

Greetings all. Today's Bulletin is about Drone use on construction sites.

The past ten years have seen a rapidly increasing commercial drone industry. Drones are now being used for all types of photography, data gathering in real time and product delivery, which brings to question matters around privacy and safety.

The construction industry is one of the fastest commercial adopters of drones and drones are frequently employed at different stages of a construction project. In 2018, the construction sector saw [a 239% increase](#) in the adoption of drone technology.



Source: 27 Advisory and Aerial Ascent

In its 2018 [report on the impact of drones](#), PwC (United Kingdom) stated that the use of drones throughout a construction project provides a record of activities; cuts planning and survey costs; increases efficiency and accuracy, and can eliminate disputes over the status of a project due to the real time and measurable feedback it provides.



Drones and Cranes

With CICA's 'Lift of the Year' Competition fast approaching and a growing trend of recording lifts utilising the 'birds-eye' viewpoint of a drone, it stands to reason that drone safety is a growing area of interest to CICA members.

Construction is already a high-risk industry, and while drones in construction have multiple and varied benefits, great care must be taken to ensure that drone use does not compromise safety. Ongoing research is essential to better our understanding of how to mitigate the risks that drone use poses.

What impact does drone use have?

[A research collaboration](#) between the [Human-Centred Technology in Construction \(HCTC\) lab](#) and the [Construction Automation & Safety Lab \(CASL\)](#) in the Rinker School of Construction Management at the University of Florida, is assessing the impact of drone use on construction sites. The three specific objectives of the project are to research:

1. Physical contact risk – examining and evaluating causes of physical interactions between humans, plant and equipment and drones
2. Attentional cost – exploring and evaluating the effects of drones use on workers attentional allocation, situational awareness and subsequent safety implications
3. Psychological impact – to develop an understanding of the psychological impact of a shared working environment

	Physical Risks	Struck by flying object Struck by falling object Struck by swinging object
	Attentional Cost	Visual distraction Cognitive distraction Balance control deterioration
	Psychological Impacts	Acute stress Cognitive overload Sensory saturation Negative emotional State

Source: Idris Jeelani, and Masoud Gheisari. 2020. *Safety Challenges of UAV Integration in Construction: Conceptual Analysis and Future Research Roadmap*. Elsevier Journal of Safety Science

This project began on 1 September 2020 and ends 31 August 2023, and CICA will be watching the outcomes of this project with interest.

Fundamental considerations

When considering drones for your business, there are some fundamental considerations.

1. [Drones are tightly regulated](#) and the level of regulation is increasing. Know the rules.
2. Operating a drone for business purposes requires great skill and understanding. A hobbyist is not a professional.
3. Understand the deliverables, why you are using a drone and whether the benefit is worth the risk.

What does the future hold?

While drones are not new technology, their uptake is increasing and the impact of drones in the construction sector is still developing.

[Dr. Masoud Gheisari](#), Associate Professor in the Rinker School of Construction Management at the University of Florida and one of the researchers involved in the afore mentioned project predicts that construction sites of the future may look like below.



Drone-dominant Construction Sites of Future

Automation and drones have unparalleled potential to improve outcomes and address challenges posed by litigation and skills shortages, however, the risks must be carefully scrutinised and sustainable strategies researched and developed, to ensure that human safety and wellbeing remains the central focus.

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