EVEREST
TECHNICAL SERVICES

# The Role of Laser Scanning in Modern Digital Construction

CitA BIM Gathering Nov 6th 2025

# Introduction

**Everest Technical Services** was established in **2018** by highly talented and experienced **AEC professionals** to harness **technology, design**, and **construction expertise** to deliver prime projects, on optimised budgets and accelerated timelines.

As a technology-driven company, we combine **construction data** and extensive building design knowledge to enhance **virtual design** and construction, offering precise and actionable insights. Our **BIM solutions** integrate cutting-edge technologies and streamline workflows, from concept design to Digital Twin deployment.

Based in **Meath, Ireland**, and with subsidiaries in the **UK, Israel, India and UAE**, our skilled AEC professionals serve diverse sectors. We've expanded rapidly, collaborating with prominent names in the design & construction industry across **EMEA & USA**.

Everest is your **ideal partner** for achieving business objectives in the evolving design and construction landscape, delivering unmatched **quality** and **client satisfaction**.

## Our Global Project Portfolio

### EVEREST IN NUMBERS

| 300+ | 5 | 2018 | 10 |
|------|---|------|-----|
| Staff | Locations | Founded | Services |

# Services

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Architecture & Interiors

BIM Management

Structures

Mechanical

Electrical

Industrial Piping

Software Development

Fire Protection

Energy Assessments & Sustainability
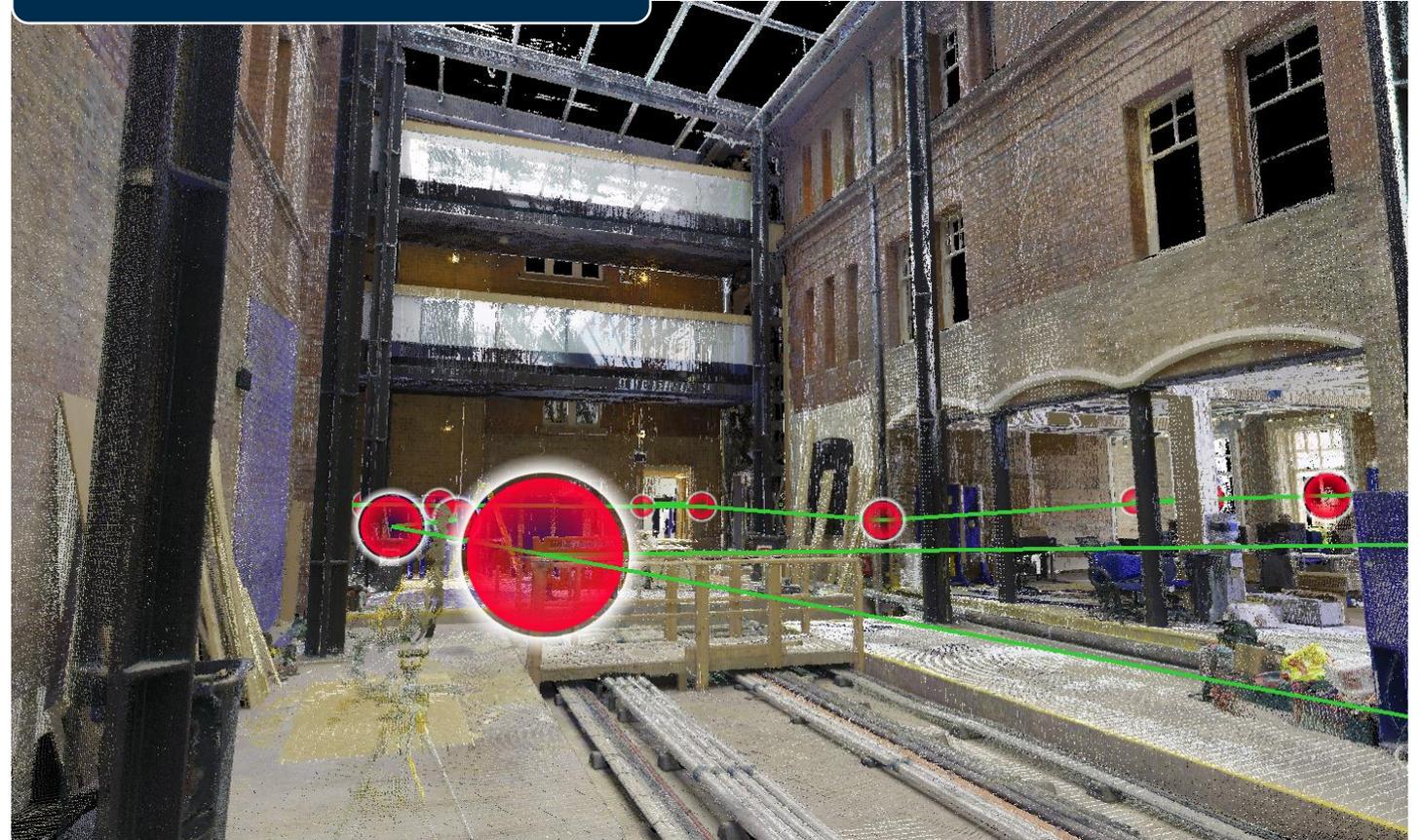
Point Cloud Scanning & Conversion

# Hardware

# Software

**Leica RTC 360**

360° x 270° full dome coverage

130-meter range

2 million points per second

3 resolution settings

3 cameras collecting panoramic images

**Point Cloud in Register 360+**

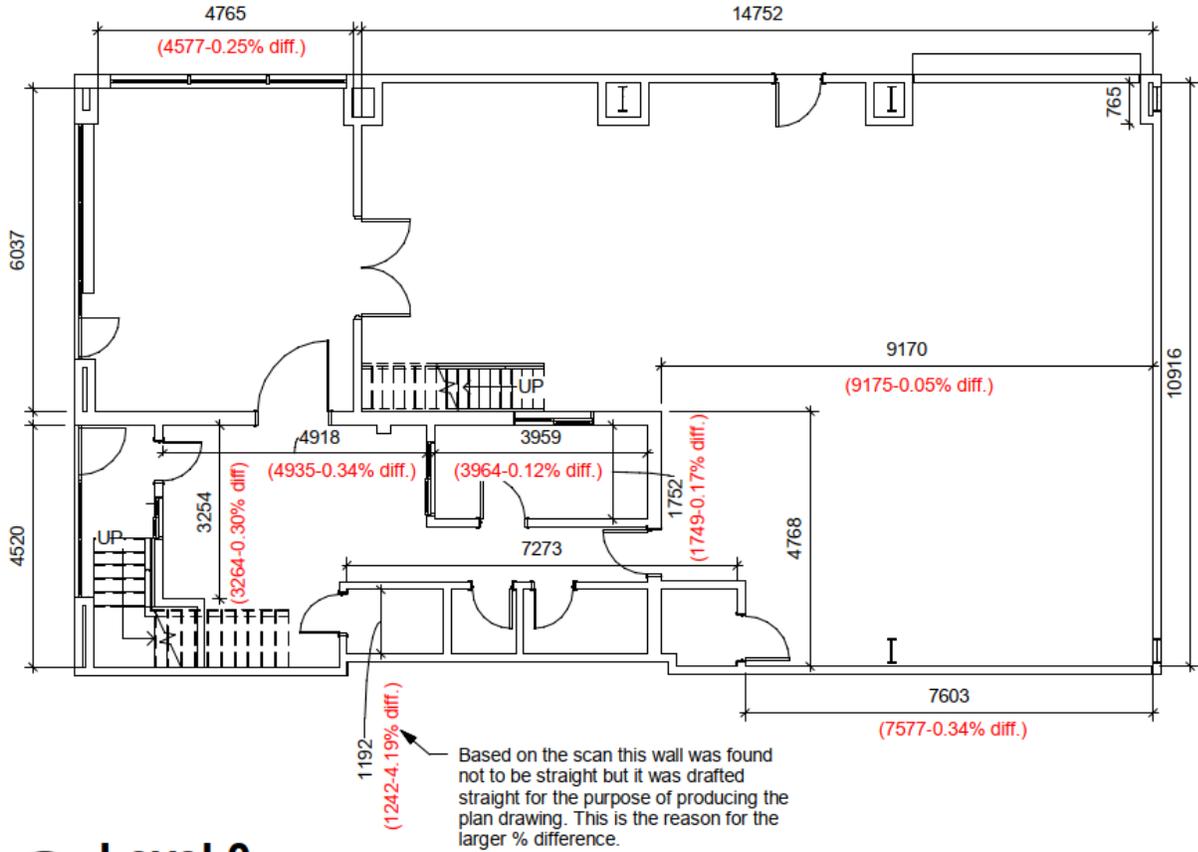# Equipment Comparison



| | FARO Orbis | NavVis VLX 3 | Leica BLK360 | Matterport Pro3 | GeoSlam ZEB Horizon |
|---|---|---|---|---|---|
| Accuracy: | +/- 5mm @ 10m | +/- 5mm @ 10m | +/- 6mm @ 10m | +/- 20mm @ 10m | +/- 1-30mm @ 10m |
| Uses: | Construction Software | Construction Software | Virtual tours, Software Aid | Virtual tours for Real-Estate, Marketing | Field scans, Façade scans (high rise) |

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# Equipment Comparison



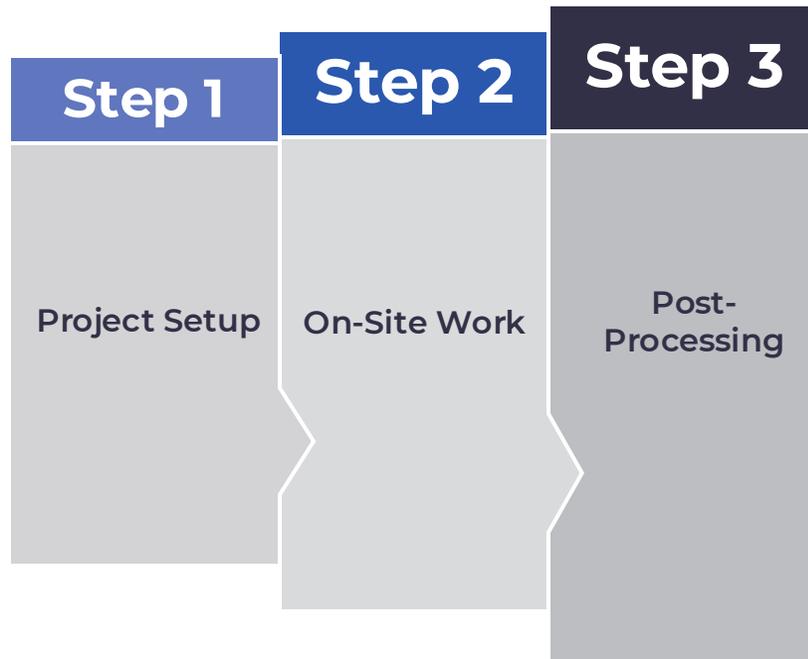Level 0
1 : 100

Scan Dimensions VS Manual Measurements

Things to consider:

- Accuracy of tools

- Modelling software limitations

- Confidence in best methods used

Measurement Device:



| Accuracy* | Angular accuracy 18"<br>Range accuracy 1.0 mm + 10 ppm<br>3D point accuracy<br>1.9 mm @ 10 m<br>2.9 mm @ 20 m<br>5.3 mm @ 40 m |
|---|---|
| Range noise* ** | 0.4 mm @ 10 m, 0.5 mm @ 20 m |

# The Scanning Process

| Step 1 | Step 2 | Step 3 |
|---|---|---|
| Project Setup | On-Site Work | Post-Processing |

1. **Project Setup:**

- review inputs

- establish specific requirements

- determine settings and coverage

- choose appropriate equipment

**Area** ▸ **Coverage** ▸ **Timeline** ▸ **Cost**

# The Scanning Process

## 2. Field Work

**Different types of spaces:**

1) Open-plan
2) Ceiling voids
3) Plantrooms

**Challenges:**

Glass surfaces, vibrations,
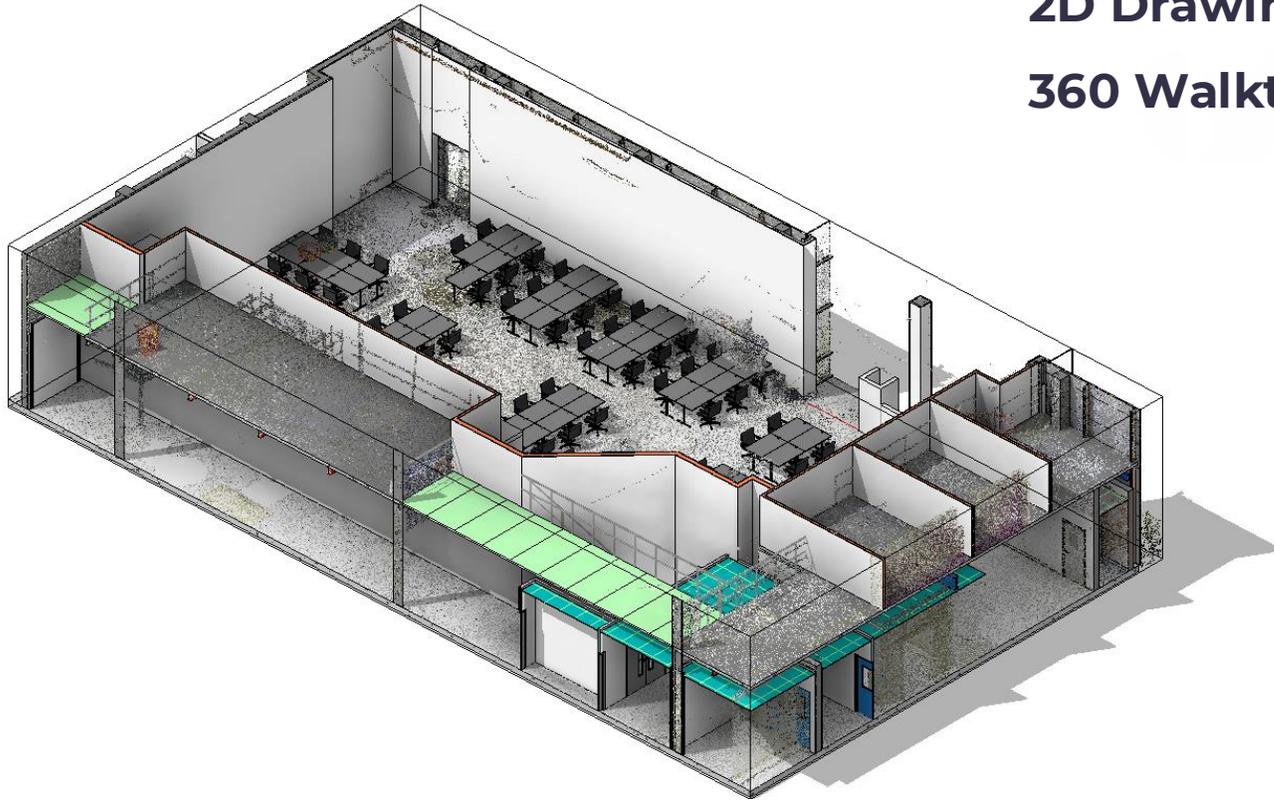
congested areas, safety regulations, etc.

# The Scanning Process

## 3. Data Processing

| Raw Data | Import | Register | Clean | Export |
|---|---|---|---|---|
| **1** Raw data is retrieved from the scanner's USB drive | **2** Raw files are imported into Cyclone Register | **3** Scans are "stitched" together and checked for inaccuracies | **4** Redundant or misplaced points (caused by surface reflectivity) are removed | **5** Point cloud is exported to formats such as RCP, LGS, E57, LAS, PTX |
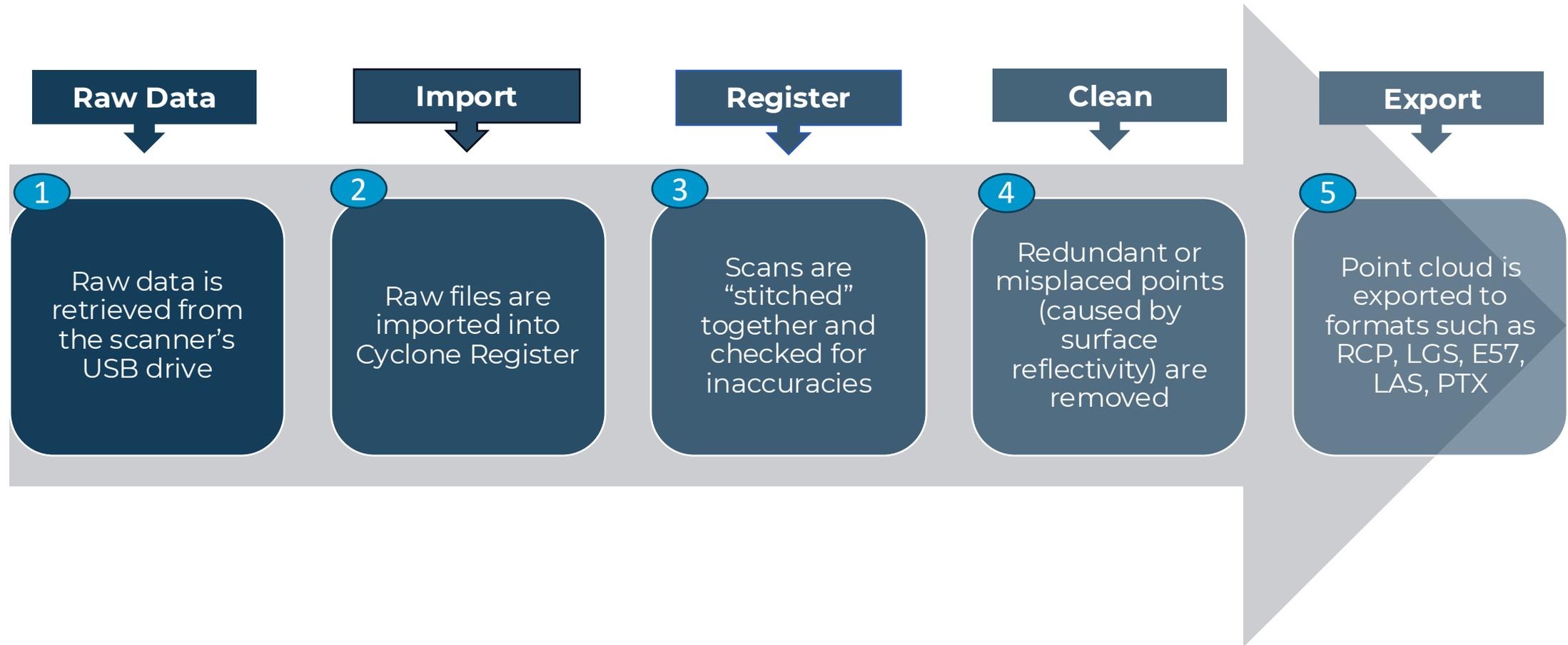
# Point Cloud Conversion to Outputs:

3D Models

2D Drawings

360 Walkthrough

**Scan**

**Render**

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# Validation & Analysis
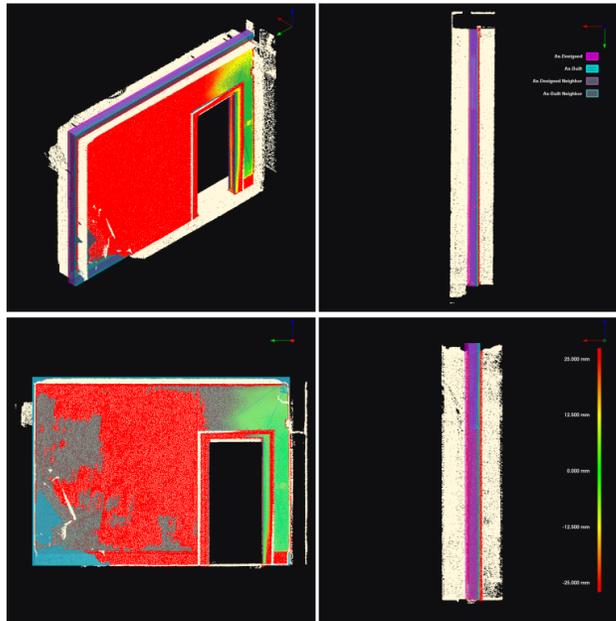
- Quality Control
  - Volume Calculations
    - Mesh Creation
      - Floor Flatness
        - DTMs
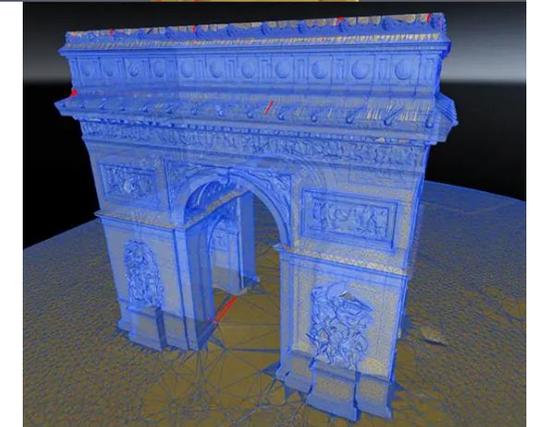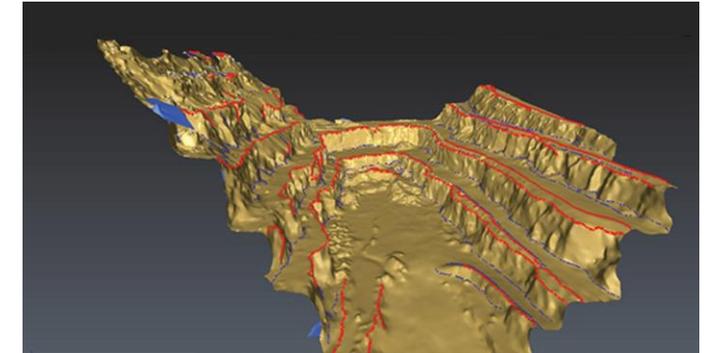
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### Office Locations : Everest Technical Services

**India | UK | Israel | UAE**

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