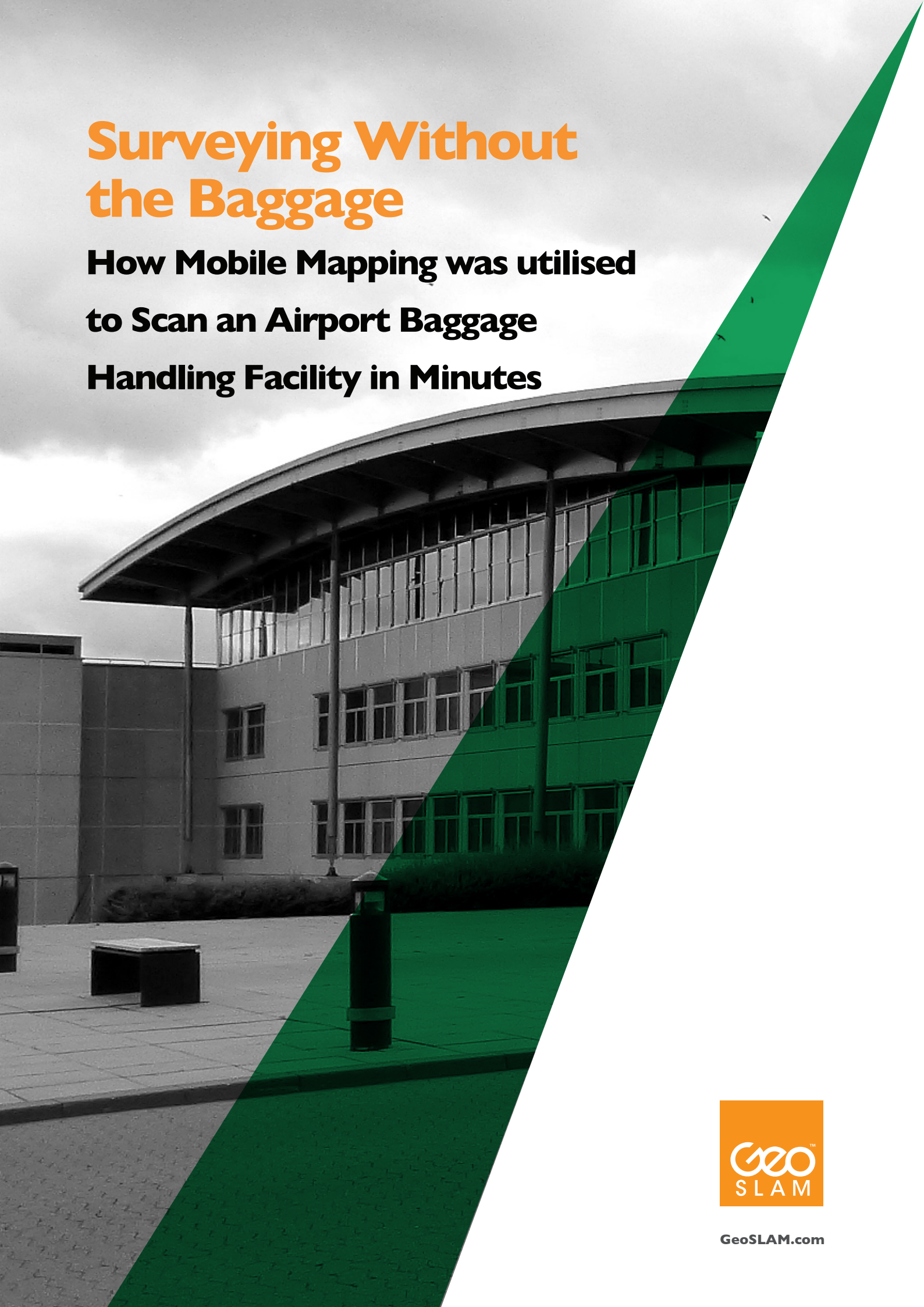
Surveying Without the Baggage

How Mobile Mapping was utilised to Scan an Airport Baggage Handling Facility in Minutes



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LIFA Surveyors utilise GeoSLAM's ZEB-REVO for rapid, indoor data collection in Danish airport

LIFA Surveyors needed just 10 minutes to scan a large airport baggage handling facility with GeoSLAM's ZEB-REVO mobile 3D laser scanner as part of a planned upgrade project. The same room, roughly 120 x 45 meters (5400m2), would have taken 1-2 weeks with a traditional total station to achieve the same level of detail in the resulting 3D model.

The baggage facility at Billund Airport in central Denmark

Billund Airport (BLL) in central Denmark is the second largest airport in the country, processing over 3 million travelers a year. Quite a few of the arriving tourists head to the original LEGOLAND and the newly opened LEGO House, which sits next to Lego Headquarters in Billund.

Continued growth at BLL prompted the VP Project & Development Anders Nielsen from Billund Airport to contract LIFA Surveyors, a surveying and mapping firm based in Odense, Denmark, to create a 3D model of the baggage handling room. BLL officials were in the process of planning to accommodate future passenger growth.

"They were studying the luggage system to obtain correct as-built material for the required upgrade of the existing room," said Nikolaj Miller, LIFA Senior Charter Surveyor.

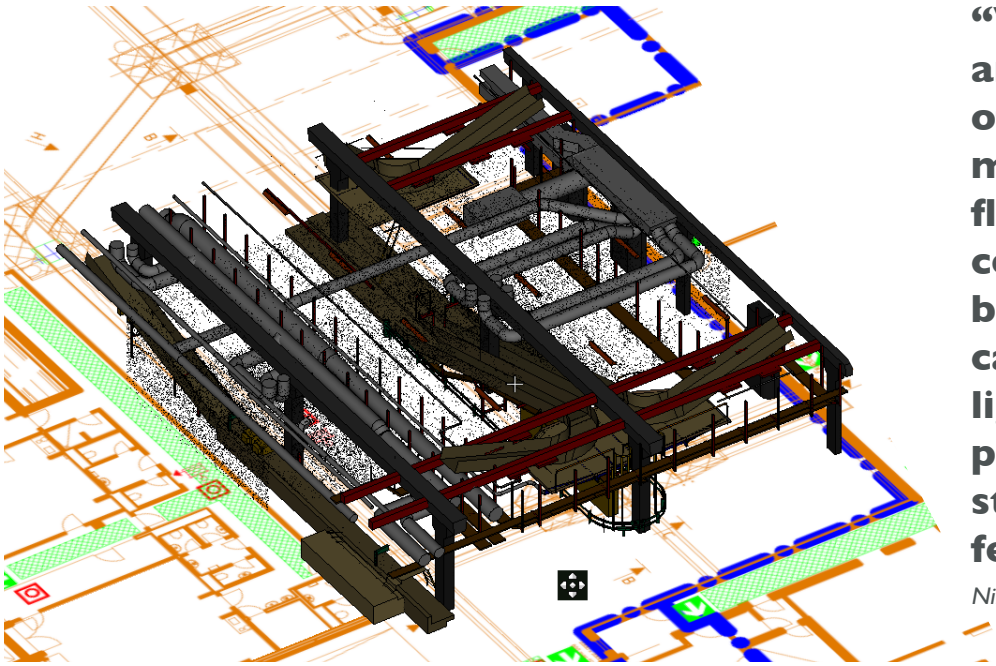
Similar to many airports, conveyor belts in the BLL departure terminal carry luggage down to the central baggage room for automated sorting before being loaded onto trolleys for the final few meters out to the waiting aircraft. With a ceiling nearly five meters high, the baggage room is a three-dimensional maze of ascending and descending conveyor belts, support structures, catwalks, and HVAC piping. A 3D model was needed to help determine if new conveyor belts could be thread through the existing features for the expansion.

Early in the project planning stage, BLL wasn't sure how much detail they would need to proceed with the expansion design. LIFA had worked extensively with the GeoSLAM ZEB-REVO handheld mobile scanner on multiple post-construction quality control jobs. LIFA's Miller was confident the GeoSLAM device would provide an impressive level of detail in a short amount of time. In fact, it took less than 10 minutes.

"We walked 125 meters down one side of the baggage room [holding the ZEB-REVO] and 125 meters back up the other side," said Miller.

After scanning the space, the collected geospatial data was uploaded to GeoSLAM's software processing engine (GeoSLAM Hub), in order to generate a 3D point cloud of the entire room. The point cloud was produced in minutes.

"As long as it takes to capture the scan data, that's how long the GeoSLAM software takes to process it," said Miller. "That is what is amazing about [this technology]."



“We had quite an amazing set of data. The 3D model included floors, walls, ceiling, conveyor belts, beams, cable trays, lights, railings, pipes and structural features.”

Nikolaj Miller, LIFA

BIM model of the complex baggage handling facility at Billund, Denmark’s second largest airport. This scan was completed in 10 minutes - a massive improvement from the 1-2 weeks required for traditional survey methods.

To further demonstrate the detail of the data collection, LIFA sent a 30m^2 section of the point cloud to a subcontractor for feature extraction and modeling.

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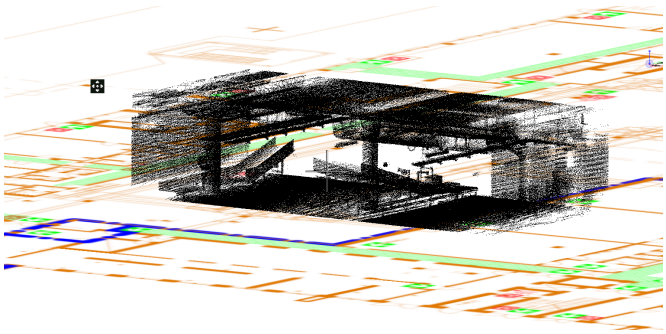
BLL officials were also impressed with the level of detail captured by the ZEB-REVO and displayed in the sample model. The information in a more detailed model gathered later during the planning phase forms part of a tender to upgrade and expand the belts and sorting for arriving baggage.



ZEB-REVO generated pointcloud of the baggage facility at Denmark’s Billund AIrport

About LIFA

LIFA Surveyors are a nationwide land surveying company, specializing in property measurement and data collection.

Starting out as traditional land surveyors, the company has expanded and modernised its offering to include advanced 2D and 3D data measurement, CAD and GIS for intelligent collection, storage, and manipulation of geospatial data.

LIFA are based in Odense, Denmark.

www.lifa.dk/ (in Danish)

About GeoSLAM

Headquartered in the UK, GeoSLAM is a global market leader in “go-anywhere” 3D mobile mapping technology. Our unique handheld technology is highly versatile and adaptable to all environments - especially spaces that are indoor, underground or difficult to access, providing accurate 3D mapping without the need for GPS.

Our technology is easy to use and within minutes’ customers can build a highly accurate 3D model of their environment. GeoSLAM was founded in 2012 as a joint venture between CSIRO (Australia’s National Science Agency and the inventors of Wi-Fi) and 3D Laser Mapping. Serving the surveying, engineering, mining, forestry, facilities and asset management sectors, GeoSLAM has an expanding network of over 60 distributors, with a presence in 50 countries across 6 continents.

www.geoslam.com

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