

## The Client

Macleod Simmonds in partnership with Dyer & Butler were commissioned by a major UK airport to carry out a number of surveys, including two of their busiest taxi-ways. Down-time had to be minimised whilst surveying was under way. Specialised airside qualified staff were needed to facilitate the project, which had to be carried out in full compliance with applicable Health and Safety and airport security regulations.

## Background

Two blocks of the most heavily used taxi-ways at the airport needed full repairs after 30 years of basic patch-repairs, due to the volume of use and the high cost of down-time. The airport authorities urgently needed an accurate, up-to-date picture of all underground features and services before breaking ground. This would prevent hazardous drilling work and eliminate surprises during remediation.

***“The team at Macleod Simmonds completely understood the task and came prepared with marked up drawings in preparation to begin.”***

David Butcher, Surveys Manager

## Mobile GPR – Accurate and Safe Way to Scan

Macleod Simmonds’ team combined leading-edge multi-channel GPR Stream array scanning technology with bespoke GPRCAD software to provide a PAS:128 compliant survey to the maximum possible quality. As the taxi-way had to be scanned with minimum disruption, the vehicle-towed Stream EM was used for the most part to cover the largest areas, and the hand-pushed Stream C and 24 Channel HDAGPR were used to infill any remaining gaps caused by poor access to the survey area.

***“Macleod Simmonds always complete their surveys efficiently, with attention to detail and are always very reliable.”***

David Butcher, Surveys Manager

## Delivering Critical Data

The scanning team carried out a BSI PAS:128:2014 - M4p utility survey. All data were positioned to Airport grid using GPS in open areas or Surveyor’s Total Stations in covered areas. Captured data were passed to the back-office for processing while site acquisition was still underway. The survey captured all detectable objects and features, including all airport ground lighting ducts, including some unknown from record information from previous taxiway alignments. This information is critical in locating and identifying potential hazards that may be encountered when drilling, excavating and re-surfacing on the airport. Avoiding utility strikes is a major requirement before any ground breaking takes place. The final deliverable to the project partner was a CAD model showing all detected objects and features with annotations and depths, along with accurate GPR data and images of the subsurface in a .jpg format.

***“Following this project, we were so happy with the results, we are now working on much larger projects.”***

David Butcher, Surveys Manager



## Summary

A major UK airport needed a comprehensive sub-surface survey of a busy taxi-way in preparation for urgent remediation work after 30 years of basic patch repair. Macleod Simmonds’ friendly professional team provided a PAS:128 compliant survey to the maximum possible quality to project partner Dyer & Butler so that work could begin.

***“Due to the quality of surveys and ability to process and interpret data, we have an ongoing partnership with Macleod Simmonds.”***

Andrew Brown, Surveys Manager