Exciting developments in drone technology over the past five years have led to a number of opportunities opening up for the use of drones in urban planning. We take a look at how the UK’s planning and construction norms will be disrupted by this step change, looking at five key areas where this technology will be used to save on costs and improve the quality of the urban landscape.

The global PropTech scene is seeing a wealth of movement as startups begin to capitalise and innovate through the use of drone technology. Previously the realm of futurists and YouTube bloggers, mounting high precision instruments onto individual drones is now not only possible, but commonplace.

We’ve taken a look at the key ways in which we believe drones (or UAVs as some prefer) will affect urban planning, both on development sites and on a broader scale across neighbourhoods.

1. Data Collection

Urbanisation is increasing in speed. More people are being crammed into the same area, making the job of the urban planner more difficult. Data collection is a key cornerstone of any planning application, along with analysis of that data and related fieldwork.

In normal circumstances, this requires a lot of manpower, a lot of time, and every increasing costs. We will inevitably see ways in which drones will be used to gather large amounts of data in a short period of time, augmented by AI processing or machine learning to deliver real time results at a much lower price point.
2. Aerial Surveys/Basemaps

Aerial surveys and basemaps are some of the first steps carried out on any potential development site. Increasingly dense urban environments have created difficulties when cityscapes need to be analysed from the air. Conversely, sparser areas spread out across significant distances pose their own problems, with detailed satellite imagery of rural areas of the world both lacking in quantity and quality.

High resolution cameras attached to drones can now be used to negotiate and map out complex areas of urban or rural terrain easily and quickly, whilst being faster, cheaper and safer than before. Developments in virtual reality, complex 3D space scanners (e.g. LiDAR) and photograph meshing will have a significant impact in this area and compliment the use of UAVs.

3. Situational Design

Designing a development on paper to sit within its immediate surroundings will always be a challenge. Accurate designs rely on accurate measurements, the majority of which are carried out in person. Better-informed decision making is the goal of the industry, and a combination of different drone mounted technology makes a powerful and robust tool in any architect's toolkit. Distance and proximity calculations become easier and more accurate, sensory data and thermal imaging can be combined to produce far more realistic representations of surroundings, and building design will improve accordingly.

4. 3D Visualisations/Public Engagement

With the rise of virtual reality above and beyond selling residential real estate, it is inevitable that 3D cameras fitted to drones will be used to generate high resolution, realistic visualisations of potential developments.

The widespread availability of augmented reality on consumer devices (e.g. mobile phones) allows these images to be transformed into effective public engagement tools. Buildings can easily be superimposed into their surroundings, providing an important middle ground between top-down satellite imagery, and 3D models. Giving members of the public (or planning inspectors!) an experiential view of a development will make complex problems more understandable and enable more comprehensive and validated feedback.
5. Traffic Flows/Behaviour Analysis

An entire industry has grown up around the necessity to mitigate the impact of new development on the surrounding area. UAV technology allows for far more accurate models to be built, either around people, vehicles or even environmental factors such as wind. These models will in turn enable landscape architects and planners to examine the existing social and environmental conditions of sites in far more detail than before.

It's inevitable that drones will become a vital part of the architect and planner's toolkit. The visualisation of data, more accurate and accessible than ever before, will eventually re-shape the way in which our cities are built. We already see a wide range of applications being explored by our clients, and the impact of drone technology on urban planning is an exciting one.

Get in touch with our planning and construction teams to discuss this in more detail if drone technology is something you see working for your developments and business!

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Author(s)

Joe Morris
Partner - Head of Leisure Group, Birmingham

Email joe.morris@gowlingwlg.com
Phone +44 (0)121 393 0482
vCard Joe Morris

Dominic Conte
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