

A Silvery Airport in the Tropical Forest

Mongomeyen, International Airport Terminal

“ Productivity per on-site worker: USD 3.82 million,
2.2 million accident-free man hours,
(No accidents during the entire project)
Two percent enhancement in the most recent
three-year cumulative cost-to-sales ratio ”

Project Background

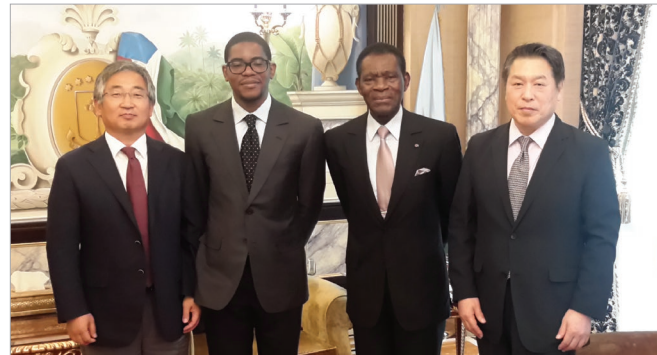
In 2010, a special bond between the President of Equatorial Guinea and Chairman and CEO S. Joon Kim brought Ssangyong E&C to this African nation.

Unlike other global contractors, which had taken part in low-quality construction projects in Africa, Ssangyong E&C had demonstrated construction quality and prowess that were on a whole new level, by building high-profile structures, including Mongomo Leader's Club, the Vice President's Residence, private facilities for VIPs, Catholic buildings for Papal visits and Capilla Privada.

This impressive track record led to the President's commissioning of an airport construction project, noting that "Ssangyong E&C has raised the national dignity of Equatorial Guinea."

DESIGN-BUILD / FAST-TRACK

During the early phase of the project, engineers had to recreate blueprints and specification documents on site, based on six perspective drawings and floor plans. However, the project team still had to meet the deadline based on the Design & Build method. Designs for large special-purpose projects, such as airport terminal construction, require extensive surveys and planning. First, basic designs will be produced, then, based on them,



[Chairman and CEO S. Joon Kim meeting with VIP & Chairman of ABAYAK]

specifications will be determined, before beginning actual construction.

However, to comply with the client's request, this project applied a fast-track approach, where construction began after only a three-month mobilization.

To handle diverse issues in the shortest possible time, the company engaged in continued discussions with authorities and the firm supervising construction.



[Perspective view of the completed airport terminal]



[Front view of the airport terminal at night]

With these discussions, based on the standards used for fixed lump sum contracts, three phases of design (basic design, structural design and finishing design) and the schedule of values (SOV) were finalized, at each step of the design process.

However, since the client and the firm supervising construction were based in three locations (Malabo, Bata and Mongomeyen), it was an inefficient and challenging process to discuss and finalize design proposals produced in Seoul and to proceed with follow-up tasks.

Yet, Ssangyong E&C persuaded the client to adopt the Design & Build method directed by its project team.

And this success served as a foundation that enabled diverse changes in construction methods, value engineering and fast-track construction, dramatically improving the project.

Best Practices

Applying a new method for foundation work

The initial method for foundation work was a DYWIDAG-designed method using large bearing piles.

However, in consideration of on-site conditions, it was replaced by a new method using small friction piles, with cost and time-saving benefits.


During the approval process, geological surveys were conducted to confirm the site's geological conditions, which proved that the original design was excessive in terms of the seismic resistance level and that using large bearing piles was unnecessary.

Eventually, Ssangyong E&C discovered a method using small friction piles, a safety-proven method based on DYWIDAG's source technology and patented in Korea, and subsequently received approval to use it.

Localization

In every field, continued localization is probably the most important element needed to secure competitiveness.

As part of such efforts, Ssangyong E&C took diverse measures, such as scouting operators who had long worked for global contractors; securing cranes, batching plants and other essential equipment and operating a maintenance system; fostering local

professionals; minimizing the use of highly-paid Korean workers; and saving logistics/material costs by procuring materials from newly discovered suppliers in neighboring countries. 



[Great Hall inside the airport terminal]

Project Overview

- **Project Name:** Mongomeyen, International Airport Terminal, Architecture
- **Location:** Equatorial Guinea, Mongomeyen
- **Client:** Equatorial Guinean government
- **Project Value:** USD 190,890,522
- **Designer:** Heerim Architects & Planners Co., Ltd.
- **Supervisor:** Inprocon-EG Consult S.L. (Subsidiary of STRABAG)
- **Project Period:** June 1, 2015–December 31, 2017 (31 months)
- **Project Scope**
 - Site Area: 116,200 m²
 - Total Floor Area: 35,560 m²
 - Scope: Airport terminal (B1+S3) / Long-term parking lot (S2) / Machine room (S2)
 - Additional Work: An approach road to the VIP hall and roundabout
 - Related Work: Airport apron, emergency power supply, etc.
 - Structure: Steel-reinforced concrete