

TOC Europe Delivering Major Port Projects

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AECOM



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TOC Events Worldwide

Typical Project Objectives

- ✓ Deliver a major new greenfield port
- ✓ Achieve key dates for operations
- ✓ Ensure port is fit for purpose
- ✓ Effective change control and cost management
- ✓ Manage risk
- ✓ Manage safety



Frequent Project Challenges

Interface
between
contracts

Scope creep

Ground
conditions

Schedule

Quality of
contractors'
designs

Health and
Safety

External
Parties

Access to
site

Operational
interface

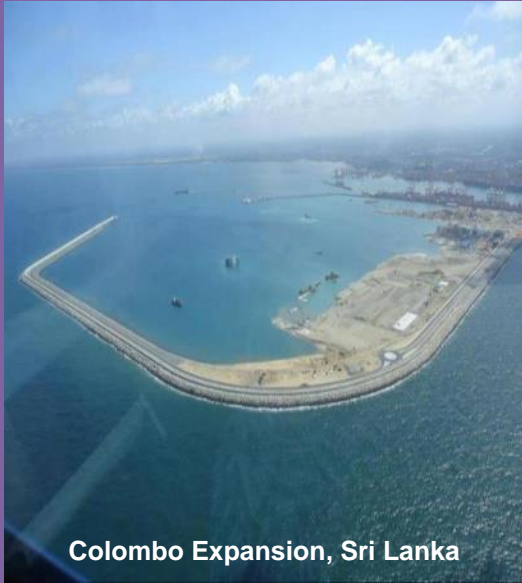
Permits



- Define project needs and timescale(s)
- Assess required resources to deliver (staff & skills, contractors, materials over the project timeline)
- Assess delivery paths & means
- Allocate responsibilities & requirements over the project delivery timeline: client, support and works contractors / equipment suppliers
- Can / should client ramp up to self deliver or source expert support?
- To redevelop ports while maintaining operations is complex
- Larger projects complexity can be solved with a comprehensive **Programme Management** approach, especially for a multiple contract, phased mega project

ADVISOR

- Strategy
- Reporting
- Communicating



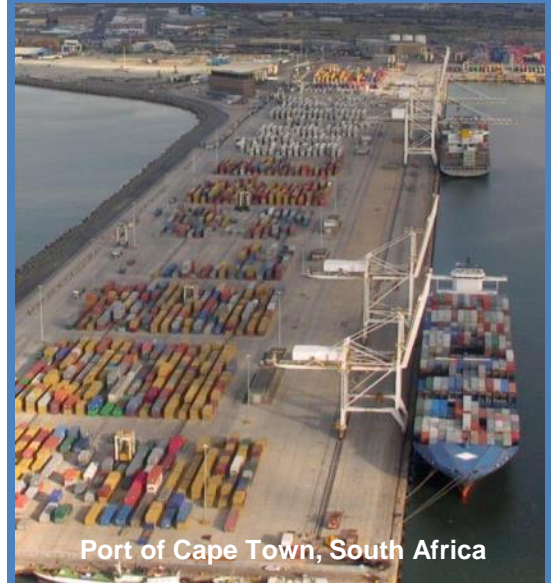
MANAGER

- Programme Management
- Cost Management
- Risk Management

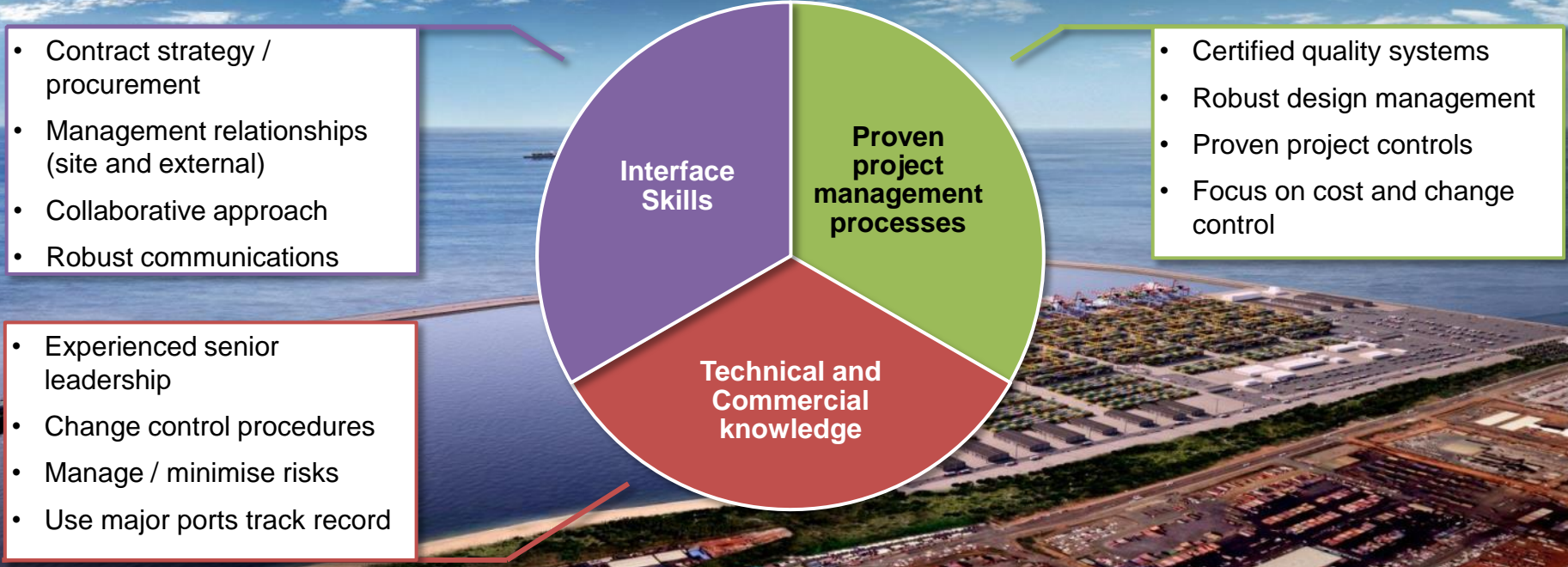


ENGINEER

- FIDIC Form of Contract
- Contract Administration
- Construction Supervision

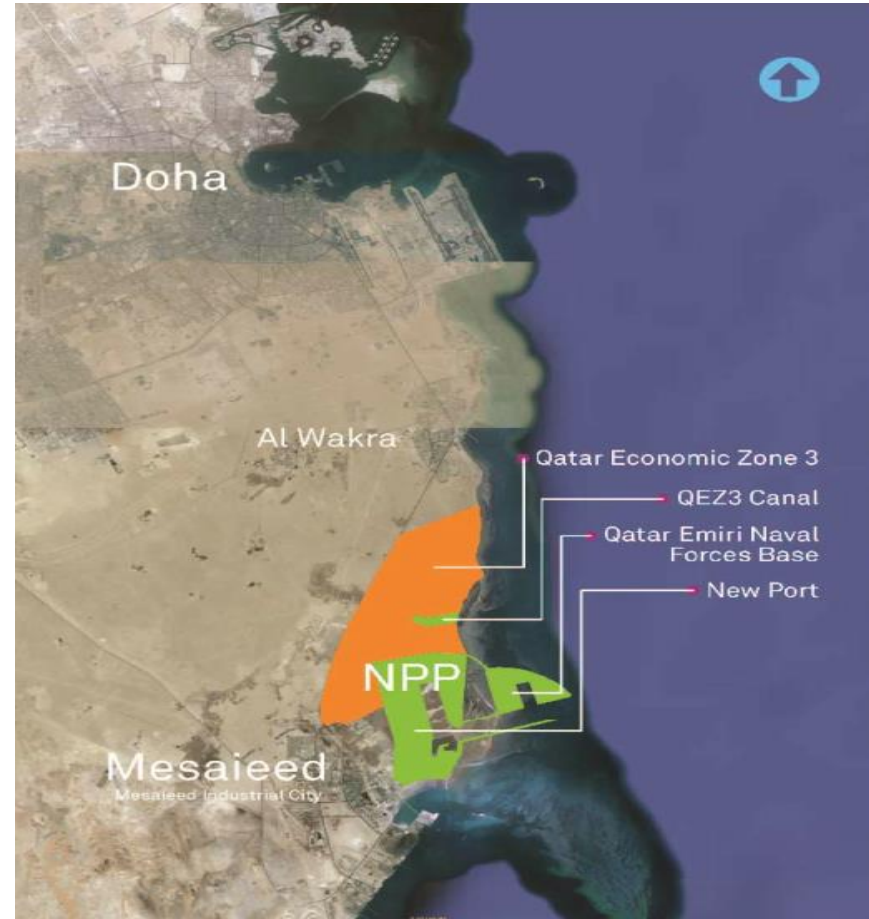


Basis of PMC Approach



Example 1: New Doha (Hamad) Port, Qatar

- New Port, Naval Base & Economic Zone Canal
- Replaces the old Doha port, allows economic growth
- 26.5km² area, greenfield
- US\$7 billion development



Project Scope



Qatar's Economic Zone 3 Canal

Qatar Emiri Naval Forces Base

Qatar's New Port

The Port Area: Plan and Status

- Container Terminal 1 & general cargo terminal operational
- All quays built, backland areas being finalised
- Channel now being deepened to -17m to suit bigger ships



Programme Organisation



H.E. Jassim Bin Saif Ahmed Al Sulaiti,
Minister of Transport and New Port
Project Steering Committee Chairman


New Port Project
Technical Committee

New Port Project
Tender Committee

New Port Project
General Supervisor

New Port Project Team

Engineering Design
Consultant (EDC)




resources & energy

Programme Management
Consultant (PMC)



Environmental Consultant
(EC)



Construction
Contractors

Equipment
Suppliers



Programme Management Role & Team

- Manage multiple contracts from Master Plan to Operations Some 80 contracts procured and delivered to date, including works, equipment & various services
- New client organisation so greater client support needed
- AECOM staffing peak 320 staff on site & 13,000 workers
- AECOM staffing numbers, profile and skills varied over time to match needs and programme
- First operations: December 2016 (container terminal 1 & general cargo)



Safety for Life

Joint Safety Organisation: New Doha (Hamad) Port, Qatar



Toolbox talks educate workers about creating and maintaining safer work conditions and are part of the project's commitment to a zero injury philosophy



A visible presence is a key element of the management of onsite safety and the commitment to the 'safety for life' philosophy

New Doha Port: Aerial Image 2017

GoogleEarthPro

Legend

- Feature 1
- Feature 2
- Feature 3
- Mesaiheed
- QP Health Clinic



Page 3

Mesaiheed

Google earth

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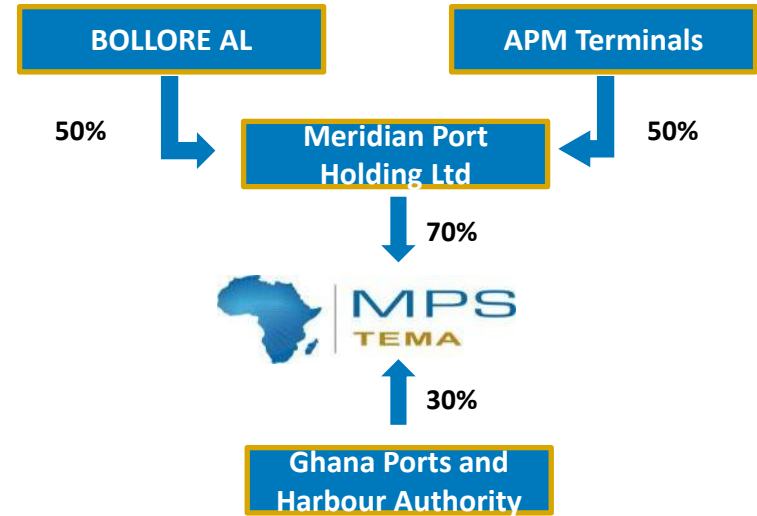
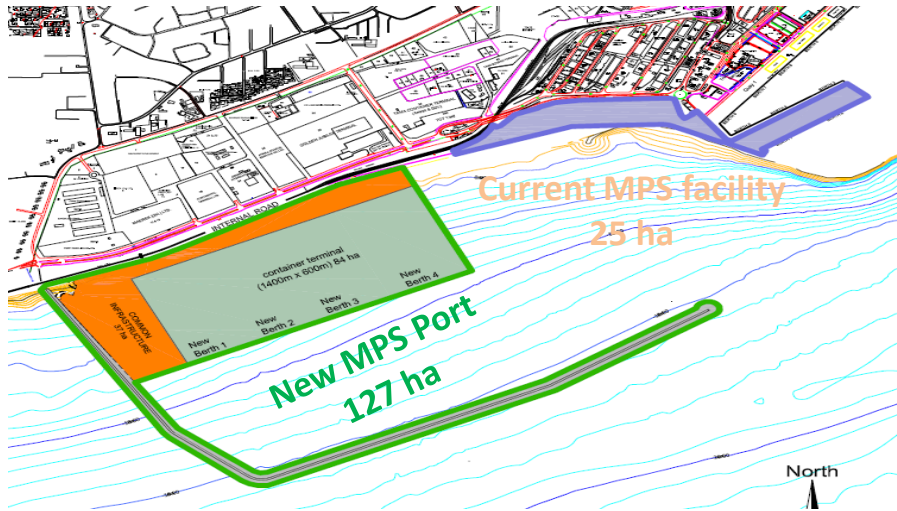


3 km

Example 2: MPS Tema Port Expansion, Ghana ^{AECOM}



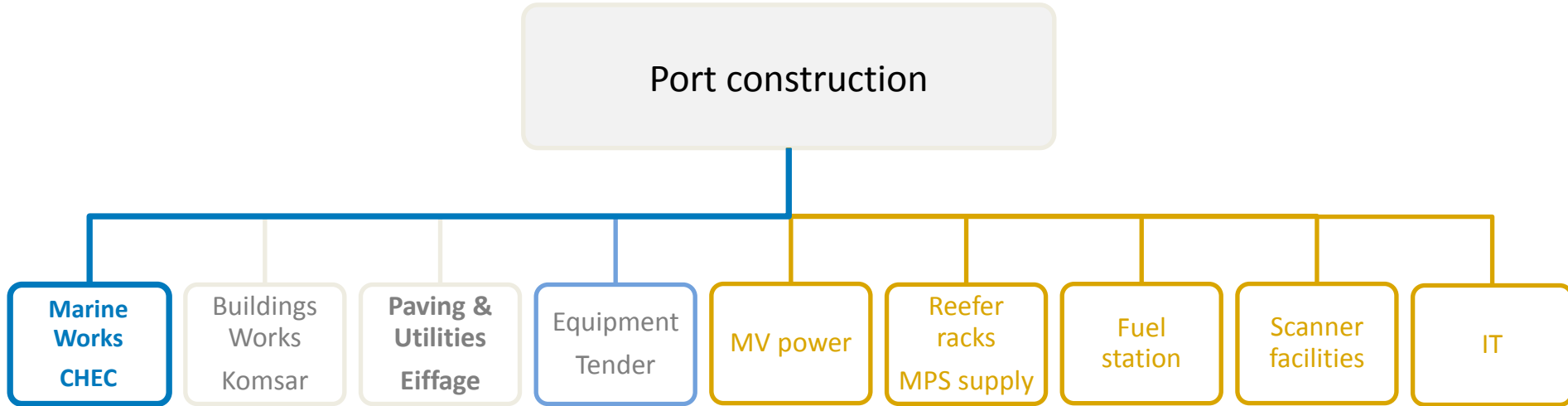
- MPS is a container terminal operating in Tema Port since 2002
- MPS is a JV between GPHA, Bollere and APMT
- June 2015: MPS and GPHA signed a Deed of Amendment for the Construction of the New Tema Port



- MPS Client is JV of APMT, Bollere, Ghana Ports & Harbour Authority; MPS lead team on site
- Overall US\$1.5 billion greenfield container terminal development adjacent to existing Tema Port
- AECOM PMC appointment for four years, working closely with client team based on site
- Started Jan 2016, first operations 2 berths end June 2019, further phases afterwards
- Marine works contract (CHEC) under way, various onshore contracts (yard Eiffage/RMT, buildings Komsar and others) now started

Construction and Equipment Packages

- The project is split into a number of packages

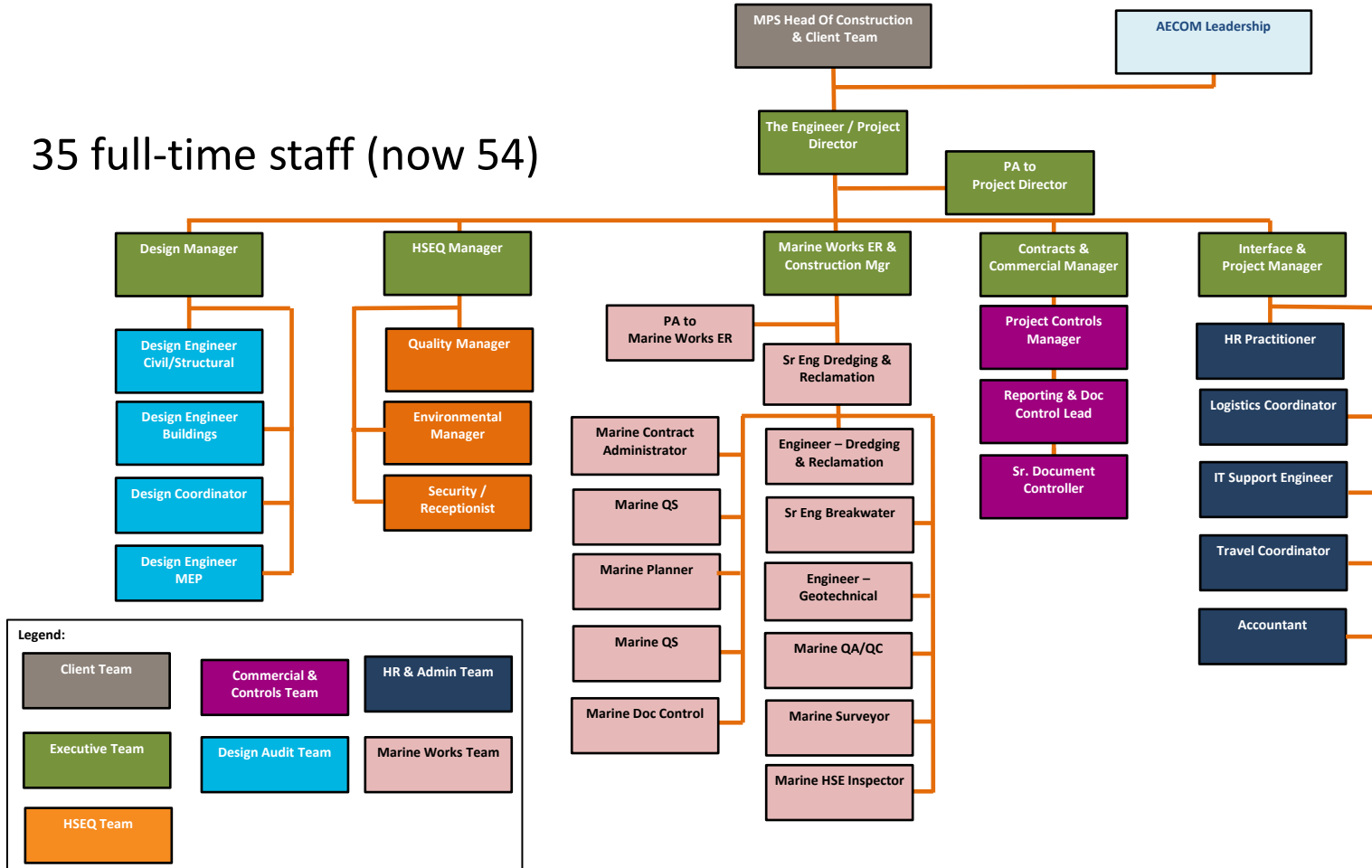


- Establish reporting & communications
 - PM Web, Primavera etc.
- Risk Management Plan, Change Management Plan
- Agree (and refine) Procurement strategy
- Health & Safety, Environmental Permitting & Approvals
 - Safety in Design approach
- Gap analysis, critical path dependencies
- Contracts progress, Progress S curves, RFIs, Critical quantities, Deliverables, Design reviews, Quality, Audit plan, Costs, Cashflow
- Interfaces (contracts, client and authorities, stakeholders)

- ***Change Management critical***

PMC Project Staff, Q1 2017

35 full-time staff (now 54)











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- Can/should client ramp up to self deliver or source expert support?
- Larger projects complexity can be solved with a comprehensive Programme Management approach