

# Wael Al Rayes

## Chief Surveyor | Survey Lead | Senior Land Surveyor

**BIM Infrastructure Specialist | Autodesk Certified Professional Civil 3D**

Mega Constructions | Roads | Infrastructure

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Riyadh, Saudi Arabia

### PROFESSIONAL SUMMARY

Chief Surveyor and BIM Infrastructure Specialist with 27+ years of experience delivering high-precision surveying, geospatial management, and digital construction workflows for mega-scale infrastructure and high-rise projects exceeding SAR 11B across Saudi Arabia and Egypt. Expert in geodetic control, GNSS/RTK, robotic total stations, laser scanning, and survey-to-BIM integration using Civil 3D, Revit, and Autodesk Construction Cloud (ACC). Proven leadership in managing multidisciplinary survey teams, implementing ISO-aligned QA/QC systems, and achieving sub-centimeter accuracy ( $\leq 10$  mm) while reducing rework and enhancing project delivery efficiency. Strong capability in digital construction, geospatial analysis, and survey governance supporting complex engineering environments.

### CORE COMPETENCIES

- Survey Operations Leadership & Team Management
- Geodetic Control Networks & Coordinate Systems
- GNSS / RTK / Total Station High-Precision Surveying
- Construction Layout, Setting-Out & As-Built Verification
- Deformation Monitoring & Structural Movement Analysis ( $\leq 3$  mm)
- Survey Data Processing, Geospatial Analysis & Data Validation
- BIM Integration, BIM Coordination & Digital Engineering
- Civil 3D Corridor, Grading & Infrastructure Modeling
- QA/QC Systems, Survey Governance & Accuracy Assurance
- ISO 19650 BIM Standards & CDE Management
- Utility Mapping & Infrastructure / Roads Surveying
- Stakeholder Coordination, Technical Reporting & Execution Planning

### PROFESSIONAL EXPERIENCE

#### Chief Surveyor

**ABV Rock Group Co. Ltd | (Feb 2016 to Present)**

**Project Riyadh Security Forces Medical City Development (MOI SFMC) | Riyadh, Saudi Arabia**

**Client Saudi Ministry of Interior – MOI | Consultant Manens Tifs KSA | Project Value SAR 11B+**

- Directed full survey strategy and execution for mega-scale medical city development, ensuring alignment with project objectives, QA/QC standards, and delivery milestones.
- Led and developed a multidisciplinary team of 15+ survey professionals, improving field productivity and operational efficiency across all project zones.
- Implemented survey governance and ISO-aligned QA/QC systems, achieving 99.8% spatial accuracy for 235+ structures using GNSS/RTK and BIM-integrated workflows.
- Delivered survey-to-BIM integration using Civil 3D, Revit, Navisworks, and ACC, enhancing coordination between engineering, construction, and digital delivery teams.

**Project King Saud University (KSU) Hilton 5 Star Hotel Residential Suites & University Office Tower | Riyadh, Saudi Arabia**

**Client King Saud University | Consultant Euro Consult for Engineering | Project Value SAR 3.8B+**

- Led geospatial and construction surveying operations for Hilton 5-Star Hotel (64,232 m<sup>2</sup>) and University Office Tower (22,381 m<sup>2</sup>), ensuring high-precision layout, vertical control, and structural alignment.
- Executed advanced QA/QC procedures achieving **99.9% as-built accuracy** for structural elements using Total Station, GNSS, and laser-based verification workflows.
- Delivered integrated survey datasets supporting BIM workflows across buildings, roads, and infrastructure networks using Civil 3D, Revit, and Navisworks.
- Coordinated with engineering, architectural, and BIM teams to ensure seamless survey-to-design alignment, reducing rework and improving construction sequencing.

#### Senior Land Surveyor

**AL Rajhi Projects Company LLC ARP (AL Rajhi Holding) | (Mar 2010 to Feb 2016)**

**Project Digital City Information Technology & Communication Complex (ITCC) | Riyadh, Saudi Arabia**

**Client Public Pension Agency | Consultant Dar Al Riyadh | Project Value SAR 2.75B+**

- Managed surveying for a 5-building complex (64,000 m<sup>2</sup>) including four 25-floor towers, ensuring high-precision layout and vertical control.
- Performed deformation monitoring ( $\leq 3$  mm) and laser scanning workflows, delivering BIM-ready datasets with 99.7% as-built accuracy.
- Executed topographic, utilities, and site development surveys in full compliance with QA/QC and project specifications.

**Project Tamkeen Tower – (ARIJ Tower) | Riyadh, Saudi Arabia**

**Client AL-Rajhi Holding | Consultant Khatib & Alami | Project Value SAR 1.80B+**

- Executed high-precision vertical control and structural alignment for a 58-story tower, ensuring  $\leq 5$  mm accuracy across all stages.
- Performed deformation monitoring, laser scanning, and core-wall control surveys supporting safe high-rise construction.
- Delivered BIM-ready as-built datasets using Civil 3D, enhancing coordination with engineering and construction teams.

#### Senior Survey Supervisor

**Misr Concrete Development Company (MCD) | (Nov 2007 to Feb 2010)**

**Project New City Atfih and Alqibabat Utilities | Atfih Helwan, Egypt**

**Client Ministry of Housing & Urban | Consultant Central Agency for Reconstruction | Project Value EGP 0.3B+**

- Supervised multiple survey teams across infrastructure and utility projects, ensuring accurate execution of field operations and compliance with project specifications.
- Conducted topographic, leveling, and utility surveys for large-scale developments, supporting engineering design and construction workflows.
- Ensured adherence to national QA/QC standards, improving survey accuracy and reducing field errors across project sites.

## Senior Roads Surveyor

**Project Regional Ring Road Badr – Al Fayoum (Phase II) | Helwan, Egypt**

**Client** General Authority of Roads and Bridges | **Consultant** ACE Moharram Bakhoum | **Project Value** EGP 1.20B+

- Executed high-precision topographic surveys for 23 km desert highway using Total Station and optical levels, achieving  $\pm 2$  cm accuracy.
- Performed centerline and cross-section surveys for two major bridges (80 m & 120 m) using advanced traversing methods.
- Conducted embankment monitoring with precise leveling, identifying settlements exceeding 15 mm tolerance to support corrective actions.

## Land Surveyor

**Alexandria Construction Company (TMG) | (Jun 2006 to May 2007)**

**Project San Stefano Grand Plaza | Alexandria, Egypt**

**Client** Kingdom Holding Group – TMG | **Consultant** Dar Al-Handasah | **Project Value** EGP 1.750B+

- Executed high-precision leveling, alignment, and topographic surveys for a 31-story tower achieving  $\leq 5$  mm accuracy.
- Prepared as-built documentation and supported roads, utilities, landscape, and bathymetric survey operations.
- Performed construction layout and verification surveys ensuring compliance with engineering and structural specifications.

## Land Surveyor

**NASR Co. For Building & Construction (EGYCO) | (Dec 2000 to Apr 2006)**

**Project Sharm El Sheikh International Airport | Sharm El Sheikh, Egypt**

**Client** Ministry of Civil Aviation | **Consultant** Dar Al-Handasah | **Project Value** EGP 750M+

- Executed topographic surveys for the new VIP terminal using Total Station and optical levels under senior surveyor supervision.
- Assisted in as-built verification for international terminal expansion (capacity increase: 1200 → 2000 passengers/hour).
- Performed precise leveling for airfield infrastructure (taxiways, aprons) achieving  $\pm 3$  cm accuracy.
- Supported road and utility data applications through field measurements and submitted daily survey reports to consultants.

## Project Future Residential City | Alismailia, Egypt

**Client** Ismailia Governorate | **Consultant** Central Agency for Reconstruction | **Project Value** EGP 420M+

- Conducted differential leveling for building foundations using Zeiss Ni2 optical level
- Achieved  $\pm 5$ cm vertical accuracy in road grading surveys
- Mapped utility networks under senior surveyor guidance

## Junior Surveyor | Trainee

**Egyptian Co. For Construction & Development | (Feb 2000 to Nov 2000)**

**Project Survey Maps and Traverses for Downtown of Kafr el-Sheikh | Kafr El-Sheikh, Egypt**

- Assisted senior surveyors in field data collection, differential leveling ( $\pm 1$  cm), and preparation of survey maps for urban traverses.
- Supported construction layout workflows and topographic surveys, gaining foundational experience in geodetic surveying and field procedures.
- Contributed to as-built documentation and site measurements ensuring accuracy and compliance with engineering requirements.

## KEY ACHIEVEMENTS

- Achieved 99.9% As-Built accuracy across mega-scale infrastructure and High-Rise projects, reducing rework by 30%+ through advanced QA/QC and BIM integration.
- Led and developed 15–20 multidisciplinary survey staff, boosting field productivity and ensuring full compliance with project specifications and international surveying standards.
- Enabled full Survey-to-BIM integration using Civil 3D, Revit, Navisworks, and ACC, improving coordination and accelerating digital construction delivery for projects exceeding SAR 11B.
- Executed high-precision deformation monitoring ( $\leq 3$  mm), 3D laser scanning, and geodetic control networks, ensuring structural stability and supporting critical engineering decisions.
- Enhanced operational efficiency through advanced geospatial analysis, coordinate system management, and geodetic adjustments, improving data reliability and reducing field errors across complex construction environments.

## TECHNICAL SKILLS

- **Surveying Equipment & Field Technologies**
  - GNSS / RTK Systems (Trimble, Leica, Topcon)
  - Robotic Total Stations & Digital/Optical Levels
  - 3D Laser Scanners & Point Cloud Capture
  - Deformation Monitoring Instruments ( $\leq 3$  mm)
  - Automatic Data Loggers & Field Controllers
- **Geospatial, GIS & Data Processing Tools**
  - Geodetic Network Adjustment & Coordinate Transformations
  - Geospatial Analysis & Data Validation
  - Survey Data Processing (Field-to-Finish), Validation & QA
  - Control Networks, Benchmarks & Datum Management
- **BIM, Digital Construction & CDE Platforms**
  - Autodesk Civil 3D (Corridors, Grading, Surfaces, Alignments)
  - Revit (Model Coordination & BIM Integration)
  - Navisworks (Clash Detection & 4D Coordination)
  - Autodesk Construction Cloud (ACC) – CDE, Document Control
  - ISO 19650 Workflows & Digital Delivery Standards
- **Infrastructure, Utilities & Construction Surveying**
  - Roads, Highways & Corridor Layout
  - Utilities (Water, Sewer, Electrical, Telecom)
  - Earthworks, Grading & Cut/Fill Analysis
  - Setting-out for Buildings, Towers & Mega Projects
  - Airport, Medical City & High-Rise Surveying
- **Project Execution, QA/QC & Reporting**
  - Survey Governance & Accuracy Assurance
  - QA/QC Systems Implementation (99.8–99.9% Accuracy)
  - Risk Mitigation & Survey Execution Planning
  - Technical Reporting, Documentation & Stakeholder Coordination
  - Digital Construction Workflows & Field Productivity Optimization
- **Monitoring, Scanning & As-Built Verification**
  - Structural Movement & Deformation Monitoring ( $\leq 3$  mm)
  - Scan-to-BIM Workflows & Point Cloud Registration
  - High-Precision As-Built Surveys & Verification
  - Vertical Control for High-Rise Structures

## CERTIFICATIONS & LICENSES

### • PMP Certification

Project Management Institute (In Progress) | (Expected Nov 2026)

### • CORE SOFTWARE CERTIFICATIONS

Certified Autodesk AutoCAD Civil 3D (2015, 2022, 2025) (Civil 3D Subassembly Composer, Civil 3D Dynamo, & Civil 3D Part Builder)

Certified Autodesk InfraWorks - AutoCAD Map 3D - Autodesk Inventor

Certified Autodesk AutoCAD 2D/3D (2022)

### • BIM & DIGITAL CONSTRUCTION CERTIFICATIONS

BIM Project Workflow for Roads & Infrastructure Using Autodesk AutoCAD Civil 3D | Otrujjah (09/2025)

BIM Management Diploma (ISO 19650) | NIQAT Global (In Progress – 2025) (Infrastructure) (Architecture)

Certified BIM Manager | NIQAT Global (Dec 2025)

Certified BIM Modeler | NIQAT Global (Feb 2026) (Infrastructure)

Certified BIM Documenter | NIQAT Global (Apr 2026) (Infrastructure)

BIM Coordinator | NIQAT Global (Ongoing – Expected Jun 2026) (Autodesk Navisworks, InfraWorks, Inventor, Civil 3D Subassembly Composer, & Civil 3D Dynamo)

### • TECHNICAL CERTIFICATIONS

Certified Roads Construction Diploma (2022)

### • ADDITIONAL TECHNICAL & SUPPORTING CERTIFICATIONS

Certified Interior Design Diploma (2022)

Certified Autodesk 3ds Max (2022)

Certified Adobe Photoshop for Technical Documentation (2022)

## EDUCATION

• **M.Sc. South Sinai Geomorphological Study** | (Ain Shams University | Sep 2025 to Present)

• **B.A. In (Survey, GIS and Cartography)** | Faculty of Arts Cairo and AL Minya University (1995-1999)

• **Department** (Geography) | **Graduated** (Good)

## ACADEMIC CREDENTIALS

• Educational Survey Sciences Diploma | Cairo University | 2006

• Survey & Cartography Alumni Diploma | Association of Egyptian Universities | 2009

## PROFESSIONAL AFFILIATIONS

• Saudi Council of Engineers (SCE) | Licensed Survey Specialist | ID 396493

• Egyptian Surveying Engineers Association | Professional Member | ID 3802

• African Institute for Geographical & Survey Studies | Cairo University | ID 018277

## KEY SURVEYING TECHNOLOGIES

• GNSS Geodetic Control & RTK Positioning Systems

• Robotic Total Stations (Leica / Sokkia)

• Digital & Optical Precision Levels

• 3D Laser Scanning & Structural Monitoring

• Geospatial Data Processing & Survey Data Integration

• BIM-Based Survey Coordination & Model Integration

• Civil 3D Corridor Modeling & Infrastructure Survey Workflows

• High-Precision Construction Layout & Deformation Monitoring

• Geodetic Network Adjustment & Coordinate Transformations

• Point Cloud Registration & Scan-to-BIM Processing

• Vertical Control Systems for High-Rise Structures

• Survey QA/QC Technologies & Accuracy Assurance Tools

## LANGUAGE SKILLS

• **Arabic – Native**

• **English – Professional Working Proficiency**

• **French – Basic**

## ADDITIONAL INFORMATION

• **Transferable Iqama (Available)**

• **Valid Saudi Driving License**