

CRTKL

SMART CITIES

DRIVING URBAN RESILIENCY THROUGH
INNOVATIVE DESIGN SOLUTIONS



CRTKL

WE MAKE LIFE EASIER **FOR HUMANS**

CallisonRTKL, a global architecture, planning and design practice, began over seven decades ago and has evolved into a cultural agency to advance positive outcomes in our local and global communities.

Through a human-centric design approach, our team addresses the imperatives of resiliency, well-being, mobility and technology and their influence in the built environment.



At CRTKL we believe that the neighbourhood of the future has people at its center.

Cutting edge-technology combined with forward-thinking sustainable design can achieve ambitious improvements in the urban environment that can make our lives easier.

CRTLK opens a valuable dialogue on what it will take to design future-proof urban environments with sophisticated digital overlays to bring healthier, safer outcomes to our communities.



PREPARE FOR THE FUTURE

According to the UN Department of Economic and Social Affairs (DESA), by 2050 around 2.5 billion more people will be living in cities.

This highlights the up and coming need for more dwellings, more outdoor spaces, and more public services. But our urban systems are also threatened by environmental, social and economic shocks or crisis that put at risk the quality of life of the citizens.

The Surviving and Thriving in the 21st Century report, published in April 2020 by the Commission for the Human Future, indicates ten potentially catastrophic threats to human survival, and a pandemic is only one of them. We must be ready.

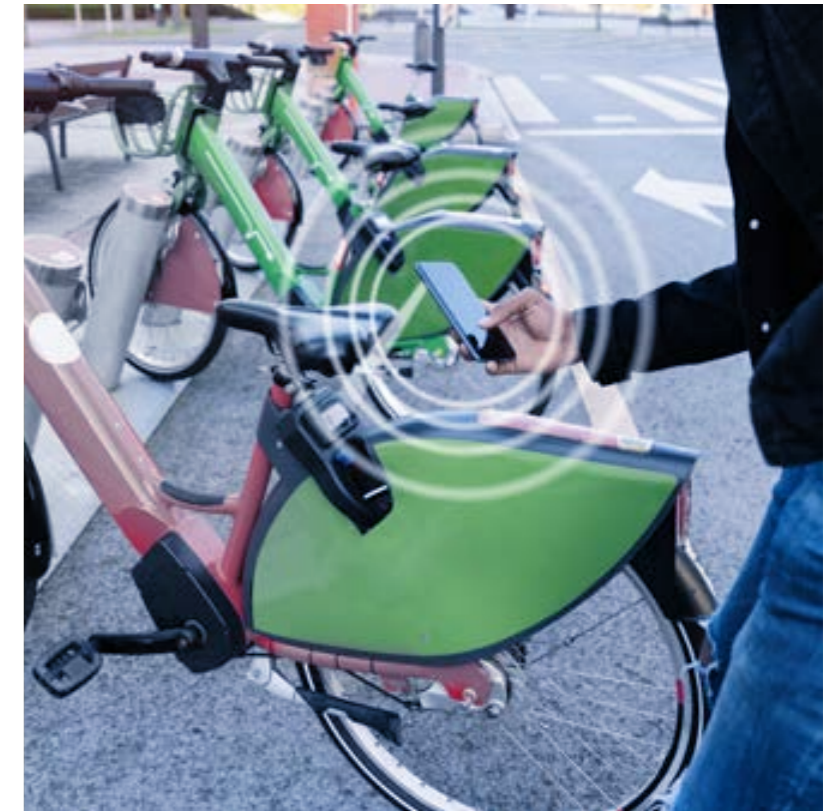


Making Our Cities Smarter

As citizen expectations change and businesses gear up for the Fourth Industrial Revolution, our urban environments must start working smarter not harder.

For a city to be 'smart' it must integrate digital technology, data, cybersecurity, and public-private partnerships – with these factors key to our ability to forecast, monitor, analyse and optimise a city's performance and secure its future.

With these tools, we can inbuild mechanisms for resilience, unlock greater environmental efficiencies, increase economic returns, and ensure the future wellbeing of our communities.



The most successful cities

-those that can withstand crisis, grow sustainability and foster inclusivity-

will combine machine learning with design intelligence and the human experience. This is how we advance outcomes in both our built and natural environments and realise the potential of automated systems.



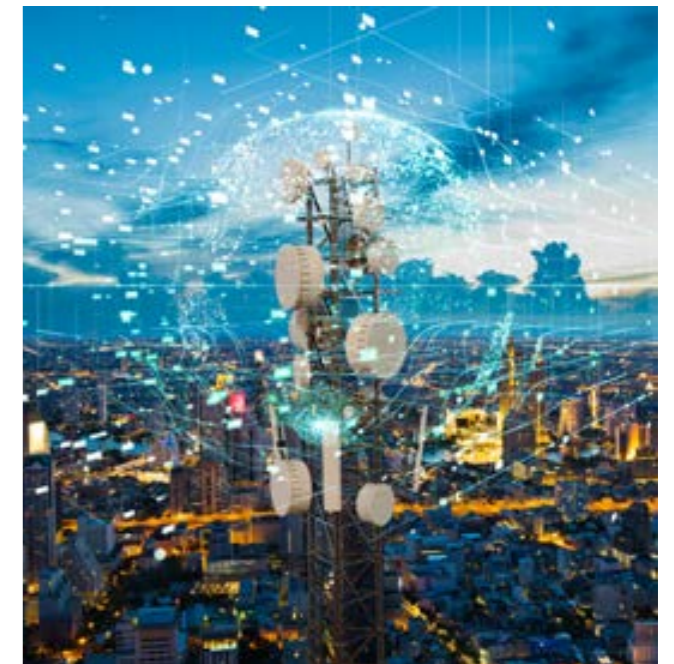
Critical Success Factors

Now, the world's cities are being assessed and categorised based on progress in two categories: progress in applying smart solutions (i.e., the level of digitisation across urban domains, competence in using data and analytics, and progress on fostering citizen engagement), and progress on the United Nations' Sustainable Development Goals (SDGs).

The most successful cities excel in both – they are farther

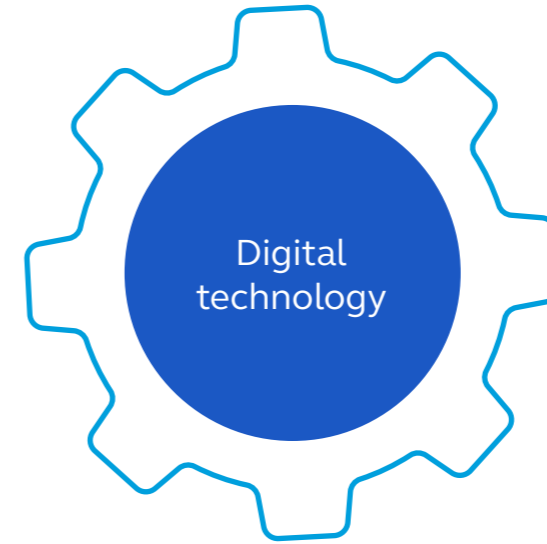
advanced in their digital transformation, fully sustainable, hyper-connected, and skilled in the new ways of doing business.

Common to these Smarter Cities is a focus on emerging technologies that have a direct impact on service delivery. Underpinned by a human-centric philosophy, Smarter Cities can also be identified by their proactive and collaborative governance and highly engaged citizens.



Driving results through **Five levers of change**

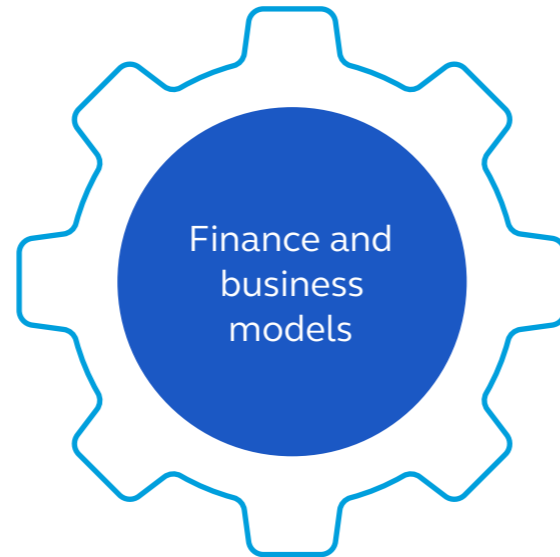
Key to driving these outcomes and results across sustainability, economic growth, social change, and citizen well-being are five levers:



The use of digital technology to drive operational, social, environmental, and economic improvements.



How cities work with citizens, businesses, universities, NGOs, and others to achieve the SDGs.



Financing and business models that cities use to pay for needed investments.



How cities manage data and analytics to support their smart, sustainable practices.



How cities govern and manage their SDG programs and engage with stakeholders.

Digital Future Proofing

Digital Twins at a city scale create digital replicas of the urban environment. When connected with live data, they can be used to monitor, inform, analyse, optimize and even simulate how we use our cities..

Using IOT and Digital twins there are opportunities for:

- **Improve air quality**
- **Energy distribution**
- **Decrease traffic congestion**
- **Streamline trash collection**
- **Early Warning Signals**

Digital Twins can empower us to understand and enhance how our cities work.



MAKING AN IMPACT

The impact of these smart applications across a city's performance, can be measured across eight key areas:

1. Economy, Trade and Industry
2. Government and Education
3. Living and Health
4. Public Safety and Security
5. Environment and Sustainability
6. Mobility and Transportation
7. Energy, Water, and Other Utilities
8. Digital Infrastructure and Network

■ ■ ■



Economy, Trade And Industry

Attracting business, generating growth and industrial development.



Government And Education

Managing a city and its services and workers.



Living And Health

Ensuring well-being and equity of citizens.



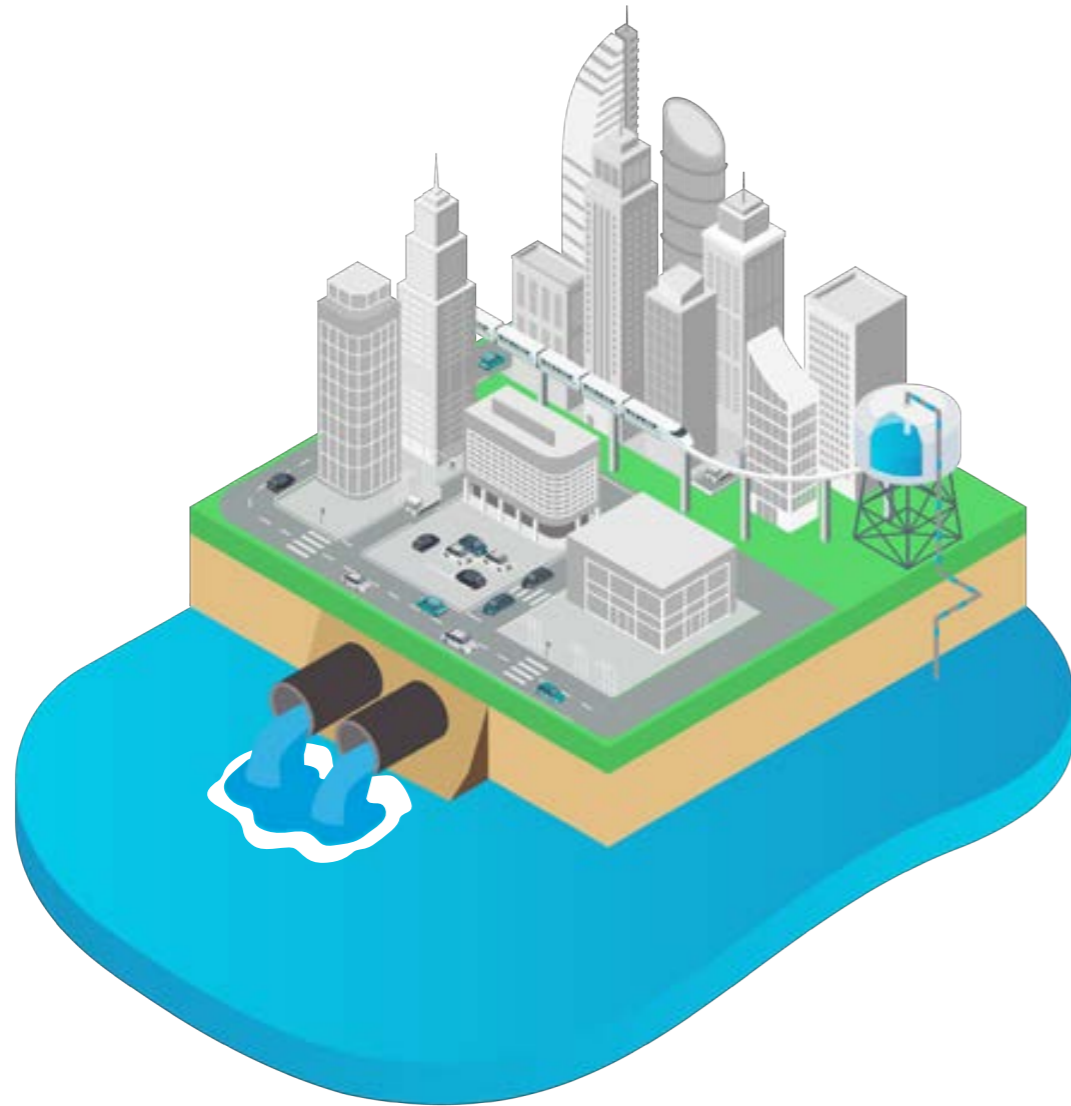
Public Safety And Security

Ensuring citizen safety and preventing crime.



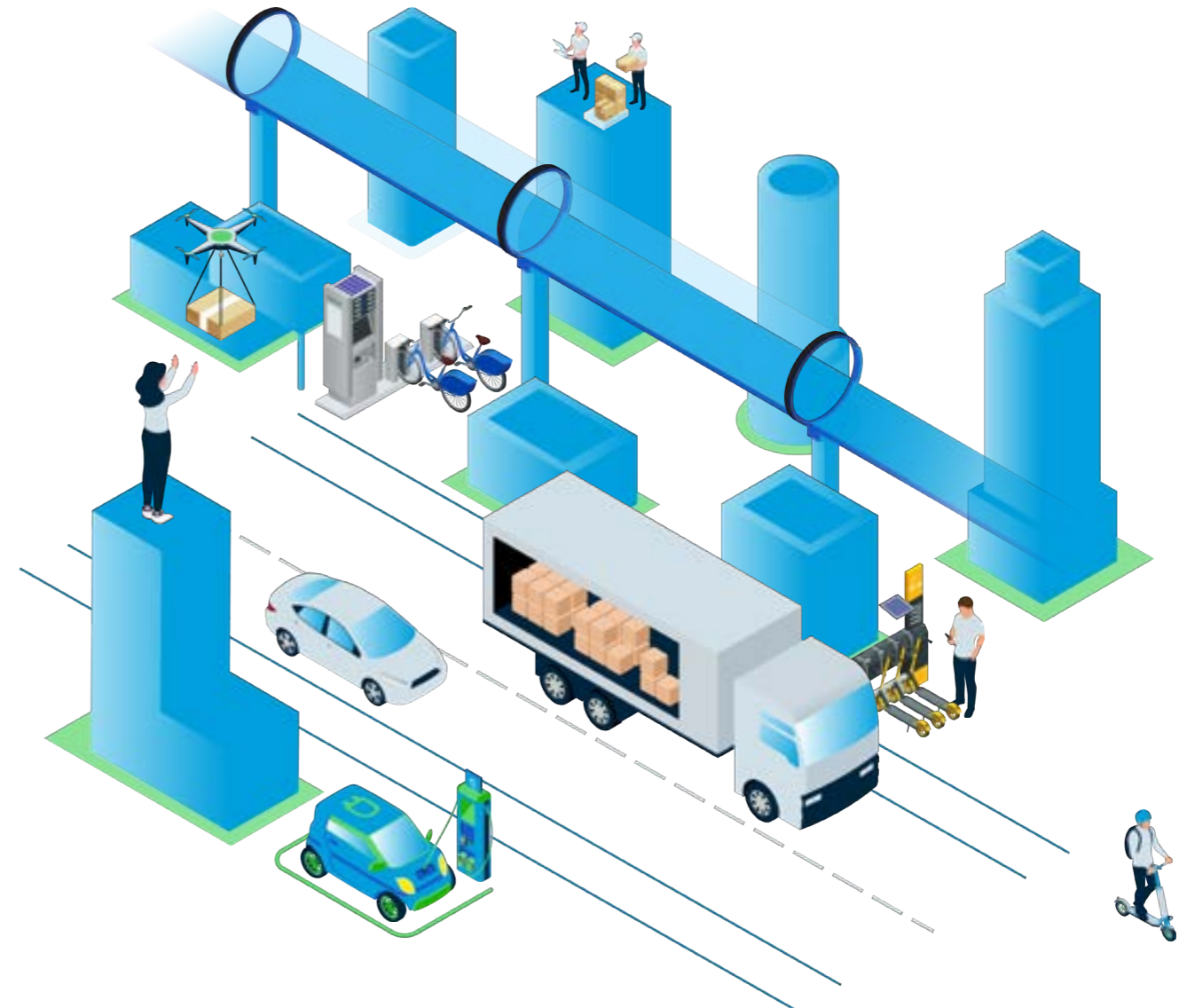
Environment And Sustainability

Ensuring well-being and equity of citizens.



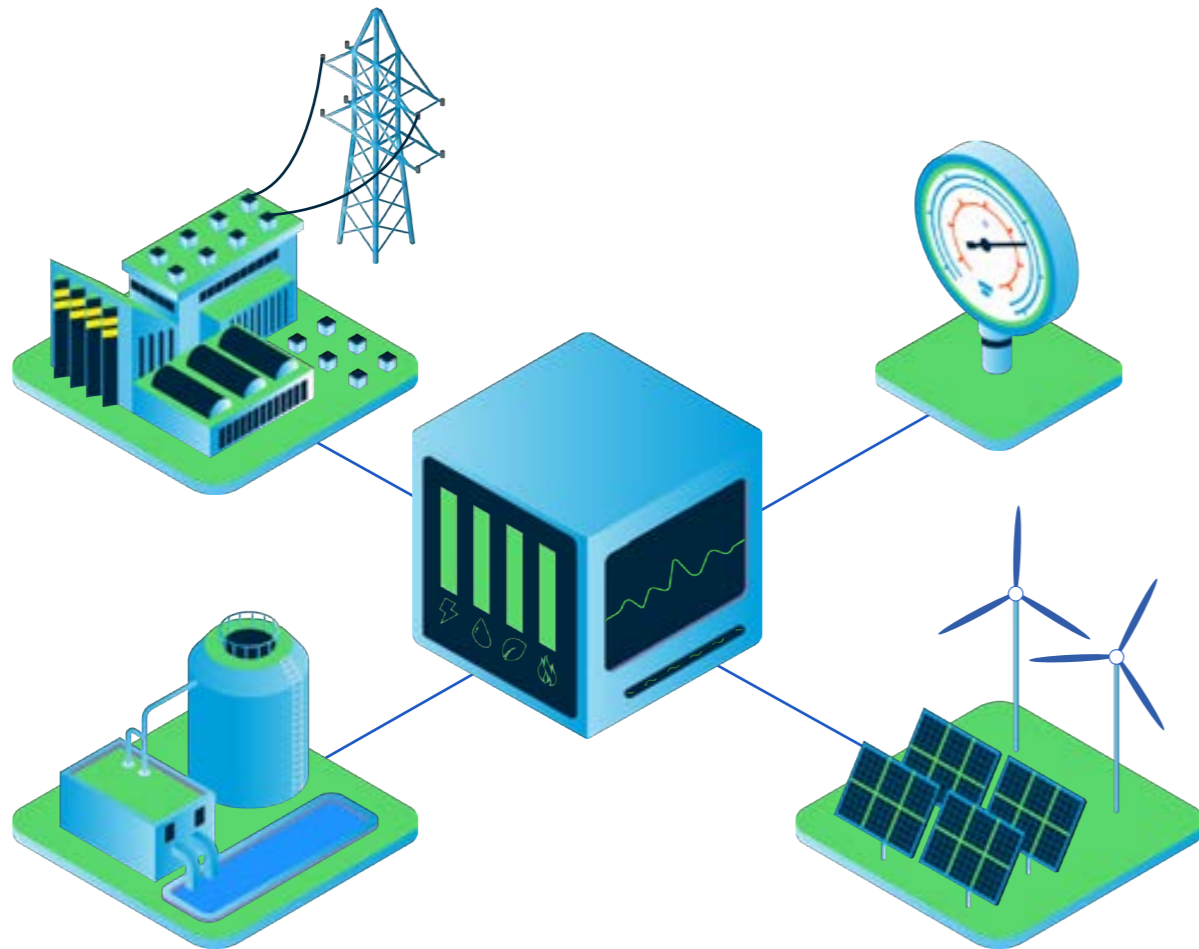
Mobility And Transportation

Enabling people and goods to move faster and safer.



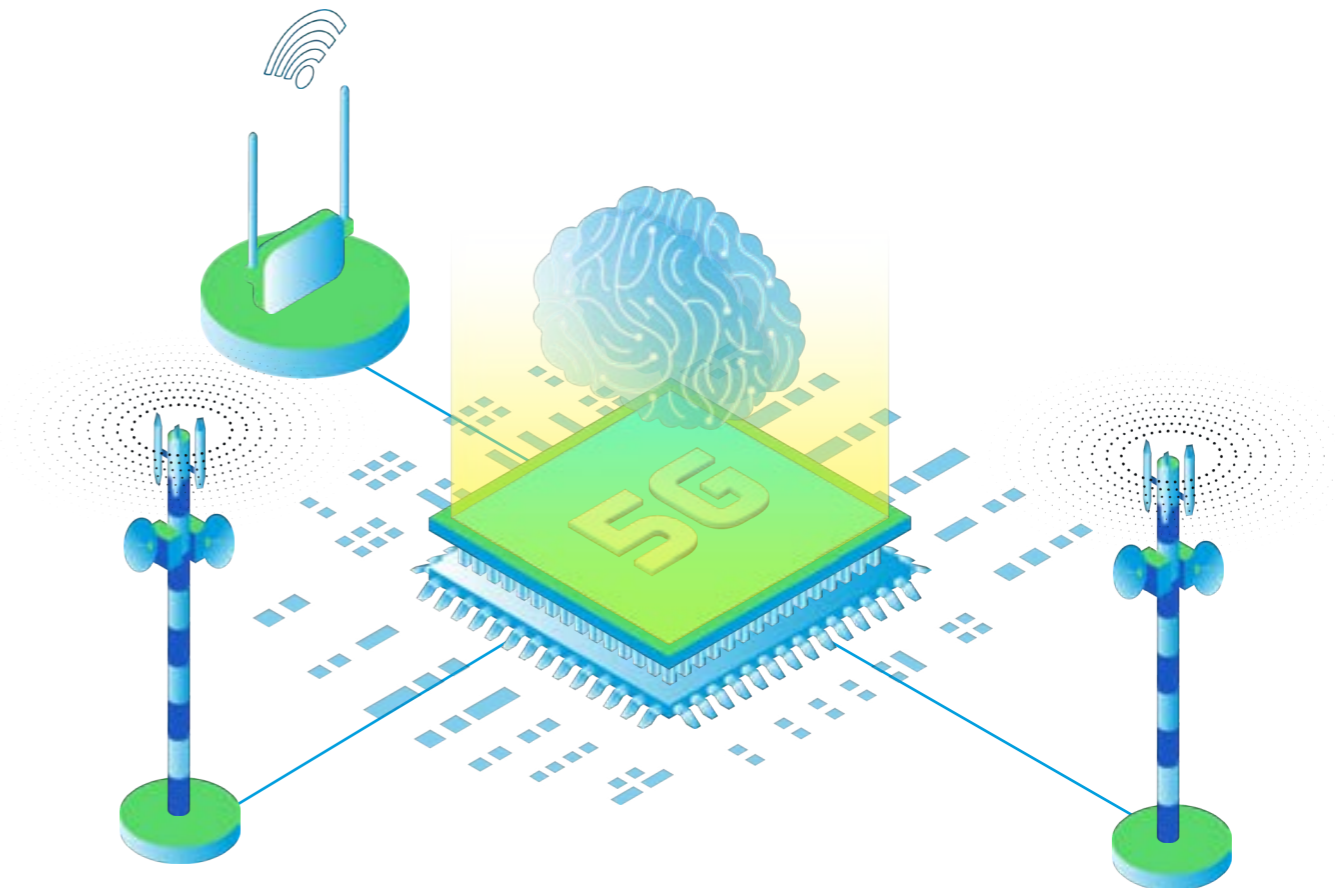
Energy, Water, And Other Utilities

Distributing energy, water, and other resources responsibly.



Digital Infrastructure And Network

Connecting people, devices, and assets across a city.



Global Knowledge and Connection

We bring together a powerhouse global team of designers, data scientists, anthropologists and other specialist partners to harness innovation and drive urban resilience in 21st century cities.

As Smart Cities evolve, we see the benefits of adopting advancing technologies across areas such as **infrastructure, public services, utilities and mobility** that allow our team to plan and design cities which embrace equity and inclusivity.

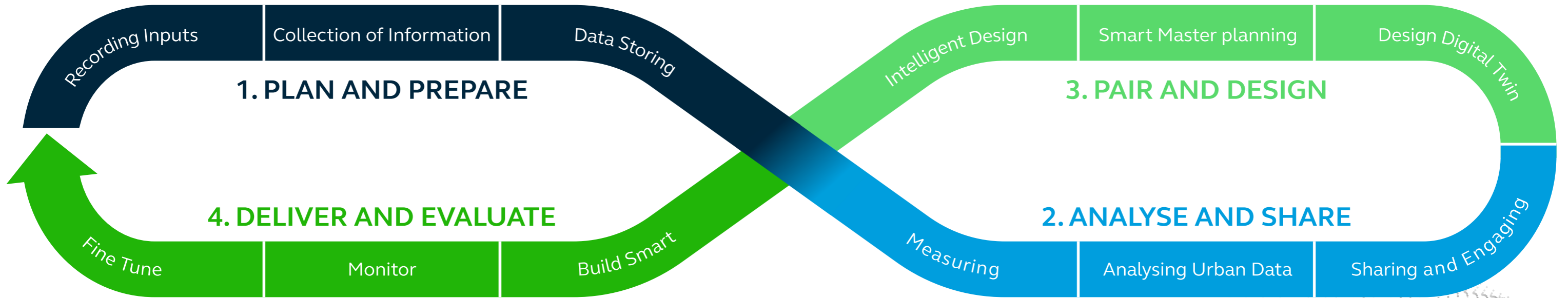
We know that if connected properly we can support our clients, enterprises, and local authorities to:

- **Be Agile and responsive**
- **Launch initiatives swiftly**
- **Make better decisions for cities**

Ultimately improving the quality of life for residents and visitors alike.

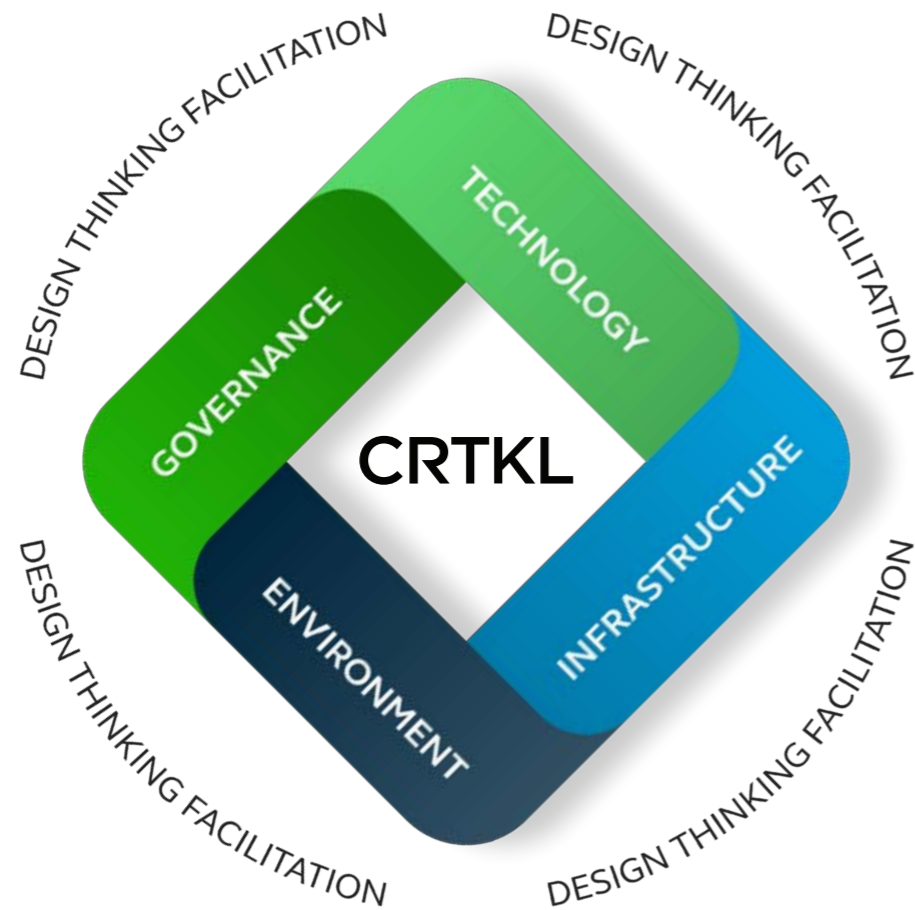
The CRTKL Process

This diagram demonstrates the multiple stages and detailed process that we undertake with our clients when planning a delivering Smart City solutions.



Smart Master Planning

As part of our stage 2 process: PAIR AND DESIGN, we consider many complex and numerous factors. We also engage and facilitate stakeholders in the follow areas:



This informs our holistic smart master planning.

- Active Digital Living
- Digital Government
- Automated Infrastructure
- Sustainability
- Participation Economies
- Integrated marketplace
- Human Scale
- Towards the IOT
- New Capital / New Ownership
- Mobility 3.0
- Human-Machine Symbiosis
- Digitized Nature
- Augmented Everything
- Adaptive Spaces
- Smart Lighting
- Remote Interaction
- The Individual and the Collective
- Urban Gamification

Our team



federica.buricco@crtkl.com

FEDERICA BURICCO

ASSOCIATE

Federica’s expertise is within mixed use master planning and urban design regeneration projects.

She has over 13 years’ experience in the design and management of large-scale residential, commercial and hotel developments and has worked in the UK, Italy and Switzerland.



craig.lewis@crtkl.com

CRAIG LEWIS

PRINCIPAL

Craig combines time-tested urban design and community building principles with objective data grounded in the marketplace to chart a path to greater livability, equity, and sustainability.

His expertise in urban design, placemaking, smart mobility, transit/transportation, and form-based codes has been widely regarded with numerous international awards and billions in new investment.



jan-maurits.loecke@crtkl.com

JAN-MAURITS LOECKE

ASSOCIATE
PRINCIPAL

Jan has worked on a wide range of award winning international competitions and projects from concept to detail design. He is an experienced architect with good technical knowledge of both office and site practices in UK and overseas markets, coordinating projects on a fast track basis to achieve buildings of high quality.



bill.kwon@crtkl.com

BILL KWON

PRINCIPAL

Bill spearheads digital transformation and technology globally at CallisonRTKL.

With nearly 20 years of experience in the architecture and design industry, his diverse background and human-centered approach allow him to help design teams to embrace technology and data, enhance customer journeys, sharpen strategic positioning, and eliminate inefficiency.

Supercharged Software and Smart Collaborators

We have powerful in house software at our fingertips to enhance and fast track our process and a collective of global digital experts who are on hand for specific specialist projects.



The digit group plans, designs, builds, and manufactures holistic smart cities, using technology solutions as the basis of its designs. From the tallest of buildings to the smallest of villages.

TDG creates smart cities solutions that provide greater security, increased safety, lower energy use, more efficient water management, safe and comfortable transportation, and a better urban experience.



Outer labs provides end-to-end digital products for the Built-environment.

We connect the digital and physical workflows throughout the design, construction, and operation of spaces to enable scale that meets the demand of a growing population.



CRTKL

Let's connect.

Federica Buricco

Associate

CallisonRTKL-UK Ltd.

Nexus

25 Farringdon Street

10th Floor

London

EC4A 4AB

United Kingdom

Federica.Buricco@crtkl.com

+442073043629

CallisonRTKL.com

Copyright 2021 CallisonRTKL Inc.

