

TOPICAL REPORT

CITIES

Gain insight and keep up-to-date with the latest publications carefully selected by the library from credible sources in academic publications, industry & market research and scientific & industry news.

If you have any sources to suggest for our report please [let us know](#).

[view past reports](#)

[subscribe to others](#)

[unsubscribe](#)

news

academic

reports

COVID-19



How 'work from anywhere' can build the city of the future

"The COVID-19 pandemic has dramatically and drastically changed the way we work. All around the world, government, education and healthcare industries have had to operate virtually, in many cases for the first time. Work from anywhere is becoming a more permanent fixture wherever jobs allow."

Source: WEFForum

The Right Way to Rebuild Cities for Post-Pandemic Work

"Since the Covid-19 pandemic forced millions of workers out of their offices, questions have loomed about the rise of remote work and what it means for cities large and small. Some cities have focused their economic development efforts on trying to attract potentially newly remote workers to move to their area."

Source: Bloomberg Citylab

Why cities will come back stronger after covid

"The coronavirus pandemic presents a cruel irony for urban dwellers. What good are cities if the very quality that makes them so dynamic—the ease of connecting with people and gathering in large groups for everything from a baseball game to an opera—now renders them more dangerous than before?"

Source: MIT Technology Review

SMART CITIES



AI perspectives in Smart Cities and Communities to enable road vehicle automation and smart traffic control

"This paper describes AI perspectives in SCC and gives an overview of AI-based technologies used in traffic to enable road vehicle automation and smart traffic control. Perception, Smart Traffic Control and Driver Modelling are described along with open research challenges and standardization to help introduce advanced driver assistance systems and automated vehicle functionality in traffic."

Source: Artificial Intelligence

Smart energy cities: The evolution of the city-energy-sustainability nexus

"This paper reviews the emergence and development of the "smart energy city" as an academic, normative, and applied concept. An examination of the academic literature since the early 2000s reveals the unfolding of spatiotemporal trends relating to this concept. It has been emerging to represent a sector-specified version of its sister concept of smart cities, also popularized in the past decade."

Source: Environmental Development

Will smart cities enhance the social capital of residents? The

CITIES



Cities and Pandemics: Towards a More Just, Green and Healthy Future

"Cities are rethinking urban space, not only from the perspective of health, but also ecology. They are recognizing the need to promote inclusive planning and to take regional dimensions into account."

Source: UNHabitat

Creating Livable Asian Cities

"This book makes the case for five priorities to create livable cities and realize a sustainable urban future in Asia. Pursuing smart and inclusive planning, sustainable transport, sustainable energy, sustainable finance, and resilience and rejuvenation will create more livable cities in the future. Getting these essentials right in cities today is vital to adapt to the demands of tomorrow."

Source: Asian Development Bank

Best-Performing Cities 2021: Foundations for Growth and Recovery

"The Milken Institute's Best-Performing Cities index tracks the economic performance of approximately 400 US metropolitan statistical areas (MSA). It uses an outcomes-based set of metrics—including job creation, wage gains, and high-tech GDP growth—to evaluate the

SUSTAINABLE CITIES



Are Cities Underestimating Carbon Pollution?

"Researchers from the Vulcan Project found that U.S. cities overall under-reported their greenhouse gas emissions by nearly 20%. The Vulcan Project is a multi-year effort funded by NASA and the U.S. Department of Energy to analyze data on carbon emissions over the United States. The major discrepancies Vulcan Project researchers found between their own data and many cities' self-reported numbers is now cities to rethink the way they conduct their own emissions inventories."

Source: Bloomberg

Start-ups create innovative solutions to help cities become more sustainable and resilient

"Plants and drones do not seem to have much in common but a Singapore team's plan to use the aerial craft to pollinate plants in indoor settings is fast taking flight."

Source: Straits Times

SMART CITIES



How blockchain can empower smart cities - and why interoperability will be crucial

"Advanced technology, including blockchain can play a key role in solving these societal issues and achieving efficient urban management. Blockchain enables network participants to exchange data with a high degree of reliability and transparency without the need for a centralized administrator. Cities have a variety of stakeholders and the exchange of data among stakeholders is essential for highly convenient urban services."

Source: WEFForum

The Future Of Smart Cities' Utilities: Powering Progress With AI

"Artificial intelligence is invaluable when it comes to its role in this transformational stage facing the utilities sector. Advanced

importance of smart neighborhood management

"This study examined the hypothesis that the regional efforts to create smart cities using advanced ICT technologies enhance the social capital of the city and identified the factors that enhance social capital."

Source: Cities

IoT enabled integrated system for green energy into smart cities

"This article provides a comprehensive methodology to plan and evaluate the creation of smart power systems that lead to complex networks of energy supply technologies using diverse on-site and off-site resources. In this paper, the Internet of Things based Smart Green Energy (IoT-SGE) has been proposed for Smart Cities."

Source: Sustainable Energy Technologies and Assessments

A Study of Smart Lighting in Smart Cities

"With the rapid development of science and technology, people gradually realized that intelligent lighting can also be applied in smart cities. This paper briefly introduces the functions of intelligent lighting and the benefits it can bring to smart cities, and also predicts its possible future development."

Source: Proceedings of Business and Economic Studies

Vehicular Crowdsourcing for Congestion Support in Smart Cities

"This paper lays the theoretical foundations of a framework for harnessing the on-board computational resources in vehicles stuck in urban congestion in order to assist transportation agencies with preventing or dissipating congestion through large-scale signal re-timing."

Source: Smart Cities

A smartphone sensors-based personalized human activity recognition system for sustainable smart cities

"In this paper, a novel framework for human activity recognition (HAR) is proposed using raw readings from a combination of fused smartphone sensors: accelerometer, gyroscope, magnetometer, and Google Fit activity tracking module. The proposed framework applies deep recurrent neural network (DRNN) to an extensive training dataset. The latter consists of five activity classes from 12 individuals using a deep recurrent neural network (DRNN)."

Source: Sustainable Cities and Societies

performance of these cities relative to one another."

Source: Milken

Prime Global Cities Index

"The Prime Global Cities Index is a valuation-based index tracking the movement in prime residential prices in local currency across 45+ cities worldwide using data from our global research network"

Source: Knight Frank

technologies are already at the forefront of driving valuable strategies optimizing the industry across all operations. This includes facilitating missions for achieving smart/clean-city initiatives and net-zero commitments."

Source: Forbes

Smart cities built with smart materials

"The Smart City Index (1) defines a smart city as "an urban setting that applies technology to enhance the benefits and diminish the shortcomings of urbanization for its citizens." The top-ranked city, Singapore, has addressed urban challenges with information technology since 2014 through its Smart Nation Initiative (2). The influence of technology is reflected in the city's open platform for sharing energy data, crowd-sourced location data for smart navigation, and even online forums for citizen participation in policy-making (2). The smart city concept requires the acquisition of massive amounts of data in real time, and large networks of smart devices must spread the burden of communication and processing evenly across the network to prevent information overload at its center. Opportunities to solve this challenge have recently emerged through the development of increasingly "smart materials" that can sense, process, and respond to environmental stimuli without centralized resources."

Source: Science

INCLUSIVE CITIES



Here's how digital infrastructure can make cities more inclusive for elderly people

"Most city planning efforts to encourage active ageing are siloed and fragmented. Older people are too often shut away in retirement villages or nursing homes rather than living in the community. Current approaches are often based on traditional deficit models of focusing on older people's declining health"

Source: WEFForum

This virtual-reality tech could help makes cities more child friendly

"Inspired by a virtual reality tool that allows users to experience cities from the height of a three-year-old, a new set of guidelines aims to show how

Redefining the smart city: culture, governance and metabolism

Case study of Port Louis, Mauritius

"When Mauritius branded its 'Smart Mauritius' Initiative, a valid framework for new Smart Cities was released in 2015 (Bol, 2018). However, no such concept exists for smarting existing urban areas into smart ones. While new Smart Cities are being initiative, Port Louis, the Capital city of Mauritius is being met with increasing challenges for business retention; leading to a slow urban decay. The study develops a model of how to smart an existing city while socially and economically rejuvenating the social fabric of Port Louis."

Source: Smart Sustainable Cities White Paper – Case Study [05]

COVID 19



Challenges of Economic Activities of Cities in the Context of the Covid-19 Pandemic

"The main purpose of the authors was to identify the threats and economic opportunities that cities are facing in general and particularly in Georgia, in terms of neutralizing the consequences of the pandemic. According to conclusion derive from studies, cities have to employ their real capacity in order to remain functionally viable. "

Source: BULLETIN OF THE GEORGIAN NATIONAL ACADEMY OF SCIENCES

Toward greener and pandemic-proof cities: North American cities policy responses to Covid-19 outbreak

"This section of the Journal, Review Notes, is the expression of a continuous updating of emerging topics concerning relationships among urban planning, mobility and environment, through a collection of short scientific papers."

Source: TeMA. Journal of Land Use, Mobility and Environment

An Overview of the Use of Biometric Techniques in Smart Cities

"A smart city is a solution to improve the quality of life of the citizens, and governing the city in an efficient and systematic. Besides, significant advances have been raised in biometrics technologies, which have

urban design can improve the health and security of vulnerable children."

Source: WEFForum

URBAN TRANSPORTATION

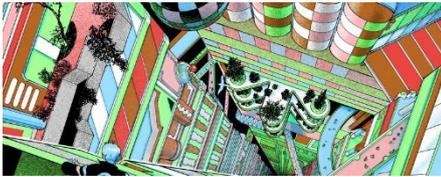


The Pandemic Prompts Cities to Rethink the Parking Spot

"The pandemic eliminated many commutes, took cars off the roads, and felt, at times, like a transportation tabula rasa. Cities seized the moment, sometimes without lengthy public comment processes or the usual red tape. "The pandemic allowed communities to get a taste for how the curb could look a different way," says Mae Hanzlik, a program manager at the urban planning nonprofit Smart Growth America who authored a report on cities' Covid-era responses to the curb."

Source: Wired

RESILIENT CITIES



Kim Stanley Robinson on Cities as a Climate Survival Mechanism

"To see the climate city, look to planning texts from Holland that describe "vertical farms," which are skyscrapers that include agriculture, aquaculture, chickens, pigs, and recycling of all waste within towers of food production. Hydroponics and vat-based food production using yeast, algae, and even meats will also be integrated into these towers. This kind of concentrated agriculture will free up land for other purposes while reducing the transport costs of goods from where they're grown to where they get eaten."

Source: Bloomberg Green

INCLUSIVE CITIES



How to design safer cities for women

"Gender is also the most significant factor in how anxious passengers feel on public transport. The gaps can be

made many aspects of urban life easier, more efficient, and more secure. Accordingly, to be compliant with the demands of a smart city in the future, biometrics-based technologies will certainly play a significant role from now on. Thus, it is necessary to list the different biometrics methods that could be used in smart cities and to review the variety of applications for each method. In this article, we have listed the potential biometrics systems that can be employed in smart cities, such as facial recognition, age estimation, gender detection, facial expression detection and sentiment recognition, and gait recognition."

Source: The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences

RESILIENT CITIES



Building resilient cities: designing resilience in a performative way. The 100RC program

"This paper aims to understand how local actors, in this case cities, implement the resilience imperative. We analyze 82 resilience strategies produced by the cities that have joined the 100 Resilient Cities network, supported by the Rockefeller Foundation. We show that, on the one hand, resilience is not a given baseline that guides urban policies, but a local construction adapted to the specificities and characteristics of each city. Resilience is place-based designed in a performative way, as local actors grasp it and give it content."

Source: ISTE OpenScience

Retaking the Cities: A Plan for the Centre-Right

"Among the most pressing are climate change-related themes such as public transportation and urban planning, but also the ongoing housing crisis and, more broadly, rising social inequality. This paper suggests that the EPP could promote a new 'EU Cities Fund', a city-tailored, directly accessible fund that would add financial heft to the EU's existing urban policy."

Source: European View

The Cities Challenge: Driving a Green and Digital Recovery and Social Resilience

"Cities are addressing the world's biggest challenges: the pandemic, climate change, migration, poverty,

enormous: one UK survey found that 93% of female respondents felt fearful while waiting for a train at night, compared to 53% of male respondents, because of poor visibility.”

Source: BBC

and inequalities. Cities can emerge stronger from the crisis if they make conscious policy choices to support a green, digital, and inclusive recovery while leveraging innovation and cutting-edge technologies.”

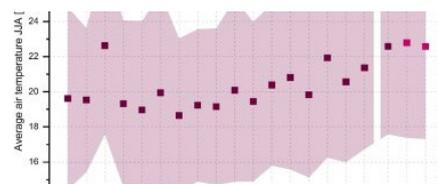
Source: IEEE Computer

Urban Resilience: Urban Design Strategies for Addressing Climate Change in Waterfront Cities

“This thesis explores models of integrating ecological design strategies into an existing urban network to adapt the life of the city to changes in sea level, creating resilience to address climate change. This proposal reimagines East Boston applying predicted changes in sea level over the next fifty to eighty years. This area of the city was largely composed of wetland and existed mostly under the water table until the city expanded by filling in land and dams over time since the 1800s. Current sea-level rise models show that by 2070, much of the man-made land in East Boston will be submerged under the new water table, and thus returning the area to a similar composition that it originally existed as: a series of islands connected by submerged shallow flats. This thesis proposes an urban design solution that embraces the projected rise of water and adapts the existing street and infrastructure network to connect and inhabit the dry islands while reconstituting the natural ecology of the surrounding marshes.”

Source: Kennethsaw State University

URBAN TRANSPORT

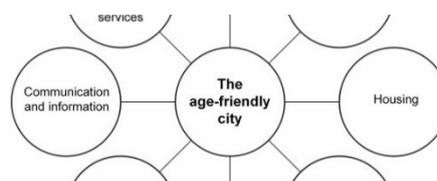


Unlocking Sustainable Transport Starts with Cities

“City leaders face incredible pressure to deliver sustainable transportation. Cities now account for more than half of the world’s population—by 2050, they will hold 75 percent of us. These people—increasingly from the middle class—will need ways to commute to work, travel, and carry out their livelihoods.”

Source: World Resources Institute

INCLUSIVE CITIES



Ten questions concerning age-friendly cities and communities and the built environment

“This article explores ten key questions associated with the age-friendly cities and communities' movement, with a particular focus on the built environment. It provides an overview of the history of the age-friendly cities' movement and the underlying models, the aspects of the built environment that are relevant for age-friendly cities, the ways age-friendliness can be evaluated, and the interactions between age-friendly cities initiatives and other strategic agendas such as smart cities. The paper concludes by discussing future perspectives and possible directions for further development of the age-friendly movement.”

Source: Building and Environment

An Investigation of Age-friendly Cities in the United States

“The purpose of this study was to explore age-friendly initiatives in the United States and to learn more about how these initiatives are structured and operated. To explore this research aim, in-depth interviews were conducted with leaders of five different age-friendly programs. The findings from this study indicate there are many ways to structure an age-friendly initiative based upon the strengths of the local community and the needs of the older adults in the city. Stable and increased investments are needed to continue expanding age-friendly work, which was made especially clear throughout the COVID-19 pandemic.”

Source: Grand Valley State University

For more articles or in-depth research, contact us at library@sutd.edu.sg

An SUTD Library Service©2019