Insight into the Engineering of Airports

YOUNG PROFESSIONALS
SUSTAINABILITY
IMBIZO 2018

Terminals

Toilets   Shops

Banks

Ntokozo Mdletshe
Technical Services & Solutions Advisory
Specialist
15 August 2018
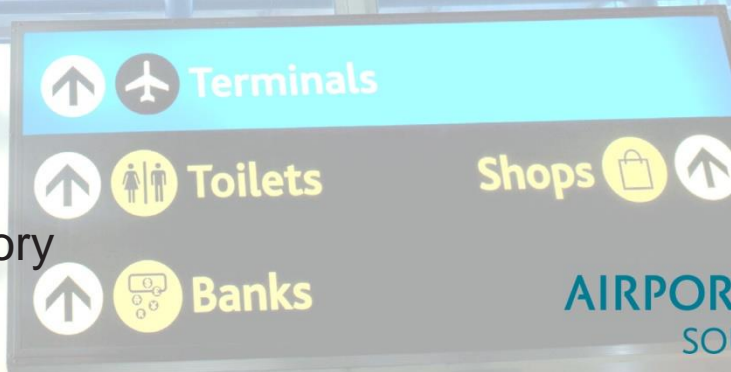
AIRPORTS COMPANY
SOUTH AFRICA

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AIRPORTS COMPANY
SOUTH AFRICA

ABOUT THE SPEAKER

ABOUT ME

Born and raised in Kwa-Zulu Natal, Dlangubo

Somewhere in my 30s

Educational Background:
- NDip: Industrial Engineering, DUT
- NDip: Project Management, VC
- B-Tech: Industrial Engineering, DUT
- MEng: Industrial Engineering, Wits

Experience:
- Intern – Hulamin Rolled Products
- IE Technician – Hulamin Rolled Products
- Industrial Engineer – BSI Steel
- Industrial Engineer – ACSA
- Senior Industrial Engineer – ACSA
- Operational Planner – ACSA
- Regional Airport Manager: Mthatha Airport – ACSA
- Advisory Specialist - ACSA

AIRPORTS COMPANY
SOUTH AFRICA

ABOUT US

Overview

Airports Company South Africa SOC Ltd (the Company) owns and manages nine South African airports. The Company is involved in equity investments abroad, and provides technical advisory and consultancy services to other airports worldwide. Our majority shareholder is the South African Government (74.6%). In line with the government's objectives, we focus on creating sustainable value that positively impacts our business, our people and society, and our environment. These elements are the core tenets of our Sustainability Framework.

Our mandate

In line with the Airports Company Act, No. 44 of 1993, as amended, Airports Company South Africa is mandated to undertake the acquisition, establishment, development, provision, maintenance, management, operation and control of any airport, any part of any airport, or any facility or service at any airport normally related to an airport function.

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WHAT WE STAND FOR

OUR VALUES

OUR MISSION
To develop and manage world-class airport businesses for the benefit of all stakeholders.

OUR VISION
To be a world-leading airport business.

Vision 2025

To be the most sought-after partner in the world for the provision of sustainable technical advisory and consultancy services by 2025.

OUR STRATEGIC PROPOSITION
To build an efficient customer-focused business.

We define our values through the acronym **PRIDE**:

P PASSION
R RESULTS
I INTEGRITY
D DIVERSITY
E EXCELLENCE

OUR COMMITMENT TO STAKEHOLDERS
To have purposeful engagements with all our stakeholders towards an agreed scope of engagements and the delivery of expected outcomes.

OUR PLEDGE TO OUR CUSTOMERS
To drive a culture of excellence in customer service and communication.

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OUR SUSTAINABILITY FRAMEWORK

Our Sustainability Framework outlines three fundamental references for our business's sustainability, and ensures that our decisions and actions aid our journey towards Vision 2025 responsibly and sustainably.

Sustainable value creation to stimulate economic prosperity, social equity and environmental integrity is embedded within the company. In ensuring, the company maintains its sustainability journey, it will check each decision against how it would affect and impact the business, its people and society and the environment.

Enhance our reputation, improve passenger experience, increase stakeholder satisfaction, contribute to airport traffic and diversify our business

Our business

Our environment

Minimise our environmental impact and strive to be carbon neutral

Sustainability Framework

Our people and society

Contribute more to black economic empowerment and support black business growth; provide improved access to airports for South Africans; improve airport connectivity to the regions we serve; diversify our workforce; and create a positive environment for our employees

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OUR STRATEGY

Our three-pillar strategy, namely to Run airports, Develop airports and Grow our footprint, underpins the delivery of sustainable value. This strategy outlines key outcomes that define our success. They will help us achieve our Vision 2025 objectives and become the most sought-after partner in the world for sustainable airport management services.

Run airports

By running our airports efficiently and developing them innovatively, we will enhance the regional economy.

Develop airports

Improving our capacity and infrastructure grows our footprint through effective operation and partnerships.
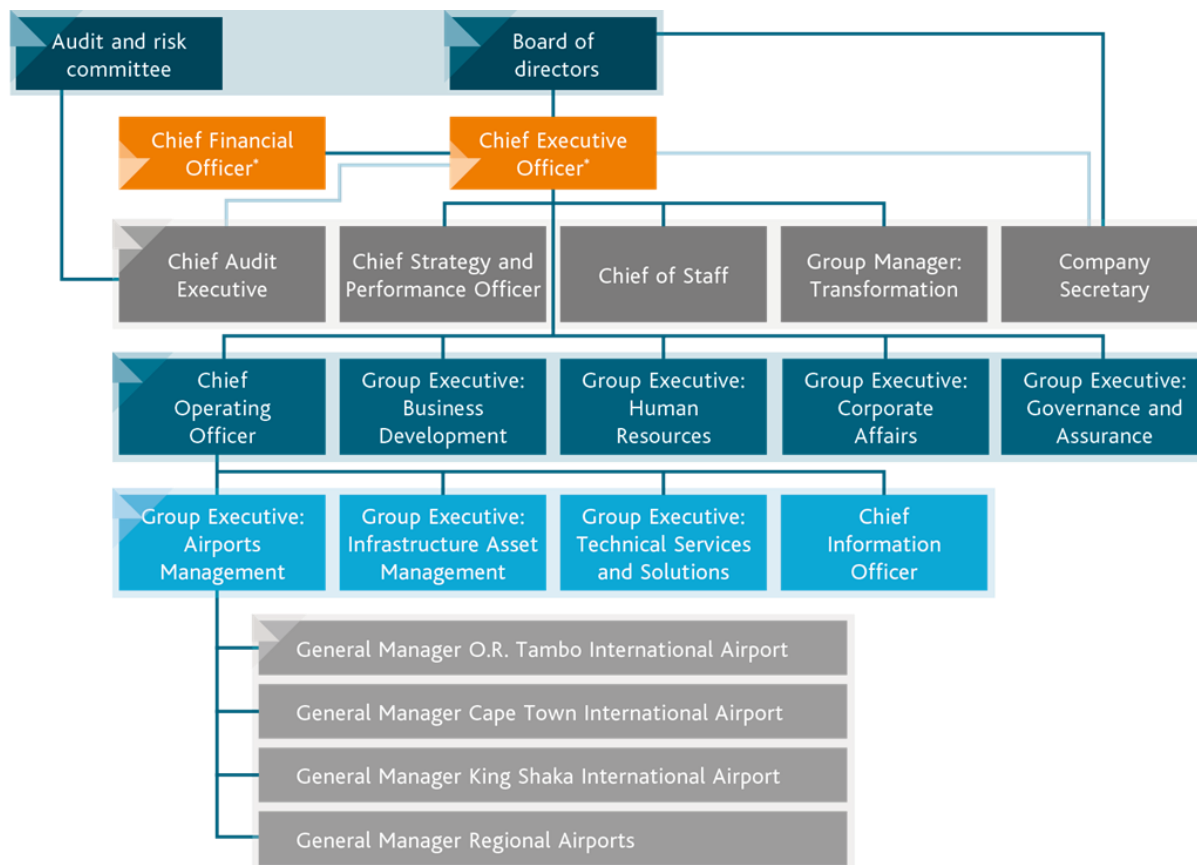
Grow our footprint

A larger footprint provides more impactful outcomes for the country and the world. As our footprint develops, we increase our exposure to diverse methods, allowing us to learn and grow, and further improve the way we run airports.

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OUR REPORTING AND ACCOUNTABILITY STRUCTURE

The company has a clear structure to support our governance procedures while defining levels of accountability.

* Executive Director

OUR FOOTPRINT

The company has a South African footprint that includes airports and support operations in nine key business and tourism hubs across the country. Its global footprint also extends to airport management and operating concessions in India, Brazil and Ghana. The company signed a memorandum of understanding, also referred to as a strategic sister airport agreement with Munich Airport Group, Germany.

Ghana

Accra, Kotoka International Airport: technical advisory and consultancy services.

Brazil

São Paulo, Guarulhos International Airport: equity investment.

South Africa

We operate nine airports, and provide technical advisory and consultancy services for Mthatha and Wonderboom airports.

India

Mumbai, Chhatrapati Shivaji International Airport: equity investment.

LEGEND

International airport

Regional airport

Equity investment or technical advisory and consultancy services

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OUR NUMBERS

SOUTH AFRICA STATISTICS

AIRCRAFT LANDINGS
- 2015: 273 342
- 2016: 284 285
- 2017: 282 057

DEPARTING PASSENGERS
- 2015: 17 844 550
- 2016: 19 374 239
- 2017: 20 001 961

Airport	Total annual departing passengers	Annual passenger throughput capacity	Aircraft landings	Permanent employees	On-time performance1 %	ASQ[2]	Total asset value R'000
O.R. Tambo International Airport	10 365 712	28 000 000	111 232	1 216	85.91	3.93	39 321 634
Cape Town International Airport	5 128 236	14 000 000	49 663	588	87.91	4.16	12 307 613
King Shaka International Airport	2624072	7500000	27 495	428	87.65	4.24	7 872 088
Port Elizabeth International Airport	793 228	2 000 000	30 256	129	85.21	3.94	1 769 395
Bram Fischer International Airport	198 311	600 000	9 053	74	86.19	4.25	635 836
Upington International Airport	31 955	100 000	6 504	30	87.28	4.40	318 093
East London Airport	399 776	1 200 000	15 004	74	83.40	3.98	809 481
George Airport	371 434	900 000	27 999	68	84.52	4.23	785 633
Kimberley Airport	89 237	200 000	4 851	41	83.48	3.79	277 440
Total	20 001 961	54 500 000	282 057	2 648*	86.42	4.04[3]	64 097 721

* We have 317 employees at our corporate of ce and 24 employed via regional management. The Company employs a total of 2 989 permanent employees.

[1] On-time performance is the percentage of aircraft departures within 15 minutes of their slot time.

[2] Airport Service Quality (ASQ) is a programme operated by the Airports Council International (ACI). It is a globally established benchmarking programme measuring passengers' satisfaction on a scale of 1 (poor) to 5 (excellent).
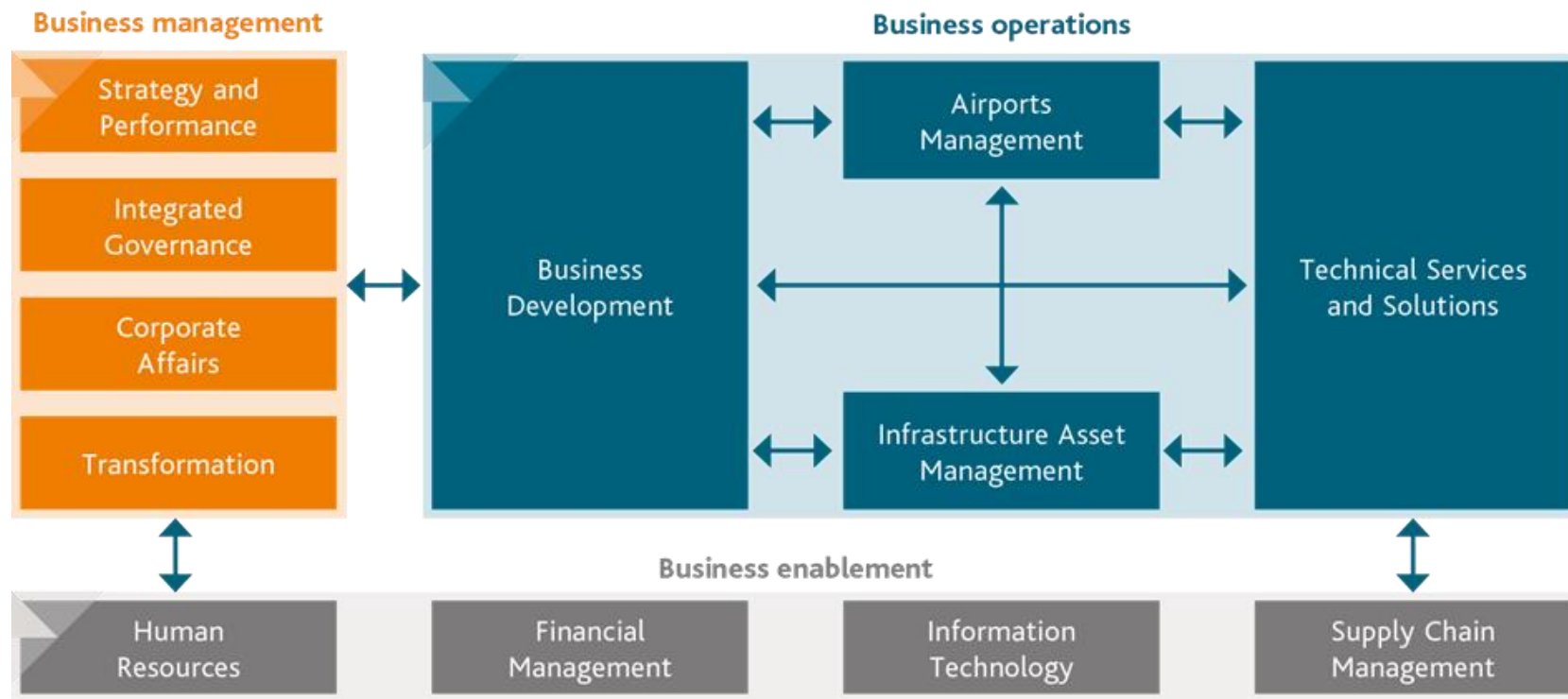
[3] Weighted average (ASQ).

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OUR OPERATING STRUCTURE

Our operating structure is integrated with our strategy and is at the heart of all we do.

ENGINEERING … AT AIRPORTS !

ENGINEERING SPEAK AT AIRPORTS

My boarding bridges

My lighting masts

My apron

My runway

My people movers

My processes

My sumps

My baggage belts

My aircons

My transformers

My doors

My trolleys

My generators

My fuel lines

My machines

My contracts

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ENGINEERING AT AIRPORTS

- Engineers at the airport must design, construct, operate and maintain airports.
- They must account for the impacts and demands of aircraft and passengers in their design, operational plans and maintenance programs of airport facilities.

Delivery on capital expenditure projects:
- Programme management (Structural, Architecture, Mechanical, Civil)
- Project engineering (Mechanical, Electrical, Civil)
- Advisory and technical consulting specialists (Mechanical, Electrical, Industrial, Airport Ops)

TSS

IAM

Airport Management

Site Maintenance of airport infrastructure:
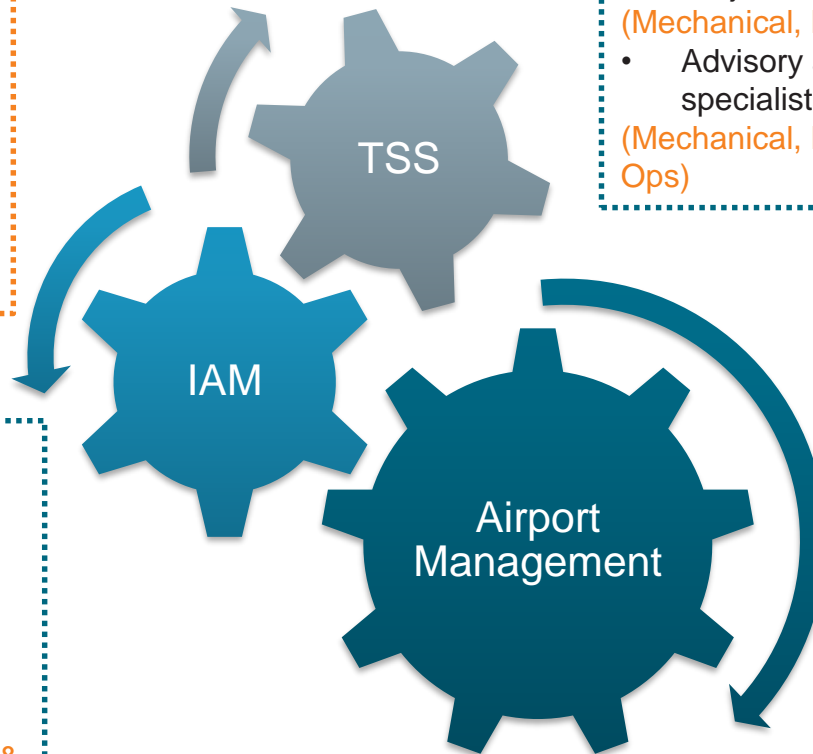- Electrical maintenance
- Civil maintenance
- Mechanical maintenance
- Facilities maintenance

Group Engineering (Electrical, Civil, Mechanical, Energy & Demand)

Integrated Planning (Town Planning, Quantity Surveying, Civil, Industrial)

Network Improvement and Strategy
- Process Engineering
- Operational Planning (Industrial Engineers, Airport Ops)

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AIRPORT SITE MAINTENANCE

Mechanical Maintenance Engineering

Maintenance of airport mechanical infrastructure (Jet Fuel infrastructure, pumps, air-conditioning, lifts, passenger loading bridges, baggage handling systems). Ensuring maintenance contracts are aligned to ACSA requirements to comply to stakeholder and related legislative requirements to ensure continuous operations.

Electrical Maintenance Engineering

Maintenance of airport electrical infrastructure (Electrical networks, AWOS, High Mats Lighting, Airfield Ground Lighting, Undisrupted Power Supply (UPS), Transformers). Ensuring maintenance contracts are aligned to ACSA requirements to comply to stakeholder and related legislative requirements to ensure continuous operations.

Civil Maintenance Engineering

Maintenance of airport civil infrastructure (Runways, taxiways, pavements, aprons). Ensuring maintenance contracts are aligned to ACSA requirements to comply to stakeholder and related legislative requirements to ensure continuous operations.

Building Maintenance Engineering & Facilities Management

Maintenance of airport buildings (cleaning, painting, grass cutting). Ensuring maintenance contracts are aligned to ACSA requirements to comply to stakeholder and related legislative requirements to ensure continuous operations.

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AIRPORT MANAGEMENT

Network Strategy, Performance and Improvement

Identify and implement process improvements to resolve operational challenges and improve business performance in order to deliver on the airports network's objectives whilst driving process standardization across the network.

Operational Planning

Implement the driving of alignment between capacity and demand for a seasonal and short term view to ensure effective flow of airport users and goods through the terminal building. Conduct resource allocation and daily operational planning for Passenger, Baggage, Aircraft, Apron services and other required processes. Maintain and manage operational data and statistics.

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PROGRAM

Portfolio Management

Manage the successful implementation of a portfolio of multi-disciplinary built environment projects from inception to completion. This includes major and minor capital expenditure building and infrastructure projects including property development

Project Engineering

Manage the successful implementation of engineering projects from inception to completion. This includes major and minor capital expenditure projects related to airport infrastructure.

Research Specialists

Conduct relevant research on airport technical trends and advancements to align to good fit practices and support the development of technical services and solutions for the ACSA network. In conjunction with the research focus, facilitate harvesting of the internal knowledge and that any technical developments and services are properly documented and managed for the purposes of knowledge sharing and skills transfer.

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ADVISORY SERVICES

We provide technical advisory services and integrated solutions to airports both locally and abroad.

How do we advice?

A team of experts is carefully assembled according to the scope of each project from internal resources that specialise in various areas of airport business and operations. The programs are tailor made according to the needs of each client.

Who do we advice ?

Airports within South Africa that are ACSA airports , non-ACSA airports as well as airports abroad.

What do we specialise in?

AIRPORT BUSINESS PLANNING & DEVELOPMENT
Airport Planning, Stakeholder relations, Project Management and Due Diligence

AIRPORT OPERATIONS, MANAGEMENT & REGULATION
Regulatory, Safety, Security and Environmental Services

COMMERCIAL ADVISORY
Retail, Food & Beverage, car rental, Car Parking, Property Development and Advertising

Roberts International Airport, Liberia
Operational readiness and transfer of new terminal building

Kenneth Kaunda International Airport, Zambia
Operational readiness and transfer for new terminal building

Kotoka International Airport, Ghana
Technical advisory and operational readiness and transfer of terminal 3

Oribi Airport, KZN
Due Diligence and Regulatory compliance

Mthatha Airport, Eastern Cape Airport
Due Diligence, Operations, Management and Regulatory compliance

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ENGINEERING PROJECTS ..

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KSIA, 2010

From Green-field

To International Airport

- Licensing requirements for new flight paths;
- Environmental compliance of noise management, co-existence of birds and fuel trucking;
- Regulatory compliance with Civil Aviation Authority requirements for the issuance of an airport license;
- Centralised management of the airport-wide Master Inventory made up of old and new furniture, fittings and equipment;
- Activation of a slot management system

800 RELOCATION ACTIVITIES EXECUTED

2 400 VEHICLE HOURS USED

10 EQUIPMENT INSTALLERS

367 000 CUBIC FEET OF INVENTORY MOVED

8 FREIGHT COMPANIES INVOLVED

1 000 CAR RENTAL VEHICLES MOVED

9 400 MAN-HOURS EXPENDED

22 NEW FURNITURE SUPPLIERS

1 600 HOURS OF DRIVING TIME

- Relocation of project planning and management;
- Route mapping and planning with the necessary road exemptions from traffic authorities;
- Integration of airlines, ground handling agents, government authorities, air traffic control, weather services, car rental companies and retail concessionaires.
- Tenant coordination and fit out programme.

SÃO PAULO GUARULHOS INTERNATIONAL AIRPORT , BRAZIL 2014

Airports Company South Africa supported a major ORAT effort at Guarulhos International Airport in Sao Paulo where a new state-of-the-art terminal was opened in time to host the 2014 FIFA Soccer World Cup.

Terminal 3, the airport's new international terminal, and its associated roads, aprons and taxiways were successfully brought into operation on the 11th of May 2014, ahead of the 2014 FIFA World Cup Brazil. The facilitation of the delegations and supporters for the 2014 FIFA World Cup Brazil was an overwhelming success as passengers, bags and aircraft experienced a smooth and seamless transition through the airport.

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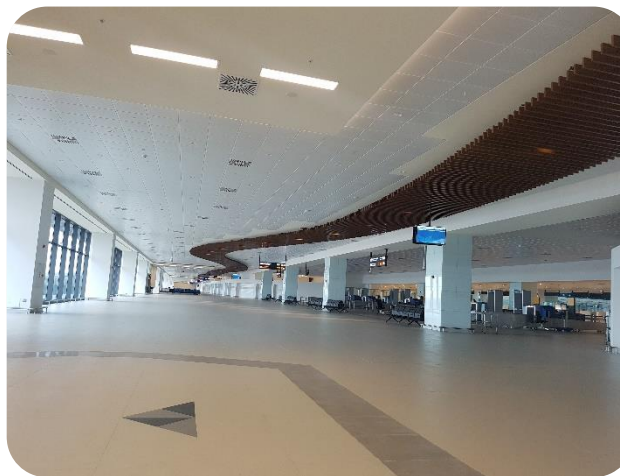AIRPORTS COMPANY
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KOTOKA INTERNATIONAL AIRPORT, GHANA 2018

Airports Company South Africa is proud of the partnership with Ghana Airports Company Limited (GACL), and to be part of unlocking Ghana as the preferred hub in West Africa. Kotoka Airport represents the international gateway to Ghana. The successful commissioning of Terminal 3 will not only assist with meeting the current and future needs of GACL but also attract business opportunities and create employment.

Airports Company South Africa has a shared responsibility to ensure that the GACL teams have the skills to implement change, and to guarantee a seamless transition of all processes into the new terminal building. This entails not only assisting GACL with Terminal 3's Operational Readiness and Airport Transfer (ORAT) challenges, but also conducting the reviews of critical process.

- Project oversight and management;
- Design review for ICT systems, baggage and airbridges;
- Contract and maintenance management;
- Operations, Security, Emergency servicing;
- Airport Engineering and ICT systems; and
- Commercial and stakeholder management.

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THANK YOU ..

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