



Barcelona

Shaping urban futures

Step into the city of tomorrow

Barcelona Shaping urban futures Towards the city of the future

When it comes to shaping its future, Barcelona has a bold vision.

Barcelona drives ambitious and transformative projects based on a shared and cross-cutting vision for the creation of a more climate-neutral, competitive and equitable city.

Barcelona opens up new possibilities

Our city is one of the world's main sources of talent and start-ups, and we need to shape the solutions that will define the future.

Barcelona innovates to care, grow and become a carbon-neutral city.

We are committed to innovation, sustainability and new technologies to create a decarbonised city that is ready for the future, improves everyone's quality of life and creates future opportunities.

- Urban transformation projects
- Digital innovation and knowledge projects
- Economy and competitiveness projects



Digital innovation & knowledge projects

> INITIATIVES AND APPS FOR THE EVERYDAY LIFE OF CITY RESIDENTS

Smou

The mobile application helps people move around Barcelona and its metropolitan area and provides users with mobility services and information for easier travel. The application allows users to check public transport information in real-time, get recommendations on the best route to get to their destination, and many other services.



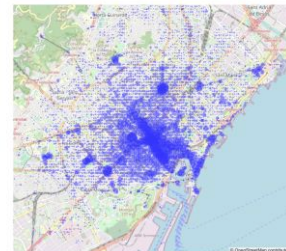
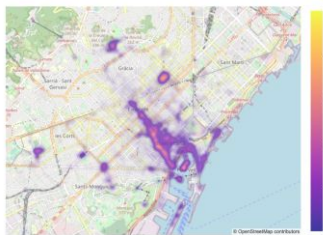
Municipal markets: collect-and-go lockers for shopping

Barcelona's municipal markets have installed a number of refrigerated and non-refrigerated lockers that can be used by customers to collect their shopping quickly, safely and conveniently, even outside the markets' opening hours.

> DIGITALISATION AND KNOWLEDGE FOR URBAN MANAGEMENT

GPS data to study visitor flows in Barcelona

This is a study analysing the flow of visitors to the city to provide a more accurate picture of tourist mobility in Barcelona. The study, which has been carried out using anonymous location data from apps whose users have given permission for this purpose, has made it possible to describe tourist flows and analyse trends with pioneering geographic and tracking precision. In addition, it has made it possible to study specific profiles, such as cruise passengers or people coming to the city to attend events.





Wastewater says a lot about you

Under the European project SCOREwater, and in partnership with research and technology organisations, Barcelona is exploring the joint application of artificial intelligence (AI), big data and sociological surveys to produce information that can prove valuable for the management of the city, such as identifying the presence of viruses, based on wastewater monitoring and analysis.



Monitoring and assessing the city's cleaning and waste collection services

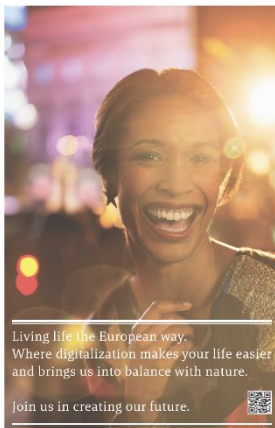
We present the technological solution for the comprehensive monitoring and assessment of the city's cleaning and collection services and the state of urban spaces. The City Council provides its inspectors with all the technology they need to plan and carry out their fieldwork and connects them to real-time cleaning and collection service information: use of maps (GPS position, travel route information), the ability to see any changes and incidents reported, and online monitoring records using monitoring forms.

IRIS

IRIS seeks to integrate and showcase a single platform for IT emergency response teams and IT security incident response teams that enable them to assess, identify, respond to, and share information on threats and vulnerabilities affecting AI-powered IoT and ICT systems.

Digital Twins

Local Digital Twins are digital replicas of the city that help design and build it, as well as carry out its daily management. They are a virtual lab that can be used by urban planners to find out what is going on in the city and test proposals before building them. This can provide answers to four major questions: What is happening right now? What happened? What will happen? What would happen if we changed something?



Living-in.eu

This is a "movement" promoted by the European Commission and the Committee of the Regions to boost the digitalisation of the EU's cities and regions. It is made up of five working groups, including the Monitoring & Measurement group, which is led by Barcelona jointly with the Committee of the Regions. Its aim is to measure cities' digital maturity using qualitative indicators to promote digital transformation in Europe's cities.

EDIC on LDT towards Cityverse



The EDIC (European Digital Infrastructure Consortium) is an instrument for multinational projects driven by the European Commission. One of its core projects will be a toolbox that will be made available to member states and cities for use in connection with the Digital Twins project. It is part of Barcelona's Digital Twins strategy, and the city is currently deputy chair, together with Valencia, which is the chair and will provide the future headquarters. EDIC is a future-oriented vision for the development of projects in Europe.

> DIGITALISATION OF SERVICES FOR CITY RESIDENTS

ARI robot

These are social and collaborative robots with digital capabilities that can be interconnected and integrated into all the devices that may be installed in an elderly or dependent person's environment. It is an advanced telecare system with configurable AI and mobility aspects.

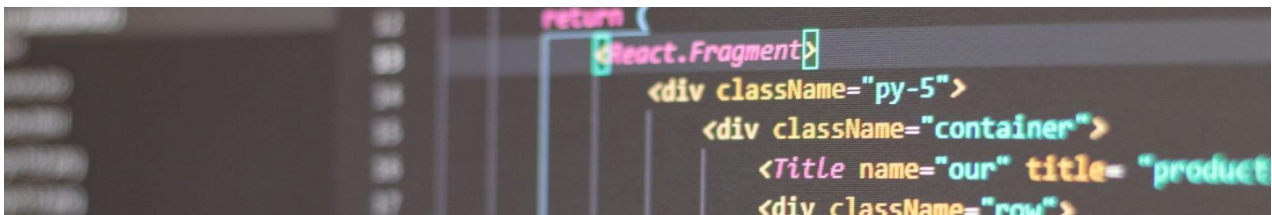
> SAFEGUARDING DIGITAL RIGHTS

Barcelona's leadership in the Cities Coalition for Digital Rights

Since 2018, Barcelona has led, jointly with Amsterdam and New York, a global network of over 50 cities working to design a set of public policies to safeguard human rights in digital environments.

Municipal strategy on algorithms and data for the ethical promotion of artificial intelligence

A measure that lays down the mechanisms for ensuring that the use of artificial intelligence for management and municipal services always respects the public's digital rights.



Urban transformation projects

> URBAN INNOVATION TOWARDS A CLIMATE-NEUTRAL CITY

Launching urban challenges

The urban challenge programme seeks to solve a problem or complex need of the city that requires an innovative method, service or product not yet available on the market. Meeting a challenge starts with an open consultation in the innovation ecosystem. It is an invitation to creativity under which solutions are neither imposed nor specifically requested. By doing things this way, pilots and the viability of innovative proposals can be tested in advance.

- **Challenge: Reducing the number of motorbike-related accidents**

The aim of this challenge is to reduce the number of accidents involving motorcycles taking place in the city in an innovative and effective way. Solutions must address the problem either from the point of view of driving by changing drivers' actions to reduce uncivil behaviour and discourage people from riding motorbikes or from the point of view of technological innovation by introducing a technological component applicable to public spaces, vehicles or people.

- **Challenge: Panot tiles for the 21st century**



The aim of this challenge was to provide the city with new panot tiles that respected the design's heritage and intangible value while providing a healthier and more sustainable solution based on reusing and recycling materials and changing the method used to lay them. Specifically, the solutions had to have a lower environmental impact, provide greater permeability and better physical and mechanical characteristics and be more durable.

- **Challenge: Regeneration of housing blocks with innovative sustainable systems**

The aim of this challenge is to find innovative and sustainable solutions for the full renovation of blocks of flats that promote an efficient use of resources, help both mitigate and adjust to climate change, and contribute to a better community life. The projects, which are currently at the prototype stage, will be tested at the Diagonal-Besòs university campus over 12 months starting in the third quarter of 2023, and the ones with the best results will be implemented and tested in real blocks of flats. The manufacturing modules provide solutions to increase volumes, apply bioclimatic envelopes, reuse rainwater to water plants, generate solar energy and manage buildings in an integrated way.

- **Challenge: To create temporary shade in public spaces**

The aim of this challenge is to find new innovative and sustainable temporary solutions based on modules to create shade in parts of the city where planting vegetation is not an option. The proposed projects, of which prototypes will be created and tested in a real-world environment for six months, must develop structures that can be adapted to traditional streets, children's play areas and shopping centres.

Heating and cooling networks

These cold and heat networks, which have already been used for a long time in central and northern Europe, make it possible to heat and cool buildings, as well as provide domestic hot water. These infrastructures are key when it comes to advancing the goal of climate neutrality for the city.

Using them can save water, take advantage of residual energy, reduce noise and vibration, minimise CO₂ emissions and lower maintenance costs.

At present, the city has the Districlima network, which serves the Fòrum and 22@ areas, and the Ecoenergies network, which operates in the Marina del Prat Vermell area. Work on installing a heating and cooling network in the city is also underway in a new area, la Sagrera.

Industrialised public housing

In a bid to boost the growth of the city's public housing stock in an agile, efficient and environmentally friendly manner, Barcelona is currently building a total of 328 homes using the industrialised production method. Most of the resulting homes will have a wooden structure, while others will be built out of 3D modules. These techniques will lead to shorter construction times and a more sustainable process.

MES Barcelona

This is an instrument that seeks to accelerate the city's energy transition, encouraging the installation of photovoltaic panels and energy renovation in all kinds of buildings under a public-private investment model that means it costs nothing to its beneficiaries.





> INITIATIVES FOR SMARTER AND MORE SUSTAINABLE MOBILITY



Endolla Barcelona

This is the largest network of electric charging points for cars and motorcycles in Spain, with over 720 charging points and a uniform and inclusive territorial cover throughout the city.

RideSafeUM

This project involves designing a system – supplementing the current regulations – to prevent more accidents by using a combination of computer vision, geolocation and real-time data to warn of events that pose a risk. RideSafeUM users thus receive alerts on their personal mobility vehicles about areas with speed or traffic restrictions.



PoDIUM

This is a system to improve safety in the emergency vehicle service. When a vehicle is providing an emergency service, PoDIUM notifies vehicles in the area of its distance and direction. This system has been perfected based on a previous experience and two derived elements: on the one hand, it takes vulnerable users into account, and on the other, it improves interoperability between the Mobility and Fire Brigade central offices.

Economy & competitiveness projects

> PROMOTING INNOVATION AND COMPETITIVENESS AMONG ENTERPRISES

Connectio, Barcelona Activa's open innovation business platform

This is a permanent resource of the city that connects open innovation opportunities to businesses in the city's ecosystem. It makes it easier to develop collaboration projects and supports participating companies during the process, boosting and promoting open innovation in the city, showcasing it and increasing its impact.



Digitalisation service for SMEs, micro-SMEs and self-employed individuals

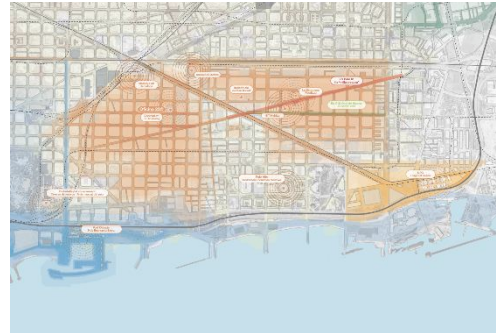
This is a specialist technical support service to support businesses in connection with various digitalisation processes, such as gaining an online presence, designing an online marketing strategy, putting online sales channels in place and digitalising their management processes. It also helps them with the digital equipment grant application



process. This service has helped 600 businesses and secured €1.7 million to date.

22@ Office

The 22@ one-stop shop is the main port of call for both businesses and individuals wishing to carry out any procedures in Barcelona's 22@ district. At the 22@ Office, which is located in the Business Support Office in the MediaTIC building, people can ask questions and carry out procedures and formalities relating to urban planning and economic activity in the 22@ district.



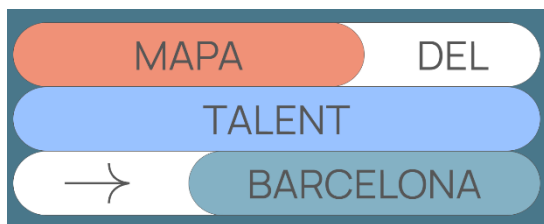
Barcelona Innova Lab

This is a pilot service that seeks to support and help interested businesses, associations and organisations to test innovative solutions of public interest for the city under real-life conditions. It can include initiatives such as products, services or methods capable of resolving a problem, new or significantly improved solutions compared to those currently available on the market that are at a pre-commercial stage, or solutions focusing on city life that seek to have a positive effect on policies, public goods and services and have a social impact.

Public subsidy for innovation: "A proactive city"

This is a set of urban innovation grants to promote innovative initiatives with a positive impact on Barcelona and its inhabitants.

> DIGITAL TALENT

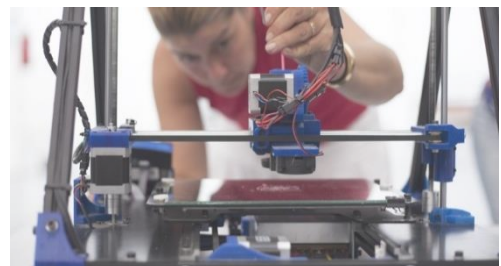


Barcelona talent map

An interactive tool that shows every aspect of the behaviour of Barcelona's talent, ranging from training and their links to various sectors of the economy to exchanges with other cities. It has been built using data provided by Barcelona's talent on the professional platform LinkedIn.

Digital Fab Labs Network

This is a municipal network of five facilities and public services that gives members of the public, the education sector and businesses free access to technological and digital equipment so they can train to develop their own projects.





> BLUE ECONOMY



Barcelona, host to the 37th America's Cup sailing competition in 2024

Barcelona has been chosen to hold the 37th edition of the world's leading sailing competition. Barcelona, a seaside city, is committed to promoting its blue economy so that it can become a vector for the creation of employment and economic and social development and a key focus of its seafloor, fostering activities that focus on innovation, sustainability and technology.

Learn more about the blue economy at Tomorrow.Blue Economy, the new world summit on the promotion and development of the blue economy's potential, here at the Smart City Expo World Congress 2023!



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