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# COMPANY PROFILE



**OVERWATCH**



# THE DRONE SERVICES EXPERTS

- ▶▶ AERIAL DATA ACQUISITION
- ▶▶ DATA ANALYTICS
- ▶▶ SOFTWARE SOLUTIONS

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## ▶▶ WHO WE ARE

Established in 2015, Overwatch is a pioneer in the field of drone services in the GCC region. From our headquarters in Kuwait, we have been providing our clients with game changing data acquired by using the latest in drone technology. Our services include drone inspections, surveys, air quality monitoring, thermal inspections, and software solutions.

Our team is made up of dedicated drone pilots, civil and computer engineers, as well as seasoned surveyors to ensure the information we deliver to our clients meets the highest accuracy standards. At Overwatch, we take safety very seriously. Our drone pilots go through an extensive training program that would allow them to be prepared for any eventuality. We are well-versed with local drone regulations which can halt work and incur legal liability if not navigated correctly.

We pride ourselves on being hands on with our clients to ensure that they receive the maximum benefit from the acquired data so that they have a great return on their investment. We start a project by deep diving into the client's requirements and we offer a custom-tailored solution accordingly. We then plan our flights and get any necessary approvals followed by our flights, data processing and delivery. Our unmatched experience in this field has allowed us to call some of the largest contractors, engineering firms, real-estate companies, and government agencies our clients.

To learn more about Overwatch, please contact one of our specialists today or visit our website. [www.overwatch.blue](http://www.overwatch.blue)

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## ▶▶ WHY DRONES?

While drones have been around in one form or another since 1918, most of their applications have been militaristic. Only in the last decade has this technology made its way into the civilian market. This can be attributed to easily accessible advancements in battery, software, artificial intelligence, computing, sensors, and GPS technologies. Specifically, in the field of inspections and surveying, drones can provide data that would be virtually impossible to achieve using any other platform. Drones provide a resolution that can approach 50X the output from a satellite image, and an operating cost that is a fraction of aircrafts used for photogrammetry. Our ability to achieve centimeter level accuracy means that we can replace most of the conventional surveying jobs at a fraction of the time and with exponentially more information.

Depending on the project requirements, we employ different drones and software combinations to execute the project safely and efficiently. Our software options today give us a wide array of powerful capabilities. Whether you want to import a 3D model into your BIM model or use a digital surface model to compare excavation works against a design layer, we have the right solution for you. If you are a contractor wanting to monitor a subcontractor's work, or an engineering firm needing a topographic map to design a road, or an environmental agency monitoring landfills, our services will allow you to have an unprecedented level of situational awareness to exercise complete control over your projects.

At Overwatch, we strive to remain at the cutting edge when it comes to our drone and software capabilities. The advent of drone technology will be a game changer in your industry, do not be left behind and enlist Overwatch's services today.

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# OUR SERVICES

## SURVEYING

- Accurate and full color orthomosaics, 3D models and digital elevation models
- Measurements such as (GPS coordinates, lengths, areas, and volumes)
- Elevation Profile
- High Accuracy (down to 2 cm horizontally & 5 cm vertically)
- Our services can replace about 90% of surveying applications

## ANALYSIS

- Stockpiles
- Cut/Fill
- Earthwork
- Design vs Actual
- Slope Analysis
- On-site Quantity Surveying
- Change Analysis

## MANAGEMENT

- Collaboration between project stakeholders (owners, managers, architects, contractors, & subcontractors)
- Progress Monitoring
- Site Planning
- Safety Planning
- Legal Documentation
- Site Meetings

## INSPECTIONS

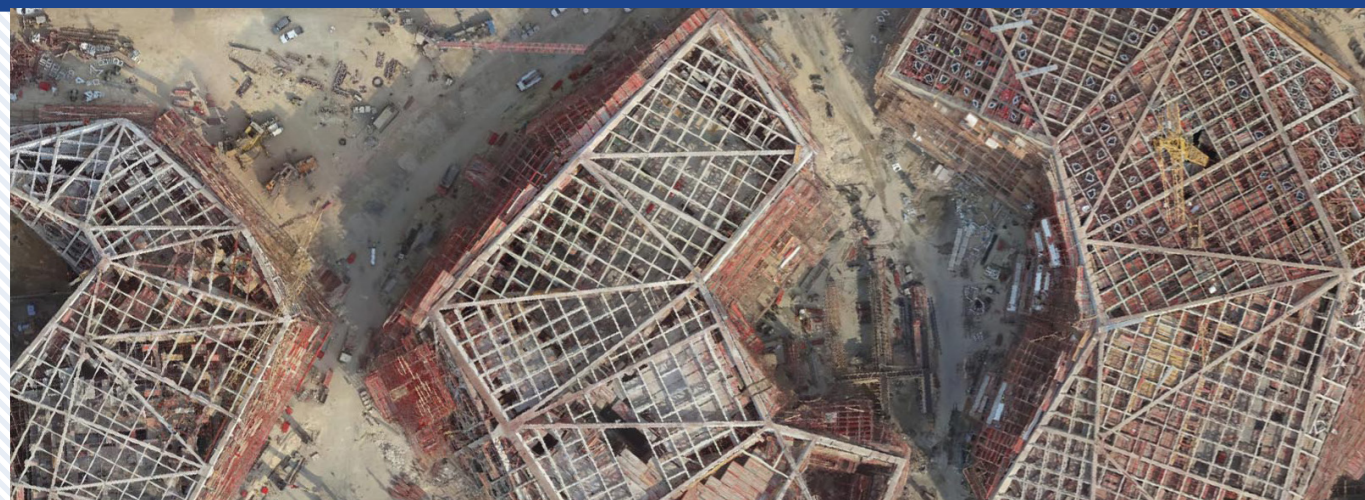
- Oil & Gas Platforms
- Cell Tower Inspections
- Bridge Inspections
- Pipeline Inspections
- Power Transmission Inspection
- Solar Plant Inspections
- Asset Inspections
- Insurance Claims

## ENVIRONMENT

- Change Monitoring
- Coastal Erosion
- Terrain Modelling
- Plant Conservation
- Rain Water Runoff Planning
- Air Quality Monitoring
- Desertification Monitoring
- Landfill Monitoring

## THERMAL

- Photovoltaic Panel Analysis
- Building Thermal Efficiency
- HVAC Efficiency
- Security Applications
- Search & Rescue
- Firefighting



## Looking for a Customized Solution?

Through our experience and network in the drone sector, Overwatch is capable of implementing bespoke solutions for your special projects. This includes access special payloads, sensors, software, and artificial intelligence. Contact our specialists today to find out what Overwatch can help you achieve.

# HOW WE WORK



## 01 PROPOSAL & PERMISSIONS

Overwatch meets with the clients to determine the requirements of the project. Based on the type of project, accuracy, and size, we would draft a proposal. After that, an initial site survey is conducted, and all necessary permissions and paperwork are obtained.



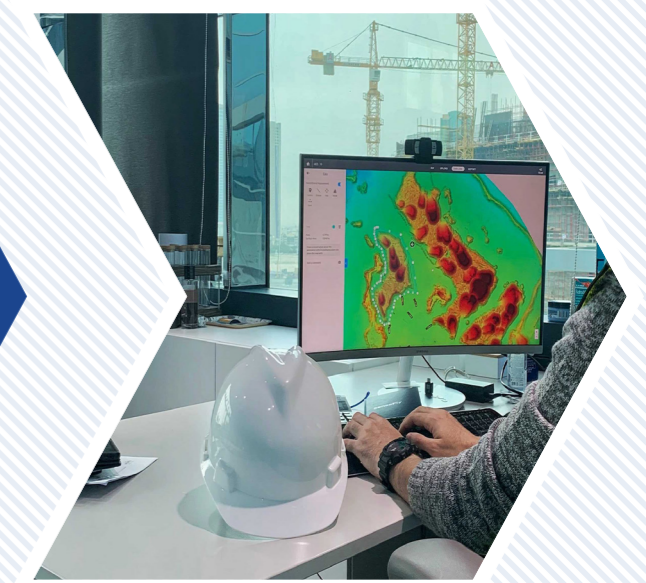
## 02 PLANNING & SITE WORK

Before any flight, Overwatch have to consider metrics such as wind speed, lighting, visibility, temperature, accessibility, and physical obstructions. After choosing the right equipment for the job, a flight plan is generated. The flights are then conducted, and the data is collected and taken back for processing.



## 03 PROCESSING & SOFTWARE

The collected data is then processed on the cloud by super computers, dramatically decreasing the time required to generate your models. The appropriate software is then chosen and prepared for the client.



## 04 DELIVERY & TRAINING

The outputs and access to the software are then delivered to the client. At this point Overwatch will tap into its ethos of customer success management. This means that one of our specialists will closely work with your team to ensure they are well trained and making the most possible use of the acquired data.

# TOOLS



## WHAT'S IN OUR ARSENAL?

Each project is unique. Before any proposal leaves our office, we have to go through an extensive list of variables. We will then match our clients with the right combination of tools for the job. In this fast-changing field of drone technology, equipment and software evolve continuously. At Overwatch we strive to provide our clients with access to the best technologies on the planet as soon as they are made available to us.



## GPS TECHNOLOGY

- To ensure the accuracy of our outputs, Overwatch integrates several tools and procedures into our workflow.
- With the use of a base station-rover combo, we set ground control points and check points. These are markers placed on the ground that are clearly visible from our drone images. Ground control points are integrated into the processing of the outputs to improve accuracy. Check points are used to independently validate the accuracy of the outputs.
- Our drones also have Real Time Kinematic (RTK), and Post Processing Kinematic (PPK) capabilities. RTK is a GPS correction technology technique that provides real-time corrections to location data when the survey drone is capturing photos of a site. PPK is another GPS correction technology technique that works to correct location data, except this is done after the drone data has been captured and uploaded. Using GPS correctional technology can improve data accuracy by 75%. Additionally, data acquisition can be performed much faster because of this technology.



## DRONES

- Drones are mainly classified into either being Multi-rotors or Fixed-wing. Multi-rotor drones function like a helicopter with vertical take-off and landing capabilities allowing for more maneuverability in tight spaces. They are optimal for use in relatively small to medium areas. They are also very useful for creating 3D models of structures due to their ability to take oblique images. Fixed wing drones are designed more like traditional airplanes. We use these drones to cover large areas. Depending on the accuracy, we can cover up to 20 km<sup>2</sup> per day.
- All our drones are equipped with cutting edge sensors including: 40 MP RGB cameras, FLIR thermal cameras and air quality sensors.
- Different camera lenses are used for different applications, for example, when the requirement is to create 3D models of structures, a fish-eye lens is recommended
- Custom payloads available upon request.



## SOFTWARE

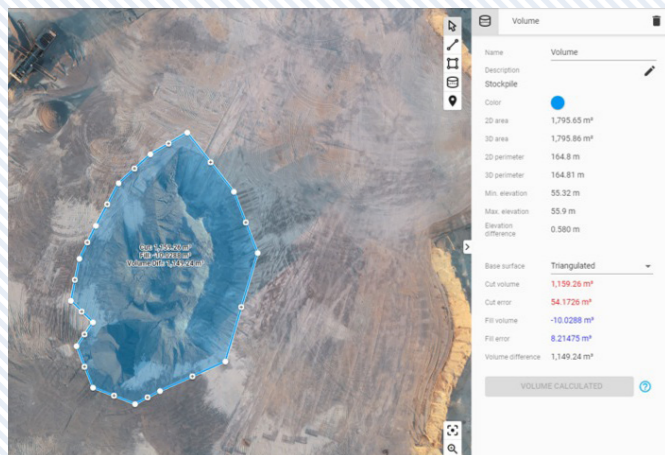
- At Overwatch, we are well-versed in lots of different software programs for the drone services industry. Each application has different requirements, for example: clients interested in earthwork analysis would be using a different software than clients interested in progress monitoring.
- Our solutions can be offline or cloud-based in case you want to access your data from any computer on the planet.
- For our special projects, we are also capable of developing specialized software that can even leverage artificial intelligence and machine learning.
- Our outputs can easily be imported into your existing software such as Autodesk programs and ArcGIS. The following extensions can be exported from our software: (.kml, .tiff, .las, .laz, .ply, .ascii, .obj, .dxf, .shp, .png)

# USE CASES



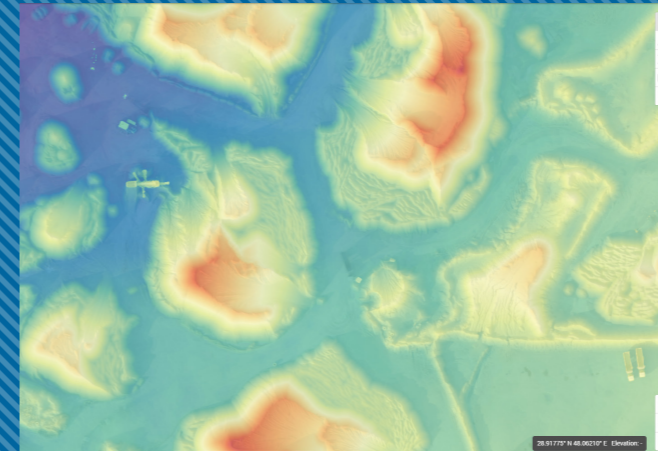
## 01 SURVEYING

Given that we can achieve a Horizontal accuracy of 2 cm and Vertical accuracy of 5 cm, we would be able to replace most conventional surveying applications. On average, our work is 10X times faster than conventional surveying methods. We also provide an exponentially more information dense data-set that will give you a better reflection of what is happening on the ground. The strength of this technology allows us to be a very cost-effective and efficient solution that will be the next generation in surveying technology. Our surveying software programs allow our clients to extract essential information such as: GPS coordinates, distances, areas and volumes within seconds.



## 02 STOCKPILE ANALYSIS

In the field of stockpile analysis, drones have become a game changer. Drone mapping can save 96% on data collection time on a typical stockpile analysis project while also being much safer. This allows us to be extremely cost-effective when compared to alternative methods. Accuracy is a metric where this technology excels. Traditional methods take limited number of points and interpolate between them to calculate the volume of stockpiles, their methods are inaccurate and can't describe the irregularity of stockpiles. With drones, the model has millions of points of each stockpile. Overwatch has performed these types of projects for some of the largest contractors in Kuwait. These experiences will ensure that best practices are followed, and the best possible accuracy is achieved for your project.

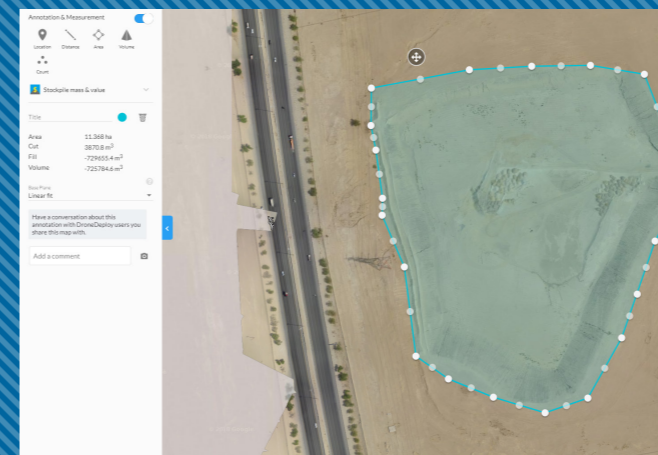
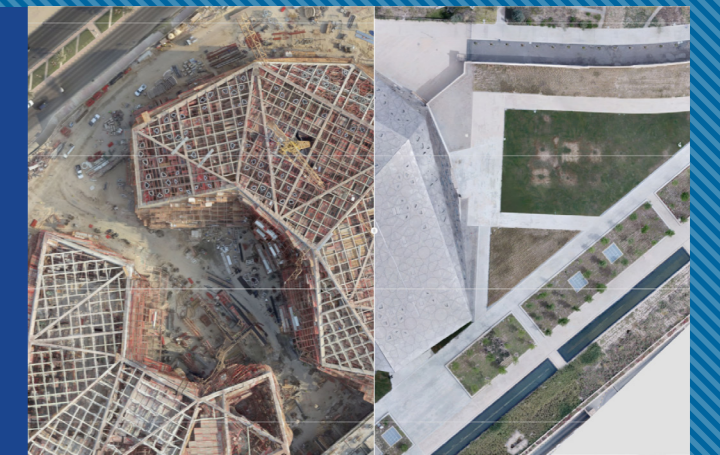


## 03 EARTHWORK

Drone technology will be seen as the biggest innovation for earthwork projects in the last 50 years. The amount of information that can be acquired will be hard to believe for most contractors. Imagine having a 3D-model of the ground surface with centimeter accuracy, while being able to compare it to last month's survey or a 3D design model. This could be visualized as either a false color map or an elevation profile. Accurate GPS coordinates for any point on the surface can be extracted by a click of a button.

## 04 CONSTRUCTION MANAGEMENT

How many times have you sat through site meetings where different parties argue over things that would be easily solved if they had access to up-to-date and relevant information? Whether you are a government agency, contractor or a project consultant, there will definitely be a useful application of this technology for you. Our software will allow you to compare past and current surveys, make annotations on different parts of the site and share them between any relevant member.



## 05 LANDFILL MANAGEMENT

Volumetric analysis can be very useful for landfill management. Landfills operate in a finite area and they must utilize it as efficient as possible. A landfill is not the ideal environment for a surveying team to walk around in. A thick stench, and the risk of toxic materials or a land slide make using a remotely-operated drone potentially life-saving. In one project, Overwatch performed a survey of an asbestos landfill for an environmental agency. Overwatch flew from a safe distance avoiding harm from the dangerous material.

## 06 ROAD MAPPING

The key to efficiently design any road is the cut/fill analysis. The models generated by drone mapping allow you to achieve unprecedented accuracy when deciding on a design level against an elevation profile. Clicking on any 2 points of the provided 3D model will generate a centimeter accurate profile within seconds. After earthwork starts, drone flights can be done weekly or monthly to validate your work in order to quickly correct mistakes before they become costly, or efficiently planning your site work.



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