

# LiDAR

## Elevating your world

As a leading supplier of geographic information and aerial imagery The GeoInformation Group continues to provide the latest geographic information products to its clients. LiDAR (Light Detection and Ranging) is an airborne mapping technique that uses a laser to measure the distance between the aircraft and the ground, providing a very accurate 3D model of the world.

LiDAR data, once reserved for specialist users and niche applications, is now readily available from Cities Revealed. With an already comprehensive and current archive of many metropolitan areas, including London, Manchester, Birmingham, Liverpool, Newcastle, Edinburgh and Glasgow, Cities Revealed will further expand the archive to meet industry demand.

Cities Revealed LiDAR is a very dense network of elevation points with vertical and horizontal accuracies of +/- 15 cm. Each point is collected at intervals of between 1m and 2m, which produces detailed 3D ground and surface models.

LiDAR has revolutionised the acquisition of digital elevation data and has quickly become a de facto method of collecting height and surface information for a myriad of applications and analysis. There is no other method that can collect ground and surface

height information as quickly, accurately and as cost-effectively. These factors make LiDAR a highly viable option for all applications that require height, volume or 3D visualisation information.

### Case Study

#### Luton Airport

##### Site Assessment for Runway Development

As part of the ongoing expansion of London Luton Airport, detailed topographic information was required to assess development options in and around the existing airport site. An area of approximately 80 sq km was inaccessible for ground survey. With an undulating terrain, accurate level data formed a crucial part of the optioneering process. Due to its quick and reliable collection method LiDAR data was the ideal choice for the analysis.

*"We chose The GeoInformation Group to provide LiDAR data as they are a regular and trusted supplier of aerial photography data. We have been a client for a number of years and the Airport has developed an excellent working relationship with them."* Neil Thompson, Airspace and Airfield Environment Manager, London Luton Airport Operations Ltd.



## Features

- A geographic database with height and surface measurement information
- Collected by a laser at intervals of between 1m and 2m on the ground
- Height point vertical accuracy of +/- 15 cm
- Referenced to the National Grid system
- Integrates with other geographic databases and Ordnance Survey mapping
- Produces both Digital Terrain Models (ground surface only) and Digital Elevation Models (the ground and all features on it)
- Supplied in a number of formats and easily integrates with all major GIS and CAD systems
- Extensive coverage of UK urban areas available

## Benefits

A very accurate collection method of ground and surface height information.

LiDAR data can be integrated directly within an existing mapping system therefore reducing initial setup costs.

Fastest collection method for data of this type and highly cost effective.

LiDAR provides a true 3D view on the world; a realistic representation of the world provides better understanding and improves project communication.

LiDAR enhances the decision-making process and reduces overall project timeframes.

LiDAR data and models can be used in a wide variety of applications, providing a high degree of flexibility to the end user.

LiDAR data collection is not dependent on lighting conditions, therefore capture can take place at any time, including at night. This drastically improves the chance of collecting the data in a single flight, resulting in rapid delivery times.

## Applications

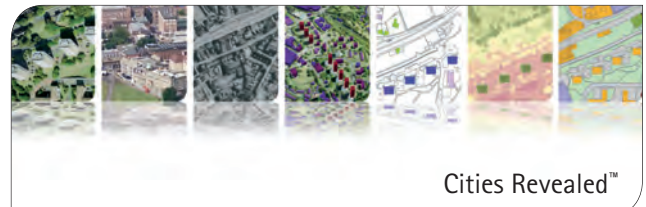
LiDAR surveys can be utilised in many applications, a few of which are listed below.

- Flood modelling
- Planning control
- Property management
- Wind farm visualisation
- Urban regeneration projects
- CCTV location planning
- Microwave antenna modelling
- Cut and fill analysis
- Airport planning
- Tree height measurement
- Water supply modelling
- Emergency planning
- Buildings insurance risk assessment
- Telecommunications planning
- Gas pressure modelling
- Road network planning



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