Remote Construction Challenges and Lessons Learned

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Agenda

- What is remote construction?
- Challenges and lessons learned
  - Safety
  - Engineering
  - Project management – communications
  - Logistics
- Discussion
Remote Construction Projects

PACOM HA
- Schools, Clinics
- Roads, Wells, Disaster Shelters

PACOM ERC
- Barracks, Firing Ranges, Shoot Houses
- C-130 Parking Apron
- Sniper/Rappel Towers
- Ammo Storage Sites
- Hangar Renovations

JSOTF-P
- Team Houses
- SEAL Nipa Huts
- Boat Ramp
- Maintenance Shed
- Wave Screen
- Pier Repair
- Aircraft Parking Apron
- Warehouse
- Barracks, JOC, ECP

JIATF-West
- Boat House
- Ramp
- Maintenance Shed
- Barracks
- Airport Surveillance Facility
- Fingerprint Data Center
- Police Checkpoints
- Floating Piers

GPOI
- Barracks
- Training Camps

Other Construction (AFRIMS, JPAC, ATA, NFE LCS)
- Laboratory Renovations
- Insectary Building
- Veterinarian Medicine Building
- Training Camp
- Force Protection Barriers
- Vehicle Leasing/Purchasing
Contingency Engineer Locations

- Site Thailand (Bangkok) Engineers, KOs
- Site Philippines (Manila) Engineers, KO
- NAVFAC Far East (Yokosuka) Engineers, KOs
- NAVFAC MAR (Guam) Engineers, KOs
- PWD Singapore
- PWD Diego Garcia
- Indonesia Office (Jakarta) Engineer
- NAVFAC Pacific/Hawaii Program Managers, Engineers, KOs, Reach back
Safety Challenges

– Remote project sites present unique challenges

• Host nation culture
• Local construction methods
• Not on a military base
• Contractors not very familiar with DoD requirements
Safety Lessons Learned

– Extensive training is beneficial
  • NAVFAC personnel – 40 hour class, monthly/annual training
  • Training provided to contractors – 206 trained!
  • Pre-construction meeting
  • Weekly jobsite training

– Documentation is critical
  • Contract submittals: safety plan, AHA, APP
  • Safety checklists
  • Daily/weekly progress reports

– Proactive enforcement is required
  • Site visits
  • QA reports
Engineering Challenges
Cambodia Water Project

- Water treatment system at UN Peacekeeping Barracks
  - Training and living area for UN Peacekeeping soldiers
  - 150,000 L/day requirement for drinking, cooking, bathing, laundry
  - Water wells ineffective
Water treatment and delivery is complicated!

- Geo-resistivity tests inconclusive
- Digging deeper wells didn’t produce more water
- Local conditions result in high turbidity runoff
- Dry season!

Rapid sand filter meets the requirements

- Maintenance friendly
- High throughput
- Simple, common in the region
Engineering Lessons Learned
Cambodia Water Project
Project Management Challenges
Indonesia Barracks Project

- Barracks facility for approximately 600 personnel
- Barracks is located on a military base with ongoing construction
- Many stakeholders within Indonesian military
- Construction to match other barracks built by HN

NAVFAC Pacific

Barracks

EXERCISE AREA

NAVFAC Barracks
– Local engineer is critical to success!

• Embassy staff augment
• Host nation coordination
• Construction management
• Frequent site visits

– Communication, communication, communication
Logistics Challenges
Timor Leste Project

- Limited contractor base, no major capabilities
- Limited vendor base for construction materials and equipment
  - Most supplies imported from Indonesia
- Lengthy and costly customs process
Logistics Lessons Learned
Timor Leste Project

- Long lead times needed
  - Changes in scope
  - Material and equipment procurement
- Keep all stakeholders appraised of progress and potential delays
Jackhammer but no PPE!