

Navigating the Future

The Evolution and Impact of Modern Transportation



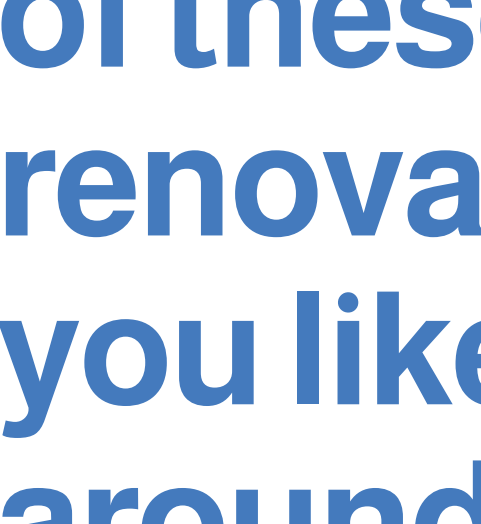
In metropolitan cities worldwide, the heavy reliance on automobiles significantly impacts the quality of life. Congested traffic reduces daily productivity and leisure, while air and noise pollution from cars detrimentally affect public health. Additionally, the need to sustain extensive road networks strains city budgets, drains resources and energy, and creates environments that discourage physical activity and reduce social interactions.

83% of CO₂ emissions were caused by automobile exhaust in 2019*

This article will explore strategies to mitigate the challenges and negative effects of automobile dependence in metropolitan cities, offering solutions and case studies to promote better, human-centric urban planning.

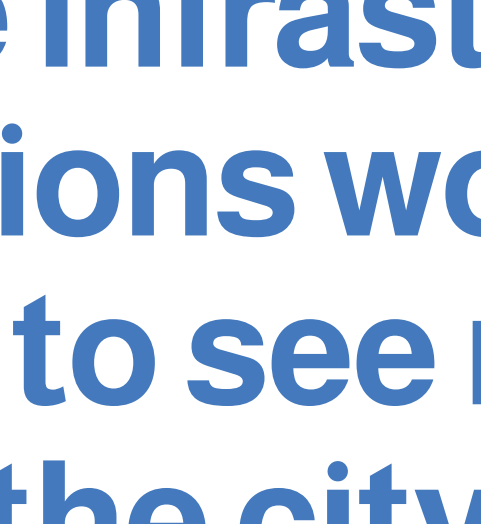
How can improving a city's infrastructure impact quality of life?

Infrastructure



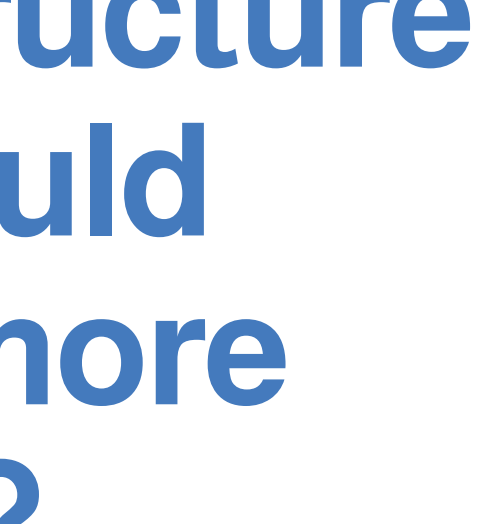
Bike Lanes

Bike lanes are vital for promoting health, reducing traffic congestion, and fostering environmental sustainability. They provide safe spaces for cycling, alleviate urban congestion, and contribute to efforts in combating climate change. Additionally, investing in cycling infrastructure enhances economic opportunities and improves overall quality of life for residents.



Complete Streets

Narrowing streets reduces speeds and traffic congestion by creating a calmer, more controlled environment. This design encourages safer driving behaviors and promotes the use of alternative transportation modes. Additionally, it enhances the overall livability of urban areas by prioritizing pedestrian-friendly spaces and fostering a sense of community.

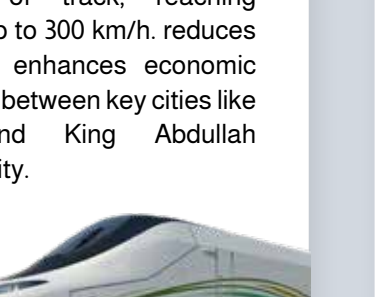


Pedestrian Bridges

Walking bridges have been introduced in various phases across Saudi Arabia, with specific dates varying based on local infrastructure projects. However, a notable early signal control has occurred in recent years as part of urban development initiatives aimed at enhancing pedestrian safety and connectivity in efforts to improve transportation infrastructure and promote sustainable environments.

Implementing infrastructure changes is resurging in Saudi Arabia to foster healthier lifestyles and create more human-centered cities, aligning with the goals of the Vision 2030 initiative. This aims to cultivate healthier, happier, and less congested urban environments, promoting well-being among city residents.

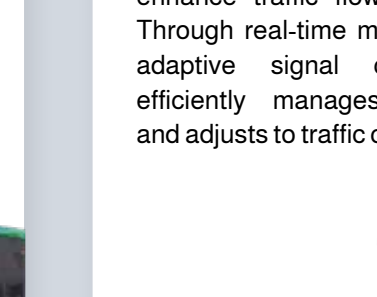
In your opinion, which of these infrastructure renovations would you like to see more around the city?



Bike Lanes



Complete Streets



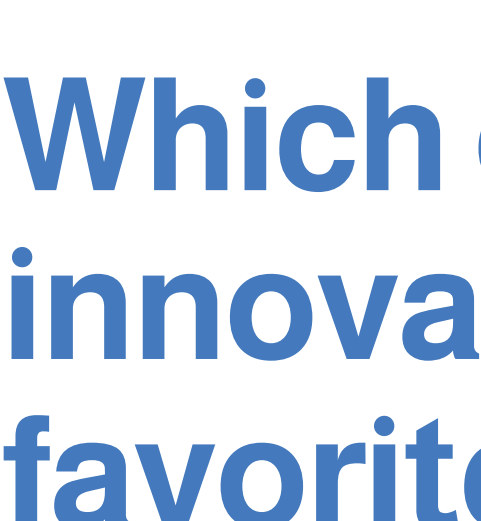
Pedestrian Bridges

TO ANSWER THE SURVEY

What new transportation innovations promise better quality of life in human-centric cities?

In conjunction with infrastructure renovations aimed at fostering human-centric cities, transportation innovations are emerging. This shift promises elevated levels of quality of life, sustainability, and well-being for Saudi Arabia.

Innovation in Transportation



Technology in Transportation

Haramain High-Speed Railway

The Railway links the holy cities of Mecca and Medina via 450 kilometers of track, reaching speeds of up to 300 km/h, reduces travel time, enhances economic connectivity between key cities like Jeddah and King Abdulah Economic City.



Public Transportation

Riyadh Metro and bus transport

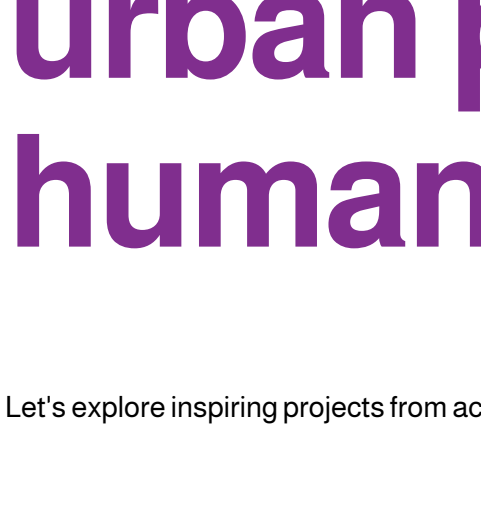
The Riyadh Metro and Bus Project is a comprehensive public transportation initiative in Saudi Arabia's capital, consisting of six metro lines and an extensive bus network. Designed to enhance urban mobility and reduce congestion.



Smart Traffic Management

ITS, KAEC Jeddah

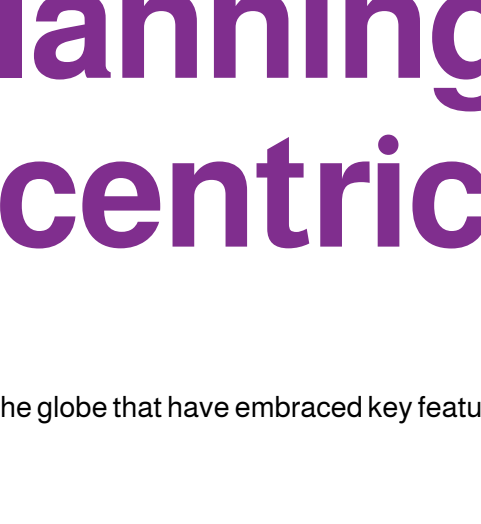
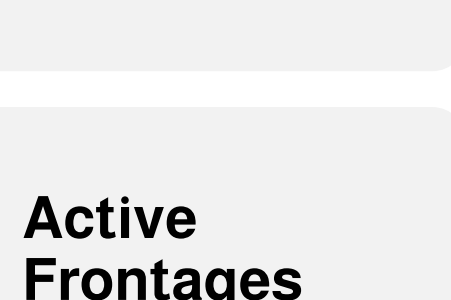
The Intelligent Traffic System (ITS) uses advanced technology to enhance traffic flow and safety. Through real-time monitoring and adaptive signal control, ITS efficiently manages congestion and adjusts to traffic conditions.



Clean Energy

Hydrogen Truck TGA

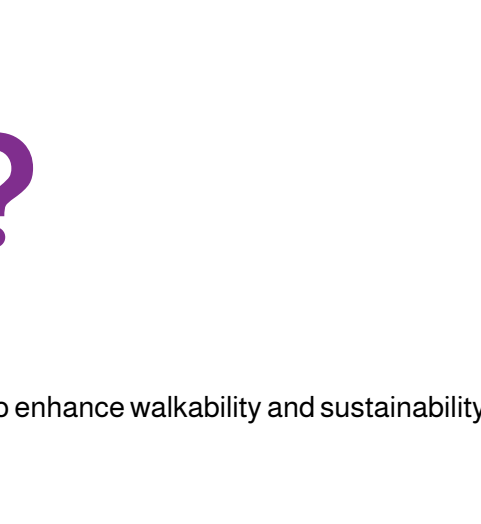
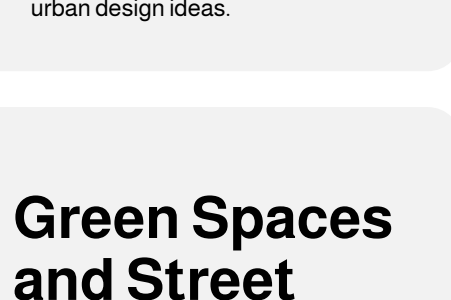
The Saudi Transport Authority has launched the kingdom's first hydrogen-powered truck. This initiative is part of a broader strategy to incorporate advanced, eco-friendly solutions in the transport sector, aligning with global environmental sustainability goals.



Sustainable Transportation (Shared Drive)

Rekab, Dammam

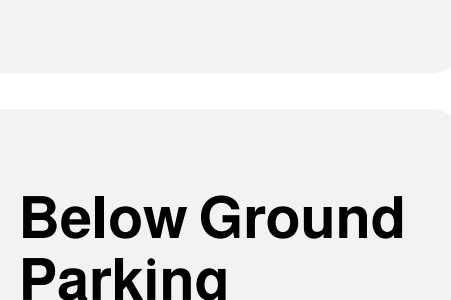
Rekab, is a shared driving service designed to ease urban traffic congestion by offering a carpooling option. Resulting in a lesser number of vehicles on the road, which decrease traffic volume in metropolitan cities. This contributes to a cleaner and less congested urban environment.



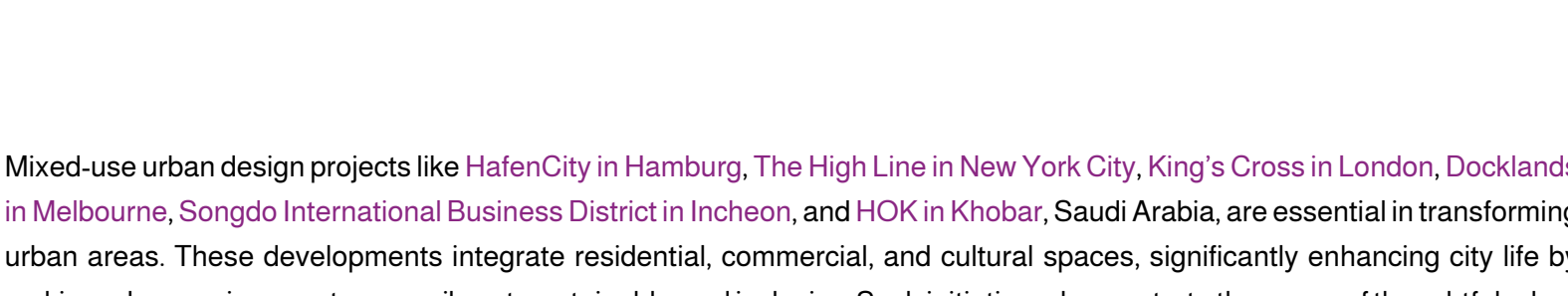
Electric Vehicles

PIF, (Lucid)

Lucid Motors, is expanding its presence in the Kingdom to move towards sustainable transportation solutions. The introduction of Lucid's advanced electric vehicles (EVs) aligns with Saudi Vision 2030's environmental goals, aiming to reduce dependency on oil and decrease carbon emissions.



Which of these innovations is your favorite?



TO ANSWER THE SURVEY

Human-centric urban design makes city living better by encouraging less reliance on cars, thanks to walkable spaces, extensive bike paths, and efficient public transit that help reduce congestion and pollution. The inclusion of ample green spaces and mixed-use developments also nurtures a sustainable environment.

What really makes urban planning human-centric?

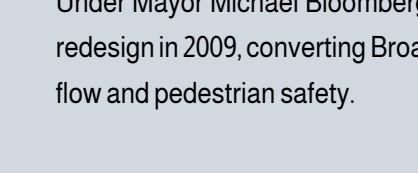
Let's explore inspiring projects from across the globe that have embraced key features to enhance walkability and sustainability.

Urban Planning: The Human-Centric Approach



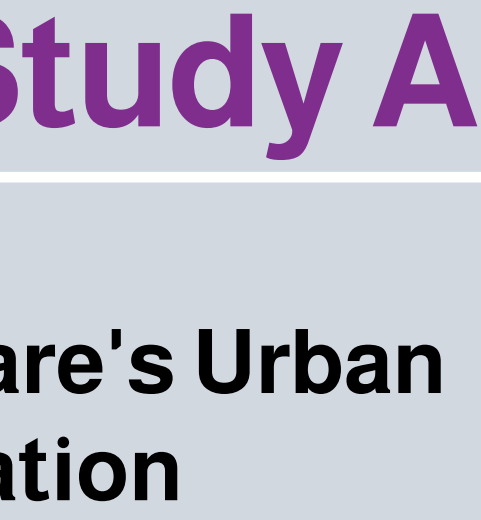
Mixed used

New York City, USA



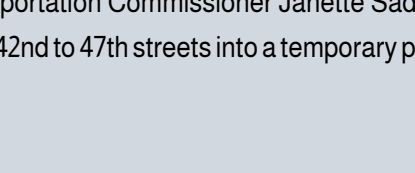
Hudson Yards

Featuring a blend of office buildings, residential apartments, shops, and cultural institutions, all built above rail yards on Manhattan's West Side.



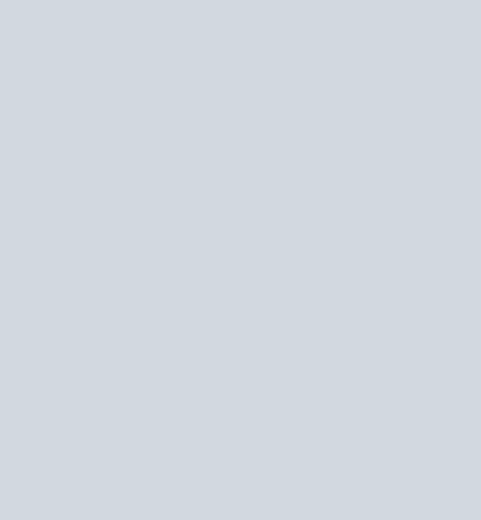
Walkability

Copenhagen, Denmark



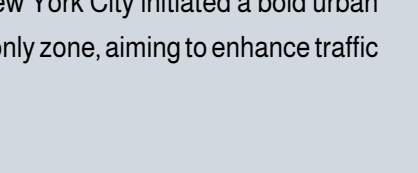
Superkilen

Superkilen is a public park in the Nørrebro district that features a red square, a black market, and a green park, encouraging walking and cycling through its innovative use of public space that integrates global urban design ideas.



Human-Scaled Proportions

Tianjin, China



Tianjin Eco-City

The adoption of human-scaled building proportions, which make the urban environment more accessible and comfortable for residents and visitors alike.



Active Frontages and Vibrant Street Activity

Buenos Aires, Argentina



La Boca

Known for its colorful streets, tango dancing, and vibrant culture, La Boca's Caminito street is lined with brightly painted houses, outdoor cafes, and artisan stalls. Visitors enjoy the neighborhood's energetic atmosphere and artistic expression.



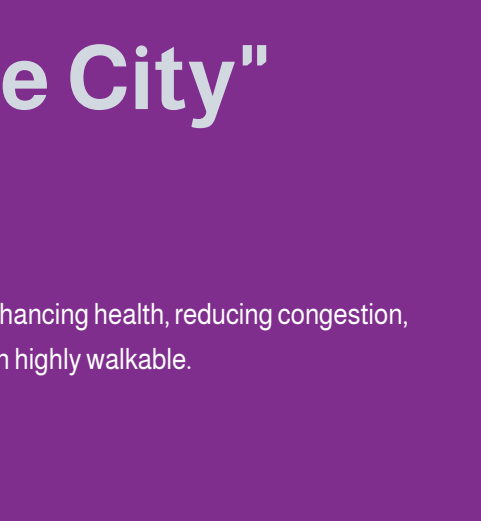
Green Spaces and Street Furniture

Holland Village, Singapore



Singapore Botanic Gardens

A UNESCO World Heritage Site and one of the most acclaimed green spaces in Asia. Visitors can explore lush pathways, tranquil ponds, and winding pathways, immersing themselves in nature's beauty.



Below Ground Parking

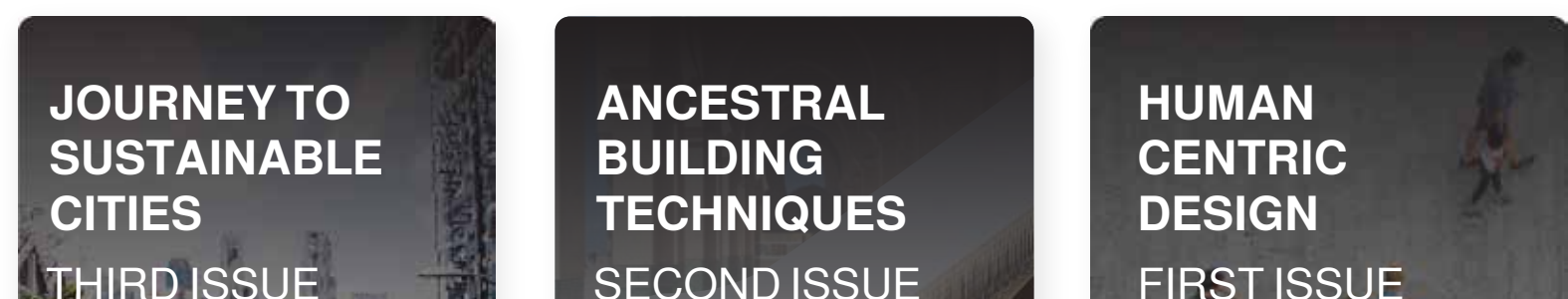
Mexico City, Mexico



Museo Soumaya

The Museo Soumaya features a striking architectural design that includes a hidden underground parking facility. Beneath the museum's surface lies a spacious underground parking garage that accommodates hundreds of vehicles, which allows the museum to maintain its sleek and uninterrupted exterior while providing convenient parking for visitors.

Mixed-use urban design projects like HafenCity in Hamburg, The High Line in New York City, King's Cross in London, Docklands in Melbourne, Songo International Business District in Incheon, and HOK in Khobar, Saudi Arabia, are essential in transforming urban areas. These developments integrate residential, commercial, and cultural spaces, significantly enhancing city life by making urban environments more vibrant, sustainable, and inclusive. Such initiatives demonstrate the power of thoughtful urban planning to enrich communities and adapt to the needs of diverse populations.



CAR LANE

600 - 1,600 people per hour

BIKE LANE

7,500 people per hour

SIDEWALK

9,000 people per hour

TRANSITWAY

10,000 - 25,000 people per hour

The impact of Urban planning

Case Study A

Times Square's Urban Transformation

Before 2009, Times Square, a bustling tourist and entertainment hub, struggled with extreme pedestrian congestion and vehicle traffic, compromising safety, and detracting from visitor experiences.

Introduce Urban Design Intervention (2009)

Under Mayor Michael Bloomberg and Transportation Commissioner Janette Sadik-Khan, New York City initiated a bold urban redesign in 2009, converting Broadway from 42nd to 47th streets into a temporary pedestrian-only zone, aiming to enhance traffic flow and pedestrian safety.

Implementation

- **Initial Setup:** The area was initially closed using simple materials like beach chairs and planters.
- **Feedback and Adjustments:** Feedback from pedestrians and businesses influenced permanent upgrades, including high-quality street furniture.

Outcomes

- **Safety Improvements:** Pedestrian injuries fell by 35%.
- **Better Traffic Flow:** Contrary to fears, traffic improved on adjacent avenues.
- **Economic Growth:** The area saw a retail and hospitality boom, enhancing its status as a global shopping destination.
- **Public Satisfaction:** Post-project surveys indicated high satisfaction levels, celebrating the area's enhanced accessibility and appeal.
- **Environmental Gains:** Reduced vehicle traffic improved air quality and lowered noise pollution.

Case Study B

"Make London a Walkable City" Initiative

Initiated in 2018, this initiative is part of London's broader "Walking Action Plan" aimed at enhancing health, reducing congestion, and minimizing pollution by increasing pedestrian infrastructure and safety to make London highly walkable.

Strategies and Investments

- **Infrastructure Improvements:** Upgrades to sidewalks, crossings, and public squares, emphasizing accessibility.
- **Safety Measures:** Stricter speed limits and expanded pedestrian zones.
- **Promotional Activities:** Campaigns to boost walking and highlight its benefits.
- **Integration with Public Transit:** Enhancements to connect walking with other transport modes.
- **Monitoring and Feedback:** Systems to track progress and gather public input.
- **Financial Commitment:** Over £2.2 billion invested to promote walking and cycling, aiming to increase walking trips by one million per day by 2024.

Outcomes

- **Increased Walking Trips:** Progress towards the daily walking trip target.
- **Health and Environmental Benefits:** Improved public health and reduced pollution.
- **Economic and Community Gains:** Boosted local retail and enhanced public spaces.
- **Safety Improvements:** Reduced pedestrian accidents.

The transformation showcases the power of urban design to solve core issues in congested city centres, effectively promote walkability, boosting safety, economy, and environmental quality. These initiatives serve as a valuable model for other cities aiming to reimagine their urban landscapes.

References

- "Emissions of Carbon Dioxide in the Transportation Sector." Congressional Budget Office. www.cbo.gov/publication/58861. Accessed 5 May 2024.
- vidah. <https://www.linkedin.com/posts/urban-design-lab-urban-design-roads-for-city-urban-designer-activity-7173950836618747905-kTKZ7hmso>. <https://www.linkedin.com/company/urban-design-lab>

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