

# BEIT RAZAN

Discover Excellence



WWW.BEITRAZAN.COM

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# ABOUT US

At Beit Razan, we excel in providing top-tier consulting services through innovative technology, a professional and sophisticated approach to surpass our clients' expectations, providing innovative and sustainable solutions for urban infrastructure with a focus on safety, cost effectiveness, and timely delivery

# SERVICES WE PROVIDE

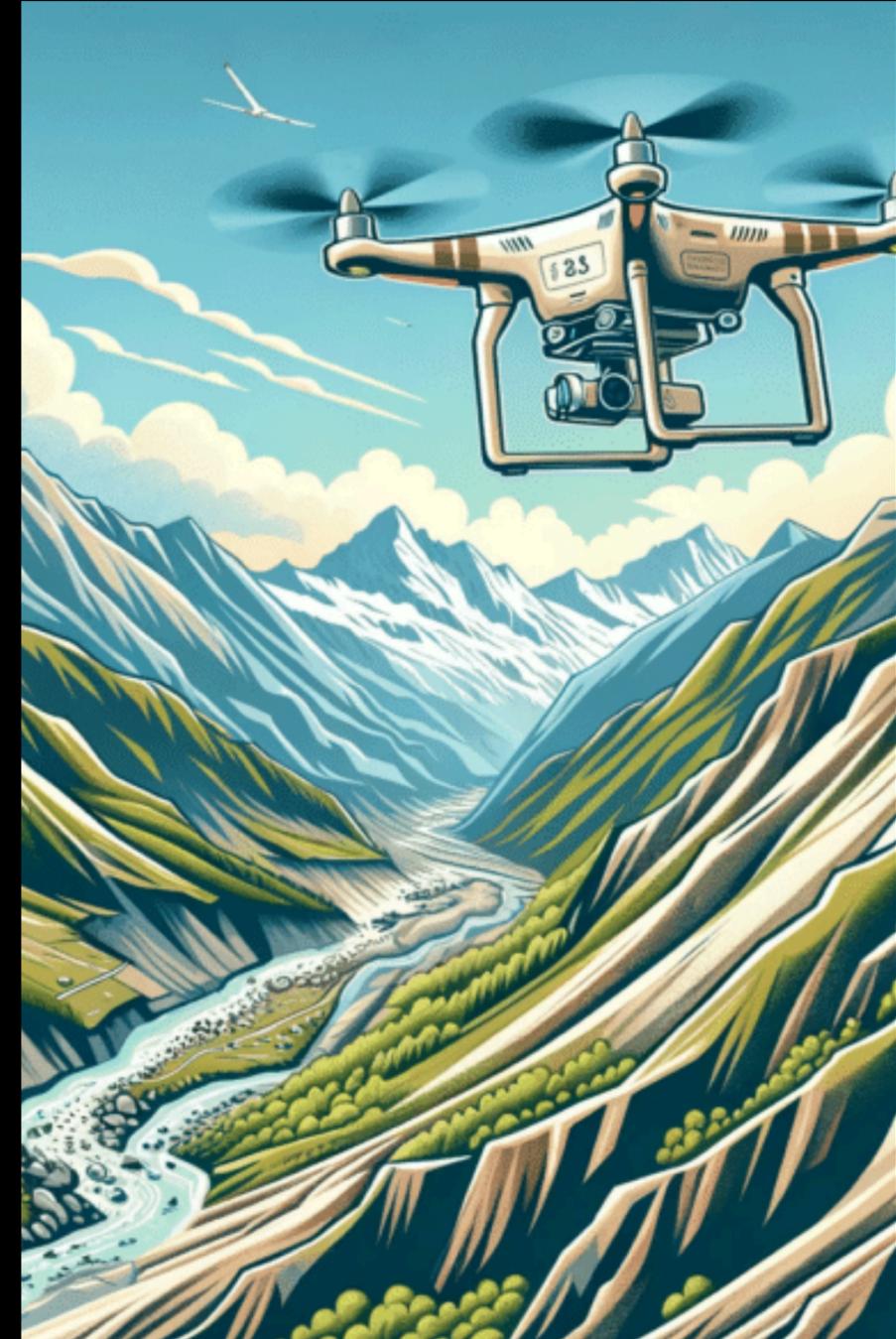
Drone-based survey and mapping, also known as unmanned aerial vehicle (UAV) surveying involves the use of drones equipped with cameras, sensors, and GPS technology to collect :

1. aerial imagery
2. geospatial data
3. terrain information for various applications.

Drone based mapping is: cost-effective, efficient and versatile solution for collecting

1. geospatial mapping
2. conducting surveys
3. monitoring various environments and assets.

The technology continues to evolve, offering new opportunities for applications across industries and disciplines.



# OUR TEAM



Dr Muhammad Fahad  
PhD Structural Engineering  
State University of New  
York



Dr Muhammad Rizwan  
PhD Structural and  
Earthquake Engineering



Dr Adeel Akhtar  
PhD Structural and  
Earthquake Engineering



Engineer Waseem



Engineer Ehsaan

# OUR VISION



“To position Beit Razan as a global leader in engineering, providing innovative and sustainable solutions for urban infrastructure with a focus on safety, cost effectiveness, and timely delivery”

# ABOUT DRONE TECHNOLOGY



Matrix 300 RTK



Mavic 3



Mavic Phantom 4Pro

Drone technology is revolutionizing land surveying by providing high-resolution aerial images and topographic data with great speed and accuracy. Equipped with advanced sensors like LiDAR and GPS, drones can efficiently capture precise measurements in difficult or large terrain. This reduces manual labor, minimizes costs, and enhances safety while delivering detailed 3D models and geospatial data in all terrains and weathers.

Beit e razan boasts of the top of the line drones for all sorts of uses



Why choose Beit Razan?

1. Team of expert drone pilots
2. 10x Faster Data acquisition
3. 5x faster delivery
4. 99% data accuracy

Mining

Railways

Highways

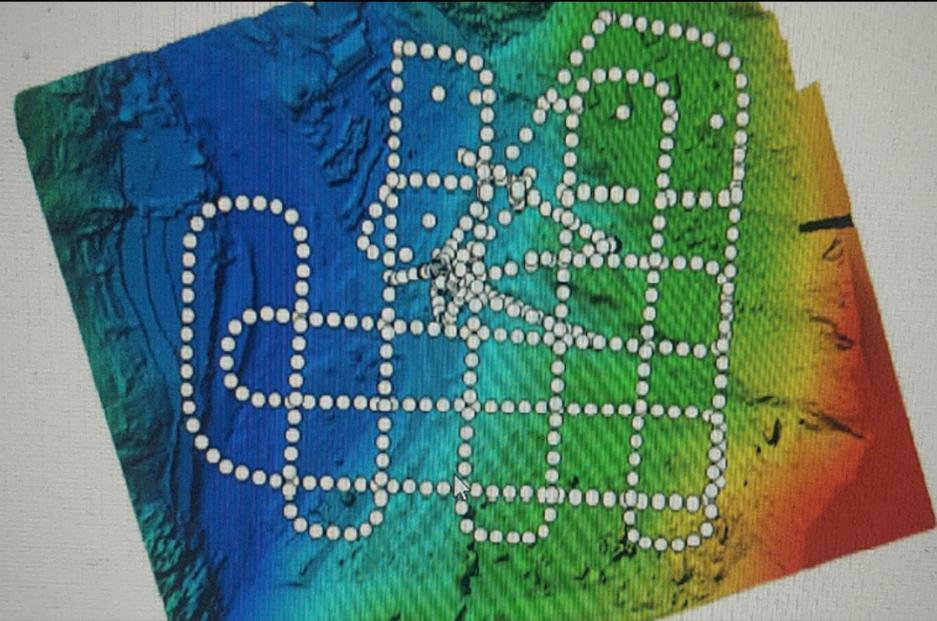
# INDUSTRIAL APPLICATIONS OF DRONE TECHNOLOGY

Agriculture

Infrastructure

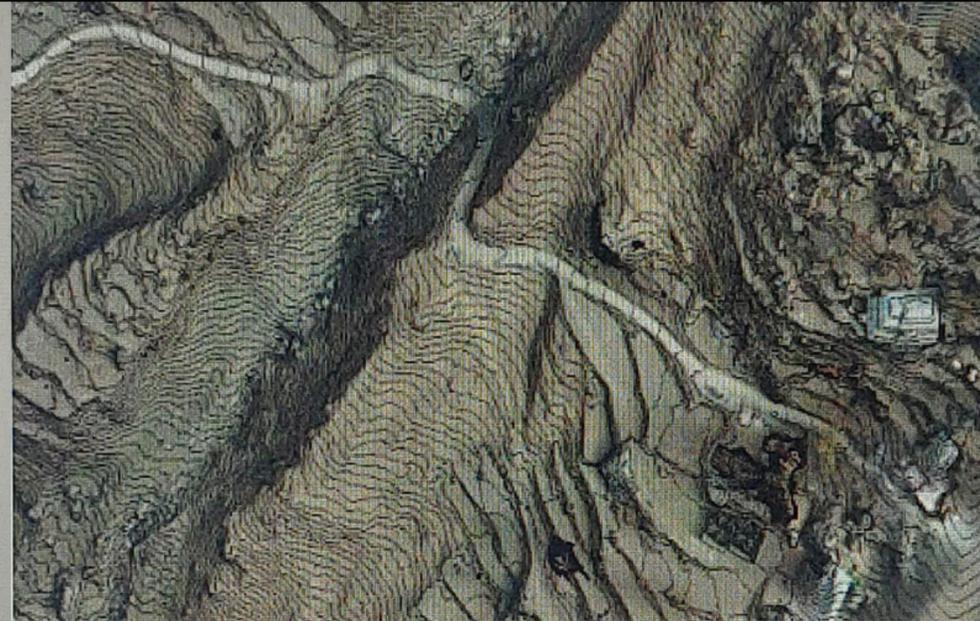
Renewable  
Energy

# Services we Provide



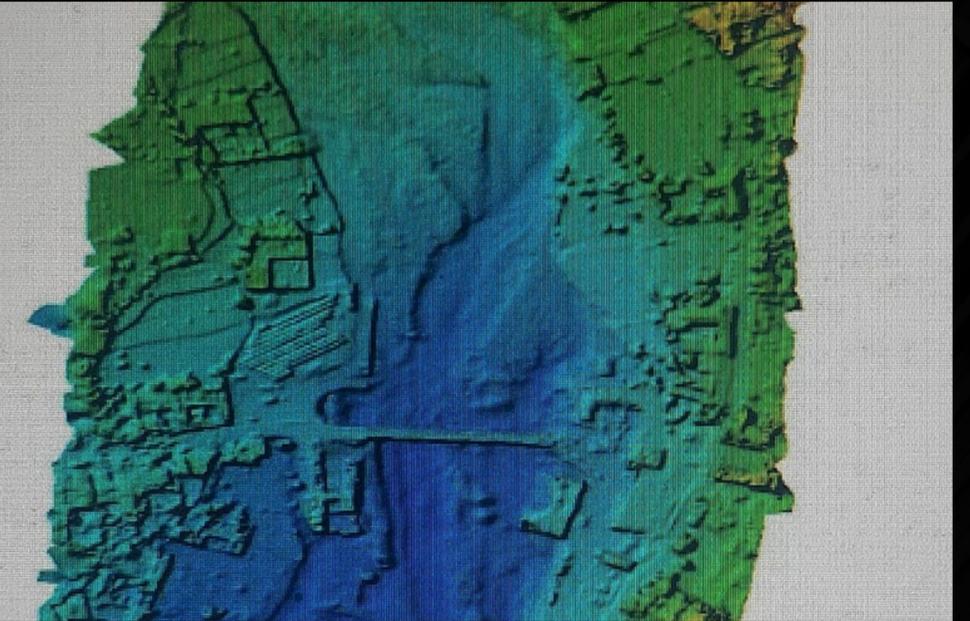
## Digital Terrain Modelling

After filtering objects such as buildings, the drone images can be used to create DTMs with each pixel containing 2.5D information



## Contour Maps

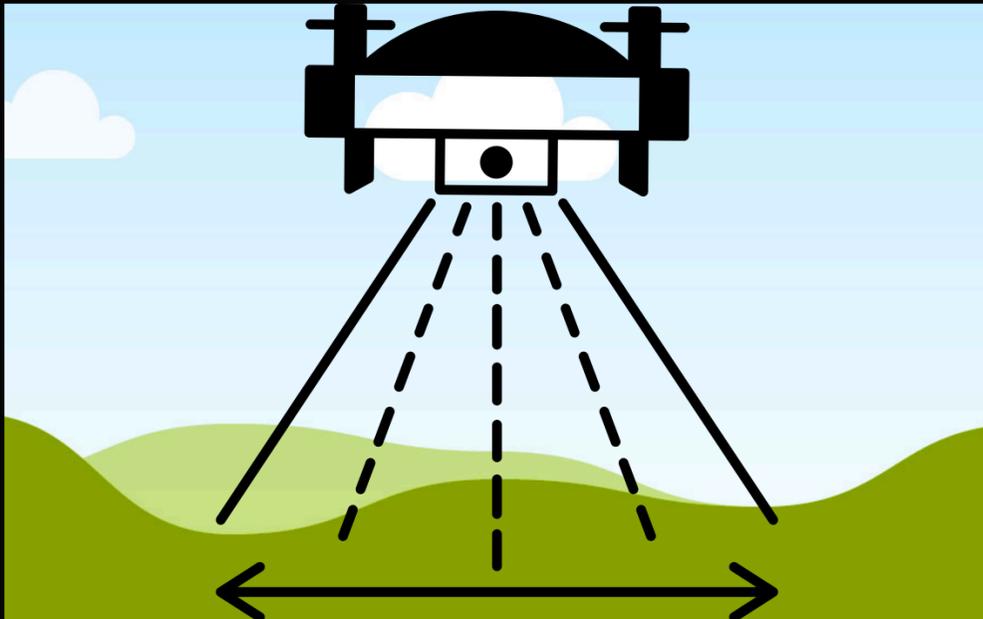
Depending on the project requirements, either the DTM or DSM model, with custom contour intervals, can be used to create a contour lines map, giving you a better understanding of the surface of the area shot by the drone.



## Digital Surface Models

DSM captures both the environment's natural and artificial features. It includes the tops of buildings, trees, powerlines, and any other objects. Commonly, this is seen as a canopy model and only 'see's' ground where there is nothing else above it

# Services we Provide



## LIDAR

LiDAR technology, uses light to map virtually any kind of physical environment. Extremely accurate images can be rendered due to LiDAR technology's use of very precise laser beams.



## Orthomosaic maps

Drone images are corrected for distortion and stitched together during post-processing to create a highly accurate Orthomosaic map. Each pixel contains 2D geo-information and can directly procure accurate measurements, such as horizontal distances and surfaces



## 3d point cloud

A densified point cloud can be generated from drone images. Each point contains geospatial (X, Y, Z) and color information. It provides a very accurate model for distance (slant and horizontal), area and volume measurements.

# Geographic Information System

Geographic Information Systems (GIS) play a critical role in various sectors today by enabling

- collection
- analysis, and
- visualization of spatial data.

In a world increasingly driven by data, GIS is essential for understanding

- patterns
- relationships, and
- trends across different industries.



# Applications of GIS in Construction



## Site Selection and Analysis

GIS allows for the evaluation of terrain through digital elevation models, their proximity to services and utilities, and environmental sensitivity analysis, such as risk of floods and rainfall. A combination of these ensures optimum site selection for construction.



## Infrastructure Management

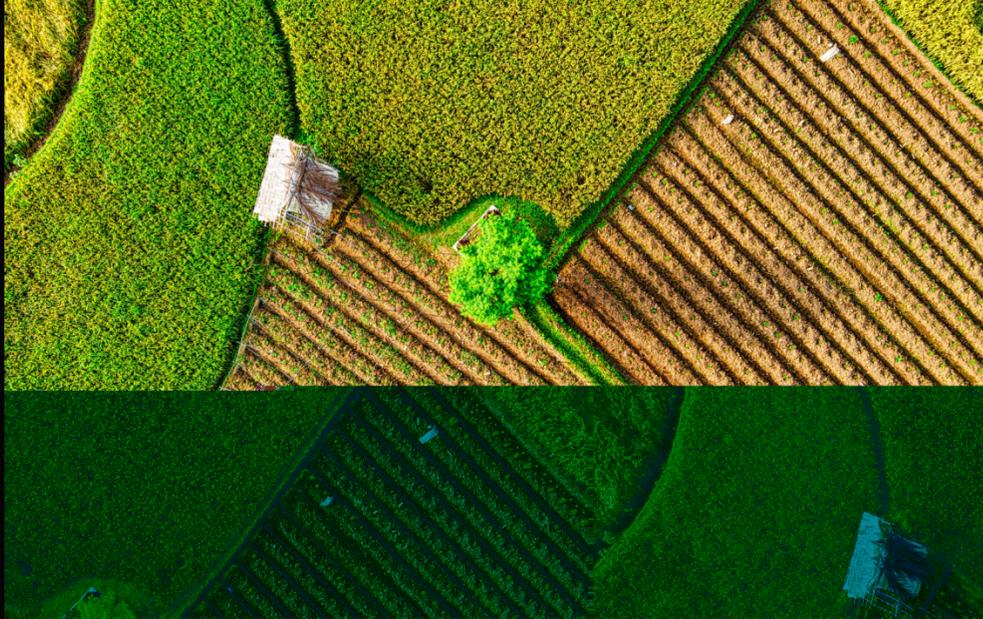
GIS helps map location of utilities, allowing for better urban planning, and conflict resolution between different elements, such as sewerage and electrical lines.



## 3d modelling and visualization

GIS creates 3d models of buildings, for planning and visualization and simulations, allocating resources on the site, and identification of risks that might hinder project progress

# Applications of GIS in Environmental Management



## Environmental Impact Assessment

GIS allows for accurate data of vegetation, water quality and wildlife, predicts impact of infrastructure projects on the local environment, and helps mitigate their effects.



## Natural Resource Management

GIS helps with monitoring forest resources, water bodies, groundwater levels and wildlife habitat mapping through satellite imagery and spatial analysis



## Disaster Management

GIS helps identify areas at risk of floods, landslides and earthquakes, analyzes risk for population and infrastructure, and helps plan mitigating efforts such as evacuation routes, shelters and coordinated disaster response efforts.

# Applications of GIS in Land Management



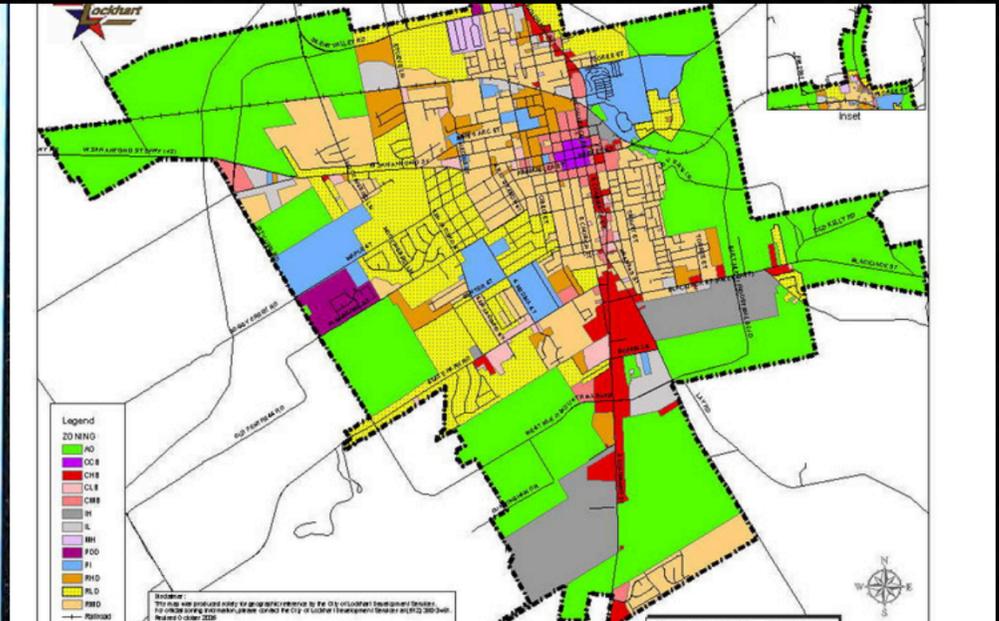
## Land Use Planning

GIS supports design of urban spaces by analyzing land use, determines best use of agricultural areas based on soil type, and identifies environmentally sensitive areas for protective measures.



## Cadastral Mapping

GIS is essential for creating maps, showing property boundaries, manages land parcels, registrations and taxes, and resolves land disputes by providing accurate spatial data



## Zoning Regulations

GIS is used to monitor and enforce zoning regulations according to local laws, controls proposed development, and engages public in zoning by providing accurate maps through GIS platforms.

# Our Projects



## GIS Based Projects

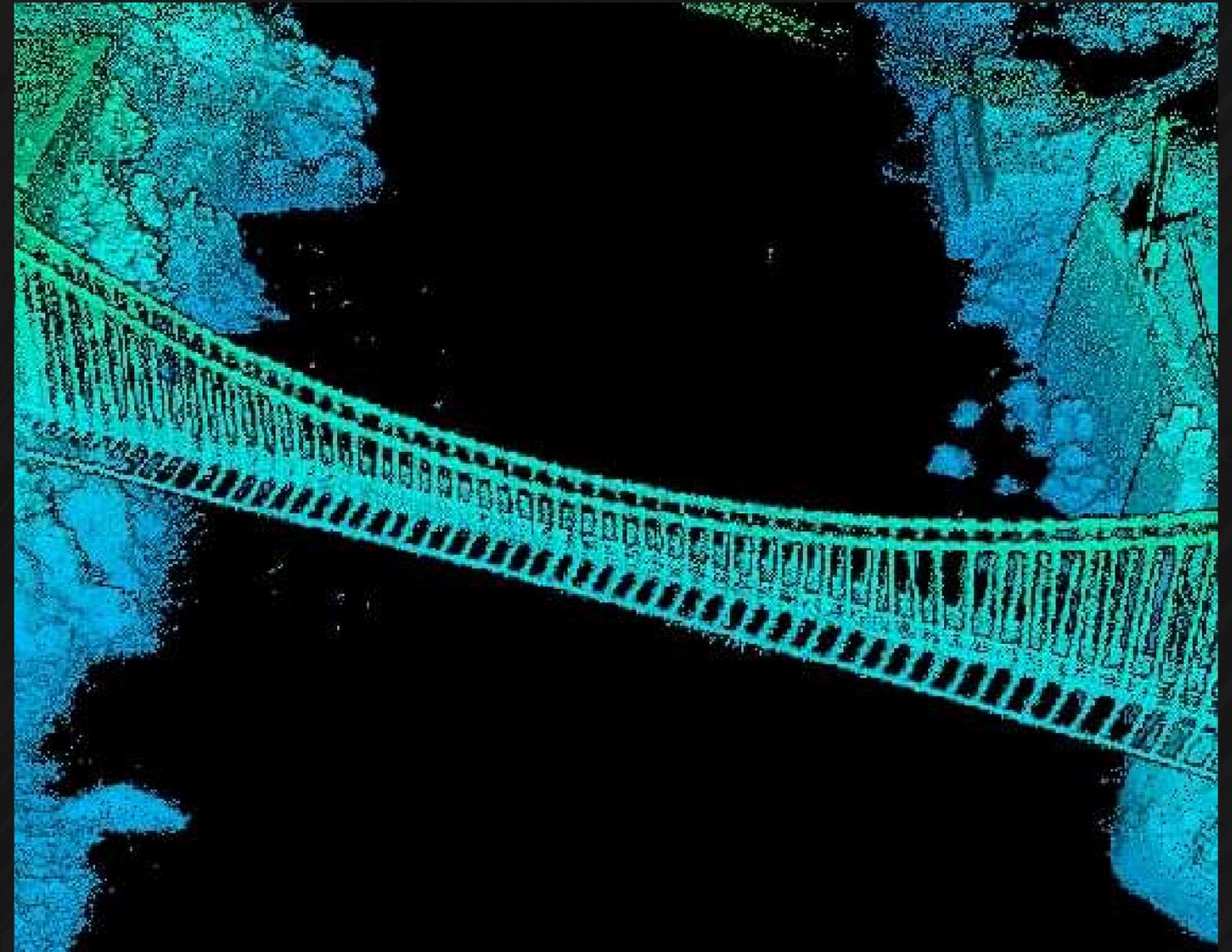
- Digitization of Planned Urban Areas of major cities in Pakistan
- Mapping Temporal Topography of 8000 acres in DHA Quetta using Mavic 2 Pro, M30 and M300
- Multi Criteria Approach for site selection in Quetta
- Spatial Analysis of forest cover distribution in North and South Waziristan
- Utilizing Hec RAS Model for flood vulnerability assessment in Charsadda District



# TOPOGRAPHIC SURVEY AND 3D MODELLING OF BUDDHIST ARCHEOLOGICAL SITE AT TAKHTBAI



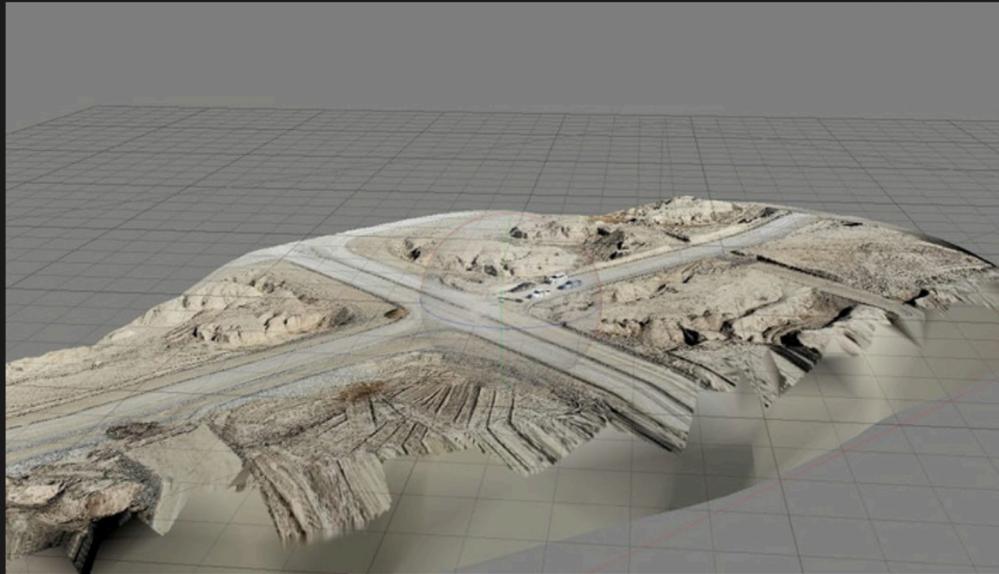
# PHOTOGRAMMETRIC ANALYSIS TO CREATE 3D MODEL OF BRIDGE IN SWAT UNDER UNOPS



# TOPOGRAPHIC SURVEY FOR 225KM INDUS HIGHWAY



# DRONE SURVEY FOR DEFENSE HOUSING AUTHORITY QUETTA



# OUR CONTACT

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