

ENGINEERING TRENDS

James Franckiewicz
Michael Gould

December 2008



Construction Implementation

- **Four Partners:**
Owner, Engineer (CMC),
Constructor and Financier
- **Basic Construction Models**
 - Design/Bid/Build
 - Design/Build
 - Construction Management



Direct versus Host Country Contracting

- **Direct Contracting:**
Engineer and Constructor are hired by USAID.
- **Host Country Contracting:**
Host country agencies hire firms using financing from USAID.
USAID not a party to the contract but retains approval rights.

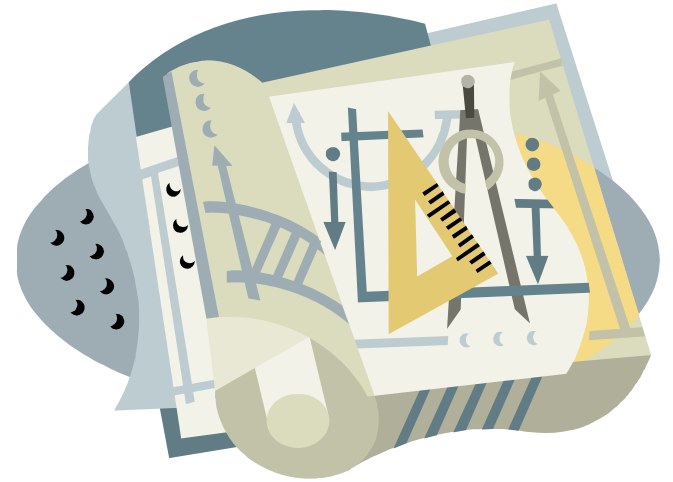


Construction Contract Administration

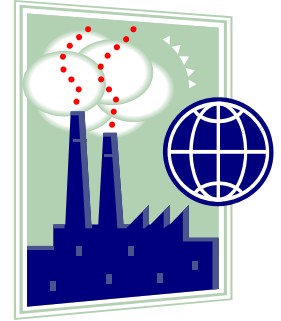
- ☑ Permits, Submittals and Notice to Proceed
- ☑ Schedules
- ☑ Inspection and Progress Payments
- ☑ Variation or Change Orders
- ☑ Claims and Disputes
- ☑ Liquidated Damages
- ☑ Substantial Completion
- ☑ Warranty or Defects Liability Period

Relevant Agency Policy Areas

- Environmental Review – Reg 216
- Disability Access
- Value Engineering
- Green Building Design – LEED



USAID Environmental Procedures



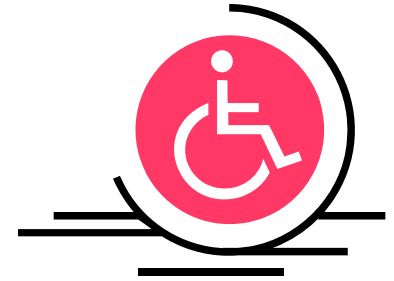
- Based on 22 CFR 216 – ensures environmental consequences are addressed for USAID projects
- Exemptions for disaster assistance and emergencies
- Categorical Exemption – TA, research
- Initial Environmental Examination leads to a Threshold Decision/Determination – BEO and Mission Director must approve
- Negative Declaration by AA – programmatic, duplicative, agency design criteria available



USAID Environmental Procedures

- If Threshold Decision positive – potential adverse impact, then leads to EA or EIS
- Scoping Statement focuses the study – consultative process
- Env. Assessment examines alternatives, impacts and mitigative measures and develops M&E plan
- EIS only done if impact on US or global environment – follows US CEQ regulations

Disability Access



- USAID Policy on Standards for Accessibility for the Disabled – Sept 1997
- Applies to new buildings and renovation
- Universal versus Accessible design
- Comply with ADA and ABA (Architectural Barriers Act)
- US Access Board 2004 Guidelines apply
- Waiver must be approved by AA or Mission Director if not possible to comply

Disability Access

- Housing – min. 10% units accessible
- On renovations not required if not feasible
- Waive for lack of feasibility, restricted access, undue burden
- Affects plumbing, corridors, multi-story buildings, parking, site access, communications



Irak El Tayahy School, Nablus

Value Engineering



- Required under Office of Federal Procurement Policy Act 41 USC 401
- Contractors are encouraged to propose more economical methods and designs – considers construction and O&M costs – life cycle costs
- A&E contracts -- include VE review at 35% design level – reimbursed – no sharing in cost savings – VE team different than designers – results in VE proposals and changes to design

Value Engineering



- Construction contracts – uses a voluntary incentive approach – Value Engineering Change Proposals are developed and evaluated
- USG not required to implement proposal
- Contractor paid a share (usually 55%) of “instant” savings and 20% of “collateral” savings over one year of typical operation

Green Building Design

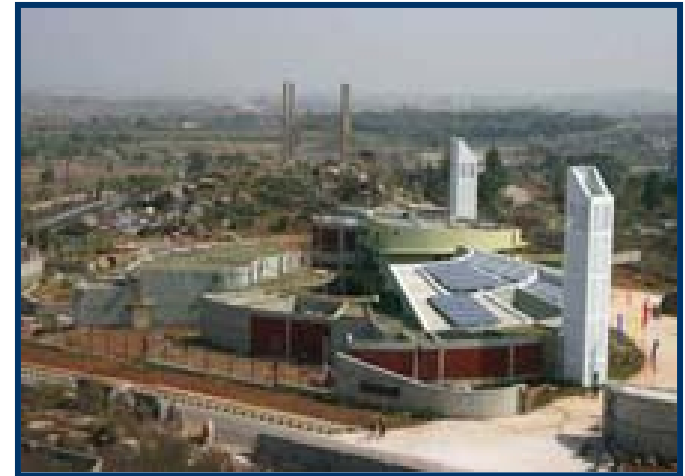
- Design and construction of buildings should incorporate green building concepts
- Sustainable site planning, water and energy efficiency, materials and resources, and indoor air quality
- Site selection and landscaping, natural ventilation and lighting, water efficiency and recycling, waste management, local construction materials, renewable energy, recycle demolition/construction debris



Green Building Design



- Leadership in Energy and Environmental Design (LEED) - US Green Building Council
- Different certification levels and situations
- Application followed by design phase and construction phase reviews
- USAID/India and then USAID/Sri Lanka have supported this – spread effect



CII Green Business Center in Hyderabad