

CUSTOMER KimberGlen International LLP

PROJECT

Setting out and as-built Trimble Catalyst DA2 design

SOLUTION

surveys for golf course GNSS, K-Capture software and Parrot ANAFI Ai

Reshaping golf course design

KimberGlen International LLP, the visionary international golf course architects, are reshaping the future of course design by taking their survey work in-house for greater productivity and an even better understanding of the lie of the land they're working on.

KimberGlen International LLP represents a partnership between two esteemed golf course architects, Paul Kimber and Niall Glen. Headquartered in Scotland, their company specialises in the design and restoration of golf courses worldwide, collaborating with prominent figures in the industry. Throughout their 25 years of experience, they have played a pivotal role in the creation of some of the finest modern courses, firmly believing that exceptional course design is an amalgamation of art and science.

Having recently purchased a Trimble Catalyst DA2 GNSS and a Parrot ANAFI Ai drone from KOREC, they are now actively exploring the integration of survey technology into their projects. This new equipment will significantly enhance their existing workflows by eliminating any delays associated with relying on third-party surveyors. Moreover, it will provide them with a more comprehensive understanding of the topography of the land they work on. By adopting a more hands-on approach, they will be able to rapidly and efficiently evolve their designs, allowing for a more flexible approach to each job. Overall, these additions will streamline their processes and empower them to achieve greater efficiency and productivity in their work.

Four reasons to take the survey work in-house

Both Niall and Paul attribute the amount of time they spend on site and their attention to detail as major factors in their success. However, using third party surveyors was holding back both the creative and functional aspects of their course design in a number of ways:

• Third party surveyors were not always available as and when required which could slow up operations and compromise accuracy on as-built surveys. Important details, such as drainage and irrigation are regularly buried and therefore have to be marked on the surface. Any delays in recording their positional and attribute information could result in diminished accuracy.

• For a hands-on team like Kimber & Glen who greatly value site time to better understand the land they are working with, using external surveyors was a missed opportunity to test ideas and verify and visualise designs in real time.

• Golf course projects often require rework as the design evolves and marker poles are moved to different positions that have to be resurveyed, again previously requiring a visit from a surveyor.



Key system benefits for **Kimber & Glen**

Trimble Catalyst and K-Capture software

· Ability to take CAD drawings on site. digitally

 Fasy to use system at the right price point

• Fully customisable for a niche industry like golf course design

Parrot ANAFI Ai drone

• Lightweight design for easy portability

• Ability to map a large site in hours rather than days

• Unbelievably easy to use with simple flight software





Completed Dumbarnie Links Golf Course (8th hole in the foreground), which was the first new build golf course that Kimber & Glen used the Catalyst system on. It was used for the set out of the design in the field and the collection of all as-built information. The finished course has gained critical acclaim and already hosted top level golf only 3 years after the first seed was sown.

• Even on smaller sites, a surveyor would need to be engaged to record topographical elevations to generate contour information.

Ground based data capture - early experience paves the way

Almost four years ago, the company had realised that an easy to use, handheld GNSS system would be a useful tool to supplement the work undertaken by external surveyors for the collection of as-built information. Having researched the market and dismissed many of the high-accuracy GNSS available as too pricey for their requirements (centimetre accurate GNSS can cost up to £18k for a system), they contacted KOREC to learn more about Trimble's recently released Catalyst GNSS.

The Trimble Catalyst hardware is extremely easy to set up and use and comprises a simple, low cost, lightweight Trimble GNSS receiver (around £380 per unit), connected to an Android™ or iOS device (in this case running KOREC's K-Capture field software) turning it into a precision mapping, navigation, and measurement tool you can use with any location enabled app or service. The KOREC K-Capture software comes with KOREC's secure, cloud-based Portal for analysing, viewing and sharing the collected information.

Following the successful introduction of the first system, a second, including the updated DA2 Trimble receiver, was purchased.

Customising the Trimble Catalyst solution for a niche market

Kimber & Glen encountered an extra challenge when they decided to bring their survey work in-house. Since they operate in a niche market focused on golf course design, it's uncommon to come across a product specifically designed for that purpose. As a result, they have experimented with various hardware and software solutions originally developed for other industries, at-

tempting to adapt them to their needs. However, they have been unsuccessful in finding a solution that perfectly meets both their functional and budget requirements.



What has impressed us most is the versatility of the Trimble Catalyst and K-Capture software that allows us to customise the options so that it really feels like it was built for our purposes.

Niall Kimber, Partner, Kimber & Glen

"The Catalyst system and K-Capture software and the way it allows us to transfer our own data between CAD and the handheld devices has been revolutionary for the way we carry out our design and construction."

Niall Kimber, Kimber & Glen



About Trimble Catalyst

The Trimble Catalyst business model has been developed for people exactly like Niall and Paul who require centimetre positions to supplement their primary area of work rather than positions for all day, everyday use. Trimble Catalyst comes with an 'on demand' subscription pricing model so users can select the accuracy they need, 1cm, 10cm, 20cm or 60cm, which means they only pay for what they use.

Niall opted for 1cm accuracy with a pool of 100 hours as the most cost-effective way to use the service due to the ad hoc nature of how and when the system was needed. Typically, they rarely need 1cm accuracy for x/y coordinates, but need it every time for z coordinates for their elevation data collection and setting out.

The combination of Trimble Catalyst and K-Capture software therefore provided a very superior solution. Budget wise, the 'on demand' Catalyst model worked well for their intermittent mapping requirements and the K-Capture software allowed for Niall to pre-define attribute lists to perfectly reflect the points they were collecting in the field. Additionally, a recent development to the software ensured that detailed CAD drawings can be easily transferred on to the field handheld device including all the text and symbology. This means that the full CAD drawing can be viewed digitally in the field backed up by positional information.

"The Catalyst system and K-Capture software and the way it allows us to transfer our own data between CAD and the handheld devices has been revolutionary for the way we carry out our design and construction. We've also been impressed by the versatility of the Trimble Catalyst and K-Capture software that allows us to customise the options so that it really feels like it was built for our purposes. We can use almost all the features of the software to our benefit, unlike in the past when we've have to pay for lots of equipment and software that has features we never need or know how to use."

Aerial data capture – using a drone to become self-sufficient

With the as-built data collection and ground-based point and attribute information taken care of with the Trimble Catalyst system, Kimber & Glen sought to complete their move towards survey self-sufficiency with a second solution that would enable them to survey, large areas of ground, often over 60 hectares, quickly and efficiently rather than just recording points and features.

Their solution was to purchase a KOREC supplied Parrot ANAFI Ai drone with Free Flight 7 software. This would enable their independent collection of relevant site data, topography and aerial imagery without the need to engage a specialist operator and the consequent scheduling of their lead times.

Generally, Niall and the team are using the ANAFI Ai to collect ortho-corrected aerial imagery and elevation data for the creation of detailed and accurate topographical maps of large site areas. These outputs are then combined to generate accurate/scaled base plans in AutoCAD upon which they can base their designs. This detailed topography and high-resolution imagery allows them to design with accuracy and the best possible knowledge of the site.

"Collecting data over larger sites, in excess of 60 hectares, used to take days using traditional survey techniques, now the raw data is ready for processing in a matter of hours. It's been impressively easy to set up automated flight plans using the ANAFI's Free Flight 7 software. One could expect that this would be a very complicated process, but it really is unbelievably simple to set the flight parameters and the drone does the rest!" " With the ANAFI Ai, it's unbelievably simple to set the flight parameters and the drone does the rest.

...KOREC's customer service has been exemplary and KOREC support has been brilliant at being on hand to get us back up and running if we have ever encountered any technical issues that we can't resolve ourselves – we've never had a wasted trip."

Niall Kimber, Kimber & Glen



About the Parrot ANAFI AI drone



The Parrot ANAFI AI drone is an advanced and versatile drone that incorporates cutting-edge artificial intelligence technology. Its lightweight construction ensures that it is easily portable which is especially useful for Kimber & Glen applications and also highly manoeuvrable.

Additionally, it offers 4G as the new communications standard, 48 MP of imaging accuracy, intelligent obstacle avoidance for autonomous photogrammetry missions and a unique robotic platform with the first open-source piloting application. Finally, the ANAFI Ai embeds a Secure Element that protects both the integrity of the software and the privacy of data transferred.

Single objective, multiple benefits

Kimber & Glen set out to become self-sufficient for all their survey requirements from initial topographic surveys to setting out designs to collecting as-built data and they are confident that they have found two solutions and a partner in KOREC that have delivered exactly that. As well as being able to progress projects based on their own schedule rather than waiting for surveyors, they are also more effective in what they do by having a better understanding of the land they are working on and also the opportunity to experiment with different designs. Niall concludes,

"KOREC's customer service has been exemplary and KOREC support has been brilliant at being on hand to get us back up and running if we have ever encountered any technical issues that we can't resolve ourselves. These two pieces of equipment are now fully integrated into our design and construction processes, and they allow us to offer a much broader range of services to clients. Most importantly, they have delivered on our original objective, to be self-sufficient in our survey operations."



Kimber & Glen design associate, Andrew Imray, with the Trimble DA2 Catalyst system working on a current project at Belleisle Golf Course in Ayr, Scotland creating new wetland areas.

CONTACT US

Please do get in touch for further information on any of the products or services mentioned in this case study, a demonstration, support or just a chat about your requirements.

(UK) 0345 603 1214 (IRE) 01 456 4702

info@korecgroup.com www.korecgroup.com



Measured Solutions Construction | Surveying | Mapping

Authorised Deale

