns and river flows.

We're experiencing extreme climate shifts during the year: hotter and hotter summers, followed by colder and colder winters. For example, the winter of 2016 witnessed the coldest temperatures for several decades, as low as -7°C in the city, which is something we're not used to.

Indoor water pipes, tanks, and meters froze, and it took a week to recover the water supply.

By contrast, temperatures during the summer can be up to 41°C, which is extremely uncomfortable. For weeks, the temperature doesn't move from between 39°C and 41°C, making life very difficult. I don't like the cold winters, but I prefer them to the severe heat.

Due to the changing temperature, water is becoming an increasingly important concern for people, particularly during the summer. The reality now is that the city has unstable water quality. This is caused by algal bloom in summer, which can contaminate the raw water in reservoirs.

In the winter, we have problems with saltwater seeping into freshwater aquifers in estuaries and contaminating drinking water sources. Our challenge is to provide high-quality tap water to meet the demands of our customers.

We have clear targets. All our water plants will be updated with advanced treatment technology by 2025, with the aim of making tap water drinkable by 2035.  
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## Teaming up against adversity

**Project**

Integrating climate risks with the water supply infrastructure strategy, Shanghai, China

**Client**

UK Commonwealth Office, Shanghai Water Supply Administration

**Expertise**

Consulting services, climate risk in managing water resources, climate resilience

We provided the Shanghai Water Supply Administration with a comprehensive climate change risk assessment of the city’s water supply system, and risk-based policy recommendations on water supply planning and asset management. It was the first assessment of specific climate change risks to a Chinese urban water supply system.

Our risk assessment framework and recommendations will be included in Shanghai’s future workplan, with the aim of building resilience to climate change, reducing water loss in the event of extreme weather, and improving the sustainability and reliability of the city’s water supply services.

**Change is within us all**

I’d say the public are now recognising that climate change and extreme weather is affecting their daily lives. They are starting to understand the potential impact. The government now faces an arduous challenge to improve water quality and achieve clean drinking water for all, against other concerns such as pollution, urbanisation, economic development and climate change.

International assistance is certainly important in this regard. I worked at Mott MacDonald’s Cambridge office for three months in 2015 as a visiting scholar, which I enjoyed very much. I think there is a lot we can learn about water management in the UK to help solve some of the problems we face in Shanghai.

I’m proud of how far the city has come in the last few decades, but we are still adapting to the impact of our rapid growth.

Through ingenuity and shared learning, I’m confident we will meet the challenges we face around water.



# A more inclusive society

When individuals, groups and whole communities are actively included, society grows stronger.

“Our community outreach programmes are making a real difference in disadvantaged neighbourhoods. We’re starting to see local employees replacing those from further afield.”

**James Larmuth**, renewable energy advisor  
on the KaXu solar project in South Africa (p17)

Learning maths in the USA p13

Educating Ghana p15

Add-ons from solar in South Africa p17





# 180-degree playing field?

Obi Obiora studied for five summers with the USA's Calculus project. He looks back on the 'ah-ha' moment in seventh grade, when he understood why his classmates were getting maths quicker.



“We were ahead of everyone else. I already knew everything the teacher was talking about.”



I'd always liked maths. Growing up in central Boston, it didn't occur to me that anyone my age could be better at maths than me. Then, in second grade, I was accepted into the Metco programme, which enabled inner-city children to attend better-resourced schools in the suburbs. Now, I was a minority kid from the city in an affluent community, and I was well off the pace. For the first time, I felt dumb in class.

The history lessons didn't help. You're taught about slavery and how your people weren't allowed to learn certain things. Everybody's looking at you – or you think they are – and so you feel dumber just because of the colour of your skin. Then, in maths class, you find out that you really are dumber, and it's not a great feeling. I'd never stick my hand up or ask a question, in case I looked dumb in front of my white peers. I didn't want to confirm the stereotype. I felt constricted in class. Like I was wearing a tight sweater.

## Releasing the pressure

The Calculus project changed all that. All the minority kids were invited to join an assembly where we met with the project leader Adrian Mims. He said: 'Do you ever feel that other kids get topics much quicker than you do?' We all sat up then. That was the 'ah-ha' moment, because that was exactly how we felt.

'Well, it's not by accident,' Mims continued. 'These kids have tutors. They come from wealthy, competitive families where both parents have degrees and high expectations.

They have better learning resources at home. What I want to do is give you the same tools, so you can compete on a level playing field.'

Of course, aged 13, I didn't want to spend half my summer holiday being tutored in maths, but I could also see the benefits. I certainly don't regret it now. It didn't feel like school either. We were in small, informal classes – six or seven kids at most – where everyone was your friend.

We'd talk about maths one minute, and then sport the next. You got the sense that it was ok to do maths and live a normal life at the same time.

They introduced us to the concepts we'd cover in eighth grade, so we'd be ready for them. They also taught us basic rules about how to solve things and work stuff out for ourselves; how to attack a problem, rather than jumping straight in and floundering about.

For sure, it was different being minority kids together. We'd have lessons about African-American inventors or Latino mathematicians. Discover that people who looked like us have done great things – it's just that their exploits aren't captured in the history books. It was like I'd ripped that sweater off. I'd ask a dumb question, and my classmates would laugh at me, but I didn't feel insulted. It's hard to capture in words, but it was just different. There was no worry about a double meaning from a race perspective.

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### Ahead of the curve

I walked into high school a maths rock star. I'd sit at the back with this white kid and we'd finish assignments in a few minutes. I'd never really spoken to him before, but we became great friends because we were so good at maths. We were ahead of everyone else. I already knew everything the teacher was talking about.

I did five summers with the Calculus project, including one year as a tutor. I'm now joining the commercial engine business division at Pratt & Whitney after graduating with a BSc in mechanical engineering. I like to think that I would have done something in the engineering world with or without Calculus, but the truth is that none of

my minority friends who didn't attend the summer camps have majored in STEM or have a related career. I am incredibly grateful, because the project has proved so instrumental in getting me to where I am today.

I have great sympathy too for any minority kid who feels dumber.

The history you learn at school can affect your ability to learn in other classes.

You can feel sorry for yourself. It's not your fault that you feel that way. But it is your fault if you choose to remain that way, because you don't have to.



## Opportunity shouldn't be skin deep

The Calculus project is a grassroots initiative to dramatically increase the number of minority and low-income students completing advanced maths in high school – giving them a higher likelihood of studying STEM (science, technology, engineering and maths) subjects at university. It is the brainchild of Professor Adrian Mims, one of our experts in Cambridge Education.

Through early exposure to calculus, intensive summer courses, outreach to parents, and continuing support throughout the school year, capable minority students are more confident, boosting their test scores, and laying the foundation for achievement in college and beyond.

### Project

Calculus project, USA

### Client

US education authorities

### Expertise

Closing achievement gaps



# Education is the engine for Ghana's surge



See how Gifty plans to inspire students

Gifty and Helena are set to join the new wave of primary and high school teachers in Ghana. Here, they share their hopes for the future.

## Gifty Mensah is a graduate teacher

The introduction of free high school education in Ghana means all children will now be ready to take the country forward. You no longer need money for an education. You just need a desire to learn and then you can get to where you need to go in life.

My mother did not have the same opportunities as me. Free education is really helping girls in Ghana. Gone are the days when parents would only send their sons to school because they couldn't afford to send their daughters too. The perception was always that boys will do better.

But now we are showing what girls are made of. At college, we have a lot of women achievers in STEM subjects – science, technology, engineering and maths – who tell us about their achievements. They explain how maths and science have improved their learning, which I found really inspiring.

When I entered the college of education, I told my brother I wanted to specialise and teach maths. He said that even men have problems learning maths and that I should choose a 'more feminine subject', one I could easily pass. But, I ignored his advice and followed my passion to specialise in maths.

"I told my brother I wanted to teach maths. He said I should choose a 'more feminine subject', one I could easily pass."

Now, my confidence has grown. During my final year in off-campus teaching practice, I began teaching science and maths to final-year junior high school students, helping them to learn for their graduation exams. My dream is to take my maths and science to a higher level, so that I will not only learn more about it, but also

inspire girls who believe maths is a pathway for men only. In my spare time, I want to engage in community service to help the less privileged in my area and organise classes for people who have difficulty studying maths. This time I'll be the role model. I'll say: If I can do it, then you can too.

I believe that a lot of problems that people encounter in later life start in the classroom. As a teacher, I can help children get the very best start.





### Helena Akato is a second-year student teacher

My final exam results in maths and science at high school were abysmal. I didn't do as well as I know I could have done. Classes were often boring. We would sit in rows and only speak when asked.

“My dream is to help other children, especially girls, to overcome the challenges I faced at school when it came to studying maths and science.”

The teacher filled us up with knowledge from a book and we poured it out in the exam paper, and then it was gone forever. I never really understood what I was learning.

That started to change when I went to college. We were taught maths and science in a more interactive and practical way. Suddenly, I found I was able to help other students when they got stuck.

I now want to motivate other girls who might need that support and help demystify what's going on in the classroom. We're being taught to put children at the centre of the learning experience. This could mean giving a small group a problem and getting them to come up with the solution. The teacher only intervenes when they are really stuck, but they can usually work it out for themselves.

Before, young teachers were sent into the classroom without this practical experience. We now learn how to teach drama and rhyming stories. We work on our voice projection. Colleges of education are now starting to run four-year university courses, with students getting a proper degree at the end. Teaching is now a much more prestigious choice than before.

My dream is to help other children, especially girls, to overcome challenges similar to those I faced at school when it came to studying maths and science. I can provide guidance in the classroom and also help with teaching and the development of learning materials.

Sometimes, to reach your potential, you need to first conquer your fear.

## Turning the barrier into the solution



Ghana's education system is struggling to keep pace with the rate of economic progress in the country. A UK Aid-sponsored change programme, managed by our experts in Cambridge Education, is overhauling pre-service teacher training.

As project leaders for the Transforming Teacher Education and Learning (T-TEL) programme, we are helping the Ministry of Education to develop students with skills in critical analysis and thinking, rather than 'knowledge sponges' who focus solely on passing exams. By improving the quality of teaching and learning in all 40 colleges of education nationwide, the next wave of teachers will be better prepared to set foot in the classroom.

### Project

Transforming Teacher Education and Learning, Ghana

### Client

UK Aid

### Expertise

Education services



# Giving Pofadder a fighting chance

Greg March, economic development officer for the KaXu Solar One solar thermal park in South Africa, talks about the challenges facing local communities in the Northern Cape.



Explore Greg's community outreach story



In South Africa, people say Pofadder to describe somewhere far away, like you might Timbuktu in the UK or Kalamazoo in the US. You can see why. It may be the capital of the Bushmanland region, but Pofadder is a small place, with a population of about 8000 people. All around is empty, arid desert. When you come here, what strikes you first is the sheer vastness of the landscape.

It doesn't take long before you also notice the desperate poverty. Some 80% of inhabitants depend on benefits to survive. The prospects here are bleak.



"It's no overstatement to say that we have become a vital contributor. If we stopped our involvement, then we would be sending the people back to deep poverty and suffering."

As part of our obligations as a power producer, we fund socio-economic and enterprise development activities in the communities that surround our projects. The only other major employer in this remote part of the Northern Cape is the mines dotted around the town of Aggeneys. Mine owners fund the town's schools and local facilities. Our responsibility lies with Pofadder and its surrounding villages.

## Tackling local hunger

Our flagship programme is our soup kitchens and kindergartens. Why? The more we examined it, we understood that people's monthly food parcels didn't stretch far enough. They were hungry.

We have fantastic teams in our kitchens, made up of people who know the area and its people.

They can identify those most in need, whether due to low income, sickness or old age, and ensure they get at least one proper meal a day. We also have a close connection with the local clinics and ensure each person on medication takes it with their lunch.

In some places, kitchens operate from people's own homes, and will offer a porridge breakfast, so pills are not taken on an empty stomach.  
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For the kindergartens, we work with service providers to ensure all pre-school children have at least one good meal every day. We also work with an NGO in the small village of Onseepkans, which provides after-school cultural classes and music clubs for Nama, an ethnic group in South Africa.

These community projects didn't exist before the solar farm. Thinking back to what we found and where we are now, it's no overstatement to say that we have become a vital contributor. If we stopped our involvement, then we would be sending the people back to deep poverty and suffering.

#### Heart-touching gratitude

In my role, I also see the giant gulf in opportunity. At the solar park, there's amazing technology and clever engineers from around the world. Just down the road, there are poor communities struggling to survive with very limited technological skills and knowledge.

When you come to a place like Pofadder, it's hard to believe the level of poverty.

*In some communities, you will be amazed too at the level of gratitude you get for the little that you do. It moves you. It motivates you to do more.*



## Powering up when the sun goes down

Solar energy only produces electricity in broad daylight, not when people most need it. New storage technologies enable solar to feed the grid even at peak times. Concentrated solar power (CSP) linked to molten salt is one such technology.

CSP thermal energy storage is relatively new, so our role as lenders' technical advisor was to provide investors with the confidence that these enormous solar heat collectors would provide a return on investment. The 100MW KaXu plant has proven its worth and we are currently involved in all seven CSP projects awarded under South Africa's renewable energy programme. To qualify, projects must directly support long-term local education, and socio-economic and enterprise development initiatives.

#### Project

KaXu concentrated solar power, South Africa

#### Client

Abengoa

#### Expertise

Solar energy consultancy, lenders' technical advisor, due diligence



# Raising living standards

Equipping people and communities with the skills and knowledge to thrive in a global economy.

“Social enterprise and investing around education is now a big noise and we’re delighted to be leading the conversation.”

**Jawaad Vohra**, education economist and deputy team leader of ILM Ideas 2, Pakistan (p20)

Pakistan’s new comic-book hero p20  
After the Australian gold rush p23







Watch Imran tackle stereotypes through comics

# Solving the mystery of the out-of-school children

Imran Azhar is creator of AzCorp, a comic book company adding a fun factor to education in Pakistan. He believes the best way to combat stereotypes is to bring the real world to life in a way children love.



Like so many kids, I grew up with Superman, Batman and Spiderman. Even as an adult, I could never shake the dream of writing comic books. But something always bothered me. There were no Pakistani heroes, solving Pakistani problems in a Pakistani way. I decided to do something about it.

**Enter a new heroine**  
We worked with education development specialist Nadya Karim-Shaw to create Sheeba and the Private Detectives: Three girls, a boy, a donkey and a dog. They're the Pakistani answer to the Secret Seven, Famous Five and Scooby Doo, except they solve mysteries using

the principles of maths and science. The comics go far beyond academic subjects. From the start, we wanted to include themes around social justice, diversity and tolerance. So, we have multicultural, multifair heroes. As we build the plotlines, we ensure the action takes place in cultural and heritage sites in Pakistan.

The school textbooks in Pakistan are very informative and teach the principles of maths, science, geography and the social sciences. But I always felt they lacked entertaining content. Knowledge should be fun. That's why our comics never preach education – instead we try to illustrate its benefits.



**Freedom to entertain**  
Textbooks tend to look at kids as recipients, not the end customer. As a for-profit business, we need to get children's buy-in to survive. Our mission as a social enterprise is also to do good. So, we aim to challenge stereotypes by planting strong, subliminal messages. For example, it's the girls who take risks and fight crime.

We have deliberately developed characters in a 'he-for-she' way. Take Sheeba. She is the heroine, a rebel, strong and tough, with a love of boxing. By contrast, the boy, Majid, is quiet and calm.

He's happy to follow Sheeba's lead and learn from bookworm Qulsoom. Majid plays a willing sidekick to his precocious little sister Reemi. In Pakistani popular culture, it's usually the females who provide support in the male world, but this is the other way around.

The comics highlight girls' quest for education and mystery solving with the support of the male members of their family. Likewise, the roles of street dog Sheru and grumpy donkey Tufaan are central to the gang's success solving mysteries, and our depiction is a gentle reminder about the worth of even the lowest animals.

We tackle divisive stereotypes by showing the action as a norm. For the reader, it should appear perfectly natural that there are three girls leading the adventure, supported by a boy and two scruffy pets.

We feel this taps into authentic Pakistan, where there are many amazing women. We link the narrative into real stories too. For example, Sheeba is typical of many young girls in the Dhobi Ghat, Karachi's ancient laundry wharf on the banks of the Lyari River.

Sheeba has lost her mother, while her brother has a disability. Her clothes are smudged and patched. Her hair is wild. We are showing that Sheeba's world is not imaginary or untouchable, but a true reflection of life that kids can seek to replicate.





“We tackle divisive stereotypes by showing the action as a norm. For the reader, it should appear perfectly natural that there are three girls leading the adventure, supported by a boy and two scruffy pets.”



### Foundations for growth

These are exciting times for us as a company. We are looking to expand internationally. The comics may be about Pakistani heroes, but the principles that motivate them are universally relevant and popular. Another goal is to reach out to new markets by providing content that reflects multiculturalism.

We recently had an opportunity to bridge the gap between Western and Pakistani literature with a soft launch of our comics among the Pakistani community in Bradford, England. We're developing an audio series and podcasts for digital download worldwide, and looking to translate the comics for Chinese and Arabic audiences.

I'm proud of the way we have managed to develop partnerships with various school networks and organisations to improve the basic education skills of primary school children. Our books reached almost 17,000 children in Pakistan in our first year.

This is an important time for our country. Pakistan is progressing quickly. We have one of youngest populations in the world, with 60% under 25, and the highest growth rate in Asia.

We will be a young country for at least the next 20 years, so we have a window of change that we can't afford to miss.



## A new mind-set for Pakistani education



Pakistan is second only to Nigeria for the number of children not in school. For those who do attend, the standard of learning can vary immensely. DFID recognised the need for fresh ideas and approaches. The Pakistan Education Innovation Fund, known as ILM Ideas 2, managed by our Cambridge Education team, aims to engage organisations and experts from inside and outside the education sector to develop innovative approaches to improving the quality of learning and access to education in the country.

AzCorp's Sheeba comics were funded through ILM Ideas 2 and we're currently working with 10 enterprises receiving grants from the fund, from early childhood centres to digital content for secondary school students. In total, 34 start-ups have been incubated by our partners.

### Project

ILM Ideas 2, Pakistan

### Client

UK Department for International Development (DFID)

### Expertise

Education services



# Peak provider



See Simon's vision for new energy hub

Australian firm Genex is transforming an old goldmine in Queensland into a major renewable energy generator. Executive director Simon Kidston explains how the company plans to connect the world's biggest battery.



The lightbulb moment came in 2014 when the Australian government announced it would start exporting vast amounts of Queensland's reserves of liquified natural gas (LNG) to China. LNG is traditionally the peak energy provider in Queensland. So we hypothesised that these exports would push up the cost of domestic gas. How could we find a way of generating an alternative power source? Could renewable energy fill the gap?

My business partner, Michael Addison, is an engineer, and he identified the use of pumped hydro as a potential storage mechanism for energy, and a peak power

generator. First, we had to find the right site. The biggest challenge to building these assets anywhere in the world is that environmental permitting can be a major drain in terms of time and, therefore, a significant financial risk. In theory, if we could identify a site with a prior land use, permitting would be simpler.

This led us to Kidston. The fact I share a surname with the nearby town is no coincidence. My great-great-grandfather, William Kidston, was the premier of Queensland when gold was discovered in 1906, and the town was named after him.



## The perfect site

That connection meant I was aware of the site and its unique characteristics, which were exactly what we were looking for. Importantly, it has two enormous pits, very close to each other for an upper and lower reservoir. These were filled with water during the mine rehabilitation work.

By linking them together with a tunnel, we will create a 190m water head. Reversible turbines will pump water to the top reservoir during a daily eight-hour cycle, powered by renewable energy. It will then be released downhill again to generate up to 2250MWh for the grid during peak hours.

Each run will shift 5Mm<sup>3</sup> of water, equivalent to 2000 Olympic-size swimming pools.

Kidston was the complete site in other ways. It was already connected to the grid via a transmission line. As an added bonus, there was a pipeline to the nearby Copperfield Dam, so the reservoirs can be refilled in case of evaporation.

The region is perfect for renewable energy, as it has the most amazing solar resource, perhaps the highest anywhere in the world, and a reliable wind supply.

## Holes in the ground

In terms of storage hydro, just having those two enormous holes in the ground has given us a head start of about A\$500M in terms of sunk capital.

Being so remote, there is zero community opposition, although we were mindful of engagement from the get-go. Fortunately, we had unanimous support in the town, so it was easier for the local council to get on board, as well as the state and commonwealth governments, which are the three critical stakeholders in the development of the project.

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“Large energy infrastructure like this typically takes a decade from concept to completion, and we're on track to doing this in less than four years.”



### Building momentum

The first stage of our project is to build a 50MW solar farm, providing energy for 27,000 Queensland homes every year. We'll then install an additional 165MW solar farm during the second stage to provide the power to pump water back up the tunnel during off-peak times. The final stage is a 150MW wind farm, although that's still going through a viability assessment.

I'm enormously proud of the speed and momentum we've managed to generate in relatively short order. Large energy infrastructure like this typically takes a decade from concept to completion, and we're on track to doing this in less than four years. It's exciting to do something that's never been attempted before in Australia, or on this scale anywhere in the world. And it feels good to provide an enduring, productive economic use

for land that was extensively disturbed by open-cut mining, producing more affordable, cleaner energy for thousands of Queensland households. We're making intermittent energy reliable and dispatchable – and that's the holy grail of the renewable energy industry.

The fact we've found a way to do it at low cost is down to the hard work and understanding of our team, stakeholders and partners.

## Generation X-factor

The Kidston pumped-storage hydro project will turn two redundant gold mining pits into one of the world's largest solar-powered batteries. By using renewable energy to pump vast quantities of water up from one giant crater to the next, the interlinking tunnel can support 2250MWh of peaking power generation as the water drains back down.

By optimising the original plans, we've reduced costs. This includes using the existing mining pit as an upper reservoir instead of building a new one, and modifying both the powerhouse and alternative waterway designs.

### Project

Kidston pumped storage, Queensland, Australia

### Client

Genex Power

### Expertise

Owner's engineer, feasibility study optimisation



# Starting over

New beginnings for former industrial areas after long-term decline.

“We’re proud to play a significant role developing a road that’s opening opportunities for local businesses and growing the region’s reputation as a hub for logistics and connectivity.”

Nigel Morley, project leader for the Great Yorkshire Way, UK (p28)

Shanxi leaves coal behind p26  
Doncaster takes off p28





# What's next for the coal hub of China?

Junyang Zhang works as a conference interpreter and has specialist knowledge of the green transformation in Shanxi state. He explains the changes and challenges for its people in a post-mining future.



Shanxi is known for coal. For the past century, the economy has relied heavily on mining. At its peak, we produced one quarter of all the coal in China. That started to change 10 years ago when the government began widescale transformation to renewable energies. Shanxi is now seeking a new growth pattern towards tourism and agriculture.

The pollution here was terrible. In Liulin, a county in western Shanxi, almost 75% of all adults ran a coal-related business, whether mining, transporting or selling coal.

It used to be said that you never found a poor man in Liulin. But you simply couldn't breathe the air. The roads were covered in coal dust. I remember walking on the streets with shiny, newly polished shoes and they immediately got very dirty.

Mine accidents were another part of growing up. There be would news reports almost every month. Coalbed methane was a specific hazard, but now, thanks to modern technology, we are using the gas for cooking, heating and even powering taxi cabs.

“The roads were covered in coal dust. I remember walking on the streets with shiny, newly polished shoes and they immediately got very dirty.”

## A different path

My home region is Qinshui County in south-east Shanxi. It sits above one of China's major coal reserves. My father had no choice but to join the mine. He needed an income to raise a family. The coal mine was the way to get a good, direct wage, so a lot of young people worked there.

I remember he got so tired and he wanted to quit, but he just had to keep working for our livelihood.

In 1997, my father was badly injured in an accident. I saw him lying on a truck, bleeding. Fortunately, he recovered, and he got a pension. I didn't want to follow in his footsteps,

so I worked very hard to find a different way of earning a living. Languages kept me out of the mines. I majored in English at college and have since worked as an interpreter for the World Bank and Asian Development Bank, as well as lecturing at university.  
>





Now, I use my language skills to help change the destiny for Shanxi. Bringing in international experience, such as best practice, is very important here. For example, we have developed close ties with the Ruhr district in Germany. It was also once dependent on coal, but has undergone a massive transformation.

**Going forward**  
To move forward, we are also looking back. There is a big push towards restoring past glories, so that relics and monuments can attract visitors. Datong, Shanxi's second biggest city, has the famous Yungang Grottoes, carved into the mountains towards the end of the Jin dynasty (c.465 AD).

The site was dilapidated and covered in coal dust but has now been completely restored. In agriculture, we are trying to become a major area for fruit, such as jujubes (dates) and apples. So, there are signs of transformation. We want people to learn about Shanxi. We want to be known for something more than mining.

Coal is part of my life story, and I have such gratitude for my father. He gave me the opportunity to choose my own path, paying for my middle school and university tuition fees.

*I think that both my parents are very proud that I have changed my destiny.*



# Can Shanxi look beyond mining?

Shanxi's economy has relied on mining but this has led to severe environmental degradation, with declining air, water and soil quality. In 2010, Shanxi was approved by the government as a pilot site for economic transition, livelihood improvement, urban and rural development, and ecological remediation.

As part of a project funded by the Asian Development Bank, we developed methodologies and indicators for the green transformation of the coal industry. By studying local conditions and comparing them to examples in Europe, North America and India, we were able to establish best practice for the province that could be used as a model for sustainable low-carbon development in other parts of China.

**Project**  
Green transformation guide, Shanxi province, China

**Client**  
Asian Development Bank

**Expertise**  
Environmental assessment



# Doncaster on the high road

Anglo European Express managing director Gary Winterman has built up the cargo terminal at Doncaster Sheffield Airport. He explains how a 4km road is helping the region to move on from its coal-mining heritage.



When our company came to Doncaster Sheffield Airport (DSA) in 2008, the road was just a pipe dream. It was then known as Robin Hood Airport and was still finding its feet. There were less than 1M passengers a year, and only a handful of cargo flights. Our original contract was to transport the freight, but as the airport has expanded, we've helped to build up the cargo terminal to what it is today, with an annual throughput of more than 10,000t.

It's quite something to see the area turning around – and to have played a part in its regeneration. I'm Doncaster born and bred, raised not far from the airport, so I've seen how things have changed. Historically, this was a proud mining region. When I left school in 1984, a lot of the pits were closing. The manufacturing jobs soon followed. I signed on at a major nylon plant, but it too closed down. So, I bought a van and started running deliveries.

The atmosphere in the town then was depressing. There was nothing the next generation could look forward to.



## Back in the fast lane

Now, Doncaster is taking advantage of its position on the map and its fantastic connections. The new link road has made such a positive impact in terms of job creation and regeneration. It has opened up the iPort, a massive distribution centre next to a 12ha intermodal rail freight terminal. Doncaster is starting to be known as a centre for logistics.

Access was a problem and the new road was the missing link in the chain. Up to 50 articulated lorries a day, depending on flights, would rattle through the local villages to and from the airport.

Those trucks have now been diverted away from the smaller roads, making them safer and less polluted, and saving hauliers time and money. At a stroke, villages have changed from a highway to a destination of their own. They can start to reinvent themselves.

A good example is Rossington. When its pit closed in 2006, the village effectively lost its reason for being. The young people there had little chance of finding a job, and with no access to other towns and cities, due to the inadequate road network, they were physically, socially and economically cut off.

Now, they have a release hatch. They can reach the motorway and the nearby colleges and employers.

We've had some memorable milestones when I've thought: yes, this is really happening. For example, when the first Antonov 225 – the largest cargo freighter in the world – landed at DSA in 2015, it was a big, loud validation of the progress we had made. The cargo airlines are always watching who's doing what, so if a competitor lands somewhere new, then their rivals want to experience it too. >



“We recently got an emergency request to fly out parts to a major car plant in the US. Who would have thought a 4km road outside Doncaster would make such a difference to car production in the US?”

#### Flying to the rescue

We’re smaller than most, but we can compete on speed and access. Planes don’t get caught up in the stack like at other airports. It’s just easier, and in today’s interconnected logistics network, that amounts to massive savings down the line.

We recently got an emergency request to fly out parts to a major car plant in the US. The fact we could keep one of its key production lines open saved the automobile firm huge amounts of money. Who would have thought a 4km road outside Doncaster would make such a difference to car production in the US?

Twenty years ago, everything was closing down and shops were boarded up. Now, we’ve got new restaurants and retail parks.

Doncaster has felt the pinch, so hopefully it’s our turn to enjoy the surge.



## Moving forward again

We provided technical and design support to the council during the construction of the Great Yorkshire Way, a new 4km highway connecting the M18 with Doncaster Sheffield Airport. The road also links to former mining villages, helping to regenerate a region that has suffered economic isolation since the loss of the coal industry.

The growth of the airport, as well as other developments such as the iPort and rail logistics park, have allowed Doncaster to take advantage of its excellent location, and so open a new chapter in its economic story. Our team helped access funding, and offered advice on transport and environmental appraisals, planning submission preparation, public consultation, contractor procurement and land assembly.

#### Project

Great Yorkshire Way (previously known as the Finningley and Rossington Regeneration Route Scheme or FARRRS), Doncaster, UK

#### Client

Doncaster Metropolitan Borough Council

#### Expertise

Transport planning, economic assessment, civil engineering, highways design



# Making vital connections

Overcoming natural and human-made barriers can turn fortunes and lives around.

“We met families who had lost loved ones to the old bridge, or who were restricted from accessing their fields or schools.”

**Ian Towler**, project leader for the construction of a vital footbridge across the Rutaka Valley in Rwanda (p31)

Connecting a Rwandan community p31  
New path for the Balkans p34  
Getting to work in Seattle p36







Click for Divesh's bridge builder story

Hydrologist Divesh Mistry captured in photos the construction of a vital footbridge in Rwanda. He recalls the experience.

Innocent Rurangwa was 22 years old when he was washed off the makeshift log bridge linking two communities on either side of Rutaka Valley. His body was never found. After days of torrential rain, the Nyagako River had burst its banks – a frequent occurrence during the wet season. Innocent attempted to cross the bridge to complete essential work on the family farm. He left behind his wife and a new-born child. That was in 2008. Four more villagers died trying to cross the river during the rainy season over the next few years.

In 2017, a 10-strong team of volunteers from Mott MacDonald and Balfour Beatty travelled to Rutaka to help construct a footbridge to enable the local community to cross in safety.

The valley is incredibly beautiful, a typical rural Rwandan landscape in the 'land of a thousand hills'. Defined by a mosaic of crops and terraces, the Nyagako cuts its way through the slopes leaving an extensive floodplain, a constant reminder of the transformation of the landscape during the wet season.

The old bridge was frightening: just a couple of logs with a 2.5m drop either side. It was so treacherous that our team weren't allowed to set foot on it. In the dry season, you'd break your leg if you fell off. In the wet season, the logs were slippery, with the river raging below.



#### Personal journeys

To capture the significance of the bridge, I organised a participatory photography project with 10 people from the local community. They each received basic training and a disposable camera to document what was most important in their lives, with a particular focus on 'journeys'.

Francine, a mother of four, said her children had previously been separated from their grandparents each year for up to three months. They were delighted with the new bridge because now they would get more gifts!

During the rainy season, farmer Pretake would miss valuable news, but the bridge enables him to now access community meetings on the other side of the valley. Filston took pictures of his brother's wedding, with the bride having to hitch up her white dress and struggle across stepping stones to the ceremony on the other side.

Emmanuel, a recent high school graduate, took carefree photos of his walks around the valley to visit friends, including his girlfriend who lived on the other side. It will now be easier for him to socialise and seek new job opportunities as a labourer during the wet season.

Valentine walks one hour each way to and from school, crossing the bridge there and back. She typically lost up to 21 days of education during the wet season as she was unable to cross the river. Sometimes, she got stranded on the far side during flash floods and had to stay with relatives or friends for up to four days.

Jean-Claude was a central figure in the local bridge building team. He was extremely proud of his involvement. Family is very important to Jean-Claude, and the new bridge has made it easier for him to see his daughter on the other side of the valley.

>





“After the project ended, I left my job as a hydrologist and accepted an invitation to photograph another project in Uganda. Rutaka has built a bridge for my career too.”



Venant was another who worked on the construction. He discussed how the new bridge made access to the health clinic that much easier, especially for expectant mothers. Journeys to the clinic would take an additional three hours by foot when the river was impassable.

Pascal, a subsistence farmer, has spent his entire life in the valley. He supports his family with crops of plantain, cassava, beans and sweet potatoes. Every year during the wet season, Pascal lost around 100kg of his crops as he couldn't maintain them all.

That loss will now feel like a surplus, which he hopes to sell at market to help fund his grand-children's education: 'I am very happy for the building of the bridge.'

His message was particularly poignant. He had asked his younger brother Innocent to tend the crops on the day he died.

As we left the village, we passed Innocent's abandoned house, which stood unattended on a plot overlooking the valley.

The overriding message from our 'photographers' and other members of the community was one of relief.

Now, kids will not miss school if they live on the other side of the valley, crops will not rot in the fields because farmers can't tend them, and, if they get sick, people will be able to access healthcare facilities quickly all year round.



## Fancy footwork

Bridges to Prosperity (B2P), a global non-profit organisation, has constructed more than 200 footbridges in developing countries since 2001. The bridge connecting farming villages in the Rutaka Valley in Rwanda is one example.

As part of B2P's team of 10 volunteers (five from Mott MacDonald and five from Balfour Beatty), we helped the villagers build a footbridge that will give them year-round access across the valley. We introduced a new method of construction – eliminating the need to work at height to fashion the swing assemblies and install the decking – that improves safety and quality. This innovation will enhance the way that B2P builds its bridges in the future.



### Rutaka bridge in numbers

**5000** **40m**

people positively impacted

span over river

#### Project

Rutaka bridge, Muhanga, Rwanda

#### Client

Bridges to Prosperity

#### Expertise

Structural engineering



# Combating isolation

Yngve Engstrom, head of co-operation at the EU delegation to Serbia, explains his optimism for the people of the Western Balkans.



A major road bridge over the Sava River opens in 2019 linking Bosnia and Herzegovina to Croatia. Funded mostly by the EU, the bridge is part of the recent push to improve connectivity in the six Western Balkan countries – Serbia, Bosnia and Herzegovina, Montenegro, Albania, Kosovo and the former Yugoslav Republic of Macedonia – with a view to securing their eventual accession to the bloc.

Connectivity is critical to the economic development of the region. People and businesses in the Western Balkans face considerable challenges, particularly around energy

failures, transport bottlenecks and poor-quality internet. Access, data protection, energy and fast broadband are all essential for a modern economy. Creating the right infrastructure will help level the playing field for people in the Western Balkans. With smoother access, for example, small businesses in Serbia can offer competitive rates of production to companies in other parts of Europe.

But just as important as roads and pylons are the soft measures, such as reducing valuable time lost at border control or cutting the bureaucratic burden of outdated legislation.

## Turning a new page

Having worked in the region for many years, I don't see the states as locked in transition, but rather on a journey towards accession to the EU. Major issues, such as the rule of law, governance, gender equality and environmental protection are being addressed.

Sustainable economic growth is another precondition for successful EU integration, and the Western Balkans is currently attracting investment.

For many of the people living there, the rate of growth hasn't been fast enough though. They are impatient.

Salary levels and life quality have not changed as quickly as expected and many skilled people have left. They will be needed as economies grow.

Maybe there will be employment opportunities soon and many will return.  
>

“The transition period provides a strong agenda to undertake reform, which can be difficult without the carrot of EU membership.”





Clear signal of intent

People in the Western Balkans need to know with confidence that the door is open for every country in the region that meets the accession conditions. Serbia and Montenegro may join the bloc in 2025. That might seem a long time off, but I get the sense that people understand it is a realistic aim.

From a professional point of view, I was drawn to the region for the enlargement process.

I was involved when Sweden joined the EU, so I have seen first-hand how accession can help lever change. The transition period provides a strong agenda to undertake reform, which can be difficult without the carrot of membership.

It's important to remember how much the region has changed in the past 20 years. Albania, for example, has become a modern economy after more than 40 years as a Soviet-style communist state.

Likewise, we've seen the break-up of the former Yugoslavia, and the subsequent conflict and reconciliation process.

I'm truly optimistic for the long-term future of the region. Things will not change overnight if countries join the EU. It will be a long process, but changes will come in transition, as well as post-accession.

Connectivity is about more than transport corridors, transmission lines or even high-speed broadband. It's about linking peoples and economies, creating faster and safer access to jobs, bringing better services and goods to market. It can change lives.



Constructing the case for EU accession

In 2009, the EU pooled resources with international financial institutions, donors and the region's governments to create the Western Balkans Investment Framework (WBIF). We are leading a business consortium tasked with providing technical assistance services to WBIF beneficiaries. The aim is to develop bankable transport, energy, environmental and social infrastructure, and digital economy projects in six Balkan states.

Overall, we are contributing to 26 sub-projects, 16 of which have been completed. They include feasibility studies for the 220kV Elbasan1-Fieri transmission line between Albania and the Republic of Macedonia, and a biomass district heating system in Kolasin, Kosovo.

Project  
Western Balkans  
Investment Framework

Client  
Business consortium

Expertise  
Technical services, economic and financial analysis, environmental and social impact assessments, preliminary and detailed design, onsite supervision



# Downtime downtown



Check out Traci's commute here

Our own people are commuters too. Speaking with her Seattle citizen hat on, project control specialist Traci Molitor gives her verdict on the new light rail line that carries her to and from work.



Before the LRT, public transport wasn't really an option, so I would drive to our downtown office. The journey was horrible. Morning rush hour was so bad I became the office early bird, arriving about 6am. In the afternoon, going home, it didn't seem to matter what time I left. Most days it was at least two hours to cover just 40km.

Commuting on the light rail is so... nice. There's no other word for it. My home is about 16km from the end of the line, which takes me about 15 minutes to drive.

Then I enjoy a gentle 40-minute train ride. I always get a seat in the morning. In the afternoon, it can be crowded, but at least I know I'll be home in one hour, no matter what. That's super nice because I'm able to see my family, help my daughter with her homework, do whatever, and not spend half my evening fighting traffic.

You get all kinds on the train: construction workers, nurses on their way to hospital, the students who continue past downtown to the university, and tourists, who hop on from the airport.



I'm always telling people that you can get downtown from the airport for just US\$2.75 in 30 minutes.

I do it myself if I take a flight. It's so much easier and cheaper than taking a taxi or renting a car, and you get to avoid the traffic. The only drawback is you lug all your luggage!

"I would drive every day, which was just horrible. I'd resigned myself to the misery. It was what it was, and it sucked."

## No place like home

I'm a Seattleite, born and raised. I've lived here all my life and I honestly can't imagine living anywhere else. Contrary to what people think, we have gorgeous weather. You get all four seasons. There's water all around. The mountains are one hour away. It's so green and so pretty.

Seattle people are laidback, which I like. You get lawyers and bankers in conventional business dress, but we have a lot of tech companies too. Amazon is here. Microsoft too. The guy or girl next to you on the train in the t-shirt and jeans could well be the latest e-billionaire. >



I've always been a Seattle Seahawks fan, just as my parents were, and can take the LRT to home games. The 2013 season when we won the Superbowl was just crazy. Seattle often has parades, when certain streets are blocked off and you can't park. So, for big events, the LRT is a great thing for the city.

#### Our chance to kick on

Seattle has changed a lot since I was a kid: more buildings, way more people. By 2009, the LRT was desperately needed. The city had outgrown itself. We could have used it years ago to be honest. We'd look enviously at cities like New York or Washington DC that had subways. Now, the city is free to kick on again.

Earlier in my career, I'd shy away from finding a job downtown because it was hard to get there. The traffic was terrible and the cost of parking was astronomical. Taking the bus wasn't convenient, or it took forever. The light train has opened opportunities for people in the suburbs to find work downtown.

There's something else about the LRT that makes a difference: it's so reliable. The peace of mind knowing I can get home in one hour at any time of the day if my daughter needs me is so important.

I've found my happy place. Sitting in a car in bumper-to-bumper traffic doesn't allow you to switch off after a tough shift.

Downtime to decompress is valuable. I'm sure there were days when I'd get home and I was super irritated and grumpy.

Now, I'm more present when I walk in the door. I'm more me. That's so nice.



## Sound thinking

#### Project

The Sound Transit light rail programme, Seattle, USA

#### Client

KJM & Associates, Central Puget Sound Regional Transit Authority Board

#### Expertise


Management systems, project controls, design, engineering

We have worked on the Sound Transit light rail programme since 2009. As the main civil and structural designer, we were responsible for bid and design support for the southernmost segment of the 22.5km Central Link. It comprises a 6.7km elevated and a 1.2km retained earth section, with an elevated signature station where the line connects with the link to SeaTac Airport.

We were also responsible for the preliminary and final design of the 770 Airport Link, a 2.7km LRT connecting downtown Seattle to the airport. More recently, we were lead joint-venture partner for construction of Beacon Hill station and tunnels as part of an extension to the LRT. More than 23M passenger journeys were made on the LRT in 2017.







**“You can just tick  
the boxes, or you  
can go above  
and beyond.”**

**Greg March**, economic development officer,  
KaXu Solar One solar thermal park, South Africa



In their own  
**words**

Opening opportunities with connected thinking.