

SELECTED REFERENCES

AIRPORTS



COWI GROUP

COWI A/S

COUNTRY

GREENLAND

PERIOD

2017-2023

CUSTOMERKalaallit Airports Holding
A/S**TOTAL FEE**

USD 4.5 mln

AIRPORTS IN QAQORTOQ, NUUK AND ILULISSAT

Design of three new/upgraded airports in Greenland for aircraft up to code E. Design includes new runways, taxiways, aprons at airside. Further works at airside includes airfield ground lights, meteorology monitoring and navigation and communications. Landside infrastructure design include new roads, parking areas, and utilities.

Design includes consideration of rock blasting, construction of high embankments, and at Ilulissat Airport also coastal protection.

The airports of Ilulissat and especially Nuuk should be upgraded while the existing airports are in full operation.

For all three airports, special consideration has been give go the unique conditions in Greenland. This includes the remote location related to Europe and North America as well as the harsh climatic conditions. The remote location has necessitated extensive use of local materials (especially blast rock) to limit expensive transport of bulk materials. Import of materials must take into consideration the high sea transport costs as well as the long time that needs to be allocated to sea transport from primarily Denmark.

In terms of climate construction processes and materials need to be selected to cope with the harsh conditions in winter with freezing temperatures, snow and limited daylight. At Ilulissat the project has considered challenges related to permafrozen soil, protection of coastal protection embankments against icebergs.

Services provided within the assignment:

- > Preliminary and detailed design covering the following disciplines:
- > Airfield and landside geometry
- > Geotechnical engineering
- > Coastal protection
- > Drainage
- > Pavements
- > Airfield ground lights, meteorology monitoring, navigation and communication
- > Tendering of works
- > Project follow-up
- > Project Management
- > Authority approvals (municipal, government, civil aviation)

COWI GROUP

COWI A/S

COUNTRY

FAROE ISLANDS

PERIOD

2019-2021

CUSTOMER

Vagar Airport (FAE)

MASTER PLAN AND BUILDING PROGRAMME

Vagar airport is the only airport serving the Faroe Islands. The traffic has increased significantly over the last ten years with growth rates of around 10% annually. The islands are foreseeing a growing number of incoming tourists and as well increase of Faroese travelers. Hence an expansion of the airport facilities is highly needed. This include new passenger terminal, apron, service buildings and facilities, access road system and additional car parking.

COWI was responsible for developing a 20-year master plan for the expansion and development of the airport, planning the facilities for an increase of

current traffic volume to the double. The master plan work included an assessment of existing facilities, traffic projections, development of design basis, overall layout plan and phasing plans, CAPEX estimations and environmental assessment and studies.

Subsequent COWI was engaged to prepare the technical Building Programme, that will be the basis for the future expansion of the buildings.

The Building Programme includes concept design and technical specifications and requirements for the new passenger terminal, Cargo terminal, AFIS tower and a number of other Service buildings.

The Building Programme has been prepared in close cooperation with the Client and the stakeholders at Vagar airport. This included a number of workshops with local authorities, management and board members and representatives from the main carrier and ground handler at Vagar airport.

Services provided within the assignment:

- > Master plan including environmental studies,
- > Building Programme for passenger terminal, service buildings, new tower, and MRO facilities

COWI GROUP

COWI A/S

COUNTRY

Denmark

PERIOD

2016-2023

CUSTOMER

Copenhagen Airports A/S

TOTAL FEE

6 million USD

COPENHAGEN AIRPORT FINGER E (NEW PIER E)

Copenhagen Airport is expanding to cater for more than the 26.5 million passengers handled in 2015 and this project will increase the capacity. The project deals with technical advice and assistance in connection with the establishment of new finger E with associated support building (a total of about 30,000m²).

COWI's services include full design services for the new pier, and assistance with implementation of the procurement, delivery, commissioning etc. In addition, project follow-up and technical supervision.

Services provided within the assignment:

Project Management and Engineering design including:

Structural, Fire, Acoustic, HVAC, Environmental and Sustainability, Security controls, Lighting design, IT Systems, and Commissioning. For all project stages from Initial design, through to procurement and commissioning.

COWI GROUP

COWI A/S

COUNTRY

Greenland

PERIOD

2014 - 2015

CUSTOMER

Government of Greenland, Ministry of Health and Infrastructure.

TOTAL FEE

DKK 1.060.000

SECTORAL PLAN FOR GREENLANDIC AIRPORTS AND AVIATION

No investment value. The sectoral plan for airports and aviation is a plan with a 10-year perspective. It strengthens the overview of the existing air services to, from and within Greenland and describes the existing aviation infrastructure.

Initially a market analysis was carried out, studying the current and the future potential air service net-work/routes.

On that basis, COWI made suggestions and a prioritisation of the physical airport infrastructure, to be able to guide future decisions on construction projects and prioritise current maintenance funds.

In addition, the sectoral plan studies the competitive conditions in the Greenlandic aviation sector, including what the market can bear of competition and governmental support measures.

Lastly, the plan suggest possibilities and value of any loss guarantees for start-up of new routes or other state funded / subsidising actions towards airline operators.

Project management, interviews, socio economics, aviation, transport

COWI GROUP

COWI A/S

COUNTRY

Bangladesh

PERIOD

2012-2014

CUSTOMER

Civil Aviation Authority of Bangladesh (CAAB)

UPGRADE OF HAZRAT SHAHJALAL INTERNATIONAL AIRPORT

The main taxiway system of Hazrat Shahjalal International Airport has undergone a major rehabilitation and upgrading to meet future demands with respect to aircraft use and life expectancy.

The project was tendered as a design-build project. COWI assisted the winning contractor, Munck Asphalt A/S, with preparation of a detailed design for construction purposes.

The main taxiway system subject to the rehabilitation – in total approximately 5,500 m – includes a full-length parallel taxiway, two taxiway entrances to the runway and two taxiway exits. One of the exits was realigned to comply with the ICAO requirements for a Rapid Exit Taxiway. The original pavement was concrete pavement with varying overlay of asphalt for strengthening purposes. The pavements, originally from 1970 were in general severely dilapidated and not designed for loads of the aircraft types, which presently use the airport.

COWI assisted with setting up a pavement testing program. Based on the consolidated test results, a pavement design for a new flexible pavement was designed. The design was in accordance with the Employers Requirements based on a reuse of the existing pavement structure lying under the concrete pavement, while the concrete should be demolished and recycled in selected pavement structures.

Furthermore, the project included a 3-D geometric design for construction purposes. This also included design of taxiway widening in turns and widening of paved shoulders in order to comply with ICAO requirements for Code E aircraft. The airport silt is severely waterlocked and design of a subsurface drainage system for the new taxiway pavements was also part of the services. Finally, the design also included an upgrading of the taxiway lighting system to a Cat II system with inset centerline lights. During the construction phase, COWI assisted with refining of the pavement design based on actual measured strength of the reused pavement structures.

COWI GROUP

COWI A/S

COUNTRY

Oman

PERIOD

2005-2012

CUSTOMER

Ministry of Transport and Communications

TOTAL FEE

>150 mln USD

DEVELOPMENT OF MUSCAT & SALALAH INTERNATIONAL AIRPORTS, PLANNING, DESIGN AND SUPERVISION

Development of two existing airport in Oman comprising the following main topics:

Muscat International Airport:

- New Terminal with annual capacity of 12 million passengers, 6-lane access road, interchanges and parking for 6,000 cars.
- New second runway, and taxiways serving Code F aircraft.
- Apron areas with aircraft stands connected to the terminal with 28 passenger Boarding Bridges.
- New control tower and area control center.
- Aircraft Maintenance and Hangars.
- Fuel farm and fuel hydrant system.

Salalah:

- New Passenger Terminal with annual capacity of 2 million passengers and parking facilities.
- Apron area with aircraft stands connecting to the terminal with 6 passenger Boarding Bridges.
- New 4,000 m runway prepared for A380 and CAT II operations. New full length parallel taxiway.

- New Maintenance Hangar to accommodate a B747.

Description of actual services provided:

The design responsibility for Master planning, traffic studies and all Engineering design for civil and building works. COWI is also responsible for special equipment as security systems, IT systems and navigational aids. Furthermore, construction supervision is included.

OWI GROUP

COWI A/S

COUNTRY

Bulgaria

PERIOD

2001-2009

CUSTOMER

Sofia Airport EAD

SOFIA INTERNATIONAL AIRPORT NEW RUNWAY

In joint venture with KEO (Kuwait) and STROL 1000 (Bulgaria) COWI was awarded the contract for construction supervision of a new runway system within the Sofia Airport

Reconstruction, Development and Extension Project in 2001.

The consultants' main services cover Project Management and Supervision during construction of the runway system and related works. COWI is providing the inputs of Resident Consulting Engineer, Supervisor of Civil Works, Tendering Expert and Contracting Expert. The total scope of specialist services is 127 man-months, out of which 50 man-months are provided by COWI.

The project for upgrading of the Sofia Airport was initiated in 1995/1996 with the production of a Master Plan by the Bulgarian design company "Transproekt". To define the size of the future airport facilities – new runway and terminal building – the following parameters were used as starting points:

- > 2.6 million passengers per annum
- > 2000 passengers per peak hour
- > 20 aircraft movements per peak hour
- > 26 000 tonnes cargo per annum

The main elements of the Master Plan were the construction of a new parallel runway and a new passenger terminal building. Accordingly, the project was divided into two main packages:

- > Lot B1 – New Passenger Terminal Building and Related Infrastructure
- > Lot B2 – New Runway System and Related Works – consist of construction of a new runway system, a bridge across the Iskar River, existing runway extension, construction of taxiways to connect the new runway with the existing one, a deicing platform, a fire and rescue substation, additional crash roads, a new fence around the new territory for the international airport in Sofia. Other works include a new circular road, a road for inspecting the fence and related infrastructure. The construction includes the provision of runway power supply, a lighting path and two navigational systems.

The construction works are carried out in such a manner that the airport remains fully operational during the construction period.

Services provided within the assignment:

- > Project Management
- > Construction Supervision

COWI GROUP

COWI A/S

COUNTRY

Guyana

PERIOD

2003-2004

CUSTOMER

Ministry of Public Works
and Communications,
Guyana

TOTAL FEE**REHABILITATION OF RUNWAY LIGHTING CHEDDI JAGAN INTERNATIONAL AIRPORT**

The main runway of Cheddi Jagan International airport has been rehabilitated and upgraded to fulfil the requirements of the International Civil Aviation Organization, category I.

The works comprised rehabilitation of pavement and lighting systems for the 2,270 m runway. COWI has provided consulting services for the entire rehabilitation project, including the lighting system.

The rehabilitation of the runway lighting included the removal of the existing lighting system and the implementation of a new system:

- > Runway edge lighting, high intensity elevated lights
- > Runway threshold/end lights, bi-directional in-pavement lights
- > Two constant-current regulators (CCR) for power supply to the runway lighting system
- > Building works and power supply system for the CCR
- > Isolating transformers, cables, connectors, earthing system
- > Control system in control tower for remote control of lighting circuits

COWI has provided the following consulting services related to the lighting system:

- > Design of the lighting installations
- > Tendering and contracting
- > Approval of the Contractor's design
- > Site supervision and construction management
- > Participation in factory acceptance test of equipment
- > Supervision of installation, on-site testing and commissioning
- > Monitoring of personnel training
- > Coordination with pavement rehabilitation works

COWI GROUP

COWI A/S

COUNTRY

Norway

PERIOD

2011-2016

CUSTOMER

The Norwegian Civil
Aviation (AVINOR) and
Bergen Airport

BERGEN AIRPORT FLESLAND, NORWAY

COWI was contracted to carry out a major redesign of taxiways Reallocation of taxiways due to non compliance with ICAO rules. The work consisted of relocation of

Taxiway Y for a distance of 3,000 m and Taxiway W for a distance of 1,000 m and also relocation of cross taxiways for a total length of 1,500 m.

In connection with the taxiway relocation a new primary and secondary cable duct system was designed and constructed along with a new surface drainage system with eparators for collection of contaminated substances. An important design feature was an underground channel from the ocean to a nearby lake to secure water flow and allow for passage for sea trout and eel.

NEW TERMINAL DEVELOPMENT

In September 2011 an engineering team with COWI as one of the partners won the tender for the engineering services for a major expansion of the airport. The project includes a new passenger terminal building (Terminal 3),

redesign of the existing terminal for use as a future satellite terminal, and a major redesign of airside, forecourt areas and access roads.

The existing terminal was built more than 20 years ago with a design capacity of 3 mppa. Passenger figures have grown steadily reaching 5.5 mppa in 2011

Services provided within the assignment:

Project Management, Geometrical design of taxiways, design of civil works and pavements, drainage design, environmental evaluations, mechanical equipment, IT systems, docking systems, Energy solutions, HVAC in passenger terminal, acoustics, water sewage and solid waste, design of markings, construction supervision.

COWI GROUP

COWI A/S

COUNTRY

Faroe Islands

PERIOD

2011-2016

CUSTOMER

Vága Floghavn (FAE)

VAGAR INTERNATIONAL AIRPORT, NEW PASSENGER TERMINAL BUILDING

The Faroe Islands' only airport has been expanded and remodelled with new terminal and service buildings, and an apron expansion and remodelling. With the inauguration of the new passenger terminal in May/June 2014, a five-year overhaul and major upgrade of Vagar International Airport was completed.

Aside from the rebuilt terminal and service buildings, the airport's runway has been extended from 1,250 to 1,800 meters. Furthermore, the rebuild has included aircraft apron, administration facilities, fire station, and car park.

IMPROVED SERVICES AND OPERATING RADIUS

The implications of the revamp are far-reaching with improved service for passengers and airlines, safer and more predictable flights, VAGAR AIRPORT and access for aircraft with greater operating range.

The modern looking terminal building, in contrast with its predecessor, has an international, futuristic feel to it and offers more convenience and a wider range of experiences for passengers.

The big change compared to earlier, before the extension of the runway, is that Vagar Airport can now serve aircraft with a larger operating radius. The fact that the airport can now handle both medium-haul and short-haul flights puts many more destinations within reach across Europe and beyond.

COWI was responsible for the functionality of the terminal design including passenger and baggage flow and for geometry and detailed design of civil works for the apron expansion and redesign as well as quality assurance.

FIRE SAFETY A HIGH PRIORITY

Safety is of course extremely important for the airport, and a significant part of the overall safety are well-designed fire safety solutions.

COWI's fire engineers have developed the fire safety strategy for the passenger terminal and the support building based on Faroese, Danish and international codes and tandards. The major elements of the fire strategy are:

- > design of means of escape from different security zones (airside/landside)
- > fire alarm and evacuation strategy
- > mechanical fire and smoke control system
- > integration of the airport fire and rescue service into the building fire safety.

The fire team also documented the fire safety level by CFD simulations of fire and smoke spread as well as evacuation calculations

Services provided within the assignment:

- > Functionality within the passenger terminal, including flow of passengers and baggage
- > Simulation of passenger flow > Security concepts > PA / acoustics > IT infrastructure design > Planning and design of apron expansion and remodelling > Quality assurance and PM support > Fire safety strategy for the passenger terminal and the support building > Documentation of fire safety level by CFD simulations of fire and smoke

COWI GROUP

COWI A/S

COUNTRY

Uganda

PERIOD

2012-2017

CUSTOMER

China Communications
Construction Co., Ltd.,
Uganda

ENTEBBE AIRPORT – EXPANSION AND MODERNIZATION

In recent years, the country's fast-growing reputation as one of East Africa's tourist and investment destinations, has led to increased passenger traffic with more international airlines flying into Uganda. In order to secure continued economic growth and competitiveness, the Ugandan Government has decided a 20 years' master plan to expand, modernize and reconstruct the airport.

COWI'S ROLE

COWI is the planning and design consultant for CCCC (China Communications Construction Company), on phase 1 of the airport expansion.

The project involves many disciplines and will draw on assistance from COWI's airport specialists and designers from Denmark, Tanzania, India and Oman.

COWI is responsible for the planning and design of all stages and technical surveys for:

- > passenger terminal, 20,000 m²
extension
- > cargo centre, new building of 10,000 m², new apron and access roads
- > new apron for passenger aircraft
- > major refurbishment of two runways including runway lighting
- > renovation of pavements on remaining aprons.

The new passenger terminal will increase the airport capacity from 1.5 to 3 million annual passengers. The expansion will have two main floor levels and

a top level for offices. The ground floor will be used for a fully automated baggage sorting system and a goods delivery facility.

The second level will be a new check-in hall and a boarding hall.

The new cargo building will have facilities for import and export cargo. The building will include cold storage modules for short-term storage of food products which make up a large part of the cargo export. A new apron for dedicated cargo aircraft is part of the project as well as a spacious line up and manoeuvring area for trucks bringing and picking up goods at the cargo centre.

The main runway will have a new asphalt overlay and the parallel taxiway will be widened to meet requirements for Boeing 77-300 and for Airbus 340-600.

The second runway and associated taxiways will be strengthened and new shoulders will be constructed.

Apron 1, serving commercial aircraft, will be supplemented with a new remote apron for six IATA code C stands. The existing aprons, apron 1, 2 and 4, will also have pavement rehabilitations and new overlays

Services provided within the assignment:

EARLY PHASES COWI responsible for all technical works during feasibility study and planning phase.

PRELIMINARY DESIGN COWI covers all design works except from architectural design

DETAILED DESIGN COWI cover all design works

COWI GROUP
COWI A/S
COUNTRY
Iceland
PERIOD
2015
CUSTOMER
savia Ltd.

MASTERPLAN FOR KEFLAVIK INTERNATIONAL AIRPORT

Making use of the airport's existing facilities in the best possible way for as long as possible was one of the main reasons COWI and the Norwegian architects, Nordic, won the design contest for a new master plan for Keflavik International Airport on Iceland.

To meet increasing demands at the fast expanding Keflavik Airport, the Icelandic

airport operator Isavia late 2014 invited six international teams to come up with

their idea for a master plan to ensure the airport capacity as far ahead as 2040.

The proposal from COWI and Nordic was unanimously selected as the winning proposal. Optimizing the use of the airport's existing facilities, and the fact that

the development can occur with minimum disturbance to the day-to-day operations were decisive factors for the selection committee.

A key advantage of the proposal is that the design utilizes the airport's existing

facilities best possibly for as long as possible. This is cost efficient for the client

who can invest at a later point in the project phase.

In addition, sustainability, convincing land use and environmental plans are important features of the proposal.

The proposal includes a northward extension of the current terminal facility, and

a future north-south runway

Services provided within the assignment:

Capacity and planning input to land use plan and terminal plan and responsible for environmental plan

COWI GROUP
COWI A/S
COUNTRY
Norway
PERIOD
2009-2017
CUSTOMER
The Norwegian Civil
Aviation Administration
TOTAL FEE
USD 20 million

EXPANSION OF TERMINAL AND APRON OSLO AIRPORT, GARDERMOEN NORWAY

Expansion of Oslo International airport with a major expansion of the passenger terminal building approx 120,000 m², a new pier with 19 aircraft stands, new taxiway system and a redesign of the landside forcourt. The planned expansion will take the capacity of the airport to 28 million passengers in the first phase and further to 35 million passengers in a later stage.

Services provided within the assignment:

Project management, HVAC in the terminal, IT systems, acoustics, fire strategy, geometry for the airfield, Involvement as airport specialists in design of the terminal and apron

COWI GROUP

COWI A/S

COUNTRY

India

PERIOD

2003-2008

CUSTOMER

Hyderabad Intl. Airport Ltd. (74%), Gov. of Andhra Pradesh (13%), Airport Auth. of India (13%)

TOTAL FEE

USD 1.9 million

HYDERABAD INTERNATIONAL AIRPORT, MASTERPLAN AND EPC TENDER

The new Hyderabad International Airport is a greenfield airport located some 20 km from city centre of Hyderabad.

It is designed to take the largest commercial aircraft including Airbus A-380 and in the opening year forecast to handle approximately 5 million passengers. The Masterplan takes into account stagewise expansion of both terminal buildings and airside facilities to a capacity of 20 million passengers for one main runway (4,260 m x 60 m). A second parallel runway and additional passenger terminal buildings can be built later to cater for a total maximum annual capacity of 40 million passengers.

The new airport has in the initial phase the following facilities:

- Main passenger terminal building (100,000 m²) with visitors village and with ample parking facilities.
- ATC tower and communication service block.
- Runway, taxiways and aprons with full instrumentation.
- Cargo terminal and Haj Terminal
- Hangars and aircraft maintenance facilities.
- Catering facilities.
- Fire and rescue stations.
- Hydrant fuel system.
- IT and Security systems.
- High capacity access roads, a bus terminal and a planned mass transit rail system.
- Housing areas for selected staff.

COWI A/S in association with Aviaplan and STUP is providing consulting services for preparing the Master Plan, preliminary engineering / architectural design, tender documents for EPC international tendering and design co-ordination and management in the construction phase.

Description of actual services provided

Overall project management, Planning, Studies and Evaluation, Surveys and Investigations, Design, Tendering and Contracting of all airside and landside facilities. Value engineering was performed as part of the tender evaluation.

Comprehensive EIA and Environmental Management planning.

Coordination of road and rail infrastructure on site and connections to the existing and planned public system off site.

Responsible for development of the Air Traffic Study and a Business Plan for the 20 sq.km airport area.

Design check of detailed design

COWI GROUP

COWI A/S

COUNTRY

Bulgaria

PERIOD

2001-2009

CUSTOMER

Sofia Airport EAD

TOTAL FEE

USD 2.5 million

SOFIA AIRPORT SUPERVISION OF LOT B2

Lot B2 consists of construction of a new runway, extension of the existing runway as taxiway, bridge across the Iskar River for the new and the extended existing runway, construction of taxiways to connect the new runway with the apron, airfield ground lighting, instrument landing systems (ILS), de-icing platform, fire and rescue substation, transformer station, additional crash roads, a new perimeter fence for the extended area. Other works include a new circular road, a road for inspecting the fence and related infrastructure. The construction includes the provision of runway power supply, a lighting path and two navigational systems. The services includes pre-qualification of tenderers, design review, assistance in connection with tendering and contracting and supervision management.

Services provided within the assignment:

Assistance to Pre-qualification, tendering and contracting, design review, project management, specialist assistance and supervision management of civil works during construction including the defects liability period.

COWI GROUP

COWI A/S

COUNTRY

Latvia

PERIOD

1999-2006

CUSTOMER

SJSC Riga International
Airport

TOTAL FEE

USD 1.32 million

RIGA INTERNATIONAL AIRPORT

New 2-storey pier with 7 gates of which 5 are connected by passenger boarding bridges. Total new building area: 5,200 m² and refurbishment of 3,100 m² of existing terminal. Reconstruction of apron and construction of new de-icing platforms.

Services provided within the assignment:

- Project Management
- Conceptual design of pier and apron
- Specialist advisor on all airport related issues during detailed design

COWI GROUP

COWI A/S

COUNTRY

Latvia

PERIOD

2009-2011

CUSTOMER

SJSC Riga International
Airport

TOTAL FEE

160.000 Euro

FEASIBILITY STUDY AND COHESION FUND APPLICATION FOR IMPROVEMENT OF RIGA AIRPORT (RIX)

Feasibility study of infrastructure elements to be included in Cohesion fund application. Elements divided into two main categories: Environmental improvements and Safety improvements.

- Strengthening of the runway strip (improved safety, ICAO compliance)
- Runway surface repairs (improved safety)
- CAT II lighting (improved operation during low visibility periods)
- Additional runway entries and exits (reduced taxi distances and runway occupancy time)
- De-icing platforms with de-icing fluid re-collection (improved environmental protection)
- Storm water system, and subsurface drainage system (improved safety)
- Reconstruction of aprons (improved safety)
- Improved surface drainage including oil separators (improved environmental protection)
- Fuel hydrant systems for aprons (reduced vehicle traffic on aprons)
- Dedicated solid waste handling area (source segregation and spil protection)
- Vehicle washing facility (including oil separation and water recircling)
- Improved power supply (electrical substation)

Services provided within the assignment:

Analysis of RIX position in the transportation market of the Baltic region. Site visit and identification of potential infrastructure elements to include in feasibility study. Technical and financial feasibility study of selected infrastructure elements. Analysis of socio economic benefits of the project elements. Preparation of sketch design and construction cost estimates for selected infrastructure elements. Preparation of Feasibility Study report for Cohesion Fund application use.

COWI GROUP

COWI A/S

COUNTRY

Uganda

PERIOD

2012-2017

CUSTOMERChina Communications
Construction Co., Ltd.**TOTAL FEE**

USD 5.6 million

ENTEBBE INTERNATIONAL AIRPORT, DESIGN AND CONSULTANCY SERVICES FOR DEVELOPMENT AND EXPANSION

Expansion of Entebbe international airport. The scope includes planning and design of the following main elements;

Expansion of the passenger terminal with 20,000 m² increasing the capacity from 1.5 to 3 mppa, new cargo centre with a cargo building of 10,000 m², new cargo apron, access road and landside truck area at the cargo facility, resurfacing of the 2 runways plus associated taxiways, new remote apron area, repavement and redesign of the existing apron 1, apron 2 and apron 4.

The project included feasibility study, planning and all design works..

Services provided within the assignment:

Early phases: COWI staff responsible for all works during feasibility study and planning phase.

Design phase: COWI cover all design works except from architectural design on the cargo building.

COWI GROUP

COWI A/S

COUNTRY

Norway

PERIOD

2012-2013

CUSTOMER

COWI Norway

TOTAL FEE

USD 192,021

ANDOEYA AIRPORT-REHABILITATION OF MAIN RUNWAY, APRONS AND TAXIWAYS

COWI was assigned to carry out rehabilitation design of concrete and asphalt pavements in Andoeya Airport. The initial task included analyses of various survey data in order to determine deterioration mechanisms and propose appropriate rehabilitation methods on pavements, geometric design, drainage, and de-icing facilities.

In phase II COWI prepared detailed design and tender documents (drawings, specifications and tender procedures).

In phase 3 COWI will be responsible for supervision and construction management as well as providing specialist input on design issues.

Services provided within the assignment:

Pavement analyses, rehabilitation design, drawings and specifications, tendering, supervision and construction management

COWI GROUP

COWI A/S

COUNTRY

Maldives

PERIOD

2014-2015

CUSTOMER

MT Højgaard

TOTAL FEE

USD 200,000

EXTENSION AND REHABILITATION OF GAN INTERNATIONAL AIRPORT

A comprehensive redesign of Gan International Airport airside, both for airside geometry and pavement construction. This project included review of declared runway lengths, runway end safety area design, apron and taxiway geometry. Additionally, pavement design for the extension of the runway, new perimeter road, taxiway and apron as well as design for the rehabilitation of existing runway, apron and taxiway.

Services provided within the assignment:

Geometric and pavement design and documentation

COWI GROUP

COWI A/S

COUNTRY

Denmark

PERIOD

2016

COPENHAGEN AIRPORT RUNWAY 12-30 RENOVATION

Copenhagen Airport is expanding to cater for more than the 26.5 million passengers handled in 2015. As a consequence of passenger terminal

CUSTOMER
Copenhagen Airports A/S

TOTAL FEE
USD 80,000

expansion, runway 12-30 may be dis-continued as runway and later be used as taxiway.

COWI's services include assessment of the current condition of pavements on runway 12-30 and development of a pavement maintenance strategy for the runway under different traffic and time scenarios.

Services provided within the assignment:

Visual pavement condition survey, assessment of previous visual inspection surveys and bearing capacity tests, development of traffic forecast under different scenarios, development of maintenance strategies for the scenarios, construction cost estimates. Detailed design for renovation of pavement in NW end of runway. Bearing capacity testing with Traffic Speed Deflectometer on Runway 12-30 and Taxiway A.