



# JURUTERA MINSAR CONSULT SDN BHD

Civil & Structural Consulting Engineers



## COMPANY PROFILE

AIRPORT DIVISION

Committed to Excellence Since 1985

# ABOUT US

## MINSAR'S AIRPORT DIVISION

Jurutera Minsar Consult Sdn Bhd (Minsar) is a Sarawak-based engineering consultant firm established in 1985. Since its inception, Minsar now has over 160 staff including more than 60 qualified engineers with majority (52%) bumiputera share participation. Minsar is registered with the Ministry of Finance, Malaysia, Unit Pendaftaran Kontraktor & Juruperunding Negeri Sarawak, Board of Engineers Malaysia, Jabatan Kerja Raya, Sarawak & Malaysia, Jabatan Pengairan dan Saliran Malaysia and Association of Consulting Engineers Malaysia.

In 1995, realising the potential in the region's airport industry, Minsar brought together a talented team of experts to form Minsar's Airport Division. Minsar's Airport Division has since carried out over RM13.7 billion worth of airport projects and studies, 10.0 million square feet of terminal building designs and 170,000 feet of runway designs. Minsar's experience and deep understanding of airport operations encompasses both domestic and international airports throughout Malaysia, Brunei as well as military airfield facilities in Malaysia.



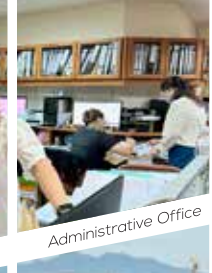
Member  
through



Head Office



Drafting Office



Administrative Office



Head Office Building, Kuching



## OUR LEADERSHIP



**Ir. Hii Yuh Tung**  
*Principal*

Email : [hiiyt@minsar.com.my](mailto:hiiyt@minsar.com.my)

Ir. Hii is the Founder of Minsar, and is the Managing Director of the Company since its establishment in 1985. He has over 45 years of experience in the Civil and Structural Engineering field and is involved in the planning & management of most major projects undertaken by the Company. He has also been actively involved in major airport development works since 1998. He is a member of MIEM, P.Eng, MACEM, C.Eng, MICE and MCIWEM, CWEM.



**Ir. Sa'id Bin Haji Dolah**  
*Director – Head of Project Management*

Email : [sdolah@minsar.com.my](mailto:sdolah@minsar.com.my)

Ir. Sa'id is an Executive Director in Minsar and is the Head of the Project Management Division in the Company. He has over 35 years of experience in Civil and Structural design and project management works. Ir. Sa'id has also gained much experience in the project management of airport projects including live airport upgrading projects such as the KKIA and Kuching International Airports. He is a member of MIEM, P.Eng, and MACEM.



**Ir. Laurance Chiam**  
*Director – Head of Structural*

Email : [Ichiam@minsar.com.my](mailto:Ichiam@minsar.com.my)

Ir. Laurance is an Executive Director in Minsar and heads the Structural Division in the Company. With over 35 years of post-graduate experience, he has gained extensive experience in handling the structural aspects of airport projects, and has great innovative expertise for planning work sequencing in complicated development works for live airports, such as the modernisation of Brunei Airport, Kuching and KKIA. He is a member of MIEM, P.Eng, and MACEM.



**Ir. Dr. Adrian Hii**  
*Director – Head of Transportation*

Email : [adrian.hii@minsar.com.my](mailto:adrian.hii@minsar.com.my)

Ir. Dr. Adrian has over 20 years of experience in major civil infrastructure projects, initially based in Australia, Kuala Lumpur, and Singapore before returning to Sarawak. Some notable projects include the KVMRT Sg. Buloh - Kajang Line, Malaysia-Singapore RTS Link, Pan Borneo and Coastal Highways, and Lawas Airport. He has also led various Feasibility and Master Plan Studies for airports and port projects. He is a member of MIEM, P.Eng, MStructE, CEng, MIEAust, CPEng, MACEM, APEC Engineer, IntPE(Aus).



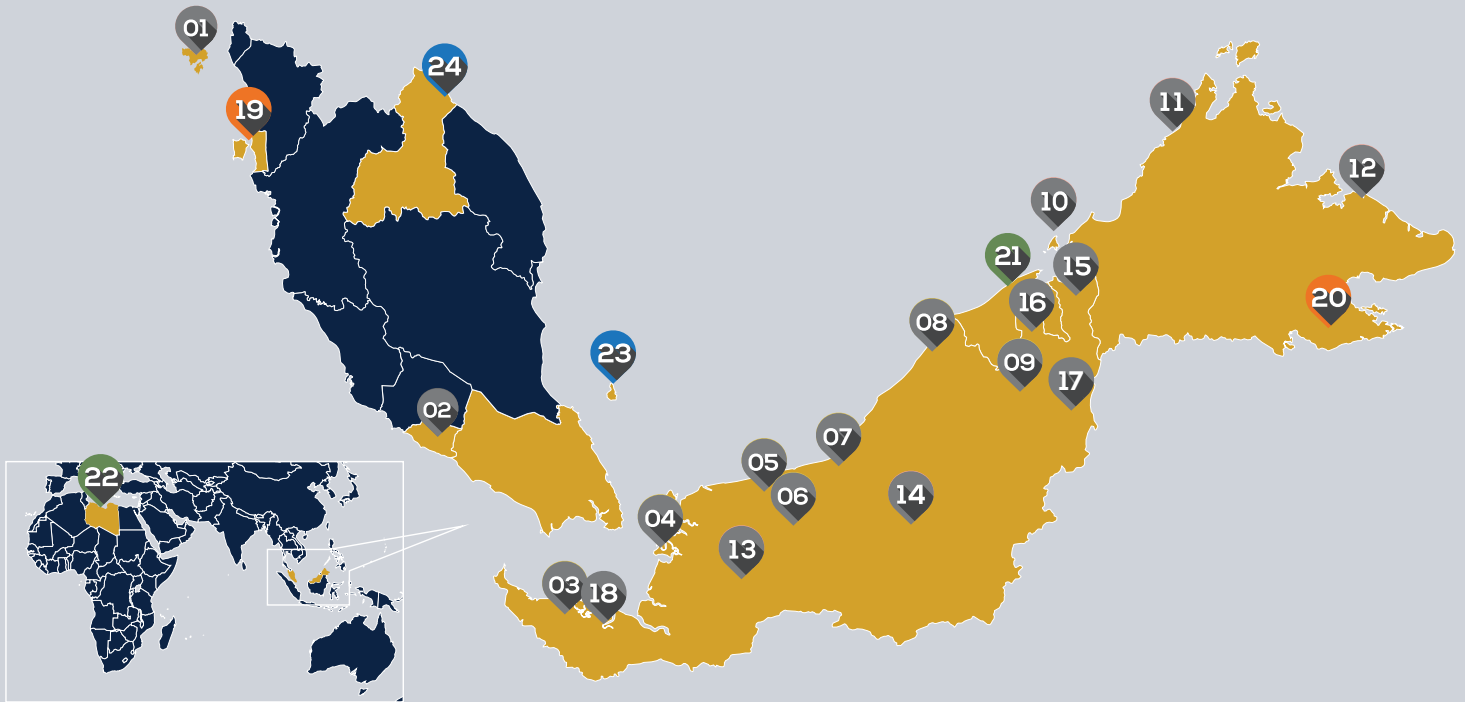
**Ir. Roland Ong**  
*Head of Airport Division*

Email : [roland.ong@minsar.com.my](mailto:roland.ong@minsar.com.my)

Ir. Roland has over 25 years of experience in Civil Engineering works, and is the Head of Airport Division in the Company. He has gained extensive and specialised experience in airport & aviation engineering design and management of airport construction. Has been involved in more than 10 major airport projects all over Malaysia and Brunei. He also heads the team in airport Feasibility and Master Plan studies. He is a member of MIEM, P.Eng, and MACEM. Roland has 2 Professional certificates by ACI on Airport Master Planning and GSN4 Working with Annex 14.







## CAPABILITY OVERVIEW

### AIRFIELD PAVEMENT ENGINEERING

- Evaluation & Design of Airfield Pavement.
- Airport Pavement Management System.

### AIRPORT MASTER PLANNING

- Priorities & Phasing of Airport Development.
- Landside & Airside Facilities Planning.

### AIRPORT FEASIBILITY STUDIES

- Assessing & Forecasting Airport Traffic, Demand & Capacities.
- Economic & Financial Feasibility.

### AIRFIELD MARKINGS & SIGNAGE

- Runway, Taxiway & Apron Markings.

### AIRPORT TERMINAL PLANNING

- Airport Terminal Capacity Calculations.
- Planning & Design of Terminal.

### OBSTACLE LIMITATION SURFACE STUDIES

- Assessment of Obstacle Limitation Surfaces & Airspace.
- Restrictions & Requirement of an Aerodrome.

## OUR FOOTPRINT

Minsar has gained valuable relevant experience in the development of airports of various sizes throughout Malaysia and Brunei.

We provide complete end-to-end solutions ranging from feasibility studies, master-planning, detailed design, contract administration, construction supervision as well as project management.

For over 25 years, Minsar Airport Division has been applying its knowledge as Lead Consultant, Airport Planner, Civil & Structural Engineering Consultant on Airport development projects for government agencies, turnkey contractors, private clients and airport owners.

Our local strength, world-class expertise and collaborative relationships have been recognized in the industry for delivering value and full satisfaction of our Client's needs.



## OUR EXPERIENCE

1. LANGKAWI INTERNATIONAL AIRPORT, KEDAH
  2. BATU BERENDAM AIRPORT, MELAKA
  3. KUCHING INTERNATIONAL AIRPORT, SARAWAK
  4. TANJUNG MANIS AIRPORT, SARAWAK
  5. NEW MUKAH AIRPORT, SARAWAK
  6. SIBU AIRPORT, SARAWAK
  7. BINTULU AIRPORT, SARAWAK
  8. MIRI INTERNATIONAL AIRPORT, SARAWAK
  9. MULU AIRPORT, SARAWAK
  10. LABUAN AIRPORT, FEDERAL TERRITORY
  11. KOTA KINABALU INTERNATIONAL AIRPORT, SABAH
  12. SANDAKAN AIRPORT, SABAH
  13. NEW BEBULING AIRPORT, SPAOH, SARAWAK
  14. NEW BUKIT MABONG AIRPORT, SARAWAK
  15. NEW LAWAS AIRPORT, SARAWAK
  16. LIMBANG AIRPORT RUNWAY EXTENSION, LIMBANG
  17. BARIO AIRPORT EXTENSION, BARIO
  18. PROPOSED BUSINESS AVIATION TERMINAL (BAT), ADMIN. BUILDING, HANGAR EXPANSION AT KUCHING INTERNATIONAL AIRPORT, KUCHING
- FEASIBILITY AND MASTER PLAN STUDIES**
19. PENANG INTERNATIONAL AIRPORT, MASTER PLAN
  20. TAWAU AIRPORT, MASTER PLAN
- INTERNATIONAL AIRPORTS**
21. MODERNIZATION OF BRUNEI INTERNATIONAL AIRPORT
  22. NEW BENGHAZI INTERNATIONAL AIRPORT, LIBYA
- TENDER AND PROPOSALS**
23. PULAU TIOMAN AIRPORT, PAHANG
  24. SULTAN ISMAIL PETRA AIRPORT, KOTA BAHRU, KELANTAN

### HELIPORT / HELI-BASE DESIGN

- ▶ Air Taxiways, Ground Taxiways, etc.
- ▶ Rotary Aircraft Parking Apron & Associated Facilities.

### AIRPORT CONSTRUCTION PLANNING

- ▶ Planning of Live Airport Upgrading Works with Minimum Disruption.

### LANDSIDE INFRASTRUCTURE DESIGN

- ▶ Access Road, Landside Facilities, Carparks & Utilities.
- ▶ Air Traffic Control Tower.

### AIRCRAFT HANGARS

- ▶ O&G Crew Change & MRO Hangars.
- ▶ Military Hangars & Associated Facilities.

### PROJECT MANAGEMENT

- ▶ Contract Administration & Management.
- ▶ Supervision & Monitoring of Construction.

### MILITARY AIRBASE PLANNING & DESIGN

- ▶ Air Force Base Planning & Design.
- ▶ Shelters, Hangars, Aircraft Bunkers.
- ▶ Ammunition & Explosive Storage.

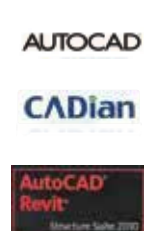
#### STRUCTURAL DESIGN SOFTWARE



#### ROADS / CIVIL WORKS / BRIDGES / GEOTECHNICAL DESIGN SOFTWARE



#### DRAFTING SOFTWARE



#### AIRPORT DESIGN SOFTWARE



170,000 FEET OF RUNWAYS



## AIRPORT PROJECTS - EAST MALAYSIA



BEFORE



AFTER



### ▲ REDEVELOPMENT OF KUCHING INTERNATIONAL AIRPORT

#### ✈ KUCHING INTERNATIONAL AIRPORT, SARAWAK

COST: RM620 MILLION      DURATION: SEP 2004 - DEC 2010

Upgrading of the fourth busiest airport in Malaysia by extending existing runway to 3780m over low swampy land and expansion of live operational terminal building to 5.0 Million Passengers per Annum (MPPA) capacity. Expansion of Aircraft Apron to 9 bay stands up to code 4E Aircraft.

#### ✈ BINTULU AIRPORT, SARAWAK

COST: RM380 MILLION  
DURATION: NOV 2000 - MAY 2003

Works involved a new Runway of 2,780m with Cat. 1 Instrument Landing System, two new connecting taxiways, a new Apron with 5 aircraft stands, a new 10,000 sqm Terminal Building, ATC Control Tower, completely new NAVAIDS, COMAIDS and ILS System as well as other associated facilities for a ICAO Code 4C Airport.

#### ✈ SIBU AIRPORT, SARAWAK

COST: RM138 MILLION  
DURATION: SEP 2010 - SEP 2012

Upgrading and extension of existing terminal building to 15,240 sqm accomodating 900 Passenger at Peak Hour (PPH), expansion of Aircraft Parking Apron to accomodate aircraft up to B747 (Code 4E).





▲ **NEW BINTULU AIRPORT, SARAWAK**



▲ **EXTENSION OF MIRI AIRPORT, SARAWAK**



▲ **EXTENSION OF MULU AIRPORT, SARAWAK**



▲ **EXPANSION OF SIBU AIRPORT, SARAWAK**

### ✈ **MIRI AIRPORT, SARAWAK**

**COST: RM200 MILLION**

**DURATION: NOV 2001 - MAY 2004**

Works involved the extension of the existing runway to 2,745m, a new partial Parallel Taxiway and a new Terminal Building for AB-330 operation. Project was completed ahead of schedule in July 2003.

### ✈ **MULU AIRPORT, SARAWAK**

**COST: RM65 MILLION**

**DURATION: APR 2000 - APR 2002**

Extension of existing Runway to 1,500m with a new terminal & Instrument Landing System for Code 3C Aircraft operation.



## ✈ SANDAKAN AIRPORT, SABAH

### UPGRADING OF SANDAKAN AIRPORT

COST: RM60 MILLION

DURATION: MAY 2013 - NOV 2014

Expansion of Sandakan Airport Terminal to 12,500 sq m (750 PPH) including its associated facilities. Minsar was the lead design & build consultant. The work was completed ahead of schedule in October 2014.



## ✈ MUKAH AIRPORT





## ✈ KOTA KINABALU INTERNATIONAL AIRPORT, SABAH

### REDEVELOPMENT OF KOTA KINABALU INTERNATIONAL AIRPORT

COST: RM750 MILLION

DURATION: APR 2006 - NOV 2010

Works include runway extension, taxiway extension, parking apron extension and runway rehabilitation.

#### ◀ UPGRADING OF MUKAH AIRPORT, SARAWAK

COST: RM65 MILLION

DURATION: SEP 2002 - SEP 2004

Works include extension of runway from 1,200m to 1,500m, improvement of landside and airside infrastructure, roads, drains and fencing.

#### ◀ NEW MUKAH AIRPORT (PACKAGE 1)

COST: RM133 MILLION

DURATION: APRIL 2014 - DEC 2016

Master Plan Study for proposed New Mukah Airport, detailed design for Phase 1 development for ATR72 aircraft operation and initial earthworks.

#### ◀ NEW MUKAH AIRPORT (PACKAGE 2)

COST: RM302 MILLION

DURATION: AUG 2017 - AUG 2020

Final formation, airfield pavement, access roads, building works and infrastructures.



#### ▲ NEW TANJUNG MANIS AIRPORT, SARAWAK

COST: RM75 MILLION

DURATION: FEB 1999 - FEB 2001

New airport at Tanjung Manis, Sarawak with a 1,500m x 30m runway and a new terminal & apron for Code 3C Aircraft operation & terminal facilities.

## AIRPORT PROJECTS - WEST MALAYSIA & INTERNATIONAL

### ✈️ BATU BERENDAM AIRPORT, MELAKA



#### UPGRADING OF BATU BERENDAM AIRPORT

COST: RM131 MILLION

DURATION: APR 2007 - APR 2010

Works include runway extension to 2,135m, rehabilitate existing airfield pavement, a new Terminal Building and new Aircraft Parking. Our team was engaged as the Airport Planner under the Design & Build Contractor.

### ✈️ LANGKAWI INTERNATIONAL AIRPORT, KEDAH



#### EXTENSION OF LANGKAWI INTERNATIONAL AIRPORT

COST: RM315 MILLION

DURATION: JUN 1994 - JUN 1997

Extension of Runway to 3,780m beyond the coastline. Works involved sea reclamation and subsoil improvement, and an 8km long Double-Sided Sheet Pile Off-Shore Breakwater.



## ✈ BRUNEI INTERNATIONAL AIRPORT



### MODERNIZATION OF BRUNEI INTERNATIONAL AIRPORT

COST: RM325 MILLION

DURATION: NOV 2011 - JUL 2015

The Project was won through Design and Build Tender among International Firms. Our team was engaged as the Lead Engineering Consultant. Works include expansion and renovation of Terminal Building under continuous operation to capacity of 3.0 mppa, replacement of 11 Aerobridges and a new public carpark. Additional roles include construction sequencing and airport planner for airside works.



## ✈ LABUAN AIRPORT, FEDERAL TERRITORY

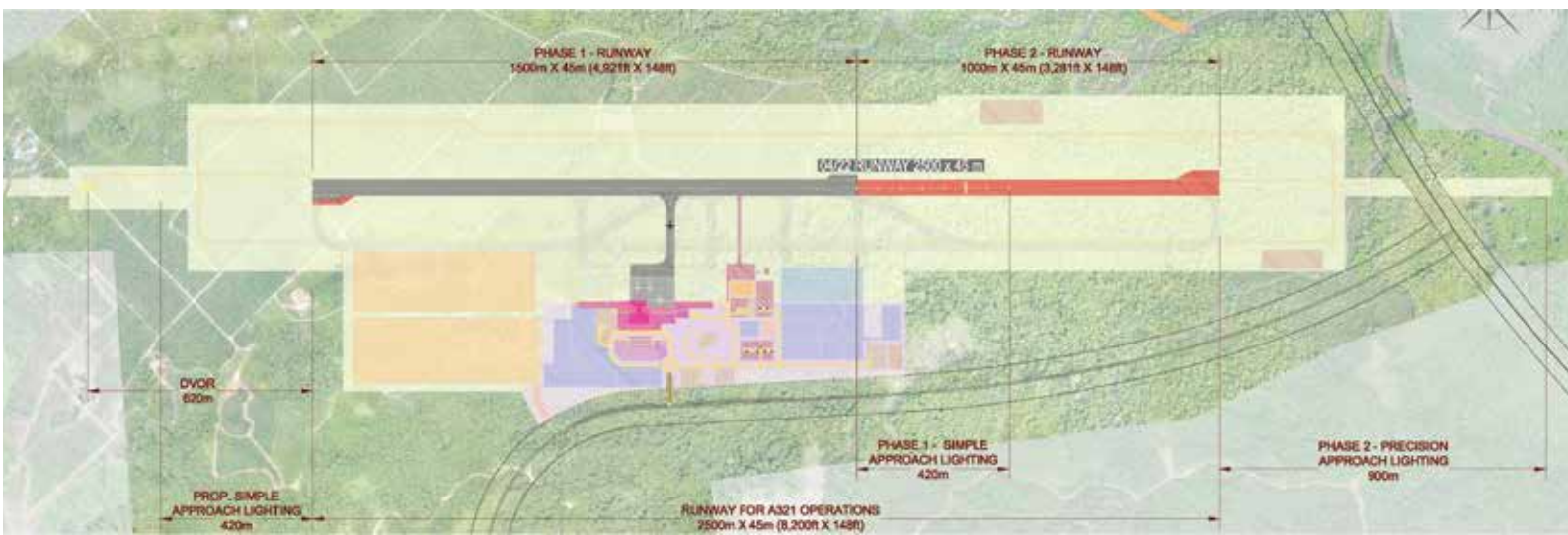
### UPGRADING OF LABUAN AIRPORT

COST: RM365 MILLION

DURATION: MAY 2005 - NOV 2008

Works include runway extension from 2,330m to 2,745m, upgrade existing terminal building and expansion of aircraft parking apron. Our team was engaged as the lead C&S consultant under the Design & Build Contractor.





✈ **FEASIBILITY STUDY OF NEW LAWAS AIRPORT, LAWAS, LIMBANG DIVISION**





In 2016, Minsar successfully bid for the tender by the Ministry of Transport, Malaysia, for a Feasibility Study of a New Lawas Airport, Lawas,. The main objective of the study was to assess the feasibility to relocate the existing Lawas STOLport (Short Take-Off and Landing) which was faced with very frequent flooding, erosion and other critical issues. The study was concluded in 2017 with a proposed New Airport Site near Kuala Lawas. A supplementary study in 2020 was undertaken by Minsar for Sarawak Government, to review the proposed New Lawas Airport site and plans. The scopes provided for both studies included:

- Air Traffic Projections and Demand Capacity Analysis.
- Facilities Requirements and Planning.
- Airport Master Planning.
- Airspace Feasibility, Operations and Management Plan.
- Terrain, Topography, Geology, Geotechnical and All aspects of Engineering.
- Environmental Impact Assessment.
- Economic and Financial Analysis.
- Costing, Financing and Development Strategy.
- Proposed Operations and Management Strategy.
- Project Implementation, Programing and Scheduling.

## **NEW LAWAS AIRPORT, SARAWAK**

Minsar was engaged to be the Airport Planning Consultant, Civil & Structural Engineering Consultant and Lead Consultant for the New Lawas Airport Project in March 2023. The project implemented by RECODA (Regional Corridor Development Authority) is estimated to commence construction in Mid 2024. The New Airport with a runway of 1,790m and Terminal Building of 3,500 sqm is designed to operate the ATR72 aircraft.



## **BUKIT MABONG AIRPORT, SARAWAK**

Studies were carried out on behalf of the Sarawak State Government which includes traffic study, airspace planning, economic and financial analysis as well as selection of new airport site.

**FEES: RM2 MILLION**

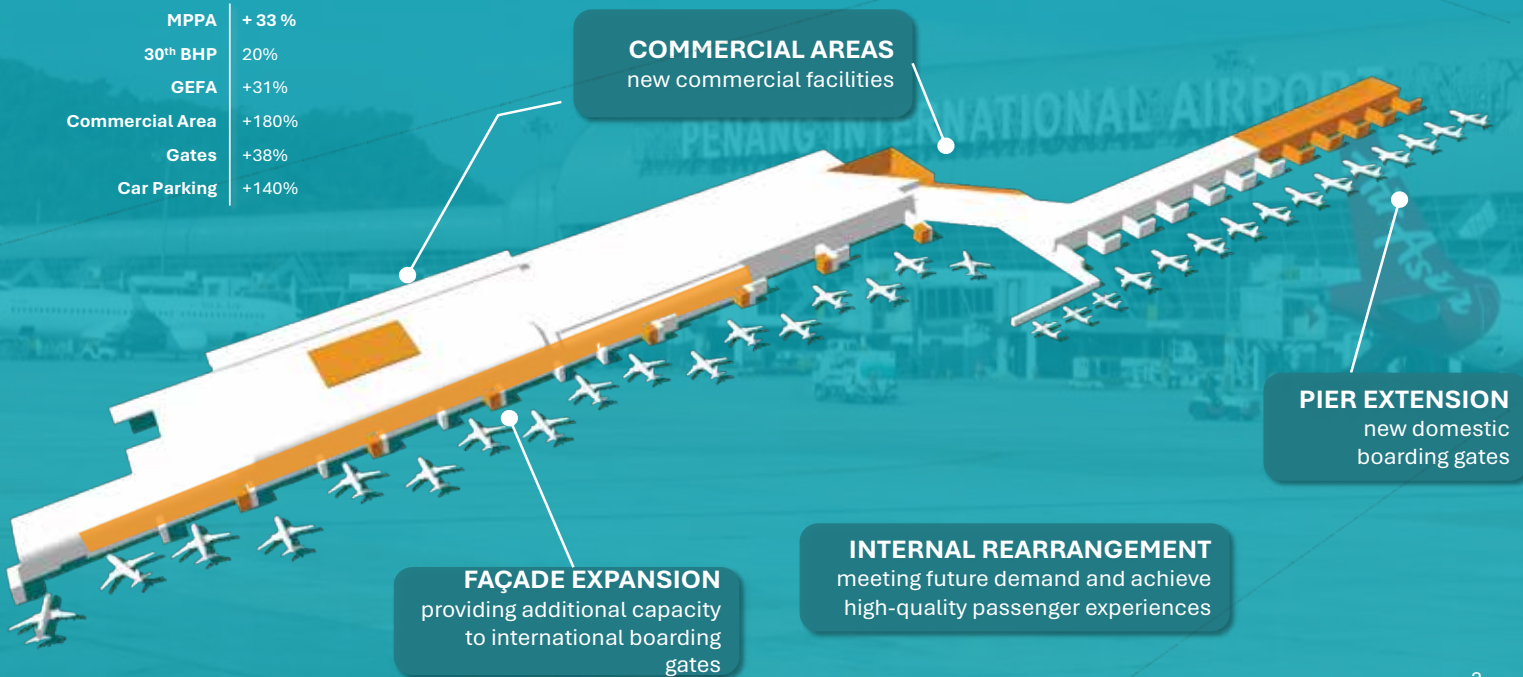
## **NEW BEBULING AIRPORT (CODE 2B), SPAOH, SARAWAK**

**COST: RM260 MILLION**

Minsar was engaged to be the Airport Planning and C&S Consultant for the New Bebuling Airport, Spaoh in 2020. The airport design for ICAO Aerodrome Code 2B operations, commenced construction in March 2021. The Airport will have runway of 1,190m a terminal building of 400sqm and aircraft parking for DHC 6 or Kingair 350i.

## Penang International Airport Master Plan Proposed Terminal Building Expansion (2<sup>nd</sup> Phase)

MPPA	+ 33 %
30 <sup>th</sup> BHP	20%
GEFA	+31%
Commercial Area	+180%
Gates	+38%
Car Parking	+140%



2

## CONSULTANCY SERVICES FOR THE MASTER PLAN FOR 5 AIRPORTS IN MALAYSIA

Minsar was a key member in a consortium of local and international consultants in successfully bidding for the open tender of the consultancy services for the five (5) airport master plans (from 2019 - 2022) Kota Kinabalu International Airport (BKI), Penang International Airport (PEN), Kuching International Airport (KCH), Sibul Airport (SBW) and Tawau (TWU).



Penang International Airport (PEN)  
Kota Kinabalu International Airport (BKI)  
Kuching International Airport (KCH)  
Sibu Airport (SBW)  
Tawau (TWU).





## Kota Kinabalu International Airport Master Plan Proposed Terminal Building Expansion

MPPA	+ 80 %
30 <sup>th</sup> BHP	+ 93%
GEFA	+ 59%
Commercial Area	+ 64%
Gates	+ 50%
Car Parking	+ 79%

**PIER EXTENSION**  
Increased no. gates

**TERMINAL EXPANSION**  
meeting future demand and achieve  
high-quality passenger experiences

**COMMERCIAL  
AREA**  
Additional Cores

**NEW HAMMER HEADS**  
updated aircraft stand  
alignments and full  
segregation

Development of Master Plans and Associated Services at  
Selected MASB Airports

The five airport master plans were essential to Malaysia Airport Sdn Bhd (MASB) in charting the future development and implementation towards 2050. The major scope of work completed includes:

- Aviation Forecast
- Assessment of Airport Existing Conditions
- Facilities Requirement
- Site Evaluation
- Master Plan Alternatives
- Technical and Operational Feasibility
- Evaluation of Master Plan Alternatives
- Airport Land Use Plan
- Airport Layout Plan
- Capital Expenditure
- User Requirement
- Terminal Planning and Design
- Airport Operations and System Requirements
- Architectural and Interior Design Direction
- Terminal Functional Layout Concept
- Development Implementation Plan

### Sibu Airport Master Plan Proposed Terminal Building Expansion

MPPA	+ 69 %
30 <sup>th</sup> BHP	+ 73%
GEFA	+ 169%
Commercial Area	+ 162%
Gates	+ 60%
Car Parking	+ 75%

**UPGRADE BHS**  
In-line bag screening  
Expanded make-up area  
Flexible reclaim hall

**TERMINAL EXPANSION**  
meeting future demand and achieve  
high-quality passenger experiences

**NEW COMMERCIAL  
AREA**  
Three new Cores

**CONCOURSE EXTENSION**  
Increased no. gates  
Segregation of Flows

Development of Master Plans and Associated Services at  
Selected MASB Airports

### Tawau Airport Master Plan Proposed Terminal Building Expansion

MPPA	+ 87 %
30 <sup>th</sup> BHP	+ 92%
GEFA	+ 169%
Commercial Area	+ 255%
Gates	+ 67%
Car Parking	+ 81%

**NEW GATEHOUSES**  
updated aircraft stand alignments  
and full segregation

**UPGRADE BHS**  
In-line bag screening  
Expanded make-up area  
Flexible reclaim hall

**NEW COMMERCIAL  
AREA**  
Three new Cores

**TERMINAL EXPANSION**  
meeting future demand and achieve  
high-quality passenger experiences

Development of Master Plans and Associated Services at  
Selected MASB Airports



# ASSOCIATED SERVICES

## LIVE AIRPORT UPGRADING

A majority of Minsar's Airport Division projects involve upgrading of live operational airports. Minsar adapts its design in accordance to the needs and ease of construction, especially renovations over busy live airports. Our expertise and deep understanding in airport operations provide the most efficient and safest construction phasing plans on upgrading of airfield facilities and terminal building on even the busiest airports.



Modernization of Brunei International Airport, Brunei





Runway Preparation Works, New Bintulu Airport

## AIRFIELD PAVEMENTS

Minsar's Airport Division team has extensive experience in airfield pavement engineering and an in-depth knowledge of pavement materials and mechanistic methods of airfield pavement design. Our team has applied their knowledge on some of the most challenging pavement rehabilitation projects including the airfield pavement rehabilitation of Kota Kinabalu International Airport, Miri Airport and Labuan Airport.



Redevelopment Of Kota Kinabalu International Airport, Sabah 2010

## CIVIL ENGINEERING

Minsar's Airport Division provides wide range of civil engineering consultancy services for all fields of airport works. Our experience ranges from large-scale new green-field airport projects to complex redevelopment of brown-field airport projects. Our team have carried out engineering design and supervision of massive earthworks, covering works like soil backfill up to 50 feet, rock blasting, build-up over swampy land, sea walls and sea reclamation works for airstrip platform formations.



Approach Lighting System, Kota Kinabalu International Airport



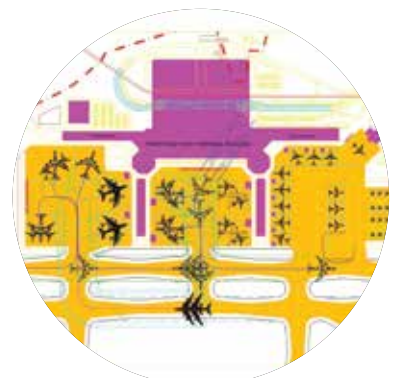
Langkasuka Marina, 8km off-shore breakwater, Langkawi Airport



Revetment Works at Kota Kinabalu International Airport

## AIRPORT PLANNING

Minsar's Airport Division has been using AviPLAN (successor to Aeroturn) by Transoft Solutions for its Airside Planning and Design Modelling software since 2006. Our team prides themselves to providing the most optimal airside layout and apron configuration to satisfied clients, ensuring operational efficiency while complying with international standards, namely the ICAO, IATA, FAA and CAP168.



Aircraft Simulation



# ASSOCIATED SERVICES



Proof Rolling Test at Kuching International Airport

## INSPECTIONS & TESTING

Minsar's Airport Division has substantial experience in pavement inspection, evaluation and testing on existing and newly completed projects. Reliable and accurate inspections to determine load carrying capacities is an essential element of Airfield Pavement Management System, an essential tool and resource for a cost effective airport maintenance programme.



HWD Test at Kuching International Airport

## MRO HANGARS

Minsar's Airport Division experience include the planning, design and construction management of a few complete MRO (Maintenance, Repair & Overhaul) hangars both for fixed winged and rotary winged aircrafts. Our team has extensive knowledge of MRO hangar planning and designs. Our team constantly keeps up to date with the most modern and state-of-the-art facilities available for MRO hangars.



Miri Hangar



Sibu Hangar



## ACEM ENGINEERING AWARD 2023

### NEW MUKAH AIRPORT, SARAWAK

In August 2023, Minsar was conferred a "BRONZE AWARD OF COMMENDATION" for its submission of New Mukah Airport Project, Mukah, Sarawak in the ACEM Engineering Awards Competition 2023.

The ACEM Engineering Awards Competition 2023 was opened to all consulting engineering firms in Malaysia for projects completed within the past 6 years throughout the world. Its main objective was to aim at recognizing consulting engineers' achievements that demonstrated the highest degree of skills, ingenuity and provided a significant benefit to the public welfare, the practice of engineering and the environment.





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