ABOUT TTA

- ✓ Engineering and Consulting Firm, in business since 1986 (+35 years experience)
- ✓ Specialized in energy access and renewable energy distributed generation.
- ✓ Headquarters in Barcelona (Spain).
- ✓ Around 35 full-time staff.



- Energy planning
- Development of Policy and regulatory frameworks
- Definition of delivery models
- Transaction Advisory



ENGINEERING

- Technical and financial feasibility studies
- Concept and detailed engineering designs
- Owner's Engineering



KNOWLEDGE HUB

- Tailor made training and capacity building
- Conference on Solar Technologies & Hybrid Mini Grids (S-@ccess Conference)



WORKS

PRODUCT DEVELOPMENT

- **Supervision** of Construction Works
- EPC
- Operations &
 Maintenance

Research & Development





Mirwais Hospital

Kandahar, Afghanistan

Roger Sallent

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November 2,2022





MIRWAIS HOSPITAL: BASIC INFO

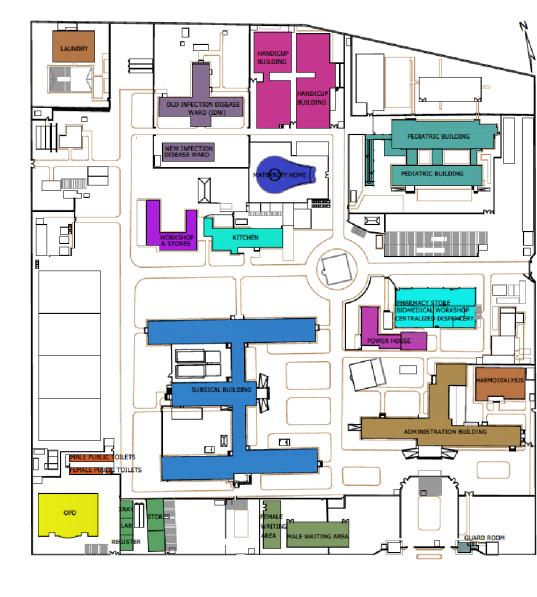
Basic Hospital Info

- Built by China in 70's. 74,000 m². 650 beds and around 755 staff.
- Built to serve 400,000, it is the referral hospital for 4
 provinces and about 5 million people rely on its services.
 Main hospital in the southern region of Afghanistan. 'an
 oasis within the oasis'.
- Power supply: grid + diesel gensets.

Project:

- TTA Scope: design and construction supervision of power system hybridization with solar PV and storage (grid-connected microgrid)
- Started in July 2021, construction about to start.





MIRWAIS HOSPITAL: SYMBOL OF RESILIENCE

- ✓ Unreliable power supply. Power from grid available 9h per day on average, with poor power quality.
- ✓ Warfare. Armed conflicts for decades.
- ✓ Climate.
 - ✓ Extremely hot and dry weather (hot desert climate), with increasing temperatures
 - ✓ Design for wide range of temperatures.
 - ✓ Design for dusty environment
 - ✓ Flash flooding. Decreasing rain and increasing precipitation anomaly.
 - ✓ Design for heavy rain
 - ✓ Shelter for population



S-@CCESS CONFERENCE





Solar Technologies & Hybrid Mini Grids to improve energy access

- 4th edition -

www.energy-access-conferences.com

Palma de Mallorca, Spain

April 26-28, 2023



Thank You

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