

Nabil Abou-Rahme

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Changing the world by helping to transform the civil engineering sector.

PORTRAIT

I am an accomplished leader in application of technology to civil infrastructure, with nearly three decades of experience, spanning executive management to technical consulting. I am currently a board apprentice with the Veblen Directors Program, demonstrating my commitment to providing real value as a Non-Executive Director.

I had the privilege of establishing and leading the research business at Bentley Systems (NASDAQ:BSY) for six years, spearheading advancements in AI and Digital Twins. In previous roles I integrated cutting-edge technologies into core business strategies, notably advancing Intelligent Transport Systems and Smart Infrastructure. My primary qualifications are Chartered Engineer with a PhD.

I am an empathetic critical thinker and my blend of commercial initiative and interpersonal strengths make me a uniquely strong advisor and mentor. Having been widowed young and since remarried, my approach is characterized by compassion, resilience, and ability to remain effective during a crisis.

EXPERIENCE TO DATE

Innovation Wave Ltd

Started a small business to offer board advisory and support services, including fractional executive capability in technology, research, and innovation.

Founder & Principal Consultant, Aug 2024 – Present

- Providing strategic advisory and innovation consulting to startups, investors, and corporate executives.
- Developing workshops and strategic interventions to drive client growth through innovation.
- Active participant in the Veblen Directors and the GILD Networks, building capability and experience as a board advisor and non-executive director.

Bentley Systems Inc

Bentley Systems (BSY) is a \$15bn software company specializing in infrastructure digital twin solutions for the global infrastructure sector.

Chief Research Officer, Feb 2019 – Jul 2024

- **Emerging Technology Advisory:** Delivered foresight and strategic advice on emerging technologies, leveraging intelligence platforms to influence acquisition and venturing strategies. Led on user-facing advisory work for digital transformation, maturity, and delivery.
- **Strategic Leadership:** Co-authored the company's AI Strategy. Used lean scale-up to streamline the research and innovation model, and adapted this to changing organisational needs post pandemic and post IPO.
- **Team and Operations Management:** Directed a multidisciplinary research team, overseeing budget, recruitment, and training. Grew a portfolio of cutting edge projects, each led by world-class technical experts with developers and data scientists, and meeting internal funding

criteria. Highlights include an engineer's copilot combining neural networks and reinforcement learning, an agent-based multimodal simulation for city planning, and a novel hybrid digital twin with embedded neural network for real-time scenario modelling.

- **Academic and Industry Collaboration:** Forged strategic alliances with premier universities like Cambridge, Imperial, and Stanford, enhancing research capabilities and setting benchmarks for industry-academia collaboration on Infrastructure Digital Twins.
- **Public Speaking and Representation:** Represented the company at key industry events, including the global 'Year In Infrastructure' events in London (2022) and Singapore (2019), speaking to large (500+) audiences about advances in research and innovation.
- **Intellectual Property Oversight:** Conducted comprehensive reviews of patent submissions, applications, and international filings, optimising for strategic alignment and potential for regional and global impact.

Mott MacDonald Group Ltd

Mott MacDonald is a global management, engineering, and development consultancy with annual revenues nearing \$3bn.

Global Practice Leader, Mott MacDonald Group, Apr 2016 – Dec 2018

- Co-authored the company Digital Strategy and was accountable for the 'clients and partners' stream in a three-year digital transformation program.
- Established the Global Community of Practice for Data Science. Co-authored company strategy for Information as a Business Asset, prompting the pivot to a data-centric business model.
- Led a cross-cutting initiative for Smart Infrastructure, with a board mandate to test services with clients and launch a new business within Mott MacDonald Digital Ventures.

Head of ITS, Mott MacDonald Transport, Nov 2013 – Mar 2016

- Director with Mott MacDonald Highways Divisional Board, jointly responsible for a £30m multidisciplinary operation.
- Led the transport technology division, directly responsible for a £5m portfolio. Successfully tendered for key contracts to secure the group's long term position. Turned division back to profit through restructuring around service lines, maximising sales to existing clients and promoting premium software development capabilities to new sectors.
- Developed a 'future transport' go-to-market strategy, for new services supporting connected corridors and intelligent mobility.

Rapp Trans UK Ltd

Managing Director, Company Secretary, Partner, Oct 2009 – Oct 2013

Rapp Trans is a center of excellence for Intelligent Transport Systems, and a global leader in client side advisory for Road User Charging.

- Executive board member and statutory company director for the UK subsidiary company, dealing with all aspects of enterprise management from business plan execution (circa £1m) to shareholder relations and fiduciary responsibilities.
- Member of the international board to coordinate across five companies, jointly responsible for bid/no-bid decisions, strategic partnerships and resource allocation for bids and projects.
- Navigated the business through a public sector spending freeze and rebuilt order book through new private sector clients.
- Key technical role for the European Commission's ITS Directive (2010/40/EU), delivering specifications for Member States.
- During this period, I navigated tragedy as a young widower with children, experiencing deep personal transformation.

Mouchel Consulting (now WSP)

South Africa Business Development, Apr 2008 – Sep 2009

Retained for six months by Mouchel, to support development and growth of a new Mouchel Africa Venture. Transitioned to freelance work for the remaining twelve months, becoming part of the local economy through ITS South Africa. Freelance work included:

- Strategic adviser to the South African National Roads Agency (SANRAL), developing an integrated payment and performance regime for Open Road Tolling and helping to evaluate substantial tenders from three international consortia.
- Technical adviser for the National Department of Transport on new regulations for electronic fare collection (incorporating contactless bank cards, an emerging technology at the time).
- Direct support on novel technology and payment-system implementations for Bus Rapid Transit (BRT) Schemes in the Cities of Johannesburg and Cape Town.

UK Network Operations and ITS, Nov 2002 – Mar 2008

In various roles from Principal Consultant to Divisional Director.

- Appointed as operations workstream lead for the pioneering 'M42 Active Traffic Management Project', defining and delivering a 'user centric' approach to operating the hard-shoulder (the original model as recently endorsed by the Transport Select Committee).
- Joined the leadership team of the M25 Managing Agent JV to develop and embed an 'intelligence-led' approach to allocating funds for critical infrastructure projects. Generated additional £3m per year in funding through this approach.
- Led the consulting team and bid key technology tenders, (including technology maintenance contracts worth up to £10m).

Transport Research Laboratory (TRL)

Graduate to Principal Scientist, Jan 1996 – Oct 2002

Exciting start to my engineering technology career, with research and development center, TRL. Gained experience in software development, research projects and technical consultancy. Delivered business case for the early 'M25 Controlled Motorway' and launched the 'MTV' Software Suite. Sponsored for and completed a PhD, based on my project work with data analytics.

CORE COMPETENCIES

- **Leadership and Communication:** Effective public speaker and writer, with empathetic engagement and leadership skills to motivate teams and drive projects.
- **Adaptive and Innovative Thinking:** Proven problem-solver with cognitive flexibility, creativity, and a track record of innovative solutions. Leadership and change training at Roffey Park.
- **Intelligence and Analytical Skills:** PhD (Bayesian Inference). Adept at horizon scanning, insight development, and research excellence, with the ability to synthesize complex information.
- **Technical and Domain Expertise:** Chartered Engineer. Deep understanding of the AEC sector, regulatory frameworks, and modern business models, with proficiency in productivity tools, software development, and AI-driven workflows.
- **Personal Attributes:** Passionate about technology, self-motivated, and adaptable, with a healthy sense of interdependence.