



United Republic of Tanzania
Ministry of Communications and Works
Dar es Salaam International Airport



Architects _ Engineers _ Planners

Aéroports De Paris

BOUYGUES

Contractor



Historical note

The airport was first built in 1955 to cater for DC3 aircraft which were being used then by the defunct East African Airways. In 1967, the runway was lengthened and strengthened to cater for VC10 aircraft. In the subsequent years several minor improvements were carried out to the terminal building, taxiways and aprons in order to cope with the increasing passenger and aircraft traffic. A cargo terminal was also built.

These efforts could not cope with the increase in passenger, cargo and aircraft traffic. Immediately after the improvements of 1967, congestion started to show up due to the generated traffic as a result of more airlines using the airport. Hence from 1968 the Government started preparing plans for future improvements.

Foreword

The New Terminal and the improvement of Dar es Salaam International Airport, built for the Tanzanian Ministry of Communications and Works with French financial assistance is one of East Africa's major construction projects. It highlights Tanzania's development. The total cost is estimated at 440 Million Fr. Francs.

The Tanzanian Government, early in the 1970's, envisaged upgrading Dar es Salaam Airport, gateway to the famous Tanzanian game reserves and the Tanzanian National Parks, which was becoming more crowded year after year.

During 1979 the first steps were undertaken. These included the financial negotiations and the preliminary planning of:

- A New Passenger Terminal.
- The extension and improvement of the runway to receive direct flights from Europe.
- A new Air Traffic Control Centre to improve aeronautical navigation security in all Tanzanian air space.

French involvement began at that date when the D.R.E.E. (Direction des Relations Economiques Exterieures du Ministère de l'Economie et des Finances) included in its yearly budget the necessary funds, both for the design and construction.

The Ministry of Works then agreed to the appointment of Aéroports de Paris as Consultant Engineer, Architect and Designer for the entire project.

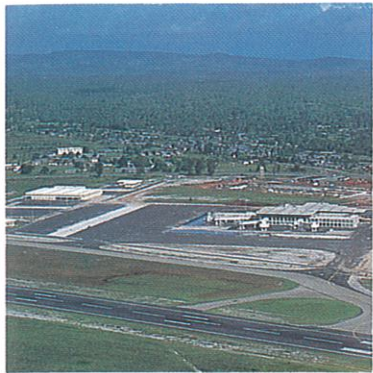
In 1980, after a competitive tender, the firm Bouygues International was selected by the M.O.W. to carry out the construction works which began in July 1981.



Master plan



Master plan



The two existing runways and the existing passenger terminal were the major constraints that determined the location of the new terminal and its facilities.

To be close to Pugu Road (the access highway) and to have easy and short access to the main runway (3,000 m long), the best place for the new terminal was considered to be to the north of the runway between Kipawa Village and the present terminal. A free space is reserved for a second module which will not be required before several decades.

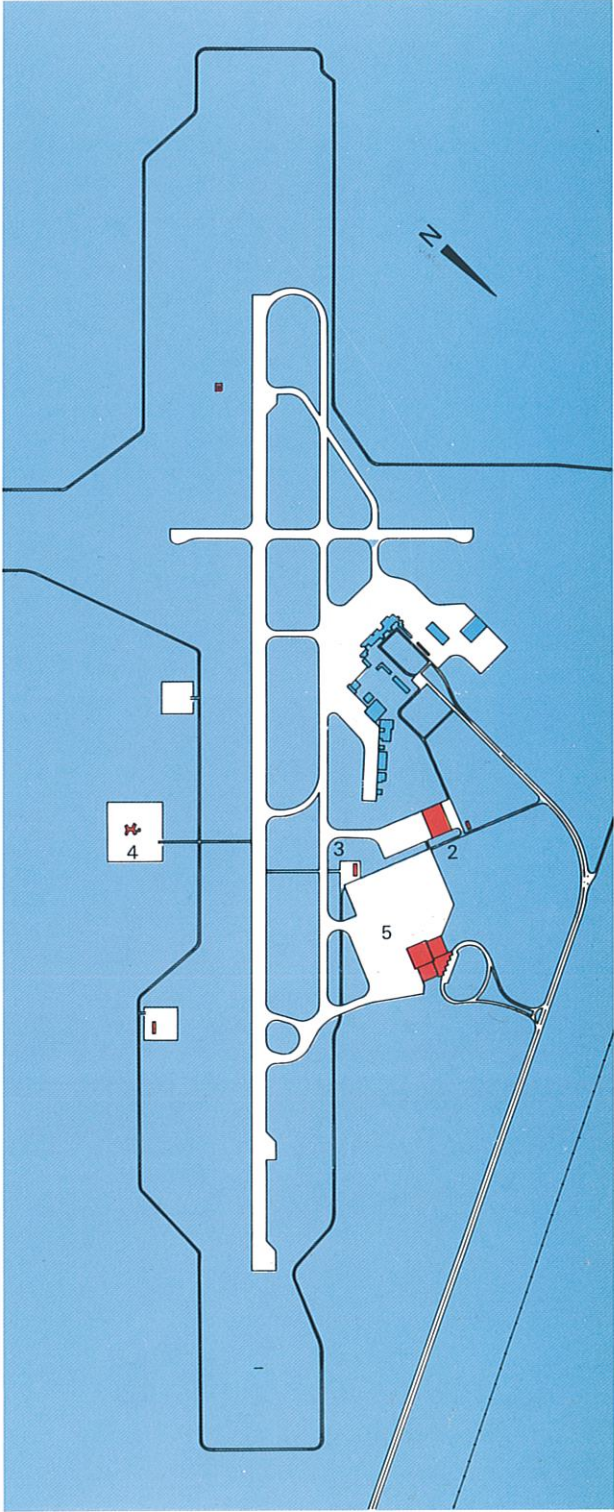
The new terminal (first module) has a capacity of 1.5 Million passengers per year.

A new standby power station, freight terminal, water pumping and fire fighting stations were built in between the present and the new terminals.

Due to lack of space, the new air traffic control centre, control tower and the meteo field were placed southwards of the main runway towards the middle of it.

A new radar station completes the navigation aids system. The improvements to the visual aids included new runway and approach lighting schemes, plus a new ILS and Papi.

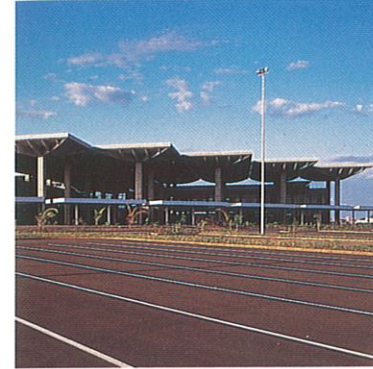
- 1 - Overall Layout.
- 2 - Freight Terminal Power Station and New Passenger Terminal.
- 3 - Fire Fighting Station.
- 4 - A.T.C./Control Tower.
- 5 - New Terminal.



The new terminal



The new terminal



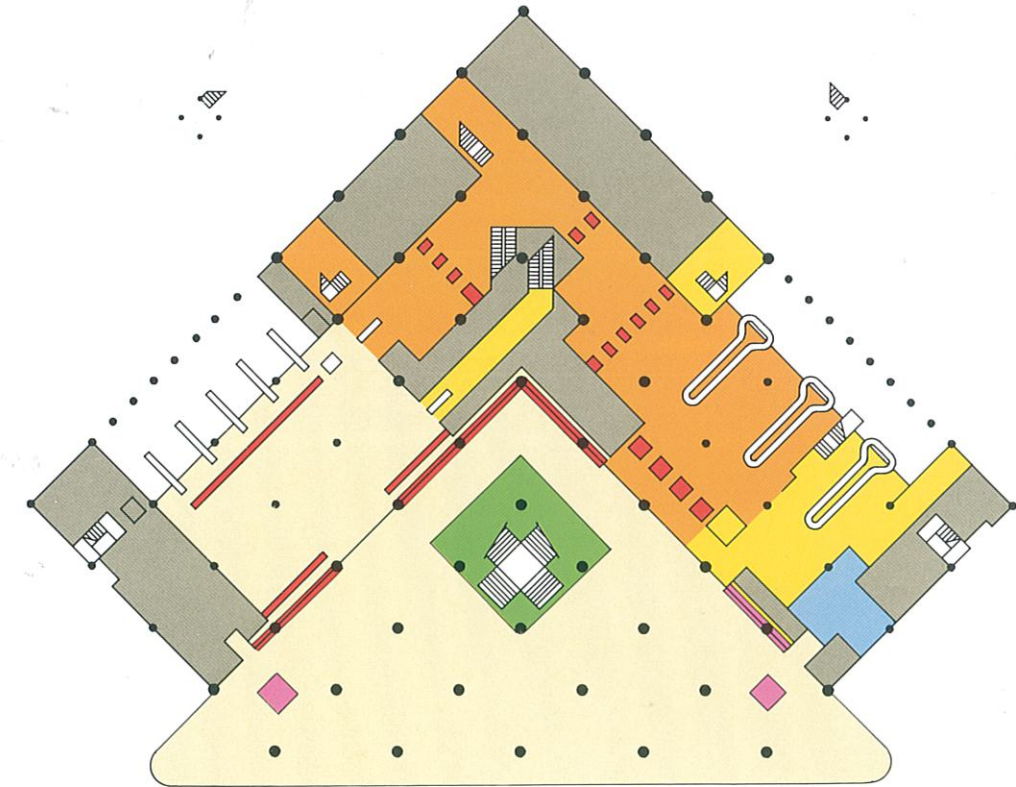
The new terminal is designed to handle an annual traffic of 1,500,000 passengers, one third of which is domestic. Its capacity should not be exceeded before the year 2000.

The shape of the building is triangular. Two sides overlook the aprons where five passenger gangways serve B 747 – DC 10 – A 300 – DC 9, etc. aircraft. The third side is the kerb side overlooking the airport access road and public car parks.

Passengers are processed on two levels. On the ground floor flanking a substantial public concourse, we find on the left (looking from the kerb side) the check-in area, and on the right the baggage delivery. All baggage handling is done on this level. Police, customs control facilities and some of the airlines offices are grouped here too.

- 1 – Public Concourse.
- 2 – New Terminal from Car-Park.
- 3 – Public Concourse - Departure Side.
- 4 – Access Staircase to Public Restaurant and Terraces.
- 5 – Mushroom Roof Units.

- public
- international
- domestic
- VIP
- offices



The new terminal



1

The new terminal



2



3



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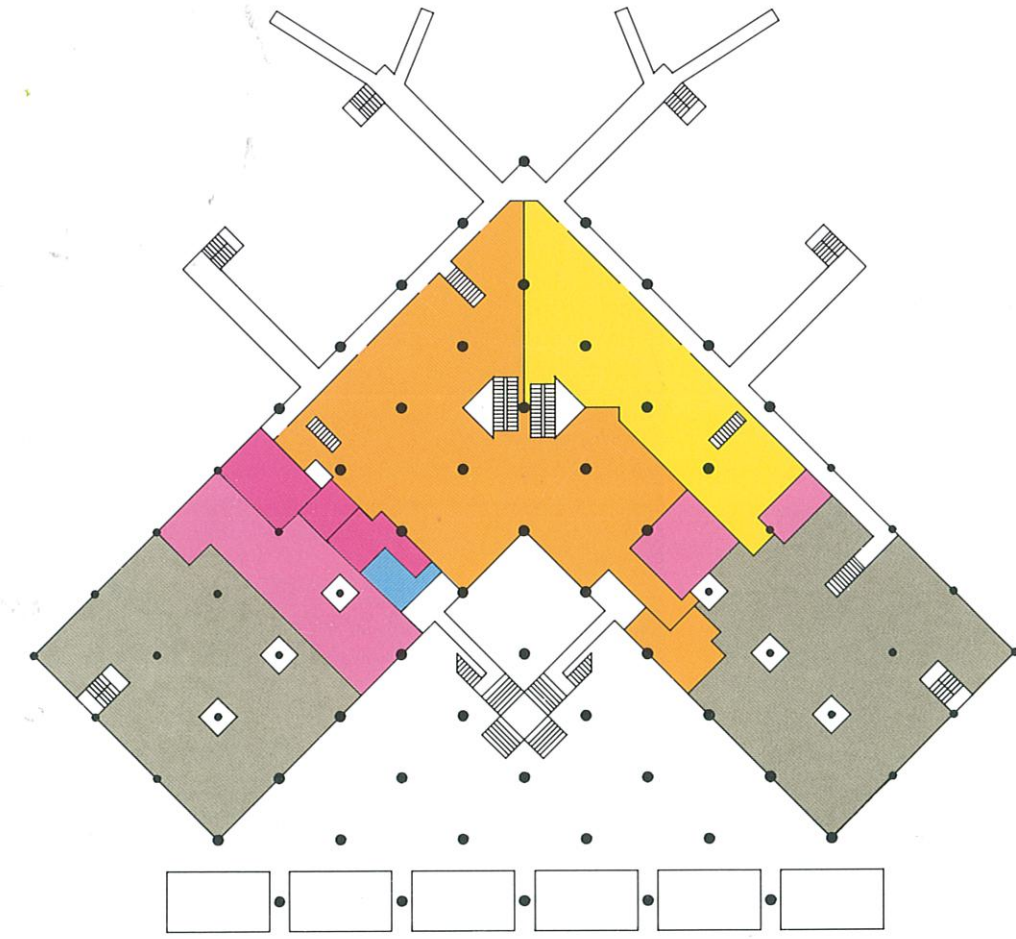


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Departing passengers proceed to the waiting lounges on the first floor level by means of escalators. There they find bars, duty free shops, and a restaurant. A glazed partition between International (on the left) and Domestic sections (on the right) keeps the first floor level as transparent as possible. A public restaurant and offices, access to which is obtained via an ornamental, X shaped, staircase complete the first floor accommodation.

The salient architectural feature of the building is the roofing composed of mushroom elements closely resembling palm-trees.

- 1 - Waiting Lounge.
 - 2 - Staircase to Waiting Lounge.
 - 3 - Waiting Lounge by Night.
 - 4 - Bar - Domestic Waiting Lounge.
 - 5 - Offices - Facade Detail.
- international
 - domestic
 - first class
 - shops and restaurant
 - offices

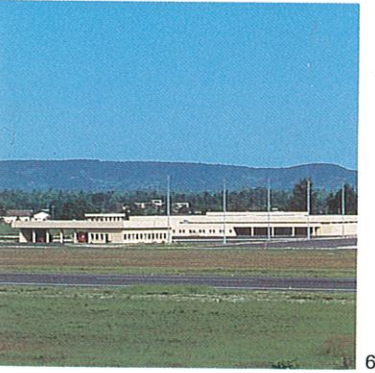
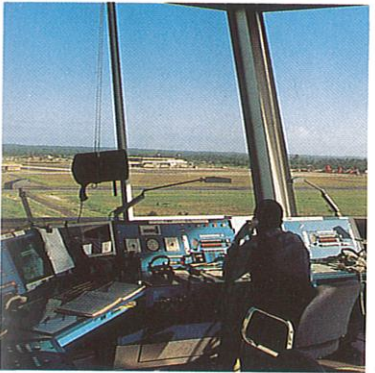
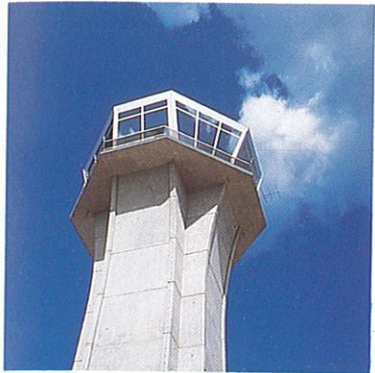


Technical building and control tower



1 - Control Tower and A.T.C. Building.
 2 - A.T.C. Radar Station.
 3 - Control Tower Cabin.
 4 - View from Cabin.
 5 - Fire Fighting Station.
 6 - Fire Fighting Station and Freight Terminal.

Technical building and control tower



Renewal of air traffic security equipment also formed part of the Dar es Salaam modernisation development amongst which the more important are:

- 1) The construction of a new strategically sited Air Traffic services complex south of the main runway consisting of:
 - Office accommodation for the Directorate of Civil Aviation and Meteorological Services.
 - A modern en-route control centre covering all Tanzanian I.F.R. and approach control to Dar es Salaam and Zanzibar.
 - A well sited and well equipped control tower.
 - A TA 23 radar, primary range 120 N.M., secondary range (S.S.R.) 200 N.M., feeding 3 control positions.
 - A new V.H.F. radio system (8 frequencies) and modernisation of H.F. equipment.
 - An Automatic Switching Centre.
- (Full modern back-up equipment such as security telephone, T.V. message distribution network, etc.).

- 2) Upgrading of the main runway to Category I precision status. This necessitated, amongst other works, the installation of a 3811.L.S. doubled in the direction 05 (Category 2) and a PAPI visual slope approach indicator in both directions, plus new runway edge and approach lighting systems. The existing H.F. radio beacons remain unchanged except for the VOR/DME which was re-sited on the centre-line of runway 05 at 0.5 N.M. distance offering a second means of approach to 05, simplifying approach in the direction 23 as well as serving as an en-route aid.

Freight terminal

The building encloses a freight handling area of 5,500 m² and 1,400 m² of office space. The annual capacity is 28,000 tonnes. Three-quarters of the area is devoted to international traffic. The equipment includes a mechanical transporter.

Fire fighting and rescue station

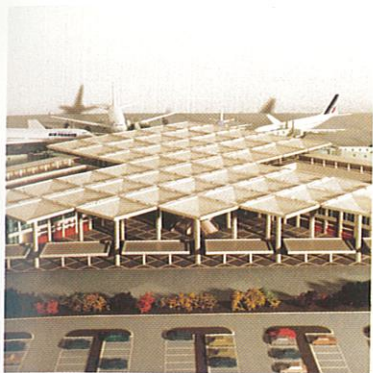
The station consists of a garage for eight vehicles, service accommodation and an observation post. Direct access to the runway is included.

Other buildings

The other buildings house the Power Station, the ATC radar, the meteorological observation post, the electrical substations associated with the runway lighting systems, the water pumping station, reservoir and other air navigation aids.



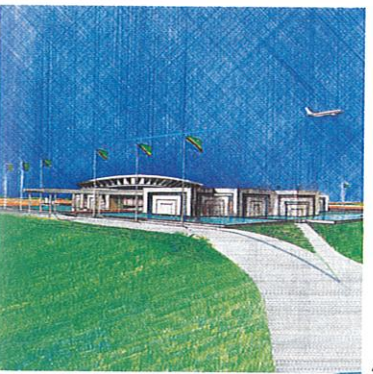
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Aéroports De Paris was retained as Consultant for the design and supervision of the works undertaken to improve and extend the Dar es Salaam International Airport.

The design work was carried out during the years 1979-1980 in association with Sofréavia to whom the navais, ATC and technical buildings were conferred.

Aéroports De Paris has also developed a design for a future State Reception Building at Dar es Salaam Airport near the New Passenger Terminal.

Furthermore, within the context of future development, Aéroports De Paris has designed a new international airport for Dodoma, the State Capital.

- 1 - Scale Model. New Terminal. Seen from Above.
- 2 - Scale Model. View from Car-Park.
- 3 - Scale Model. View from Apron Side.
- 4 - Dar es Salaam New Airport State Reception Building. Architects' Impression.
- 5 - Dodoma New Airport. Architects' Impression.

The Bouygues company



The Bouygues company

Bouygues International, the main contractor, was in charge of all construction and ancillary works of the project and carried out the Dar es Salaam International Airport on a turnkey basis.

The main runway works were performed without interruption of the air traffic thanks to very precise planning and working procedures carefully coordinated with the airport authorities and Department of Civil Aviation.

Some approximate quantities for the civil works are:

- Concrete	25,000 m ³
- Masonry	23,000 m ²
- Earthwork	300,000 m ³
- Sand slag	200,000 t
- Bituminous concrete	90,000 t

The extent of the project required the importation of:

- 1 sand slag plant	- 9 trucks TBH 280
- 1 bituminous plant	- 19 generators
- 1 concrete plant	- 6 cranes
- 1 crushing plant	- 5 loaders
- 12 trucks GBH 280	

In order to complete the project within the contract period more than 1,000 Tanzanian workers and 90 expatriates together took part in the works. A considerable transfer of knowledge and technical expertise was achieved.

List of Bouygues' Subcontractors who participated in the airport project:

Thomson CSF: Radar and ILS - CSEE, SEE, Nardeux, Sagem, Elecma : Aeronautical aids and equipment - Clemessy : Power station and visual aids - Drake and Scull : Air conditioning, electrical services and plumbing - Sietam : Conveyors, Passengers gangways - GPI - Wanson - Morel, Bonnet - Otis - Setr.

All other sections of the works were performed by the Bouygues Company directly.



- 1 - Reinforcement Detail.
- 2 - Runway Surfacing.
- 3 - Mushroom Roof Unit Construction.
- 4 - Terminal Building Construction.
- 5 - Positioning the Radar Antenna.