

# Applications of Drone Technology in the Construction Industry

Hongtao Dang

Ph.D. Candidate, Iowa State University, hitdang@iastate.edu

Jennifer Shane

Associate Professor, Iowa State University, jsshane@iastate.edu

Drones, also known as unmanned aerial vehicles (UAVs), have promising implementations in the construction industry. Many studies explored applications of drones in surveying, bridge inspections, construction safety, environmental management, and disaster and forensic investigations. Some further researched path planning, image processing, and integrations with other technologies such as geographic information system, global positioning system, building information modeling, and virtual and augmented realities. This paper synthesizes drone applications, preventing human subjected risk and providing access to low altitude space in the lifecycle of project development in the construction industry. Identifying various limitations of drones, this paper further discusses several planning strategies and integrated technologies in construction safety and bridge inspection.

*Keywords:* Drones; Unmanned Aerial Vehicles (UAVs); Construction Safety; Bridge Inspection