Sweden

Virtual Gothenburg – Gothenburg's Digital Twin

TYPE OF TOOL
Data and digital initiatives

MAIN SECTOR
Urban planning

INFRASTRUCTURE GOVERNANCE PILLARS
Asset performance throughout its life

In a nutshell

OBJECTIVE: Virtual Gothenburg has been developed to support smarter and more efficient urban planning to build a better city for its inhabitants.

Agency in charge
Gothenburg City Planning Authority

Levels of government
Sub-national

Year of implementation
2021

Current status
Fully operational

Overview

A digital twin is a virtual replica of an asset including real-time data acquired during the operation of that asset. It can be continuously updated with big data from multiple sources, enabling improved testing of what-if scenarios, analysis of the interdependency of multiple systems and simulation of risks and vulnerabilities—all toward the development of the asset's resilience. The City of Gothenburg, Sweden has developed its digital twin, Virtual Gothenburg. It is a virtual 3D model of the entire city of Gothenburg corresponding to a full 700 square kilometres, built on the city's own geographical information. A digital city makes it easier to visualise and simulate various urban development projects. The work is led by the Urban Planning Administration but involves all administrations that work with urban planning. The virtual Gothenburg is mainly developed to support smarter and more efficient urban planning in the context of multiple challenges such has climate change and segregation and those related to coordination, consensus and communication in a rapidly growing city. The digital twin makes it possible to study the city from three perspectives: understand how the existing city looks and works today, control functions in the city based on what is happening right now in real time and predict and plan a simulated future function or event in the city. The City of Gothenburg is currently working on a new project to develop and test new visualization concepts to visualize and integrate cultural values in urban planning processes. Cultural meeting places and activities, cultural environments and art contribute greatly to the city's identity. The aim therefore is to integrate these cultural values in virtual spaces in order for the virtual Gothenburg to become a true image of the city.

REFERENCES:

- Göteborgs Stad, *Digital tvilling*, https://goteborg.se/wps/portal/start/goteborg-vaxer/sa-planeras-staden/digital-stadsutveckling/digital%20tvilling