Case Study

Bluesky Aerial Photography Helps Derby Homes Boost Solar Energy Output and Reduce Carbon Emissions

Client:

Derby Homes is an Arm's Length Management Organisation (ALMO) and is a wholly owned subsidiary of Derby City Council. Created in 2002 to manage and maintain the Council's housing stock, Derby Homes' core business is the management of and investment in, Derby's social housing stock, comprising of circa 12,600 properties.

Industry:

Property

Product:

Aerial Photography

> *"Following Derby City Council's climate emergency announcement and the impact of rising energy prices on our residents, we knew we needed to do more. Working with Bluesky, we reduced our threshold to a 2.4kW integrated system and as a result we have already fitted a number of systems and hope to make our case to fit over 2,000 more integrated solar PV systems."*
>
> Ashley Redfern, Senior Maintenance Surveyor, Derby Homes.

Summary:

Derby Homes is using Bluesky's Aerial Photography to identify suitable roof coverings for integrated solar photovoltaic (PV) systems across its housing stock. The project has assessed more than 8,000 addresses to consider size, pitch, aspect, existing furniture and infringing vegetation. Using its ultra-high resolution imagery, Bluesky was able to determine the suitability of each property, measure the number of solar panels the address could accommodate and calculate potential output so Derby Homes could install PVs on an initial batch of trial properties.

Challenge:

With the ongoing agenda of fighting climate change and the impending impact of rising energy prices in the UK, Derby Homes knew it needed to take action to help its residents with renewable energy being the optimum solution. Since 2016, Derby Homes has installed around 1,000 solar panels using a pre-procured framework but has needed to increase this roll-out in a time-effective and cost-efficient manner to be able to help as many tenants as possible with their fuel bills. Derby Homes initially defined a study for a 3kW top fitted system using Bluesky's data but it did not return enough results.

Solution:

Using the most up-to-date aerial photography, together with photogrammetrically derived 3D height data and supplementary LiDAR data, Bluesky created automated algorithms to extract all roofs that met the pitch and aspect parameters set by Derby Homes. Bluesky also provided additional information that previously would have been timely and expensive, for example the impact of overhanging vegetation on a panel's ability to capture solar energy. When the first study did not deliver as many results as Derby Homes had wanted, Bluesky was easily able to amend and reduce the threshold to a 2.4kW integrated system to produce better results.

Results:

Derby Homes provided Bluesky with a master list of 8,200 addresses to consider alongside the specification. From the Bluesky derived intelligence, it is possible to benchmark which properties are suitable as well as how many panels can be accommodated on a single roof. In addition, Derby Homes is using the data to integrate the installation of solar PV panels with the renewal of existing roofs. This is a cost-effective approach as the roofer installing the integrated tiles uses the scaffolding that is already up. Derby Homes also plans to use Bluesky's data to ascertain if properties can accommodate different types of top-fitted systems, such as flat roofs, and forecast numbers and costings for future planning and budgets.

Specification		
Resolution	**12.5cm Imagery**	**25cm Imagery**
Coverage	England & extensive areas across Scotland & Wales	England, Wales, Scotland and the Republic of Ireland
Accuracy XY	± 30cm rmse	± 60cm rmse
Formats	Include: JPG, TIFF, ECW, SID, KMZ	Include: JPG, TIFF, ECW, SID, KMZ
Bands	RGB / RGBI	RGB / RGBI
Standard Projection	British National Grid	British National Grid / Irish Transverse Mercator (ITM95)
Tile Size	1km x 1km (8,000 x 8,000 pixels)	1km x 1km (4,000 x 4,000 pixels) / 2km x 2km (8,000 x 8,000 pixels)
Metadata	Gemini 2.3	Gemini 2.3 / OGC compliant XML

Get in touch today at **info@bluesky-world.com**