National Grid's key to deciding and presenting the best options

Teams use visualisation platform to layer information in the context of the real world and streamline the options appraisal process.

nationalgrid

sensat

Introduction

Challenged by third-party land ownership and a tight option delivery deadline, National Grid had to connect a new power cable for a data centre in Didcot, Oxfordshire.

Looking for an innovative solution to streamline the option selection process, National Grid partnered with Sensat to create an interactive 2D and 3D visualisation of the Didcot substation and its real-world immediate surrounding area.

Industry

Energy transmission

Location

Didcot, Oxfordshire, UK

Challenges National Grid faced:

1 

Providing data access to teams is a struggle

2 

Gaining land access can slow down decision making

3 

Understanding other teams technical information requires constant back and forth

Challenge 1

Providing data access to teams is a struggle

National Grid wanted to make a large point cloud data set available to more users. The existing LiDAR sat unused in archives that teams couldn't access.

The Didcot team foresaw this and looked for a solution to maximise the value of their data sets to help inform option selection.

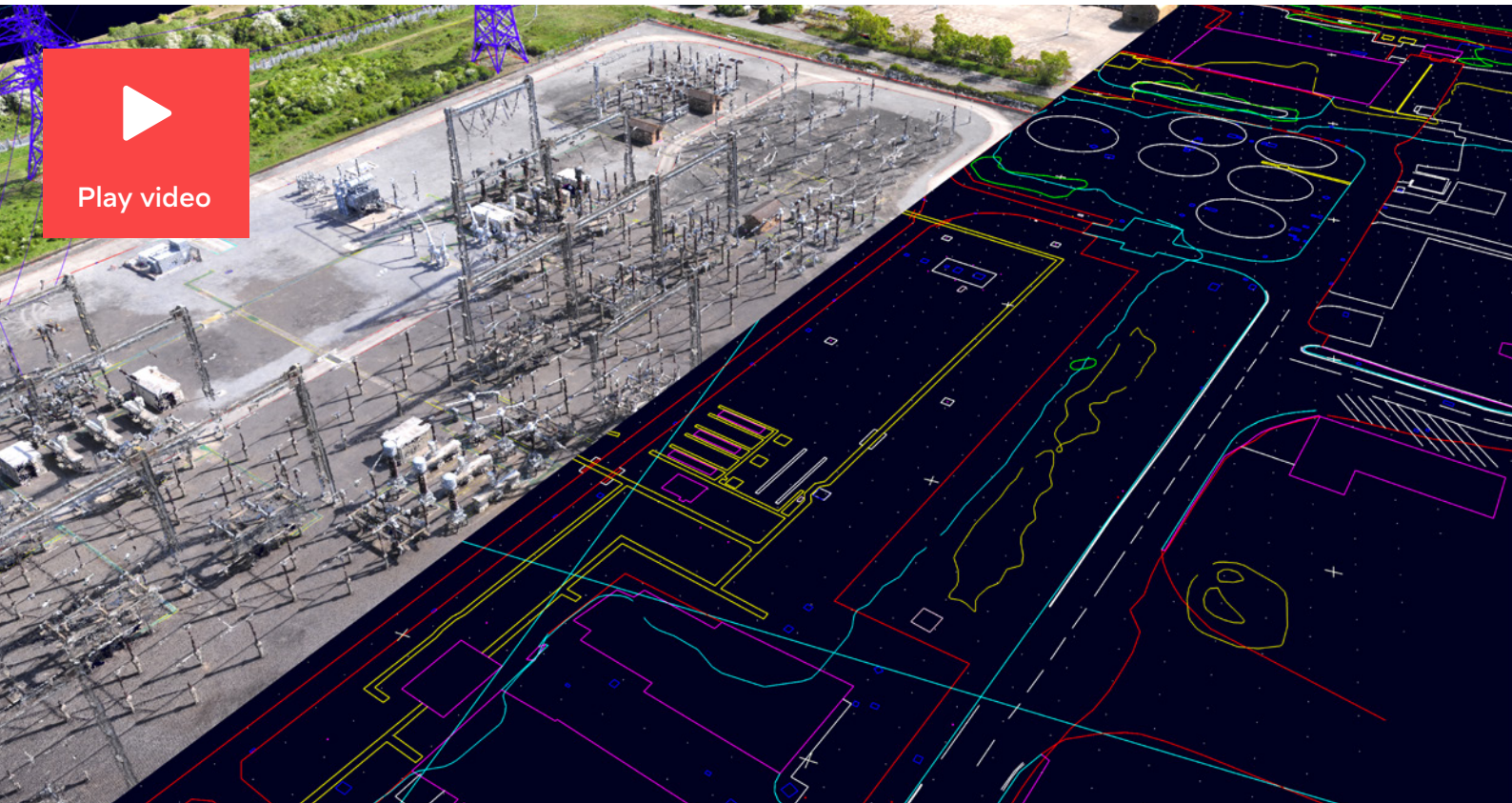
> **For the large and complicated programmes we're delivering, Sensat allows much more certainty than ever before.**
>
> **Jordan Darley** Lead Connections Engineer at National Grid

Solution

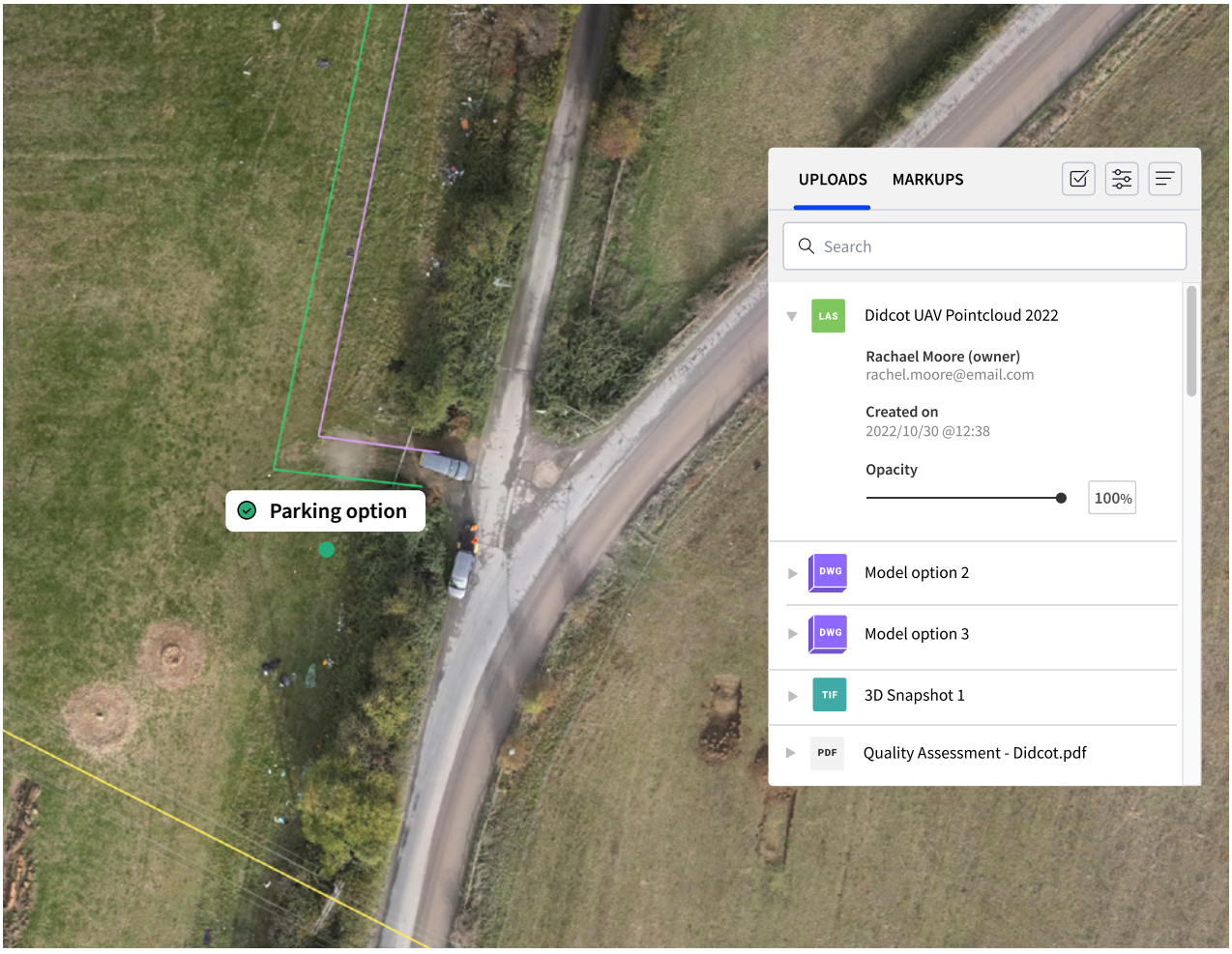
Bring important data sets together and visualise them in context of the real-world

National Grid sped up decision-making using Sensat's easy-to-use platform. Teams uploaded their contextual data around National Grid's boundaries, OHL cables and third-party boundaries onto Sensat's reality layer. This allowed them to bring their information into one holistic view so that the delivery partners could easily spot hazards and constraints during option selection meetings.

Below highly accurate visualisation of the Didcot project displayed within Sensat's platform



Instead of replacing existing software, users from different teams have been able to complement existing systems and work together in an environment, to share content and collaborate without needing to switch between clunky tools. Using the visualisation platform, the team could appraise proposed designs in the context of reality, and have a visually effective way of presenting them back to their clients. This has helped the Didcot teams to confidently make the right decisions and provide clarity for everyone involved. ■



Above 2D point cloud data captured remotely using UAVs overlaid with topographic CAD files.

> **Teams can overlay project designs and comment directly on plans. Crucially, this helps us to identify and mitigate risk more effectively, leading to safer worksites and better cost certainty.**
>
> **Jordan Darley** Lead Connections Engineer at National Grid

Challenge 2

Gaining land access can slow down decision making

With some of the project team located in York, it would take some of the team up to 5 hours to get to the site for a site walkthrough, sometimes just to take a quick measurement.

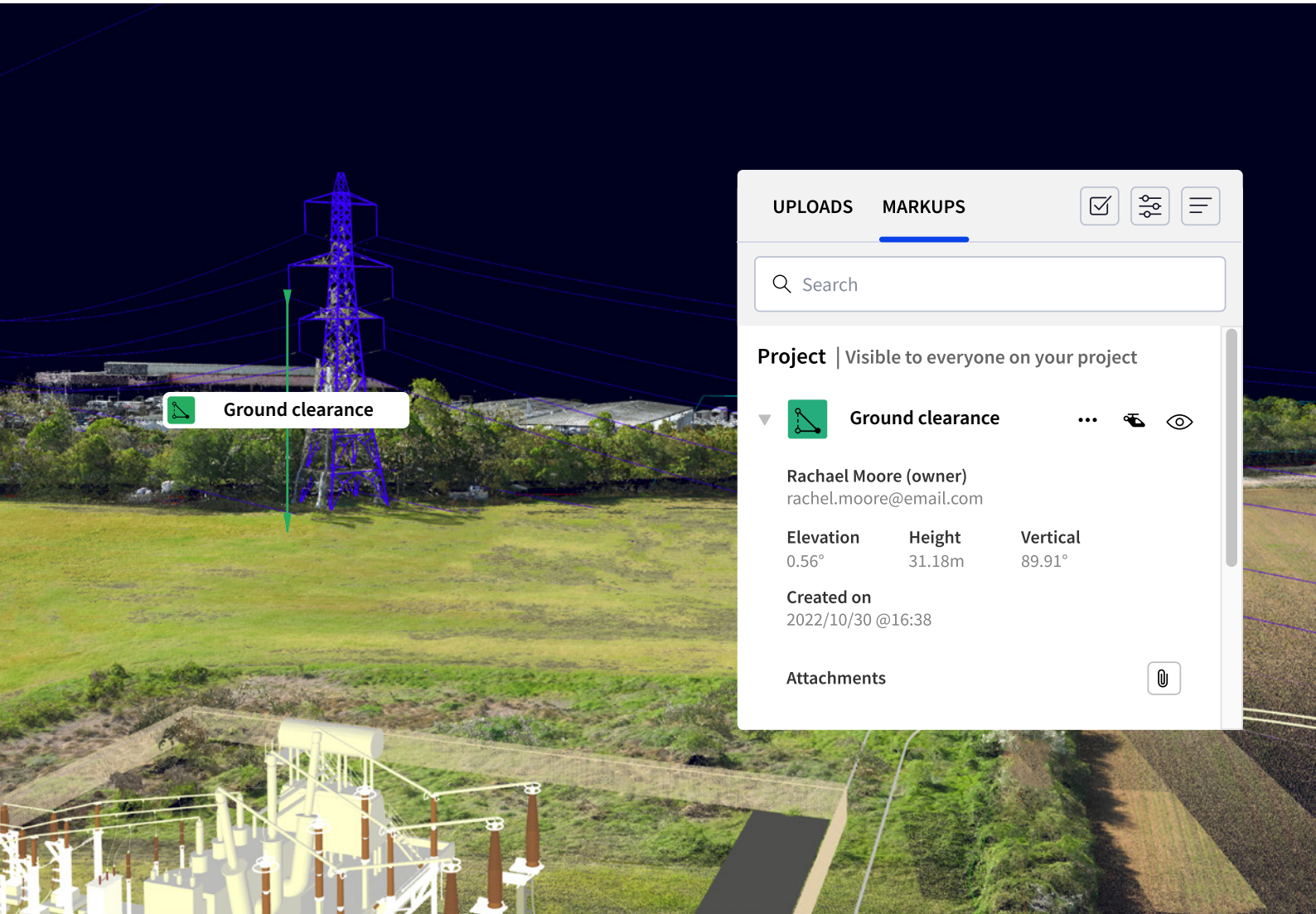
Furthermore, gaining access to some of the land posed a time-consuming challenge for National Grid, especially when land is owned by a third party.

Solution

Take accurate site measurements from your desktop

Armed with a high-quality point cloud and a platform to visualise important data sets, National Gird used Sensat to take accurate height, volume and distance measurements from their desktop. Desktop measurements were used during meetings to verify overhead cables and assess risks, helping to streamline decision-making. This minimises the need for additional topological surveys. ■

Below National Grid measuring heights between 3D point cloud and CAD models



Challenge 3

Understanding other teams technical information requires constant back and forth

National Grid wanted to share information across the project team's including with the external design consultant, allowing them to participate in the option selection process simultaneously.

Previously this would have required several meetings, phone calls and site walks to have everyone fully understand specialist information and get everyone on board. The team also wanted to ensure everyone was working from the most up-to-date information and design versions to enable more confident decision making.

> **Sensat provides clarity for everyone involved, meaning less time is spent hopping between tools, asking for updates or searching for the latest versions of files.**
>
> Jordan Darley Lead Connections Engineer at National Grid

Solution

Easily communicate specialist information between teams

In design reviews National Grid used the digital environment in place of PDFs to give real-life context to proposed designs. This has also provided significant time saving by minimising the back-and-forth between teams and a richer understanding of Didcot's design options. By uploading data to the platform and maintaining version control, everyone can access the most up-to-date information from their desktop to get a greater sense of certainty. ■

Conclusion

In the next stages, the visualisation of the Didcot substation and its proposed plan will be used for third-party engagement and public consultation. Without the need for complex explanations, non-technical users will be able to gain a clear picture of how the new energy infrastructure might affect them.

The digital environment of the Didcot substation is being used as the foundation for option appraisal meetings and selecting the designs to take forward into the next phase. Using Sensat, teams can bring together important data in the context of the real world to help them select the best option with more confidence. ■