

## In the Future, We Will Paint By Drone

Finally, swarms of spray-painting drones can create street art.

**JOHN METCALFE** @citycalfe May 15, 2017 Comments



Carlo Ratti Associati

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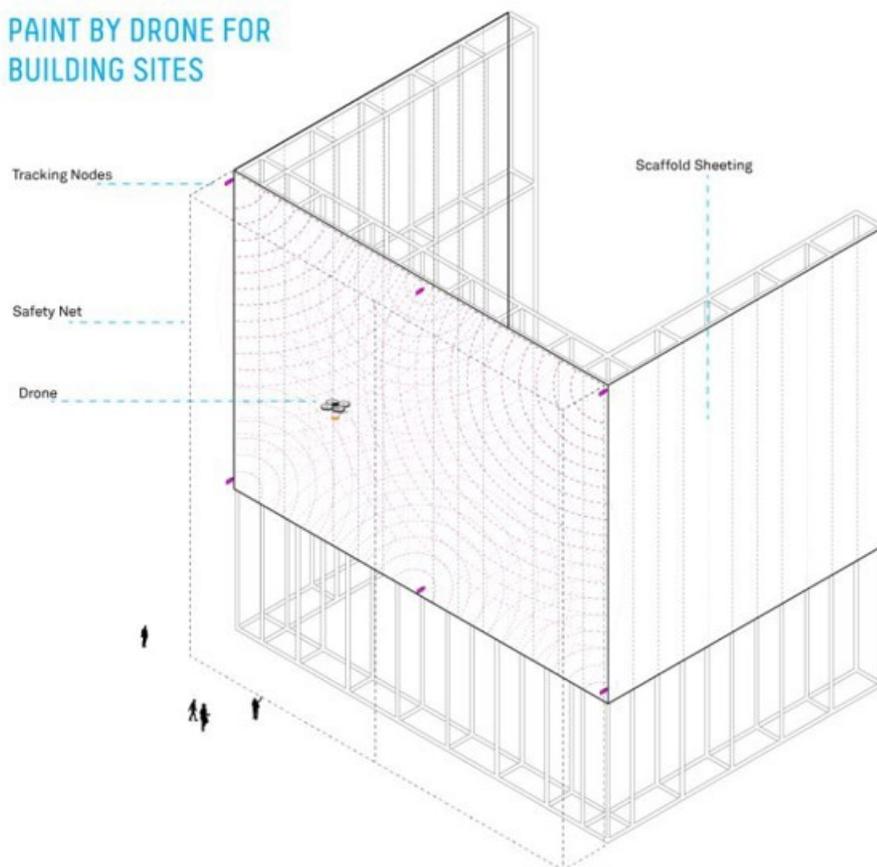
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On the list of jobs soon to be taken over by The Robots, you might not expect to see “graffiti artist.” Yet fleets of spray-painting drones could be a thing as soon as this year, thanks to a system that mobilizes fleets of quadcopters to blast large urban facades.

“Paint by Drone” is a project from [Carlo Ratti Associati](#), an Italian design-and-innovation firm with offices in London and Boston. While this invention isn't the first instance of drone-assisted graffiti—New York artist KATSU has used quadcopters to [deface a Kendall Jenner ad](#) and [spread anti-Trump tags](#)—its level of sophistication appears to pass anything else on the (admittedly limited) drone-art scene. At its heart is a “central-management system” that simultaneously regulates four unmanned aerial vehicles (UAVs), each painting one color in the [CMYK](#) scheme, though for big murals that number could be multiplied to eight drones, 12, or even more.

“The central-management system is software that controls drones’ operations in real-time, from image painting to flight, using an advanced monitoring system that precisely tracks the UAVs’ position,” explains Carlo Ratti, the founder of Associati. “This is the key technological development, as it allows precision painting that would otherwise be impossible.”

### PAINT BY DRONE FOR BUILDING SITES



[Carlo Ratti Associati](#)

Ratti became interested in drone experimentation while doing research at MIT a few years back. “Drones are becoming an

increasingly common part of our everyday life. According to the Federal Aviation Administration, by 2020 there might be 1.3 million quadcopter drones flying in the United States' skies only,” he says. “Given this evolving scenario, the idea of employing drones in different contexts is something that has accompanied us in several projects both at MIT’s [Senseable City Lab](#) and at the Carlo Ratti Associati office.”

In 2013, Ratti and the Senseable lab released “Skycall,” a project that had a quadcopter finding and guiding visitors around the MIT campus (“including stray Harvard students,” he jokes). “Paint By Drone” is the next step on Ratti’s research path, and will debut this fall at two proposed European locations: a blank, urban facade in Turin, Italy, and a construction site in Berlin. The artworks the UAVs will paint are still up in the air—Ratti is pondering having everyday people submit personal designs via an app, or else having a professional artist sketch a design that the drones would then fill in.

Though the quadcopters’ first sortie will be against scaffold sheeting and building sites, in the near future Ratti imagines his drones could move out on a vaster scale. “Over the next few months we are planning to develop a plug-and-play system that will allow the technology to be deployed in the blink of an eye on virtually any vertical surface,” he says. “Imagine how this could make the realization of works of public art both easier and safer, in the urban context as well as at the infrastructure level. Could this bring along colorful highways, galleries, bridges, and viaducts?”





Carlo Ratti Associati