



# In their own words

After the excitement and activity of implementing projects are over, what is the legacy of change?

Hear first-hand from the people experiencing it.

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# Infrastructure against inequality

The links between economic sustainability and social development are clear, albeit there are issues to resolve — not least around inequality. It's true that the world is a more fragile place when it leaves large sections of society behind in the pursuit of growth.

But the link between economic sustainability and inclusive social outcomes is even more crucial when you think of the importance of maintaining

an environment in which we can enjoy healthy and prosperous lives. Climate change, air pollution, water quality, ecosystem fragility, and species loss all impact society at large.

What's becoming increasingly evident is that infrastructure companies like our own have an obligation to provide solutions that are more inclusive. **We must play our part in addressing inequalities.**

The 17 UN Sustainable Development Goals provide a framework for more equal and sustainable global development everywhere. Infrastructure is explicitly present in goal nine, which notes that investment in transport, irrigation, energy, and information and communication technology is crucial to achieving sustainable development and empowering communities. But what we do as an industry has a significant impact on many, if not all, of the other 16 goals.

Planned and delivered with thought, infrastructure can provide outcomes that are both environmentally sensitive and socially inclusive. And it can help resolve many of the challenges we face as a society.

The projects you can read about in this report demonstrate poignantly how interventions can make a lasting, personal difference to many individuals.

**Keith Howells, Chairman  
Mott MacDonald**



When we sat down to plan this publication, our aim was simple.

Projects always talk about leaving a legacy of change. The best way to bring that to life is by asking the people affected how their lives have been altered. For example, what does it mean to see parents in your community choose education for their girls, not early marriage? Or to know your courage saved your hometown from economic ruin? Or to see your skills or vision improve the aspirations of strangers you pass in the street?

In this report, we have captured those stories from people whose lives are impacted by our work across the world, sharing their views on how sustainable action is making a difference on a human level.

I firmly believe that to be better at our job, we must see people and communities as the end users of projects and the providers of dreams and proposals to change the world around them. It's people who fight to make things happen. It is communities who rally together to turn ideas into reality.

As a professional services company, **our role is to help individuals and communities get to their destination as skillfully as we can.** Only by understanding what they experience, believe, and desire can we truly deliver the services they want.

That's the connection we set out to make in the following pages.

That's the connection we make in delivering the projects we are involved in.

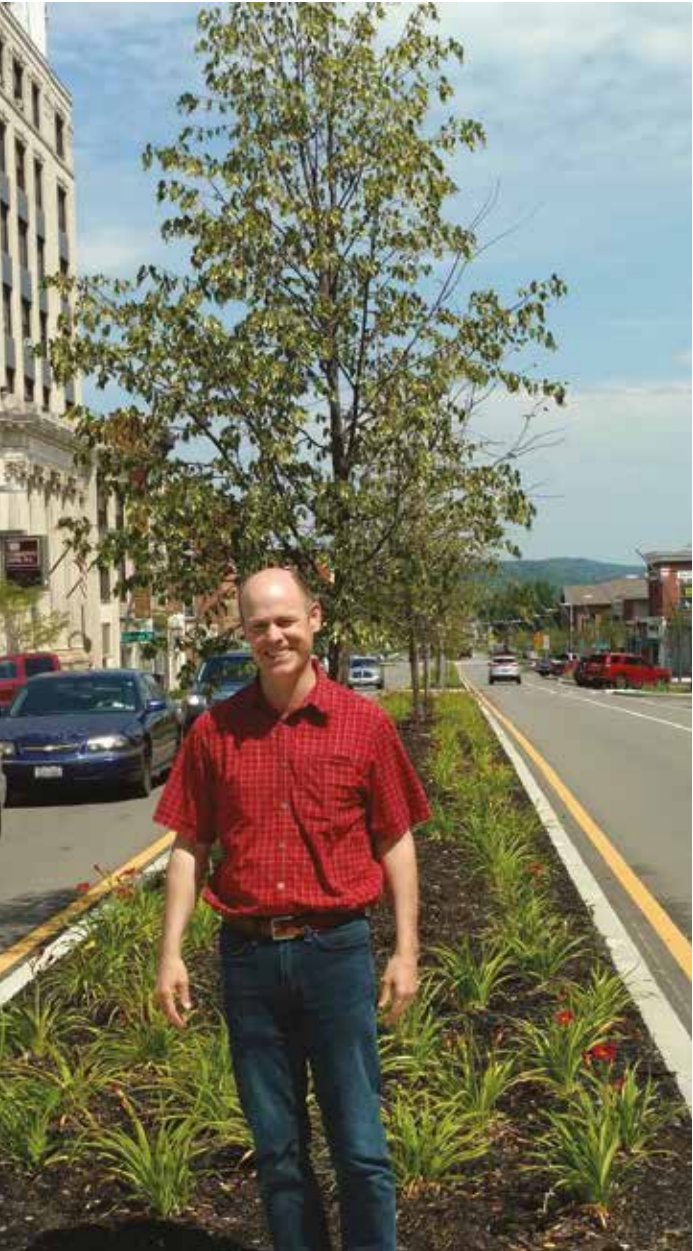
And that's the connection we always keep in mind at Mott MacDonald. As an employee-owned firm, our people are also custodians of the company for the future. We understand that our company, our clients, and our communities are all interconnected. Getting projects right, to leave positive, lasting legacies, is important for us all.

**Davide Stronati, Global  
Sustainability Leader  
Mott MacDonald**





# Swings and roundabouts



Olean in New York State was typical of many once-proud cities. The downtown area had seen much better days. Local business owner Jeff Belt knew how to save it. That bit was easy. But first, he needed to get his fellow residents on board.

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Sometimes you’ve got to make a stand. I’m a small-town guy and I hate seeing what’s happening to small-town America. I’m fed up with car dependency, urban sprawl and inner-city ghost towns. In the 1920s, our small towns were the best planned in the world. But we turned our back on them in the 1950s and left them to rot. I wanted to save this little town where I have a business. I dreamed of making Olean the beautiful and vibrant rural town center that it once was and could be again.

Highways carve up cities, and they divide society too. We’re seeing a worrying division between those who can drive and those who can’t, such as the very old and the very poor. If you can’t drive, your prospects become diminished. You risk isolation. Whole communities are losing hope. We’re creating a society that leaves some people marginalized. Sure, it works when it’s working. But when there’s a crosswind, people get blown away. I could see it happening in Olean.

When I first recommended the traffic calming measures, I framed it as an economic development initiative. I met a lot of resistance, because the traditional leaders — whether in City Hall or the loudest guy at the end of the bar — couldn’t see the link. For them, economic development means a tax inducement to a big company. But that literally does not work in the US any more. If you want a strong economy, you must attract people with in-demand skills. Then the employers will choose your town. Look at Google. They ask their people where they want to live, then build a Googleplex in that community. They’re doing OK.

The two things people are most frustrated with are the status quo and change. **There was huge fear of the unknown in Olean. When the roundabouts started to go in, people really reacted negatively. But when they started using them, they changed their minds.** This is very predictable for traffic calming and passive intersection devices. Ultimately, people will like them more than huge roads and traffic lights.

Now, folk are out in the evenings and pushing strollers. It’s like having a linear park through the middle of our city. People are encouraged to walk and ride bikes. You’d never see anyone cycling on the old street scheme. We’ve truly civilized the downtown. Even the drivers are more polite.

The inner-city retailers are taking more pride. Foot traffic is up. For years there was no construction or improvements. Now, there’s a dozen storefronts being renovated. Property values are rising and new businesses are coming in. **There’s a sense of renewed optimism. Olean is on the comeback trail.**

You can get a good meal with the family too. Before, the restaurants didn’t address the street. Why would you with cars and trucks chugging past? Now, these buildings are being renovated with more glass out front and areas for outdoor dining. They’re piping music, whereas in the old days you wouldn’t hear it.

So, the vision is happening. I’ve said from the beginning: this is not going to fail. If you do a really good walkability makeover in the downtown area you’re going to get follow-on private investment. Fact.

That’s why walkable urban placemaking is the single most effective economic development strategy in the US today.

I’m not really a high-profile guy. I try to stay behind the scenes and give credit to elected leaders who need it more. But I like the fact I can walk my daughter to her dance class, and not fear we’re going to get squashed on the street. And I’m getting fewer evil looks these days. I don’t cringe when people approach me in a restaurant. They’re coming to shake my hand rather than shake a finger in my face.

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## Sunny side of the street

North Union Street is the heart of Olean, serving 50,000 people in southern New York and northern Pennsylvania. Despite its scenic position in the Enchanted Mountains, downtown Olean had lost its charm. A four-lane roadway with seven traffic signals, no bicycle facilities, and a high accident rate had driven away foot traffic and civic pride.

Our project team of engineers, landscape designers, architects, public engagement specialists, and urban planners helped the city achieve its vision of a “Walkable Olean.” The result is a transformed community with a complete and green main street that maintains traditions and provides opportunities for economic growth.

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**Project**  
North Union Street transformation

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**Location**  
Olean, New York

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**Client**  
City of Olean

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**Expertise**  
Urban planning and  
landscape design

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# You don't know what you've got, until it's gone

Hurricane Harvey made landfall at Rockport, Texas on August 26, 2017. The tropical storm choked the natural fish pass that links nearby Cedar Bayou to the Gulf of Mexico, putting at risk a local economy reliant on sport fishing and bird tourism.



It is not the first time the channel has shut. In 1979, it was blocked off to protect the bay from an oil spill in gulf waters. The channel stayed mostly in a closed state until 2014. Just prior to Harvey, local fishing guide David Nesloney spoke about how keeping the pass open is vital for the whole region.

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Back in the early 1960s, when I was about ten years old, Cedar Bayou was a beautiful place to go fishing. In those days, you could fill tubs of trout in no time. You could catch all the live shrimp you wanted, and I'm talking big white shrimp. We used to take out nets at night and we'd fill up an ice chest in just a few casts.

Let me tell you a true story. One night, when I was a boy, I went floundering with a friend. From one end of Mesquite Bay to the mouth of Cedar Bayou, where it enters the gulf, we saw billions of blue crabs. And I mean billions. It's hard to believe, I know. But I don't need to exaggerate. I've been around here a long time.

In the early 1970s, I once saw a school of trout. I remember it like yesterday. There were more than 400, all a good size, swimming together in the crystal clear water. Seeing the trout was special. I've never seen a school of trout since.

Everything changed after the oil spill in 1979. The bay was closed and the waters became dormant. No crabs. No flounder. No trout. No redfish. Fishing declined every year. All the local marinas, hotels, motels, and restaurants were affected. You'd go down to Mesquite Bay and it was like a ghost town because there was no trout, no redfish, no mullet. Just stagnant water. The salinity was so high in the water. Dead water is what I call it. It was like that for a long time.

Now that the bay is open again, it's a thousand times better. You can catch a limit of trout everywhere. Not just in certain areas. I mean everywhere. The water is absolutely gorgeous. We could go out in my airboat right now and catch a limit of trout or redfish. We could go gigging flounder and catch the heck out of them.

Ask the shrimpers that trawl in the surrounding bays and they will all say it's better than it has been for a long, long time. The blue crabs have returned too. Nobody set a trap for six or so years. Of course, the little crabs are the staple of the wintering whooping crane, which is an iconic bird in these parts. Our birding tours are a big show again, with five busy boats.

It's done a heck of a deal for this whole community. You can't find space at a boat ramp, hotel, or restaurant on a Tuesday, let alone the weekend. Everybody is benefiting: the fishing guides like me, the oyster people, the shrimpers, flounder giggers, bird spotters, hoteliers, restaurant owners. And of course all the folk who come here from Houston or San Antonio.

These past years have definitely increased my respect for nature. If you give her a chance, she comes back strong. But you can't take her for granted. I wish I could get more young people to understand that. They don't always appreciate what they have. I tell them you gotta take care of what you have. I say: Do me a favor. When you're on the boat, look around and imagine you're seeing this for the first time. Now, imagine it's gone.

Believe me, you don't want to lose this. I know what that feels like.

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Making a connection

In 2014, our coastal engineers helped to reconnect Texas’ Cedar Bayou with Mesquite Bay for the first time in 35 years. The closure had kept the eggs and larvae of fish, shrimp, and crabs from entering the area, causing the ecosystem to crash. The thriving fishing and tourist industry had suffered too.

Today, fish and crustacean populations are soaring. Once again, the bay harbors the world’s largest flock of endangered whooping cranes. Larger numbers of fish, crabs, and birds attract more people who want to fish, watch birds, go hunting, or who just want to visit this beautiful coastal area.



<b>Project</b>
Cedar Bayou restoration
<b>Location</b>
Gulf of Mexico, Texas
<b>Client</b>
Aransas County and the Coastal Conservation Association
<b>Expertise</b>
Hydraulics engineering

# Solar is becoming par for the course

Nate Franklin, Managing Director of Pacifico Energy, gives his predictions for the solar industry in Japan and worldwide. He also reveals why it feels good to harvest clean energy for this island nation.



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People still ask me when solar will be seen as a commercial option, not just environmental. I tell them we’re already there. Solar competes with other generating technologies even without subsidies. Costs are a quarter of what they once were. Lenders are more comfortable with the technology. The modules are more efficient. Energy yield has grown, largely because our understanding of the irradiance of a given location is that much better than 10 years ago.

Take our 257.7-megawatt Sakuto solar photovoltaic (PV) project in Mimasaka-shi, Okayama, as an example. This is the largest solar PV scheme under construction in Japan to date. It’s a complex, mountainous, space-constrained site, with one third located on a former golf course.

The varied terrain brings real challenges, so we were reliant on advanced 3D layout modeling and satellite data to understand and optimize the energy yield. Without it, we’d have struggled to accurately set the module spacing with a view to mitigating shadow changes and limiting shading loss due to the nearby mountains. Suitable sites of this size are rare, given the number of small landowners in Japan. So if you get one, you need to trust that the estimates prove correct when you go operational.

The next step for solar in Japan is to incorporate storage. Of course, we already know how to do it. But we haven’t reached the point where combining them is the natural thing to do. There’s a sense among the utilities that solar doesn’t feed enough of the grid to require storage. Once that line is crossed, then I can see the balance shifting very rapidly away from fossil fuels.

Worldwide, we’re going to see more and more renewable energy because it makes economic sense. Lowering of emissions won’t come from global treaties or government interventions, but rather private industry pursuing good business. I don’t listen too closely to what the politicians say on this. I prefer to seek the opinion of economic analysts, such as Bloomberg New Energy

Finance. Its outlook for how fuel and electricity markets will evolve by 2040 suggests that solar will quickly replace coal as a more affordable source of energy — even by the early 2020s in China and India. Solar generation costs will drop a further 85% in Japan by 2040, it says.

Five years ago, Japan was playing catch-up. There was a palpable sense of urgency after the Fukushima Daiichi nuclear disaster in 2011. The government wanted to push solar forward and provided good incentives. The industry is well established here now, so the policy is for measured growth, alongside wind and biomass. Of course, Japan is already leading the way with electric and hybrid cars, with more than 40,000 charge points nationwide. The rest of the world will surely follow soon.

Harnessing natural, domestic resources is especially important for national security, as Japan won’t need to rely on foreign imports, as it does for coal or gas. Solar can give independence to an island nation like Japan. Additionally, people don’t feel comfortable living around nuclear plants now, and I don’t blame them.

Conversely, solar parks are very peaceful. There’s no activity — no noise from moving parts. No pipes and emissions. No whirring turbines. No people. Once you set them up, they look after themselves. The grass grows up under the panels. You see a lot of nature. Sakuto especially is really pretty, with mountains rising up on every side. Sometimes I get the chance to sit quietly and reflect a little on where all this electricity will end up, and the families and communities who will use it. It feels great to be contributing to Japanese society by providing power across the grid, and all the benefits that brings to everyday life. We’re increasing energy reliability without polluting the environment. That’s got to be a good thing.

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## Leading a peaceful revolution

**Project**  
Sakuto solar PV plant

**Location**  
Japan

**Client**  
Pacifico Energy

**Expertise**  
Owner's engineer

Japan established a favorable feed-in tariff for solar PV power in 2012 to promote the development and exploitation of renewable energy resources in the country. The 257.7-megawatt Sakuto plant fits into this vision and will reduce carbon emissions by approximately 4 million metric tons over 20 years. The project involved moving 282 million cubic feet (8 million cubic meters) of earth to smooth site contours and undulations, making it easier to accommodate the panels and reduce shading. A new 77-kilowatt, 10.6-mile (17-kilometer) long underground transmission line connects the installation to the grid.

The plant has improved industry understanding of project performance in the context of Japan's complex microclimates. We supported our client's engagement with the lenders, helping to facilitate both project bankability and broader maturing of the industry, which will be necessary moving forward, as tariffs for solar fall. We are currently on site full-time during construction to supervise the implementation of the civil, electrical, structural, and instrumentation systems.



# Harnessing the wind at Block Island

For many years, Block Island, about 14 miles (23 kilometers) off the coast of Rhode Island, depended on diesel generators for its electricity. Residents paid some of the highest electric rates in the country. The Block Island Wind Farm, the first offshore wind farm in the US, was designed to change all that.

As the lenders’ technical advisor during the project’s due diligence phase, Mott MacDonald reviewed project design, construction schedule, yield assessment, climate conditions, financial models, and permitting. Five wind turbines generating 30 megawatts of power now produce more than 125,000 megawatt-hours per year, allowing the diesel generators to be retired and reducing local energy costs.

Jeffrey Grybowski, CEO of Deepwater Wind, said, “Mott MacDonald is a world-class engineering and consulting firm with market-leading experience in the offshore sector. We are proud to have them as part of the Block Island wind farm team and their insight into this complex industry has proven invaluable.”



“This is a historic milestone for reducing our nation’s dependence on fossil fuels, and I couldn’t be more thrilled that it’s happening here in the Ocean State.”

**Sheldon Whitehouse**  
United States Senate

**Project**  
Block Island Wind Farm

**Location**  
Block Island, Rhode Island

**Client**  
Deepwater Wind

**Expertise**  
Lenders’ technical advisor,  
construction monitoring



# Making Adelaide proud

Managing director Andrew Daniels has led the iconic Adelaide Oval for the past five years, overseeing the redevelopment of this beloved stadium into a 21st century destination. Getting the project across the line was an emotional roller coaster.



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The Adelaide Oval is in the heart of the city and it holds a special place in the heart of all South Australians. Today, it's the state's preeminent sporting and entertainment destination — hosting world-class events from the Ashes, to the Australian Football League (AFL), to Adele.

The initial redevelopment concept was met with a degree of public skepticism. There was community concern about the project's cost and the effect the changes would have on the original Oval and its iconic features — such as the heritage scoreboard, the stands, and the memories that many South Australians hold dear.

Protecting this heritage and beauty was paramount to the redevelopment project. Designing a unique timber viewing platform around the Moreton Bay fig trees on the northern mound, preserving the heritage scoreboard, carefully designing the architecture so that the Oval remains integrated into the surrounding parklands, and maintaining unobstructed views of the Cathedral were all critical elements to the redevelopment's success.

This need to preserve the Oval's heritage had to work hand in glove with the need to offer 21st century facilities. Today's public expect high-quality coverage, lighting, replay screens, viewing, and catering. They expect a first-class entertainment experience. Getting this mix of the best of old and new right was crucial to the Oval's success.

Initially, we discussed building a new stadium out of the city. This would have been a grave mistake. One of the key reasons for the success of the Oval is its proximity to the center of Adelaide. The city is a central hub for public transport and people can take a five-minute walk to the stadium from the city across the River Torrens Footbridge. On AFL game day the roar of the crowd, the lights, the sounds, and the raw energy of the match spill out and echo across Adelaide.



Events at the Oval have dramatically increased the life and economic activity of the city. Restaurants, cafes, and bars are crammed with people enjoying pre- and post-event meals and drinks. This activity has been quantified at approximately A\$170 million a year, but the social benefits are incalculable.

It's difficult now to find somebody who would say that they were against the Oval's redevelopment. At the time though, it was highly controversial and there was a lot at stake. We put such importance on getting everything right the first time. We needed the doors to open and everything to work.

I never thought we couldn't do it. We asked people to do amazing things. And amazing people did amazing things. In the end, the whole redevelopment was completed on time, under budget, without scandal or major error.

The Adelaide Oval is now a unifying destination that all South Australians have embraced with pride. Whether it is a game of cricket, a football match, a concert, a meal, a tour of the ground or the award-winning RoofClimbs, the Adelaide Oval is a beacon of success.

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## More than sport

Total remodeling of the iconic Adelaide Oval in Australia was needed to meet rising spectator expectations and broadcaster needs, and to diversify the stadium’s revenue base in the face of a fast-changing and aggressively competitive sports and entertainment industry — while preserving the ground’s heritage and identity. For added challenge, work had to be fitted in around a full schedule of international cricket and league football fixtures.

As project managers, we coordinated a team that included three architectural firms, two building services consultancies, two structural and civil engineering firms, and 20 specialist subconsultants. The new Oval has put Adelaide on the global map of entertainment and sporting events, providing unforgettable experiences for thousands of fans.

**Project**  
Adelaide Oval redevelopment

**Location**  
Australia

**Client**  
Government of South Australia/  
Stadium Management Authority

**Expertise**  
Design management and  
project management



# A stadium for all seasons

Until recently, the Saskatchewan Roughriders football team played at an open arena built in 1910. The stadium offered minimum protection from summer heat and harsh winter weather.

Working with lead architect Pattern Design, we were retained as concept designer for a spectacular new arena, featuring an oval bowl sunk into the ground for easy access by spectators.

All 33,000 seats are protected by an overarching roof built in an elegant shell design rather than as a conventional truss structure. The structure was designed to be lightweight and energy-efficient, retaining the outdoor feeling of the existing stadium while providing weather protection.

Our design all but eliminates the effects of the wind while allowing sun into the stadium. Operating temperatures inside the facility can be increased up to 36° F during the winter.

On June 10, 2017, the Roughriders hosted their first game at the new stadium: a pre-season game against the Winnipeg Blue Bombers.



<b>Project</b>
Mosaic Stadium
<b>Location</b>
Regina, Saskatchewan
<b>Client</b>
City of Regina
<b>Expertise</b>
Engineering, quantity surveying, architecture



“Mosaic Stadium is an iconic venue, the best stadium in Canada and one of the best in North America. But it will also serve as a venue for people to gather and celebrate our great community for generations to come. This opportunity would not have been possible without the strong partnerships between the City, the Province, and the Roughriders, and the recognition that this is a catalyst for the growth and transformation of our city.”

Michael Fougere, Mayor  
City of Regina



# Better data, smarter forecasts

Dukessa Blackburn-Huettnner, operations and planning manager for Healthy Waters at Auckland Council, describes how better data is helping address the mounting challenges that face her city.



Auckland is growing fast. As other parts of the world grapple with increased uncertainty, New Zealand is seen as a safe, healthy, and settled place to live. We’re enjoying huge immigration, coupled with a surge of expats coming home. But as our population rises, so pressure is mounting on our infrastructure to accommodate the huge demand for housing. We risk becoming a victim of our own success.

The increased number of climatic events — which we are definitely seeing — adds another level of complexity. Just this year, across March and April, tropical storms dropped almost 24 inches of rain in a 30-day period. Auckland faced nearly every consequence of flooding, from roads scoured away and evacuations of building occupants to major stock losses, significant wastewater overflows, and loss of services.

However, it’s worth noting that the fundamental shift required in the management of flooding is not related to pipes and culverts, which are primarily designed for land drainage purposes. Property flooding most often occurs where

the flow of surface water is impeded by development in the wrong location or at the wrong elevation. In fact, blockage and inadvertent diversion of overland flow paths cause as much flooding as streams and rivers bursting their banks.

Developers and homeowners can unknowingly channel these paths into properties or obstruct them with fences. Likewise, if they are tipping garden rubbish into waterways, then it will block up the culverts during flash flooding. **Building community resilience is a big part of the solution. This means helping households to recognize the limitation of the system and take ownership of the outcomes.**

By choosing a more water-sensitive approach to flood management — and safeguarding the natural “green fingers” that run through the city — we will also improve water quality, riparian planting, and recreational amenity.

Rather than thinking how to convey floodwater away as quickly as possible with the smallest footprint, we need to find ways of dealing with it at the source, using rain gardens and green infrastructure.

It’s critical that we work with nature to ensure ancient waterways and gullies remain vegetated and intact, rather than being scraped, piped, and filled for higher-density housing.

Data is a key weapon in our team’s armory. We’re working on gaining a faster intelligence feed from rain gauges and radars, so our operators can chart how storms are tracking across the region and then react with crisp decisions.

Our systems are improving how we forecast and now-cast, so we can see what’s coming, whether in 30 hours or 30 minutes. We can then pass that information on to the public.

The water debate is rising up the agenda here. While there is growing political and media pressure on councils to provide better services, the prevailing

public sentiment is that water falls out of the sky and should be free. In New Zealand, water underpins our economy, especially in our primary industries like fishing, forestry, and agriculture. Tourism, likewise, is a huge asset, and it relies largely on our clean and green image. Fresh and plentiful water is something we expect to take for granted.

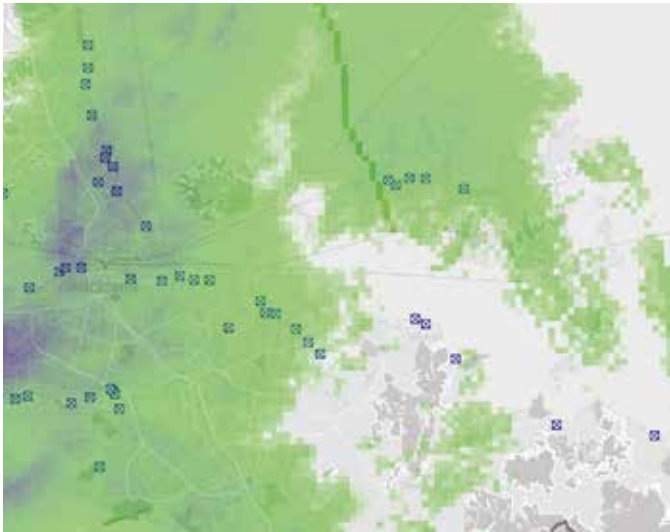
Finding the balance is a challenge we simply must rise to in Auckland, if we want our city to remain a top destination for travel, work, and everyday living. I’m optimistic that we will. There’s something about the water sector that attracts determined people. **It doesn’t get more essential than drinking, washing, and flushing, does it?**



Know the flow

Our smart infrastructure system H<sub>2</sub>knOw-how comprises sensors installed at critical points of the water or wastewater network, collecting real-time information on flow rates, water levels, and pressures. It can predict in advance (two-three hours) where flooding might occur during a rain event and provide detailed risk profiles for the water infrastructure network. Operators can now “visualize” burst pipes and leakages below the ground, and fix the fault before the taps run dry or the sewers overflow.

Twelve local authorities in New Zealand currently use H<sub>2</sub>knOw-how to provide a better and cheaper service to their customers. In Auckland, where the city council manages more than \$3.6 billion of stormwater assets, H<sub>2</sub>knOw-how has digitized the entire management system and is now driving investment in critical asset renewal projects worth about \$7.2 billion. The council has also gained valuable transparency to build trust with residents that their money is being spent where needed.



**Project**  
H<sub>2</sub>knOw-how flow monitoring, modeling, and prediction

**Location**  
Auckland, New Zealand

**Client**  
Auckland Council

**Expertise**  
Smart infrastructure





# Saving energy and money with the power of gravity

“I look forward to our City’s continued projects to preserve our municipal water system, and in turn improve our environment and our health while reducing the cost to rate payers.”

Steven M. Fulop, Mayor  
Jersey City, NJ



During the 1970s, Jersey City was ordered by the state’s Department of Environmental Protection to provide filtration for its water supply system. An aqueduct below the Boonton Reservoir was intercepted, and the water pumped uphill to a treatment plant. The pumps consumed approximately \$500,000 in electricity each year.

After examining previous studies, we found that for eight or nine months of the year, the head in the reservoir could supply water to the treatment plant by gravity alone, using a bypass pipe seven feet (2.1 meters) in diameter. Computational fluid dynamic (CFD) modeling helped us to refine headloss calculations developed with empirical methods.

Because the project reduces the use of electricity and the plant’s carbon footprint, we could secure principal forgiveness for 20% of the loan from the New Jersey Environmental Infrastructure Trust. This resulted in a grant that covered 20% of the project’s cost. The return on investment was immediate, since savings on electricity would exceed the debt service on this portion of the 20-year project loan.



<b>Project</b>
Jersey City Gravity Water Supply
<b>Location</b>
Jersey City, New Jersey
<b>Client</b>
City of Jersey City
<b>Expertise</b>
Design, permitting, bid, and construction phase services



# Building a pathway to success



The Calculus Project is a grassroots-style initiative to dramatically increase the number of students of color and low-income students who complete AP Calculus in high school.

The Calculus Project is defined by its comprehensiveness, its very high expectations, its cultural sensitivity, and its commitment to sustainability. Calculus Project programs begin in middle schools and expand to high schools over a five-year period.

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Coming to AP Calculus was a very long journey because it was all four years of high school. There were times when I was very discouraged with myself. But overall you learn how to become a better student and a better learner. By the time you're a senior it's like the right thing to do, to do AP Calculus, because you have grown so much as a student.

I was able to go after school and work with teachers, and in the summer I was able to get a preview of what the course would be like, so it wasn't as scary coming in. Just knowing that there would be other students from the Calculus Project in my class made it a lot easier for me.

**Tahira Saalik**  
Emory University



Some of my struggles were in freshman year, making that transition from eighth grade to high school, which I think a lot of students find really difficult. For me what was most helpful was going after school, talking to teachers, getting that extra help when I needed it. In the Calculus Project I'd had that exposure to those teachers and those administrators who were there to help me.

**Lindsay Westlake**  
MIT

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The tools to succeed

A new initiative from Cambridge Education, a division of Mott MacDonald, the Calculus Project is changing the way schools support students of color and low-income students to achieve success in advanced mathematics.

Through early exposure to calculus, intensive summer courses, outreach to parents, and continuing support through the school year, students are developing confidence, boosting their test scores, and laying the foundation for achievement in college and beyond.

According to Paul Reville, former Massachusetts Secretary of Education, “The Calculus Project is living proof that if adults can put in place the proper conditions of learning, all of our students can achieve at high levels and become college and career ready.”



<b>Project</b>
The Calculus Project
<b>Location</b>
Florida, Massachusetts, New York
<b>Client</b>
Middle schools and high schools
<b>Expertise</b>
Accelerated calculus instruction



Opening opportunities with connected thinking.

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