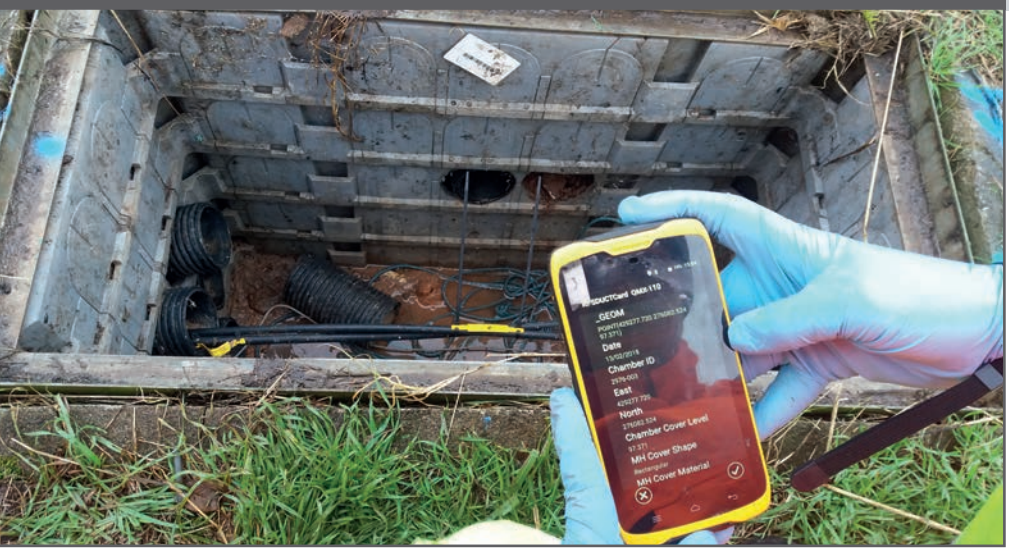
Customer:
RPS Group

Project:
Digitising a manhole survey workflow with a customised solution

Solution:
KOREC K-Mobile software and Trimble TDC100 handhelds

Case Study



Replicating a manhole survey workflow with a customised solution

Digitising complex manhole cards using customised templates to improve data quality and cut office processing time by two thirds for RPS

RPS Group Plc is a multinational energy resources and environmental consultancy that advises clients on the built and natural environment. Operating out of the company's geomatics department in Staffordshire is the Survey Manager for England and Wales, Chris Alcock, who has lately run several manhole and asset survey programmes on behalf of both the private and public sectors as part of their work as topographical and underground utility surveyors.

In the past, these surveys have been carried out by recording the position of the manhole cover to within 10mm accuracy using a GNSS or total station and by entering up to thirty different types of manhole and chamber information onto paper printed cards. This information would then be manually transcribed back at the office and transferred into a word document for delivery to the client as part of a report. Although the complexity and length of the card ensured that all the required information was collected, the process was particularly time consuming in bad weather and required each hand-written note to be deciphered and manually recorded back at the office. Depending on the client's specified format, there was often a need to duplicate information to produce a word document or excel file as required.

Chris had felt for some time that this process needed to be updated but was waiting for both the right project and application to come along and to find a data capture system that could handle the complex range of information needed for each record.

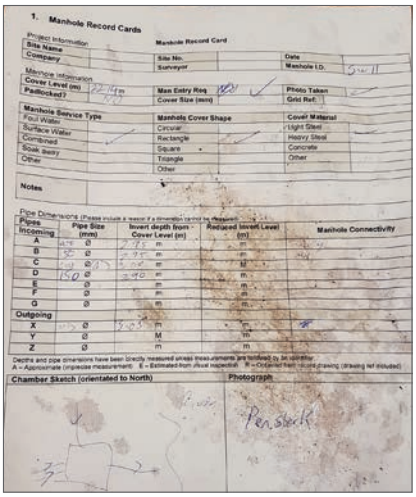
The ideal project presented itself in a job that would involve the recording of over one thousand data ducts, each requiring a position, photography and around twenty input fields. Delivery of the captured data was to be as both a Word document and ArcGIS data. Familiar with KOREC and Trimble instruments from use over the years, Chris asked about KOREC's in-house developed data capture software, K-Mobile, which is designed to run on a range of GNSS handhelds and smartphones. The ability to customise this software would be key to the success of the project.

Template development

Following a trial of K-Mobile, a member of KOREC's technical team visited the RPS offices and the development began for the initial forms and templates required for the project. These included a logical sequence for the data to be collected and easy to use customised fields, picklists and menus. Development was completed quickly and three systems of K-Mobile running on Trimble's rugged TDC100 handheld data logger were purchased and prepared for the project. The end result was a customised digital data capture system that provided all the information they were used to collecting with pen and paper.

> "In the past it would take us around one day to digitise forty manhole cards with all the information we collect. We can now cut this time by 70%"
>
> **Chris Alcock, RPS**

After a one hour training period, the RPS field workers were immediately productive on site finding the system straightforward and intuitive to use and the project was successfully completed.



▲ Paper records were time consuming to process

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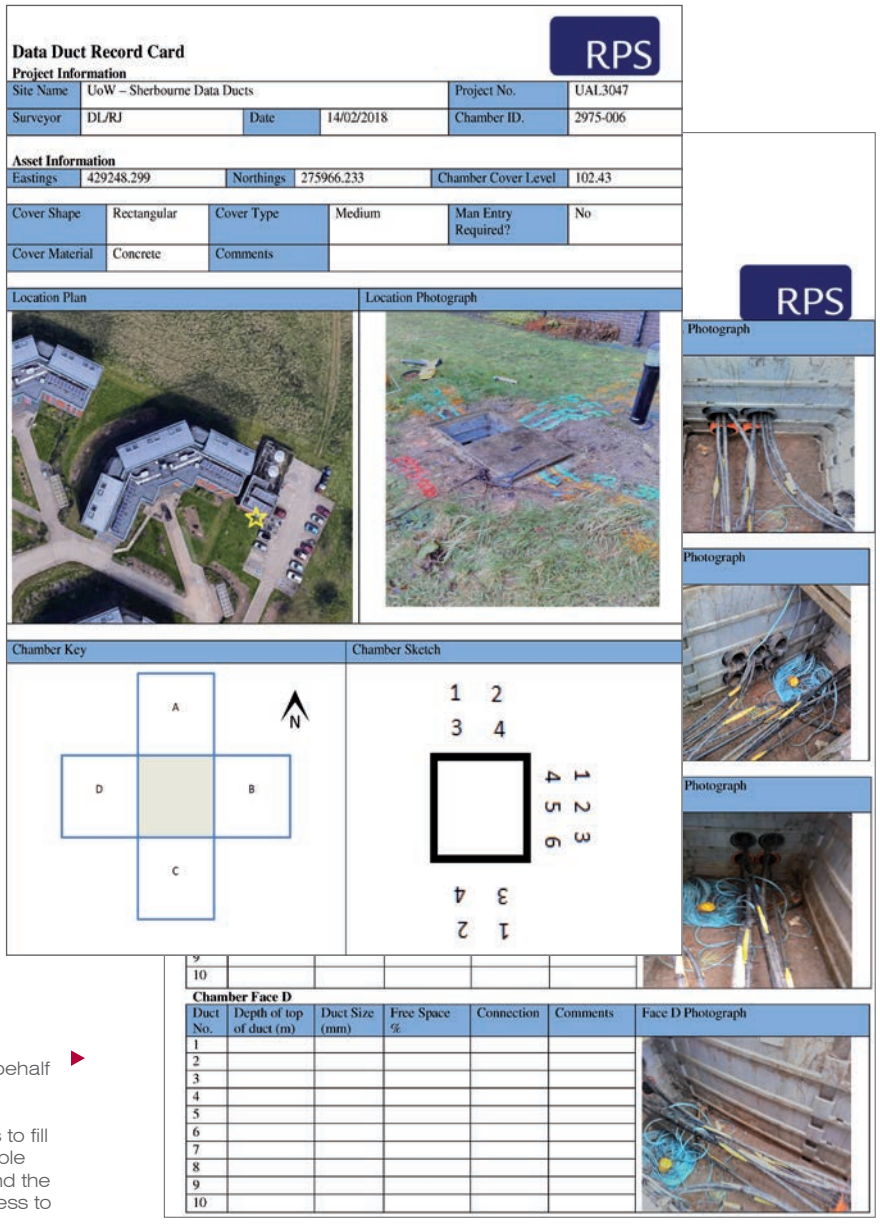
At the end of each day, the TDC100's were synced with the RPS office and collected data downloaded and then turned into reports at the touch of a button, QA checked and forwarded to the client in their specified format, all without the need for the surveyors to return to the office.

▲ Rugged Trimble TDC100

Since then templates have been developed for the manhole surveys that RPS carry out on a daily basis and additionally Chris has been able to tweak these templates to create his own form suitable for use on a fire hydrant survey.

"I'd say the time spent on site has changed little, except of course when the weather is bad and a rugged, digital system becomes invaluable!" explains Chris. "However, there are extensive time and cost savings to be gained in the office. In the past it would take us around one day to digitise forty manhole cards with all the information we collect. We can now cut this time by 70% and that means a cost saving for the client, faster delivery of data and a confidence in its quality that pen and paper methods just couldn't guarantee."

"The customisation of K-Mobile has been key to the success of these projects and we see our initial development work with KOREC as just the beginning," continues Chris. "Our future plans include building-in automatic calculations in the field for invert levels, an automatic link to the GNSS recorded positions and the introduction of a portal which will enable our clients to view and access data more freely. Throughout this process KOREC's support has been excellent and working together will enable us to get exactly where we want to be."



Data Duct Record Card

RPS

Project Information

Site Name	UoW – Sherbourne Data Ducts			Project No.	UAL3047
Surveyor	DL/RJ	Date	14/02/2018	Chamber ID.	2975-006

Asset Information

Eastings	429248.299	Northings	275966.233	Chamber Cover Level	102.43
Cover Shape	Rectangular	Cover Type	Medium	Man Entry Required?	No
Cover Material	Concrete	Comments			

Location Plan

Location Photograph

Chamber Key

Chamber Sketch

Photograph

Photograph

Photograph

Chamber Face D

Duct No.	Depth of top of duct (m)	Duct Size (mm)	Free Space %	Connection	Comments	Face D Photograph
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

This automatically generated report from K-mobile captured data, shows duct route data collected on behalf of the University of Warwick.

This information would have been extremely tedious to fill out in paper form and input manually. The deliverable was a word document, ArcGIS data and KML file and the University of Warwick will also be granted client access to the portal for this project once it is set up.

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.

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