

Putting the 'smart' into cities

Here to help your city



Smarter cities enabled by digital

Smart infrastructure

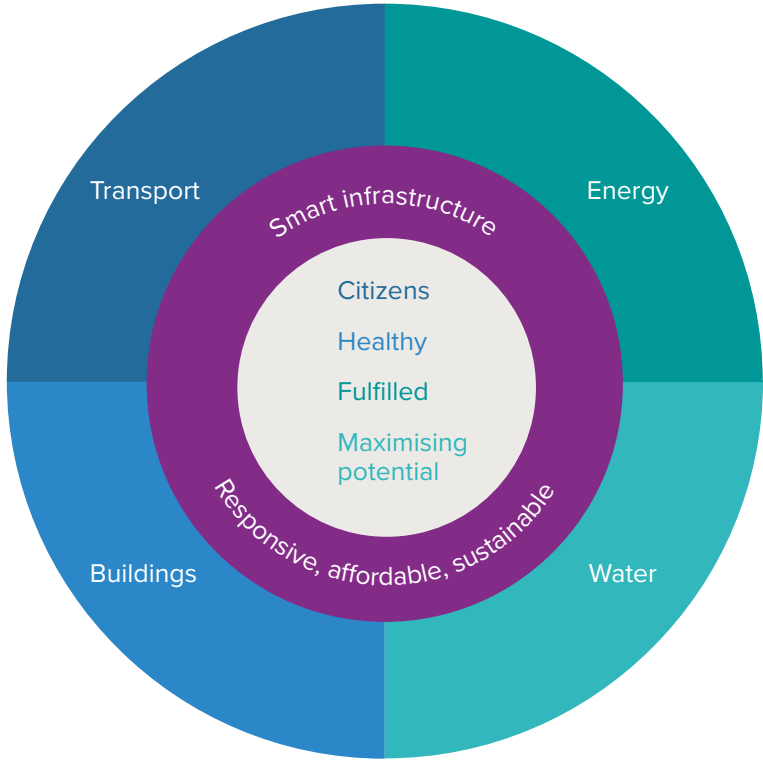
Integrated systems are more efficient and resilient, produce sustainable outcomes, and are responsive to changing citizen needs.

Making data work

Data produces better outcomes, enables diverse connections and supports two-way interaction with citizens.

Better decisions

Collecting, sorting, structuring and analysing data enables better decisions, faster and cheaper, for the benefit of service providers and users alike.



Here to help your city

- Leverage the value of data for the benefit of all citizens
- Harness smart technology and data to achieve enhanced insights into citizen behaviour and choices, increased efficiency and resilience of services, and improved economic and social outcomes

How we do it

- Finding ways to use scarce resources efficiently
- Enabling adaptation, based on real-time intelligence and observed long-term trends
- Providing domain expertise, stakeholder insight and digital know-how to assist technology companies and city authorities in realising optimised and game changing solutions

Outcomes for citizens

Smart technology and digital abundance have the potential to revolutionise the way cities operate. Securing the benefits depends on the choice of technologies and the development of solutions that focus on improving outcomes for all citizens.

Understanding motivations

A city is a multifaceted organism with complex interactions and interdependencies. One of the benefits of being a multidisciplinary company is our understanding of motivations in diverse sectors. We address risk at city scale across all the dimensions of infrastructure – regulatory, political, governance, finance and funding.

Domain expertise

We have depth and breadth of expertise in all areas of infrastructure design and management. Typical services include:

- strategic consultancy to create sustainable infrastructure for economic and social benefit at national, regional, city and district scale
- engineering, costing and project management services, from inception to delivery, asset operation and management
- economic, environmental and social advice to steer an infrastructure project through statutory regulatory processes

Knowing your assets

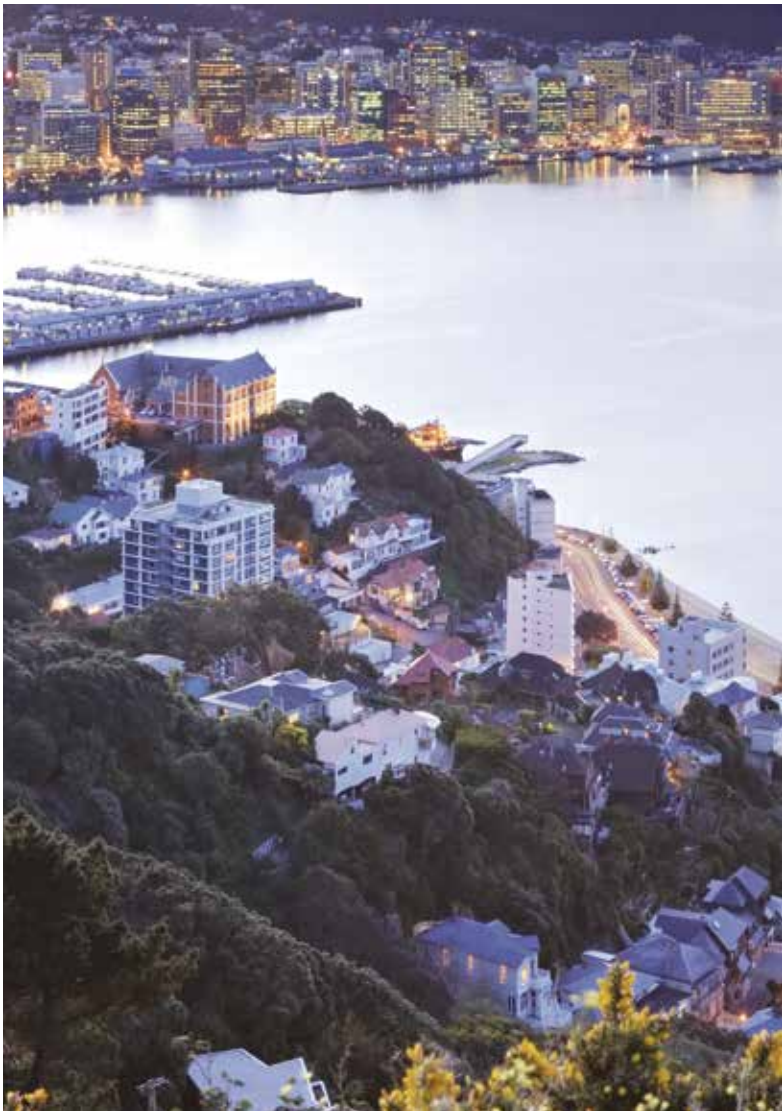
Project
Moata, New Zealand

Location
New Zealand cities including Auckland

Client
Auckland City Council

Expertise
Smart asset management

Our cloud-based system combines meteorological and asset performance information, data management, analysis and decision support, enabling optimisation and focused maintenance. Efficiency gains have cut costs by 20%.



Marked change

Project
Jaipur Smart City
Location
Rajasthan, India
Client
Jaipur Nigar Nigam
Expertise
Stakeholder engagement and urban masterplanning

We partnered with EY and consulted closely with citizens of Jaipur to submit an entry to the Indian government’s Smart Cities Challenge, launched in 2015. Our plans will transform Jaipur into a smart city for the next generation of Indians.



Two in one

Project
SMART
Location
Kuala Lumpur, Malaysia
Client
MMC Engineering Group-Gamuda JV
Expertise
Feasibility, detailed design, engineering support, construction supervision, specialist tunnel and hydraulic design services

Kuala Lumpur’s dual purpose stormwater management and road tunnel (SMART) is a solution to the Malaysian capital’s long-term traffic and flood management problems. When it is not required for flood relief the central 3km section of the 11.5km tunnel doubles as a two deck motorway to relieve traffic congestion.



The right tools and skills

Whether you’re looking for the answer to a problem in a single infrastructure sector or one spanning multiple sectors, we can mobilise the right skills and tools.

These range from tailored solutions to ‘ready-made’ answers from our digital catalogue – adapted to your needs.

Through our role as integrator, and using our deep knowledge of cities, infrastructure systems and stakeholders, we can create the right blend of our own proprietary and market available smart tools and services, to respond to any challenge.

We’re not just about engineering. With us you get access to expertise

in social research, ergonomics and human factors, infrastructure finance and economics, climate resilience and sustainability.

We also provide world-leading infrastructure finance advice, and in 2018 we were voted number one technical advisor by Infrastructure Journal for the sixth year running.



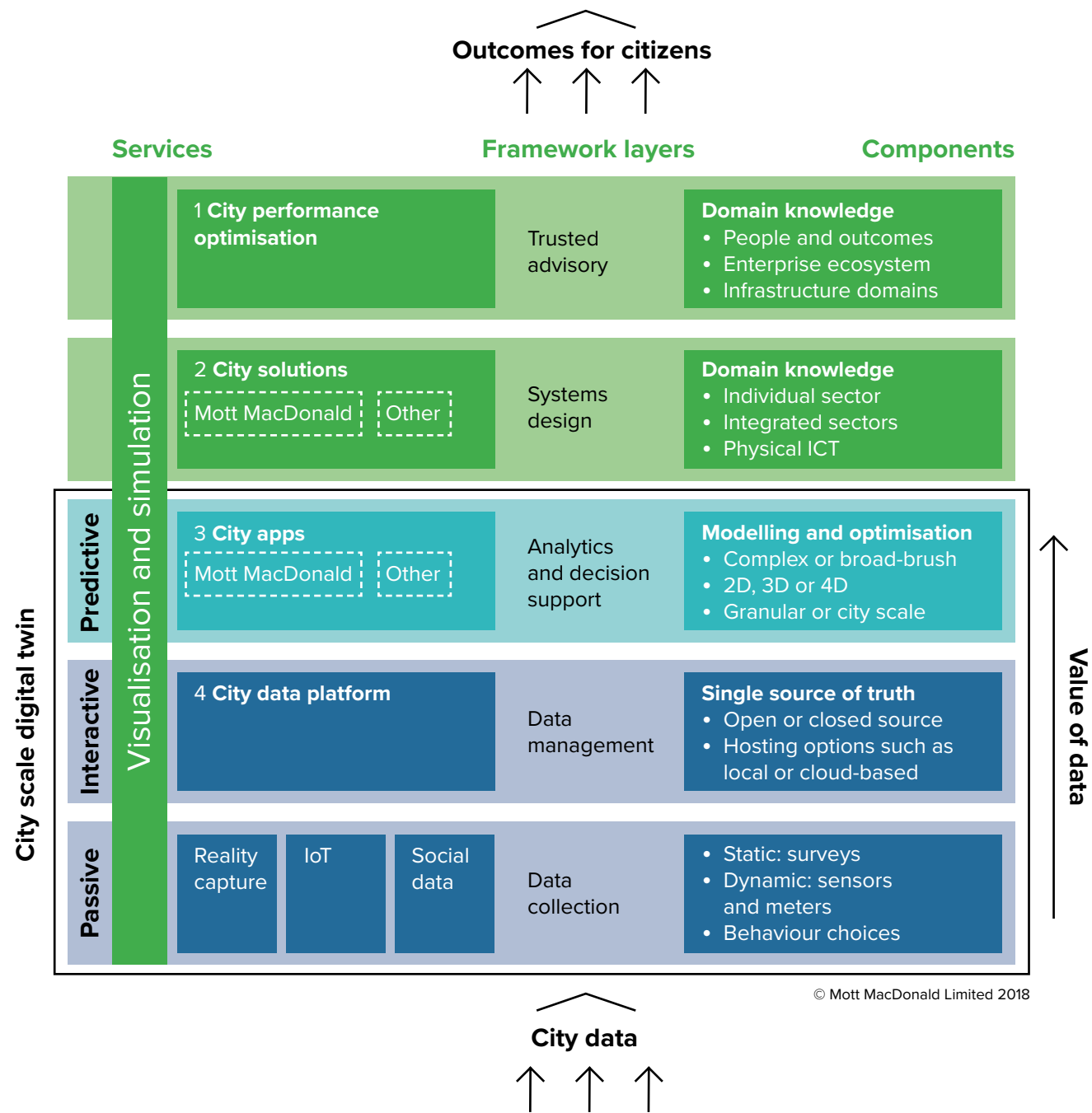
Data collection

Project
BIM consultancy services
Location
Dubai, UAE
Client
Government of Dubai, Roads & Transport Authority
Expertise
BIM consultancy

Dubai’s Roads & Transport Authority (RTA) identified building information modelling (BIM) as key to improving the way public transport infrastructure is procured, delivered, operated and maintained. We created the framework to enable the RTA to be the first to achieve the BSI BIM kitemark. The project won a Future Cities BIM award.

A framework to unlock the value in data

A suite of typical services available in the smart city domain



1 City performance optimisation

By understanding the challenge and the benefits that can be unlocked, we scope the components for the delivery of a smart city solution. We consider the commercial aspects such as cost-benefit, investment and risk.

2 City solutions

We have worked with city and infrastructure clients for more than 100 years, solving complex problems with the tools of the day. Solutions are an optimised blend of our knowledge and applied industry best practice.

Creating your smart city nervous system

Smart cities depend on a network of ultra-reliable and resilient high speed communications. Our ICT portfolio includes planning, design, specification and roll-out management for digital infrastructure – the fibre, wireless comms, sensors and control systems that allow the generation and transfer of data.

3 Apps to go

For more than a decade, we have been developing analytic applications to give infrastructure clients easy access to data.

Our app library has been created by in-house and external experts to provide the right user experience. For us, and our clients, it's about creating the right tool for the job.

4 City data platform

Alongside our digital infrastructure know-how, we can help you procure the right systems. We'll guide you through the variables – open or closed, local or cloud-based, for example – to cope with the type and quantity of data you are gathering, and what you're using it for. This includes:

- physical data generated using reality capture techniques to create a 'digital twin'
- real-time information capture from meters and sensors in the internet of things
- citizen behaviour from personal devices and social media



Traffic intelligence

Project
Understanding new and improving existing traffic data

Location
Europe

Client
Various national roads authorities

Expertise
Intelligent transport system research

Using improved traffic data from mobile devices can provide benefits for all road users. We researched new capabilities for harvesting traffic data, evaluating the quality of social media to create better systems for short-term predicting traffic. Our software toolkit has enabled roads authorities to provide better and more cost-effective traffic management services.

Capabilities at your fingertips

Project
Osprey

Location
Various

Client
Various

Expertise
Transport management

Osprey uses multiple data sources to provide traffic managers with a real-time view of how the road network is being used, enabling congestion to be monitored and mitigated through human or automated responses. It is used by at least 14 UK local authorities.

Easier access

Project
eThekweni Smart City

Location
Durban, South Africa

Client
Development Bank of South Africa

Expertise
Feasibility study

Smart cities generate jobs and boost GDP. But poor internet access hampers the ability of businesses to compete. Our work prepared this municipality in Durban to develop its broadband infrastructure, expanding internet access for residents and SMEs.



Information on the go

Project
Developing a land information management system

Location
England

Client
High Speed 2

Expertise
Land referencing, stakeholder management and site access

For HS2, we created Apollo – a high capacity, cloud-based platform to enable collaboration and provide a means of sharing design and project information. Apollo makes high-quality geographical information available to more than 500 users, in the field as well as diverse office locations, without the need for extensive training or additional software.

eHealth

Project
Strengthening South Africa's revitalised response to AIDS and health (SARRAH)
Location
South Africa
Client
UK Department for International Development
Expertise
Research



The MomConnect initiative aims to improve maternal health and reduce child mortality in South Africa by registering expectant girls and women on a national database and sending regular text messages to their mobile phones to help them during their pregnancy and look after their baby's health. It was launched after research commissioned through Mott MacDonald revealed that, with 95% of pregnant women and mothers having access to a mobile phone, it was a more effective channel for communicating public health advice than radio or television. MomConnect is supported by the UK Aid's SARRAH programme, which includes a portfolio of mHealth initiatives.

Connectivity review

Project
Connectivity review – technical and commercial roadmap
Location
England
Client
London Borough of Croydon
Expertise
Mapping digital connectivity

The London Borough of Croydon's £5.25bn growth zone regeneration programme aims to create thousands of new jobs and homes for local people. However, the council was aware that there were significant gaps in connectivity coverage across the borough and needed to ensure access to fibre and wireless networks was adequate. We mapped the existing supply of fibre, wireless and broadband services, and modelled future demand.



People movement

Project
STEPS

Location
Global

Client
Railway operators and developers

Expertise
Assessing people movement

Our STEPS tool is used to model and analyse people movement to enable more effective design and operation. STEPS can reduce cost, provide a more comfortable environment, assist emergency egress management and maximise commercial potential.



Visualising impacts

Project
Flood visualisation studies

Location
Various coastal towns, UK

Client
UK authorities

Expertise
Visualisation, data management

Climate change is increasing the risk of coastal flooding, where tidal surges overtop flood defences. Visualising the potential effects will help plan mitigation measures. Our Water and Wave Overtopping Tool (WWOT) brings together a GIS model with LiDAR data, aerial photography and Ordnance Survey mapping to model the impact of coastal flooding.

Opening opportunities with connected thinking.

Talk to us: cities@mottmac.com

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