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Urban planning as a key to address climate change

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According to the Commentary, which is based on the aggregation of existing data, the highest emissions reduction potential is offered by the use of new energy-efficient infrastructures. For example, the annual reductions that may be achieved by the year 2040 when using new infrastructures is three to four times higher than that of using upgraded existing urban infrastructures.

To embark on this path, cities around the world would need to incentivize the construction of higher-density, energy-efficient housing and implement new mobility concepts such as car sharing, electric cars and bicycles, and bike paths. The challenge would also call on urban planners to provide citizens with shorter commutes, set up inner-city tolls and realize architectural and technological upgrades of buildings, especially in Asia, Africa and the Middle East. Even in cities such as London considerable emissions reductions can be achieved through the energy-efficient refurbishment of existing buildings and the development of new mobility schemes.

Moreover, the very act of building new urban infrastructures will invariably involve introducing new CO₂ emissions into the atmosphere. In that regard carbon capture and storage as part of the cement and steel manufacturing process is of great importance for reducing emissions.

Professor Richard Dawson of Newcastle University, who leads the Tyndall Centre Cities & Coasts theme and did not participate in the study, said: "This study highlights the key role of urban development in limiting climate change. Researchers have a crucial role to play in working with urban planners to ensure our infrastructure and cities are resilient and sustainable in the face of intensifying global change."

Urban infrastructure choices structure climate solutions

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Link. [research/cities-and-coasts](#)