

# **New Risks for Workers at Height: Human-Drone Collaboration Risks in Construction**

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## **ABSTRACT**

Poor safety and low productivity have pushed the construction industry to increase the use of technology and automation. Consequently, robotic systems such as aerial and ground robots are becoming increasingly popular in modern construction sites. As construction is still a heavily human-driven industry, these robots need to collaborate, interact, and share their work environment with human workers. This integration raises novel occupational safety and health issues for jobsite personnel. In this conceptual paper, human-robot interactions and their potential collaboration areas will be discussed, focusing on robot types and their application areas. Next, the health and safety risks associated with human-robot interactions on construction sites will be discussed. This discussion will mainly focus on physical risks, attentional cost, and psychological impacts of such interactions on workers who work directly or indirectly with or around robots. Finally, a discussion will be provided on considerations and recommendations to ensure the safe integration of robots in construction.