

# ARTIFICIAL INTELLIGENCE RESEARCH CENTRE



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# Intelligent Urban Planning: AI Strategies for Climate Change

BY AR. DAMARLA SAI PUNEETH | SCHOOL OF ARCHITECTURE AND PLANNING, WOXSEN UNIVERSITY



**“Combining big data with climate prediction and urban systems optimization using AI for more resilience.”**



Climate adaptation strategies powered by AI are showing cities how to prepare for and respond better to environmental challenges. Such technologies use artificial intelligence to combine big data with climate prediction and urban systems optimization for more resilience. AI can predict floods, heatwaves, and other extreme events with incredible accuracy by analyzing data from a range of sources, including historical weather patterns, satellite images, and real-time sensors.

Moreover, the application of AI in urban climate adaptation is smart infrastructure and resource management. AI algorithms optimize energy grids, dynamically matching supply and demand to minimize carbon emissions and maximize system resilience against climate-driven stresses. Similarly, the AI-assisted water management system preserves this precious resource for cities by predicting consumption patterns, identifying pipeline leaks, and effectively modulating distribution.

The part that AI plays in climate-adaptive urban planning and design is algorithmic-software-based links to examples of how geoen지니어ing, digitalization, and advances in environment-technology interaction have changed people's behaviors and, by extension, efforts to stop climate change. AI also helps to raise citizen engagement while encouraging more sustainable behaviors. AI-driven platforms are enabling bottom-up community adaptation, linking citizens to local climate action initiatives and real-time environmental data. AI-powered adaptation mechanisms for cities will become even more essential as urban areas struggle with climate change consequences. With the help of data and machine learning, urban regions can shape climate adaptation and mitigation to be more responsive, slicker, and high-impact—all in preparation for creating resilient cities that can withstand changes for generations.

