INCLUSIONS

# Land services and all drone services

SKY REVOLUTIONS

# Contents

**LAND SERVICES**



**ALL DRONE SERVICES**



When you request a quotation, you'll receive a comprehensive breakdown of the work involved, together with a detailed price breakdown and terms and conditions.

This document sets out what is included in each type of service.

# Land surveys

## 1. TOPOGRAPHICAL SURVEY

The survey will be related to Ordnance Survey (OS) coordinates using GPS.

A minimum of 2 permanent control stations will be left on or around the site.

Features to be surveyed within the site area (where applicable)

a. Current levels of the site and surroundings
b. Ridge height & eaves height of the existing building
c. Existing building foot print plotted
d. Threshold levels of the existing building plotted to co-inside with the site levels
e. Road channels, kerbs, footpaths, verges and changes in surface.
f. Walls, fences, hedges and other boundary features with heights.
g. Manhole covers, gullies and inspection covers.
h. Visible service information including overhead cables, electric poles/ pylons, telephone poles and service covers.

Spot levels taken at 10m spacing and at changes of gradient sufficient to adequately describe relief.

Standard 2D topographic survey with tree positions, heights, spreads, girths and species (where identifiable).

The above list is a guide which may be superseded by specific instructions separate to this quotation. Requirements outside of the above list must be confirmed prior to any survey work commencing.

**Deliverables**

a. Survey data is worked into a suitable layering system.
b. Paper size will be A1 (Supplied electronically)
c. Survey drawings are issued in AutoCAD 2D and PDF format.

## 2. ASSET CONDITION SURVEYS (Buildings/ Pylons/ Chimneys etc.)

Roof & Façade Condition Survey – What we include:

Drones offer a safe method of inspecting high level assets without the need for scaffolding or elevated working platforms. We provide a report itemising all defects and the general condition of the building envelope. We use the latest high resolution camera technology available with the ability to zoom into "problem areas" identifying, for example:

a. Missing/ Cracked Tiles
b. Missing/ Cracked Mortar Joints and Pointing
c. Brick/ Render/ Cladding Damage
d. Damage to Parapets
e. Damaged Fascia's & Soffits
f. Blocked Gutters

## 3. MEASURED BUILDING SURVEY (Using the latest equipment including laser scanners)

The building levels will relate to your topographic drawing if provided, we can also provide this for an additional fee if you do not have one.

All relevant internal features will be included in the survey including all items ticked on your checklist:

a. Ceiling beams and vertical columns, underside of beam levels.
b. Wall positions and thicknesses (including any recesses).
c. Floor and ceiling levels.
d. Door positions with heights.
e. Window positions including sill and head levels.
f. Stair positions.
g. Sinks, toilets, baths and showers.
h. Any substantial structural detail.

## 4. CAD DRAWINGS

We provide 2D & 3D CAD (Computer Aided Design) services. We provide a set of drawings with every measured building survey we complete but we can also draw up your sketches/ plans and even convert existing printed drawings to CAD.

## 5. BELOW GROUND SURVEY (Subcontracted)

A comprehensive below ground survey indicates the size and specific location of each below ground utility & service: - The following specification would apply in this instance:

**The survey will include: -**

a. Lifting all covers/gullies, detailing services within where possible.

b. Flexitrace sonding drainage routes and tracing electrically cables or metallic services. Chambers will not be entered, services will be traced from ground level where possible above a depth of 2m. Deeper drainage will be traced up to 5m with a sewer sonde where possible.

c. Passive sweep with Ridgid Sr20 RFL for cables and metallic services.

d. GPR sweep with IDS Duo for non metallic services and underground anomalies, data interpreted on site or post processed if specifically requested.

e. Services spray painted using Arco survey paint (non permanent, weathers away in 2-3 months depending on ground conditions).

f. Results surveyed and plotted on to existing topographic survey.

**Not included: -**

a. Surveying internal manholes and services

b. GPR post processing

c. CCTV survey, drainage materials or condition.

d. Utility company records search (STATs) – Can be provided at additional cost (£495 plus VAT)

e. Traffic Management

**Cautionary Note:-**

Reasonable effort to lift covers will be made using a pivot lifter and manual means but stuck fast or obstructed covers will be annotated as such and routes assumed or added from records. Blocked, flooded, obstructed and services deeper than 2m will be marked as unable to survey.

Routes will be assumed or added from records where possible.

Traffic management will not be provided, therefore busy road ways will not be surveyed. Information will be assumed or added from records where possible.

Unhindered access will be required to all areas of the site. Inaccessible areas will not be surveyed, information will be assumed or added from records where possible.

Radio frequency and GPR techniques will be used in the detection of underground services. The results are not infallible and trial excavations must be carried out to confirm service identification, positions and depths. Although all reasonable effort will be made the completeness of the underground service information cannot be guaranteed. The success level of underground service detection is dependant upon ground conditions and is relative to the specification of the utility survey requested.

The above list is a guide. Requirements outside of the above list must be confirmed prior to any survey work commencing.

**Deliverables**

a. Survey data is worked into a suitable layering system.

b. Paper size will be A1 (Supplied electronically)

c. Survey drawings are issued in AutoCAD 2D and PDF format.

## 6. CCTV DRAINAGE SERVICES (Subcontracted)

**Drainage Survey**

Normally carried out in conjunction with our below ground utility survey:

a. Identification of all foul & surface water drains

b. Video recordings of each drain run – identifying blockages & damage

c. High pressure jetting to clear blockages (if required at additional cost)

d. Drainage layout CAD drawings provided (All services will be marked up

CCTV Surveys ranging from pipe sizes 50mm - 1200mm in high quality colour image. All surveys complete with video file in digital MPEG 4 Format, WinCan generated WRc approved CCTV Survey reports with defects, serviceable and structural issues highlighted supported with still images, flow direction, pipe size and depth.

All surveys then come with a remedial report and quotations to repair/ rectify any problems noted

**The above list is a guide. Requirements outside of the above list must be confirmed prior to any survey work commencing.**

# Drone services

## 7. AERIAL FILMING & PHOTOGRAPHY

The shoot will be carried out by fully licensed CAA drone pilots. Our operatives carry CSCS cards. Our UAV Pilots are registered with Drone-Safe and are fully insured.

The shoot will be carried using state of the art technology which complies with current and proposed EASA legislation.

The shoot will be carried out in accordance with our Operations Manual as approved by The CAA. Risk Assessments will be provided prior to the flight taking place.

Take-off and landing sites are pre-defined using the most up to date satellite imagery. Risk assessments are then carried out to assess the suitability of these sites before a detailed on site assessment can be done. Throughout this process secondary, tertiary and safe zones are identified so that safe recovery can occur at any time throughout a flight. Once identified land owner permissions are obtained.

Flight scheduling will depend primarily on optimal weather conditions, combined with client needs. Once a flight window is identified then flights will only take place upon the satisfactory completion of an on-site risk assessment and land owner approval. If, for any reason, the pilot is not happy with any stage of the pre-deployment process then flight will not take place.

We would provide all necessary method statements and risk assessments in order for the task to be carried out in complete safety.

**Camera technology**

a. 20mp Hi Res Stills

b. Video capability: 1080p HD quality.

## 8. ROOF SURVEYS INCLUDING REPORT

The survey will be carried out in accordance with our Operations Manual as approved by The CAA. Risk Assessments will be provided prior to the flight taking place.

Take-off and landing sites are pre-defined using the most up to date satellite imagery. Risk assessments are then carried out to assess the suitability of these sites before a detailed on site assessment can be done. Throughout this process secondary, tertiary and safe zones are identified so that safe recovery can occur at any time throughout a flight. Once identified land owner permissions are obtained.

Flight scheduling will depend primarily on optimal weather conditions, combined with client needs. Once a flight window is identified then flights will only take place upon the satisfactory completion of an on-site risk assessment and land owner approval. If, for any reason, the pilot is not happy with any stage of the pre-deployment process then flight will not take place.

We would provide all necessary method statements and risk assessments in order for the task to be carried out in complete safety.

**Deliverables**

The high resolution images will be post processed by our analysts and returned within 72 hours of completion of the survey. The data will be provided by either a cloud based file transfer programme or USB memory device.

We can also provide a written report (example available upon request) for an additional fee as shown below.

## 9. THERMAL IMAGING SERVICES

Capture Detailed Temperature Data using the latest Flir thermal sensors either from the ground or the air (using drones) . The Radiometric model allows us to identify individual pixels for accurate temperature measurements or select an area to display average, highest, and lowest temperatures within the selection. Written reports are available to support the findings.

## 10. VOLUMETRIC SURVEYS

Using photogrammetry and RTK (Real Time Kinematic) positioning on our all weather drones we can accurately measure stockpiles of aggregate/ sand, rock, salt etc. The data is captured both using drones and laser scanners and GPS Rovers from the ground. The captured data is then analysed using our software to produce 3D rendered models and volumes/ measurements.

## 11. 3D MAPPING & MODELLING

Capturing data both from the ground and air we can create accurate 3D models which can be manipulated into digital elevation models, 2D drawings and also provide accurate measurements. The 2 methods used are photogrammetry and LiDAR (Laser scanning). Photogrammetry is a series of still images stitched together to create models. LiDAR is beams of light used for measuring anything in it's path recorded digitally and presented as a point cloud which can then also be manipulated to suit.

## 12. TIME-LAPSE PHOTOGRAPHY

We provide high definition, continuous (set time frames between) images of your project. Our online portal allows you to access the latest images/ film at any time. We capture the project from start to finish and provide you with a fully edited film at the end.

## NOTES

All quotes are fixed and are based on information provided by the client at the time of quotation. Revisiting the survey area as a direct result of any of the factors listed in the paragraphs below may incur additional charges.

Prior to the commencement of site work, it is the client's responsibility to organise unfettered and safe access to the entirety of the survey area.

Areas with limited or no access, or considered unsafe by the surveyor will be marked as such on the final drawing. Complete information is not guaranteed for these areas.

Obstructions such as refuse, overgrowth, temporary structures etc. will be marked as such on the final drawing. Complete information is not guaranteed for these areas.

Any requirements not listed in the following specifications should be discussed and agreed on prior to the commencement of the survey.

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