HISTORIC ENVIRONMENT DIVISION LIDAR – NOTE ON DATASETS

Historic Environment Division LIDAR

The Historic Environment Division (HED) acquired LIDAR over a six year period from 2008 to 2014 to assist with the interpretation and protection of archaeological landscapes in Northern Ireland. A total area of approximately 130km^2 was surveyed during this period across 39 sites. The data is provided "as is" as per the OpenData licence and is not supported.

LIDAR

Airborne LIDAR (**Li**ght **D**etection **a**nd **R**anging), also known as Airborne Laser Scanning (ALS) is a landscape survey technique that uses a laser beam transmitted in rapid pulses from an aircraft in order to accurately measure the distance between the aircraft and the ground. The laser pulses allow measurements to be taken in the order of 100,000 times per second with a vertical accuracy of 0.5cm which produces a dense cloud of points which can then be interpolated to produce an accurate three dimensional model of the landscape below. In this instance surveys are supplied as either digital surface model (DSM) or as a digital terrain model (DTM). For the DTM, buildings and vegetation have been removed and only ground returns have used to produce the model. The technique can be particularly valuable for archaeological survey as it allows large areas to be surveyed accurately enough for the subtle topographic traces of archaeological features to be identified.

Coverage

There were 39 surveys conducted between 2008 and 2014:

- Ardquin
- Ardtole
- Black Pigs Dyke
- Bonamargy
- Cahery
- Cave Hill
- Charlemont
- Clandeboy
- Clogher
- Cornashee

- Crossmurin
- Devenish
- Doherty's Tower
- Donegore
- Dundrum
- Dunluce
- Dunmull
- Dunsevrick
- Garron
- Giant's Sconce

- Glynn
- Greyabbey/Ballywalter
- Inch Abbey
- Kiltierney
- Linford
- Lyle's Hill
- Magheramore
- Mobuoy
- Mount Stewart
- Navan

- Raholp
- Ringreagh
- Saul
- Scrabo
- Slemish
- Struell
- The Dorsey
- Tirgoland
- Tullaghoge

There are no plans to for HED conduct any further LIDAR surveys at this time (as of September 2016).

Data Formatting Notes

The surveys have been captured with average spacing between points of either 0.2m (25 ppm^2) or 0.125m (64 ppm^2) and with a resolved vertical accuracy of approximately ±0.1cm. The datasets have been supplied in Irish Grid or Irish Transverse Mercator coordinate systems and all elevations are with regards to Mean Sea Level, Belfast.

The data is supplied in an ASCII raster file format generally using the following convention:

ncols	167	*(Number of colums)*
nrows	204	*(Number of row)*

xllcenter	269966.7		*(Easting in meters of center cell)*
yllcenter	423350.5		*(Northing in meters of center cell)*
cellsize	0.2		*(Individual cell size in meters)*
nodata_value	-99		*(Cell value which represents the absence of data)*
34.430 34.420 34.436 34.456 34.448 ...			*(List of cell values in meters above Mean Sea Level)*

The LIDAR data is supplied using the following directory structure and file naming convention:

Survey name.zip			Name of the survey area.
↳	*X.X*m DTM/DSM ESRI grids ING/ITM		Average point spacing (in m or cm) – model type– data type – coordinate system
		↳ *XXXX_XXXX*.asc	Northing of center in meters_easting of center in meters
		↳ *XXXXXX*.asc	Tile reference given in IG 1:2500 map sheet reference