

## Major Projects in Middle East (with Consultants AECOM & Parsons International)

### Program Management for South Hudayriat Islands (SHI), Abu Dhabi – 2009 to 2011



*Residential and commercial blocks along canal frontage, served by river transport system*



*Road/rail connectivity from mainland via immersed tube tunnel crossings & island bridges to districts*



*Artist impression of canal precinct interfacing with medium density residential and commercial activity*



*Cutter suction dredging to -9m Chart Datum*



*Land reclamation of pumped dredged material*

Roger Williams relished the challenges brought by the South Hudayriat Islands (SHI) Development, comprising high-end, mixed use real estate on new man-made islands, connected to the mainland by three major crossings for roads and rail systems. This formed part of the UAE's strategy for increased housing supply to Emiratis, aimed at maximizing houses with waterfront access within an optimized island footprint.

Firstly, as Design Services Manager, and then Program Manager, Roger delivered a validated concept master plan for the 2400 ha. mixed use island development on behalf of one of the major developers in Abu Dhabi. He was responsible for alignment with client requirements as well as the planning and scope management, team leadership, financial monitoring and controls. A detailed programme was developed in Primavera P6 with resource loadings added to define the timeline.

Not someone to simply monitor outputs, Roger immersed himself into the key requirements to manage the delivery from architects, landscaping and master planning teams, gaining a clear understanding and appreciation of design constraints. Defining sustainable infrastructure systems was a driver for this project, including rail transit systems; sustainable drainage systems; reduced consumption of utilities by improved buildings design and lifestyle choices; renewable sources; reduced streetscape width; and selection of building materials.

The 8 billion USD infrastructure works comprised: dredging and reclamation of 60 million m<sup>3</sup>, 3 immersed tube tunnel crossings, 30 bridges, 100km of marine edges, 12 marinas, 200km of roads and utilities, light rail and sea transit systems.

Roger was responsible for formulating the engineering implementation strategy, logistics planning and in leading the concept design works. He also managed the liaison with authorities for planning, transportation (roads, rail & maritime), environment and utility issues. Town massing and access provisions for the commercial centres were as important as the connectivity and safety provisions for low density housing.

AECOM's project management services for the adjacent Mussafah Channel Dredging project was neatly integrated with the project at SHI, as it provided the dredged fill material required for the island formation. Production rates of dredgers were incorporated to the strategy for dredging and land reclamation at SHI.

Roger's role was to integrate with stakeholders of the shipping channel project, and to align any issues with stakeholders of the SHI project.

Environmental considerations were paramount as the channel passed through a marine protected area, significant for its seagrass community and thriving marine habitat including dolphins, flamingos, dugongs, turtles and corals.

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### Project Management for King Abdullah Economic City (KAEC), Saudi Arabia – 2012



Master plan layout for KAEC



Design of infrastructure systems to "economic cities" at KAEC and Jazan

Roger Williams worked closely with real estate developers on large developments across the region. He managed the infrastructure design for "economic cities" on Saudi Arabia's Red Sea coast, comprising steel production facilities, power plants, an oil refinery and desalination plants.

The KAEC mega-project represented one of six cities aimed at diversifying the country's oil-based economy. Located on the Red Sea north of Jeddah, the city was being developed by real estate giant Emaar Properties. With a development area of 173km<sup>2</sup>, Middle East business intelligence provider, MEED®, stated that KAEC was the top ranked project in the Gulf in terms of project value (93 Billion USD) in 2010 and 2011.

The Northern industrial zone covered 700 ha, supporting a Port, Steel Plant, Power Plant and light manufacturing facilities.

Roger managed the design of the roads and utility infrastructure systems, including the concept for a 300 MLD Desalination Plant with the initial phase sized at 100 MLD. Infrastructure provisions were designed for roads; water, sewerage and drainage systems; HV/MV power; telecoms; cooling water supply and return.

Environmental compliance and planning guidelines for the industrial zone were drawn up to address the needs for Access; Safety; Security; Emergency procedures; Interfacing with rail freight line; port jetty activities.

As Project Manager, Roger delivered the project design satisfactorily to Emaar, and to within the design fee budget.

### Bids for Program Management for Capital District & Khalifa Cities, Abu Dhabi – 2010 and 2011



A key initiative of Plan Abu Dhabi 2030, Capital District will become the sustainable capital city as the centre for government and education-based institutions of UAE. Integrated with this massive development were the residential and commercial centres of the Khalifa Cities A & B.

Roger Williams was part of two successful bid teams that AECOM secured for significant Program Management services in Abu Dhabi. AECOM provided Program Management services for the infrastructure works at Capital District across 3600 ha.

### Project Management for Local Roads & Drainage Program (LRDP), Doha, Qatar – 2013 to 2014



Typical arterial and collector road corridors, LRDP Doha South, 2014



The LRDP framework contract is part of Doha's massive redevelopment program for the 2022 World Cup. Roger Williams led the delivery of infrastructure design packages and coordinated with other programs including a sewer interceptor tunnel, storm drainage outfalls, expressways and rail systems.

His main responsibilities included management of production outputs; change management; quality control; streamlining processes; performance review. He interfaced closely with client, Ashghal, reporting on design milestones, implementation schedule, project costs, risks and logistics planning.



### Construction Management & Contract Administration

#### Al Ula “Maraya” Festival Hall, Al Ula, Saudi Arabia – 2019 to 2020



100m x 100m building with mirrored façade panels



22,500m<sup>2</sup> floor area: theatre, restaurant, VIP facilities



53m span steel truss (32T) & 25m concrete lift shafts

Roger Williams was FIDIC Project Manager for AECOM Arabia construction services, administering the 50M USD Design-Build contract for the 10,000m<sup>2</sup> Al Ula Festival Hall.

The building comprised 25m high theatre, auditorium, high atrium, kitchens, restaurants, artist facilities, VIP lounges and production offices. Building services would cater for 500 guests plus production teams managing the artistic performances.

At the time, this was the world's largest mirrored building. The construction works involved 3200T of steel erection, mirrored façade, concrete lift shafts, MEP, interior architectural finishes, stage and lighting provisions.

The fast-tracked pace of works demanded careful quality control and clear communications. Ambitious milestones were set, although Roger needed to persuade both client and contractor to work to a more realistic programme. This change in mindset brought practical targets for phased completion of works that were aligned with fixed dates for concerts.

With over 1000 workers and numerous subcontractors on site, there was a considerable amount of plant working at the same time. Safety systems and logistics planning to manage lift zones, holding areas, pedestrian and truck movements were challenging in a working culture with poor safety practices.

#### Project Executive on Flood Protection & Coastal Works – 2018 to 2019



Friog: rock toe protection to existing embankment



Llanfair Talhaiarn (TH): concrete pour for culvert



Bontnewydd: erosion protection to existing river wall

Roger Williams managed the Project Managers of NEC construction contracts (NEC3 Option A) and provided the leadership by setting the direction at initial outset, and subsequently evaluated progress, risks and safety during construction & at contract closure.

The projects involved the future-proofing of adequate standard of protection (SOP) against flooding, and included the coastal flood embankment protection works at Friog in West Wales, plus main river flood protection measures at the villages of Llanfair Talhaiarn and Bontnewydd in North Wales.

He ensured that health, safety and environmental audits were carried out to maintain good practices throughout all site activities. A near-miss was reported for incorrect refilling by the supplier of diesel into the water supply bowser – clear signage and a complete revamping of the plumbing was needed!

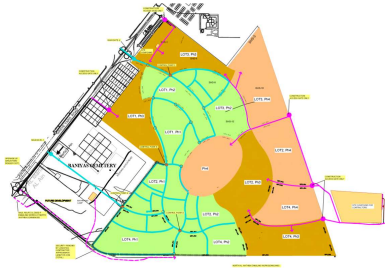
Roger was also involved with stakeholder liaison for projects, sometimes dealing with sensitive local issues during public drop-in sessions or through direct liaison with individuals. He helped develop a communications plan for projects at Friog and Llanfair TH that respectively involved construction of marine works, and a large storm sewerage and structures within an urbanized, confined environment.

### Construction Management & Contract Administration

#### Logistics Manager at South Shamka Roads & Infrastructure, UAE – 2013



*Logistics planning of South Shamka roads and infrastructure construction contracts*



*Logistical interfaces identified in zones completed; under construction (brown) and future phase (tan)*



*Kerb spillways to soakaways adjacent to roads*

As logistics manager for 4 infrastructure construction contracts across 3900ha. Roger Williams devised a strategy for cost efficiencies and improved logistics planning, focusing on reduced standing time, bill of materials review and supplier frameworks.

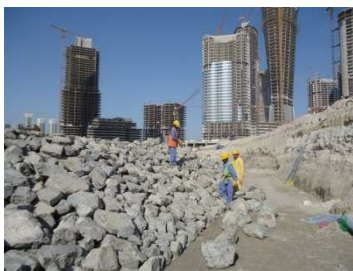
The logistics plan also aimed to minimise disruption or privacy issues during successive phases of construction, where areas would be under different stages of completion. Areas completed and occupied were handed over to the Employer, whereas other areas were still under terms of the construction contract.

He sought to address inefficiencies in material and worker resources as KPIs. Roger championed targets for reducing labour delays due to standing time or incorrect deliveries. He promoted prefabrication off site and bill of materials production for more strategic flow of supplies.

A separate logistics contract was proposed to address:

- haul roads and routes
- earthworks (by others)
- utility provisions (diversions or new) – by others
- easements for site hoarding
- temporary or completed junctions for access
- security gates and traffic movements
- delivery routes for construction materials
- solid waste disposal routes
- emergency procedures for areas still under defects period

#### Project Director for Beach Works, West Bay, Shams AD, Reem Island, UAE – 2010 to 2011



*Shams AD: Rock placement for toe block & terminal groyne along frontage to contain new beach profile*

As Project Director, Roger Williams oversaw the detailed design production and the construction works comprising concrete seawalls, rock and beach systems.

He also reviewed site supervision procedures to ensure that the Engineer's supervisory team followed correct quality control processes. He also liaised with the company's quality manager to arrange for contract administration procedures to be captured in the corporate quality manual.

As Engineer to the Contract, Roger reviewed the contractor's method statements for constructability, safety, quality control and resources deployment. He managed client concerns, contractual issues and claims during the construction phase.

### Construction Management & Contract Administration

#### Construction Management Provisions for Investments by Veolia Water, China – 2004 to 2005



*Construction management procedures modified for investment in Zhuhai treatment plants (65 MLD)*



*Enabler of new reporting lines that empowered the Resident Engineer to exercise his responsibilities*

On behalf of the Special Purpose Company (SPC) investing in 2 wastewater treatment plants in Zhuhai, China at Xiangzhou (65 MLD) & Beiqu (65 MLD), Roger Williams was tasked with validating the Design & Build contract works. He reviewed the design function and performance, the construction management procedures, safety and quality monitoring.

- He improved works supervision procedures to safeguard the investment made by the SPC by improving the direction of control of the works contract and the line of reporting for acceptance of workmanship or quality control tests
- These measures transformed site management processes and provided empowerment for the Resident Engineer whose responsibilities could be deployed more effectively. This was facilitated by changes to the appointment of the supervision consultant overseeing quality control, who could now make decisions with impartiality and without impunity from others
- Roger carried out constructability reviews for large concrete tanks and deep inlet pumping well involving top-down segmented shaft construction.

#### Water Supply Pipe Replacement Works & District Metering, Anglian Water – 1991 to 1992



*Anglian Water's programme for replacing old cast-iron mains with MDPE pipework*

As an Assistant Resident Engineer, Roger Williams was involved in supervising the installation works for new pumps, "mag-flow" district meters and potable water lines up to 600mm diameter. He also supervised the pressure testing of pipe lengths and biological tests for water quality as part of the acceptance for newly completed polyethylene water pipelines. He coordinated with Anglian Water inspectors for planned shutdowns of supply required for making final connections to the live water network system. Some connections to pipelines of 600mm dia required extensive draining time and controlled recharging.

#### Earthworks and Road Construction Supervision for A12 and A3 Trunk Roads, UK – 1987, 1991



*A47 bypass constructed along old rail line, comprised grade-separated junction and roundabouts, 1991*

Member of construction supervision team checking setting out for construction of earthworks, roads, drainage and structures.

- A12 Martlesham (Kesgrave) Bypass, Ipswich: setting out checking for piled foundation of bridge abutments for a crossing over an operational railway line. Thus, rail safety measures were applied to ongoing construction activities
- A47 Gorleston Bypass, Yarmouth: setting out checks to road alignment, drainage and structures, including concrete retaining walls adjoining the grade-separated junction and underpass structures
- Setting out checks for enabling works, reinforced earth embankment comprised of lightweight polystyrene EPS blocks which formed a noise bund along A3 expressway in Guildford to reduce noise to new housing development.



### Construction Management & Contract Administration

#### Marine Works at Felixstowe and Aldeburgh, Suffolk, UK – 1988 to 1990; 1992 to 1993



*New promenade and stepped revetment at The Dip, Felixstowe, 1988 to 1990*



*Beach recharge with similar beach grading mix using trailer suction hopper dredger, 1988 to 1990*



*Revetment block placement on flood embankments along the River Alde in Suffolk, 1992 to 1993*

Roger Williams was Assistant Resident Engineer at the marine flood works at Aldeburgh, supervising construction of rock armour stone, deposited by barge/placement by excavator, and the beach recharge programme at Felixstowe carried out by trailer suction hopper dredging.

The coast protection works at the Dip, Felixstowe involved construction of a 3km concrete stepped revetment placed on a sheet piled concrete toe beam. It also involved installation of:

- greenheart timber groynes
- precast concrete casting and installation
- access roads and concrete slab construction
- drainage pipes and outfall to sea discharge

At the beginning of his career, these roles provided a solid basis for understanding the principles and procedures behind:

- contract management for testing, payment and variations
- quantity surveying and method of measurement
- claims management and final account

He learnt about engineering practicalities and construction methods working in tidal conditions, particularly with precast and in-situ concrete, post-tensioning and earthworks stability. These projects also presented interesting challenges for landscaping, topsoil stability and public amenities within a coastal environment.

Roger was appointed Resident Engineer representing the Employer (EA) on two tidal river schemes along the River Alde. He administered the £1M contract (in 1992) under the ICE conditions. He paid specific attention to the material quality and compaction tests for the clay filling operations.