

Traffic & Transport Engineering



**DELIVERING INTELLIGENT
TRANSPORTATION
SOLUTIONS FOR A
SMARTER FUTURE ●**

Prepared by **Saswata Chakrabarti**
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Who We Are



International engineering expertise paired with local GCC market knowledge.



Practical, evidence-based solutions that clients & authorities trust.

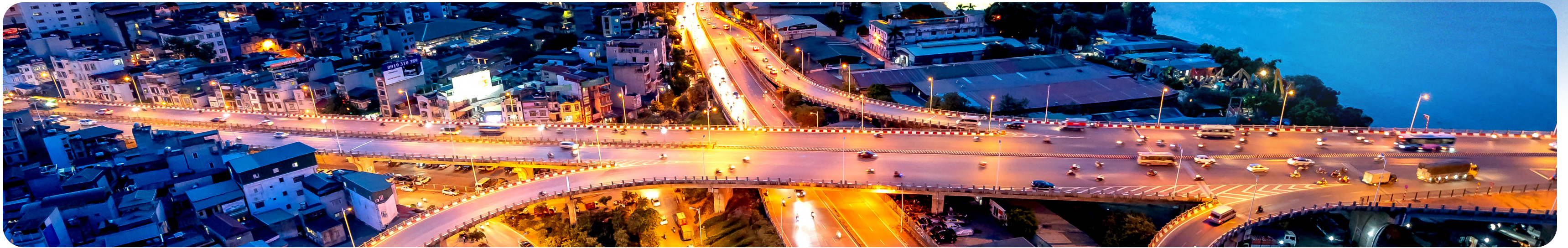
Dubai-based traffic engineering & transport planning consultancy servicing the UAE & rest of GCC.

"To provide practical, independent, and technically robust traffic engineering solutions that help shape safer, smarter, and more sustainable communities."

— Saswata Chakrabarti, Founder & Director



The Value Proposition



01 Specialist Engineering

Comprehensive solutions spanning Traffic Impact Studies, Parking Design, Transport Masterplans, Road Safety Audits, and Microsimulation Modelling.

02 Regional & Global Experience

Supported by an international technical advisory board with 12+ years of industry experience across 14+ countries in the GCC, Asia, and Europe.

03 Authority-Approved Solutions

evidence-based assessments and designs tailored to satisfy strict municipal standards, securing seamless authority submissions and fast approvals.



Core Services Matrix

Traffic Impact Studies (TIS)

Comprehensive TIS covering trip generation, junction capacity, and network impacts to secure seamless, authority-approved solutions.



Parking Design & Circulation

Optimized parking layouts, ramp geometries, and AutoTURN swept path analyses designed for smooth vehicle flow and municipal compliance.



Road Safety Audits & Inspections

Conducting comprehensive multi-stage Road Safety Audits (RSA) and risk assessments to identify hazards early, protect vulnerable road users, and minimize collision risks.



Technical Rigor & Authority Compliance Across Project Lifecycles

Traffic Impact Studies (TIS)

- **Key Focus:** Trip Generation, Trip Distribution, LOS, Delay and Queuing.
- **Technical Deliverables:** SIDRA / SYNCHRO modeling, baseline & future traffic forecasting, mitigation scheme design.
- **Client Value:** Fast-track municipal approvals, minimized network congestion, and compliant access strategies.

Parking Design & Circulation

- **Key Focus:** Layout optimization, internal Flow to be changed to circulation, vehicle swept paths.
- **Technical Deliverables:** AutoTURN simulation graphics, ramp slope & clearance profiles, valet & loading bay designs.
- **Client Value:** Maximized stall efficiency, seamless vehicular access, and zero geometry-related bottlenecks.

Road Safety Audits (RSA)

- **Key Focus:** Independent safety evaluations across Stage 1 (Concept) through Stage 4 (During Operation).
- **Technical Deliverables:** Collision risk logs, Vulnerable Road User (VRU) assessments, safety corrective action reports.
- **Client Value:** Proactive hazard elimination, reduced liability, and full compliance with regional safety standards.



Core Services Matrix

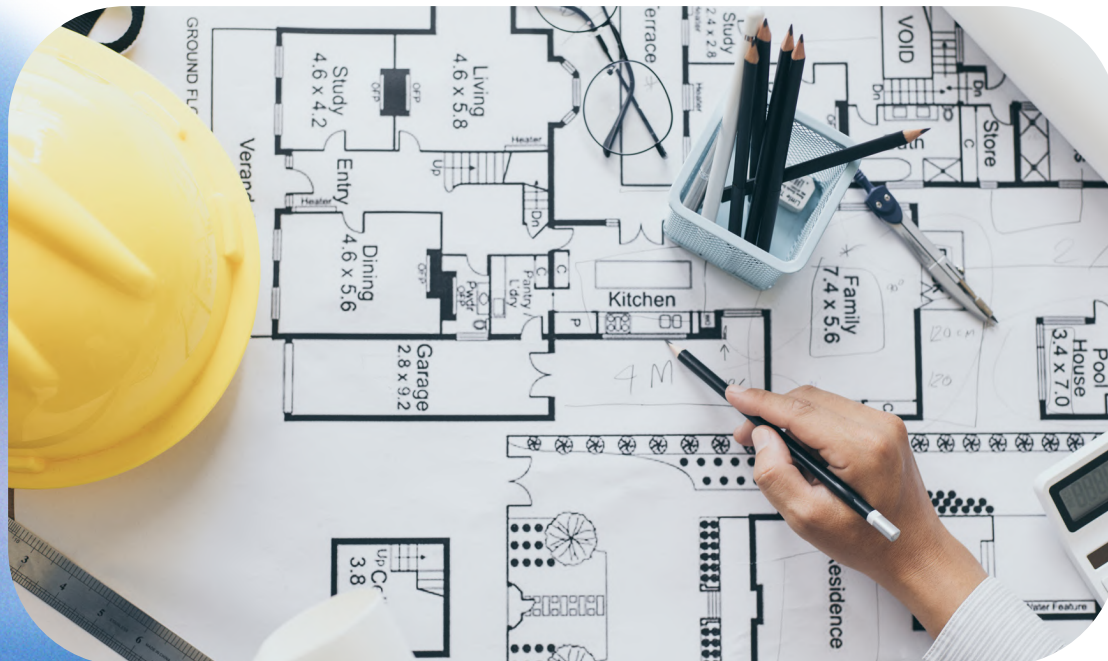
Strategic Transport Planning

Evidence-based mobility strategies and sustainable transport masterplans tailored for complex developments and municipal approvals.



Microsimulation Modelling

Advanced simulation (VISSIM, Synchro) to model traffic behavior, predict congestion, and evaluate network performance.



Temporary Traffic Management (TTM)

Compliant Work Zone Traffic Management Plans (TMP) and detour strategies to maintain safety and mobility during construction.



Advanced Mobility Analytics & Seamless Work Zone Solutions

Transport Planning & Masterplans

- **Key Focus:** Comprehensive mobility frameworks, multi-modal connectivity, and sustainable urban transport integration.
- **Technical Deliverables:** Macro-level demand forecasting, transit-oriented development (TOD) plans, and municipal clearance frameworks.
- **Client Value:** Future-proofs large-scale developments and secures smooth statutory authority sign-offs.

Microsimulation Modelling

- **Key Focus:** Dynamic simulation of complex corridors, interchange performance, and network stress-testing.
- **Technical Deliverables:** VISSIM micro-level driver behavior models, VISUM macro-demand networks, and Synchro signal timing runs.
- **Client Value:** Quantifiable data to eliminate bottlenecks, optimize signal timing, and validate design decisions.

Temporary Traffic Management (TTM)

- **Key Focus:** Work zone safety, multi-phase construction staging, and live traffic diversion planning.
- **Technical Deliverables:** Compliant Traffic Management Plans (TMP), detour routing diagrams, and temporary barrier/signage layouts.
- **Client Value:** Maintains uninterrupted vehicular mobility and mitigates site safety risks during heavy civil construction.



Aurelion partners with Government Authorities, Architects, Developers, Engineering Consultants, Contractors, Smart Cities, Railways, Airports & Ports and infrastructure owners to deliver specialist traffic engineering, transport planning, road safety, and advisory services. We support projects across the development lifecycle with practical engineering solutions that improve mobility, enhance safety, and enable sustainable infrastructure.

Sectors We Serve



Structured Project Delivery Framework

A rigorous 6-stage lifecycle methodology ensuring precision, statutory compliance, multi-stakeholder alignment, and frictionless municipal sign-offs for all transport infrastructure projects.



Understand

Stage 1

Assess

Stage 2

Develop

Stage 3

Coordinate

Stage 4

Review

Stage 5

Deliver

Stage 6



Tech-Enabled Engineering

Software Stack



Simulation & Modeling

VISSIM, VISUM,
SIDRA



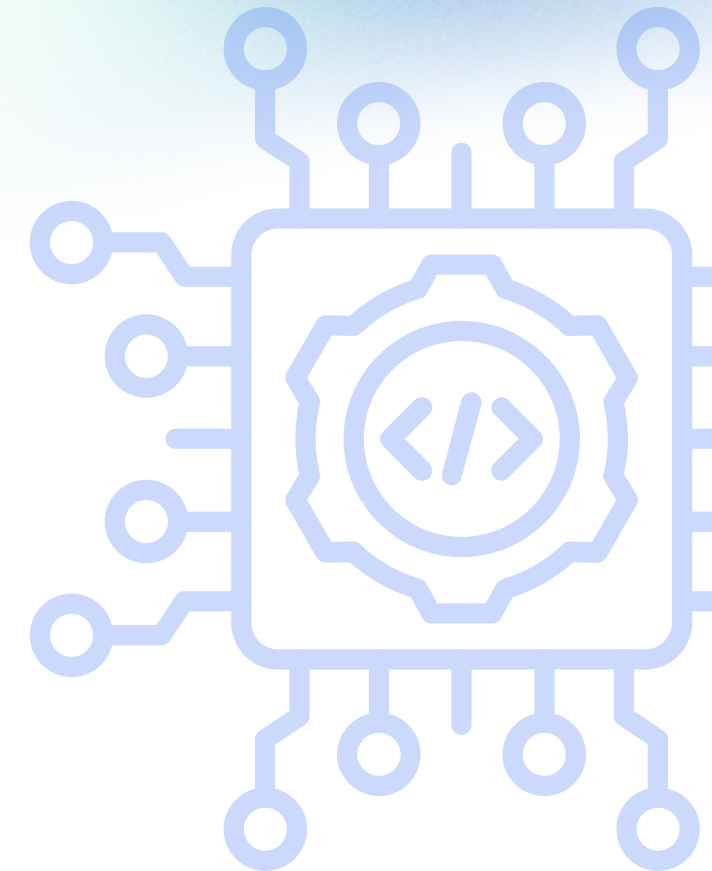
Spatial & Design

AutoCAD, Civil 3D,
ArcGIS



Intelligent Analytics

AI Analytics,
Predictive Modeling





Proven Capability & Reach



500+

Transportation
Project Delivered



12+

Years of Industry
Experience



14+

Countries Served



35+

Engineering
Experts & Lead
Consultants



Why Aurelion

Aurelion delivers end-to-end transport planning, technical modeling, and safety compliance, ensuring your infrastructure projects progress seamlessly from regulatory approval to completion.

100%

Authority Approvals

Proven track record securing unconditional No Objection Certificates (NOC) across regional municipalities.

35%+

Cost & Delay Reduction

Proactive hazard identification and design optimization preventing costly re-designs during construction.

Zero

Critical Hazards

Rigorous multi-stage Road Safety Audits safeguarding vulnerable road users and site work zones.



Project Spotlight

01. Road Safety & Audits

- EU & GCC Frameworks: Safety audit processes in Ireland & Abu Dhabi.
- Large-Scale Execution: Thousands of RSAs across major highways and complex developments.
- Global Capacity Building: Safety training across Ireland, KSA, UAE, and Ethiopia.

02. Landmark Parking Design

- Saudi Giga-Projects: The Mukaab, Diriyah Gate, and KAFD.
- Iconic Retail Assets: Dubai Mall Refurbishment & Dubai Square Mall.
- Access & Circulation: Integrated parking strategies, ramp geometries, and vehicle swept path optimization.

03. Urban Mobility Planning

- Comprehensive Plans: Navi Mumbai & Ranchi Mobility Masterplans.
- Specialized Transit: Shimla Ropeway & Aizawl Sustainable Urban Transport.
- Sustainable Masterplans: Multi-modal transit integration, pedestrian access, and city-wide mobility strategies.

04. Highways & Strategic Corridors

- Industrial Corridors: Delhi–Mumbai Industrial Corridor (DMIC).
- Expressways & Highways: Delhi–Amritsar–Katra, Samruddhi Mahamarg & Bharatmala Network.



Leadership



Saswata Chakrabarti
Founder & Director



Dr. Stephen Lambert
Director – Traffic Engineering



Kunj Bihari
Director – Global Delivery



Mahendra Kumar Ramesh
Director – Operations



Principal Technical Advisory

**TRAFFIC STUDIES & SMART
MOBILITY**

Dr. Nael Al Saleh



**PROJECT DELIVERY &
INFRASTRUCTURE**

Mr. Camille Elazar



**SUSTAINABLE MOBILITY &
STRATEGIC ADVISORY**

Dr. Viktoriia Betina





THANK YOU.

www.aurelionsolutions.com

+971 523958331

saswata@aurelionsolutions.com

