

Evidence Table

Query: specific public services urban digital twin use cases

Claim	Evidence Snippet	Citation	Confidence	Notes
One primary application area is urban planning, design, and management, encompassing public services or management, community development, and intelligent buildings .	ons due to problematic construction. From the cases collected for this report, the top three application scenarios in digital twin city construction are: 1) public services or management; 2) community development; and 3) intelligent buildings, accounting for 55.6%, 44.4% and 40.7% respectively. Of all Chinese digital twin practices, 54% are related to smart transportation and 31% to smart communities. In global terms...	(WEF2022, chunk_70)	Low	unknown
Specific use cases include urban operations, governance, urban design, and the fields of architecture, construction, and engineering .	nstance, S. Yang and Kim (2021) delineated unique use cases for different domains such as transportation, environment & energy, disaster response, planning & design, and management & operation. Similarly, Xia et al. (2022) have cataloged specialized use cases within domains such as urban operations, governance, urban design, and the fields of architecture, construction, and engineering (ACE). In an effort to harmoniz...	(Wu2024, chunk_27)	Low	unknown
Digital twins aid in metro planning and construction, which can significantly reduce construction costs .	eve urban economic recovery. Rennes, France: The digital twin city has been used in metro planning and construction, which significantly reduces construction costs. Shenzhen, China: Digital twin technology has been applied in the Mawan Smart Port. Kunming, China: The traffic database is used in urban traffic management. New South Wales, Australia: Digital twins help infrastructure builders make sound digital planning...	(WEF2022, chunk_96)	Low	unknown
They also help infrastructure builders make sound digital planning decisions prior to project implementation .	eve urban economic recovery. Rennes, France: The digital twin city has been used in metro planning and construction, which significantly reduces construction costs. Shenzhen, China: Digital twin technology has been applied in the Mawan Smart Port. Kunming, China: The traffic database is used in urban traffic management. New South Wales, Australia: Digital twins help infrastructure builders make sound digital planning...	(WEF2022, chunk_96)	Low	unknown
Furthermore, they enable digital supervision throughout the entire life cycle of a city, including planning, construction, management, use, and maintenance , .	eve urban economic recovery. Rennes, France: The digital twin city has been used in metro planning and construction, which significantly reduces construction costs. Shenzhen, China: Digital twin technology has been applied in the Mawan Smart Port. Kunming, China: The traffic database is used in urban traffic management. New South Wales, Australia: Digital twins help infrastructure builders make sound digital planning...	(WEF2022, chunk_96)	Low	unknown
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A significant function of an urban digital twin is the 3-Dimensional visualisation of the city or region .	ban Digital Twins can improve the resilience of urban areas against, for example, natural disasters and pandemics. 1 0 (cid:0) 2 ln1 25 One of the most important functions of an urban digital twin is a 3-Dimensional visualisation of the city or region. (cid:0) 1 0 2 ln4 26 One of the most important characteristics of an urban digital twin is that user interaction is as easy as in a computer game. (cid:0) 1 0 1 T2 27 ...	(Apeldoorn2025, chunk_97)	Low	unknown
In the realm of environmental sustainability and energy management, urban digital twins are used for environmental and low-carbon development .	ons due to problematic construction. From the cases collected for this report, the top three application scenarios in digital twin city construction are: 1) public services or management; 2) community development; and 3) intelligent buildings, accounting for 55.6%, 44.4% and 40.7% respectively. Of all Chinese digital twin practices, 54% are related to smart transportation and 31% to smart communities. In global terms...	(WEF2022, chunk_70)	Low	unknown
This includes monitoring energy consumption and economic returns to help with low-carbon development .	ons due to problematic construction. From the cases collected for this report, the top three application scenarios in digital twin city construction are: 1) public services or management; 2) community development; and 3) intelligent buildings, accounting for 55.6%, 44.4% and 40.7% respectively. Of all Chinese digital twin practices, 54% are related to smart transportation and 31% to smart communities. In global terms...	(WEF2022, chunk_70)	Low	unknown

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They optimize urban lighting by simulating light and shadow intensity to achieve a balance between safety requirements and energy-saving targets .	ing life to the digital twin city. For example, through digital twins, light and shadow intensity can be simulated. This allows urban lighting to be optimized to achieve the balance between safety requirements and energy-saving targets, which contributes to the low-carbon transformation and liveability of cities. Urban planners can also refine the use, operation and maintenance of energy systems, record the city's ca...	(WEF2022, chunk_69)	Low	unknown
Digital twins also allow urban planners to refine the use, operation, and maintenance of energy systems, record a city's carbon trajectory, and promote carbon neutrality .	ing life to the digital twin city. For example, through digital twins, light and shadow intensity can be simulated. This allows urban lighting to be optimized to achieve the balance between safety requirements and energy-saving targets, which contributes to the low-carbon transformation and liveability of cities. Urban planners can also refine the use, operation and maintenance of energy systems, record the city's ca...	(WEF2022, chunk_69)	Low	unknown
They contribute to the more efficient and rational use of resources and help achieve cleaner cities and reduced carbon emissions .	s could contribute to the more efficient and rational use of resources. Third, digital twin technologies could reduce the cost of urban innovation; the digital twin city model could also be used as a cloud service for enterprises and citizens to improve urban innovation. Digital twin technology could significantly improve residents' quality of life and enhance the inclusiveness of cities. First, it enhances citizens'...	(WEF2022, chunk_41)	High	unknown
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For transportation, digital twins are applied in smart transportation initiatives and urban traffic management .	ons due to problematic construction. From the cases collected for this report, the top three application scenarios in digital twin city construction are: 1) public services or management; 2) community development; and 3) intelligent buildings, accounting for 55.6%, 44.4% and 40.7% respectively. Of all Chinese digital twin practices, 54% are related to smart transportation and 31% to smart communities. In global terms...	(WEF2022, chunk_70)	Low	unknown
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They have been used in smart ports, such as the Mawan Smart Port .	eve urban economic recovery. Rennes, France: The digital twin city has been used in metro planning and construction, which significantly reduces construction costs. Shenzhen, China: Digital twin technology has been applied in the Mawan Smart Port. Kunming, China: The traffic database is used in urban traffic management. New South Wales, Australia: Digital twins help infrastructure builders make sound digital planning...	(WEF2022, chunk_96)	Low	unknown
These technologies can monitor and predict the movement of people, places, and objects within a city, enabling comprehensive and systematic advance planning and design .	ing life to the digital twin city. For example, through digital twins, light and shadow intensity can be simulated. This allows urban lighting to be optimized to achieve the balance between safety requirements and energy-saving targets, which contributes to the low-carbon transformation and liveability of cities. Urban planners can also refine the use, operation and maintenance of energy systems, record the city's ca...	(WEF2022, chunk_69)	Low	unknown
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In terms of quality of life and services, digital twins can significantly improve residents' quality of life and enhance the inclusiveness of cities .	s could contribute to the more efficient and rational use of resources. Third, digital twin technologies could reduce the cost of urban innovation; the digital twin city model could also be used as a cloud service for enterprises and citizens to improve urban innovation. Digital twin technology could significantly improve residents' quality of life and enhance the inclusiveness of cities. First, it enhances citizens'...	(WEF2022, chunk_41)	High	unknown
They enhance citizens' sense of happiness through the integration of virtual and real scenarios, providing full-range, full-time, customized services in digital twin hospitals, classrooms, and nursing homes .	s could contribute to the more efficient and rational use of resources. Third, digital twin technologies could reduce the cost of urban innovation; the digital twin city model could also be used as a cloud service for enterprises and citizens to improve urban innovation. Digital twin technology could significantly improve residents' quality of life and enhance the inclusiveness of cities. First, it enhances citizens'...	(WEF2022, chunk_41)	High	unknown
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