

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 |
| Furthermore, they enable digital supervision throughout the entire life cycle of a city, including planning, construction, management, use, and maintenance , . | ses are presented in sections that detail case overview, typical scenarios and case summary. It is hoped that this chapter will contribute to the development of digital twin cities in China and abroad. Cases of global digital twin cities FIGURE 20 Xiong'an New Area, China: A BIM management platform has been built for the digital supervision of the whole life cycle of city management, which includes "planning, constru... | (WEF2022, chunk_95) | Low | unknown |
| 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 In1 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 In4 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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| 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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