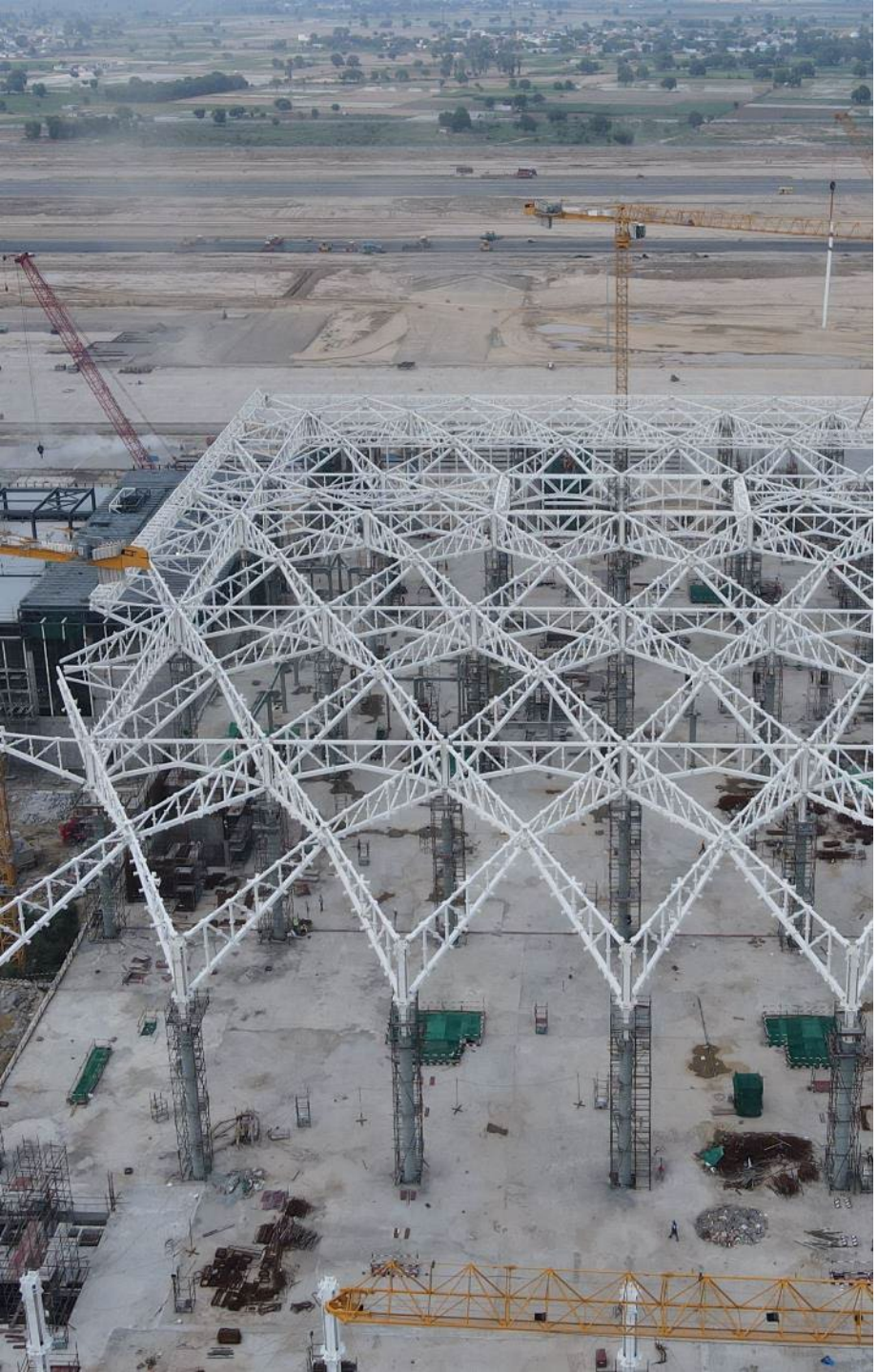
Global Aviation and Aerospace

Capability Statement

Real impact,
made together.



Content

1 Who We Are

Who we are

SJ is a diverse collective of built environment specialists committed to delivering meaningful and measurable impact through our collaborative work

Who we are

We see a world where imagination isn’t limited, and the greatest challenges of the future can be solved today.

We believe in real impact, made together.

Snapshot of **SJ Group** today

#14
2024 World Architecture 100

#23
2024 Top 225 International Design Firms

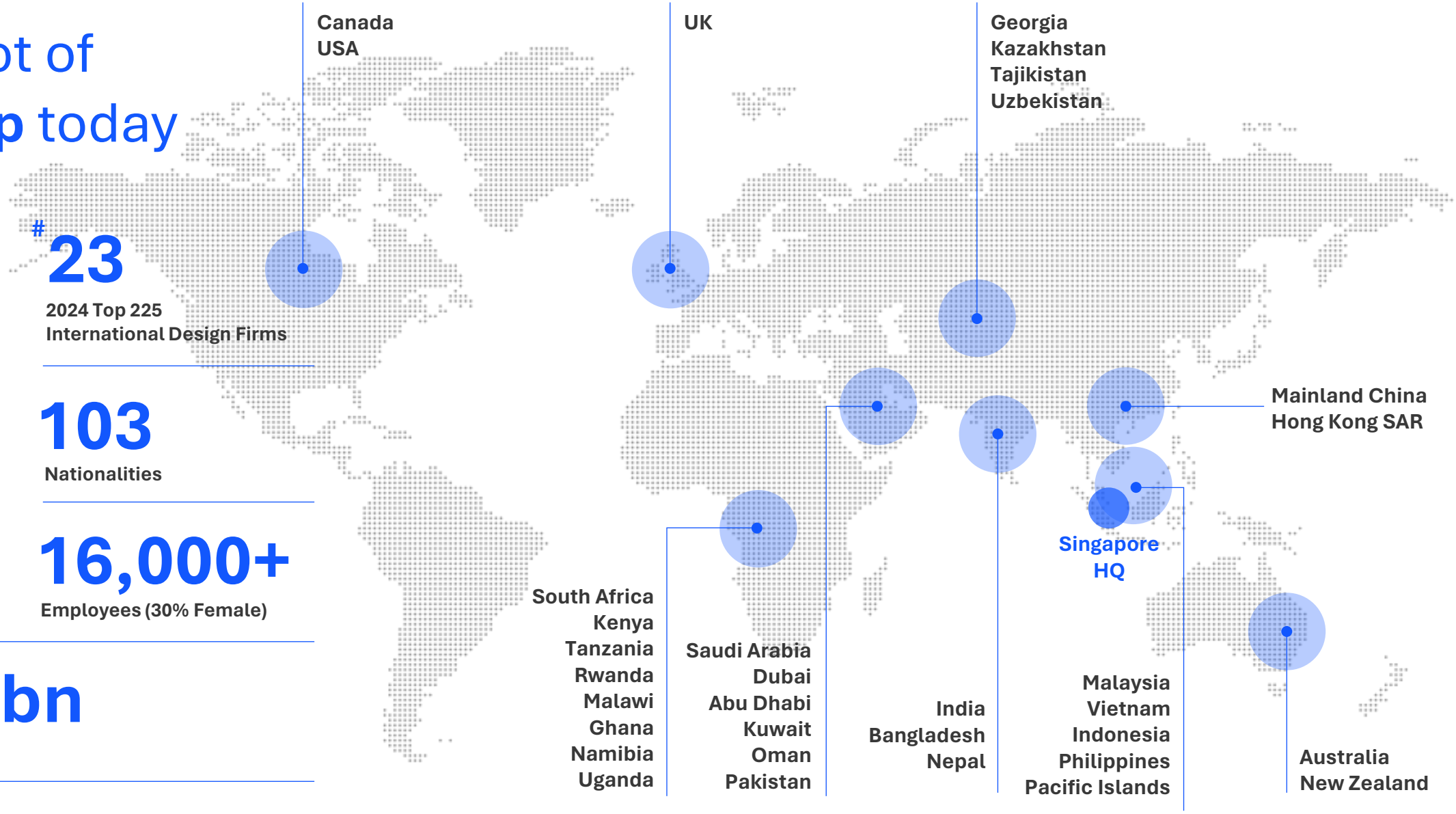
49
Countries

103
Nationalities

7,000
Active Projects

16,000+
Employees (30% Female)

S$ 2.2bn
2023 Total Revenue



Our global talent pool

1,000+
Architects, Designers, Planners

5,000
Engineers

500
Project Managers

600
Facilities Managers

3,500
Armed Security Personnel

300
Quantity Surveyors

Member companies

AETOS

Total security solutions from design and development to management solutions and safety management.

atelier ten

Global environmental design advisors, embedding sustainability into the world's most ambitious projects.

B+H

A multi-sector design practice, specialising in large scale buildings and environments.

CHIL

Luxury hospitality designers, delivering world class concepts that transform the guest experience.

KTP

Civil & structural engineers synonymous with innovation and creative solutions for the built environment.

PROSTRUCT CONSULTING

Security consulting, with deep expertise in structural engineering, fire and blast protection.

Robert Bird Group

Civil and construction engineering specialists working on complex projects at scale.

SAA

A full-service architecture & master planning practice creating major transport, aviation, health, and mixed-use precincts.

smec

Major infrastructure engineers working on critical transport, energy, and water projects globally.

SURBANA JURONG

Specialist consulting in architecture, engineering, and smart city solutions.

Temasek portfolio companies
Net portfolio S$389 bn.

Financial Services

- AIA – The Real Life Company
- China Construction Bank
- DBS
- ICBC
- Ping An
- Danamon
- Standard Chartered
- Virtu Financial

Consumer & Real Estate

- SJ
- ascendas Singbridge
- A.S. Watson Group
- CapitaLand
- Mandai
- mapletree
- M+S
- Olam
- PUV
- sats

Energy & Resources

- FTS International
- Repsol
- Pavilion Energy

Transportation & Industrials

- Keppel Corporation
- PSA – The World's Port of Call
- sembcorp
- ST Engineering
- Singapore Airlines
- SPgroup
- SMRT

Telecoms, Media, Technology

- IHS Markit
- GHX
- Singtel
- INTOUCH
- STTelemedia
- Tencent 腾讯
- Alibaba Group
- mediacorp

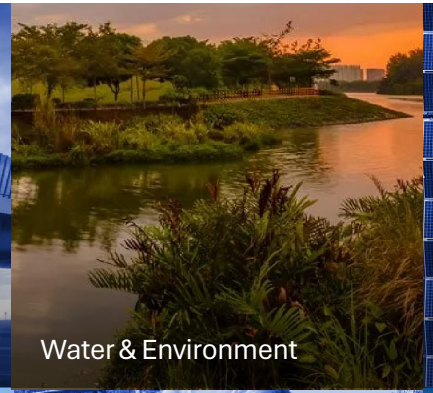
Life Sciences & Agricultural

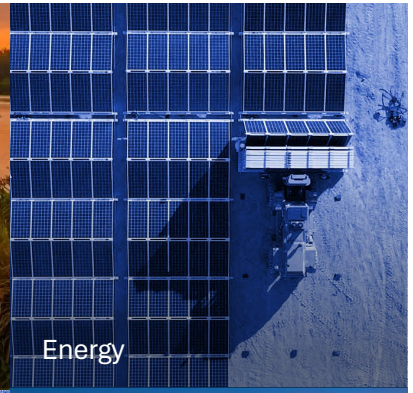
- Celltrion
- Celltrion Healthcare
- Gilead

Business Lines and Market Sectors

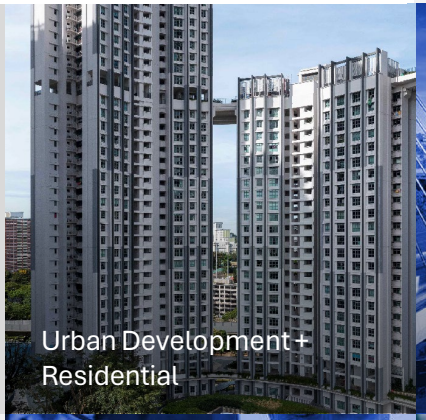
Infrastructure + Energy


Transport (Infrastructure)

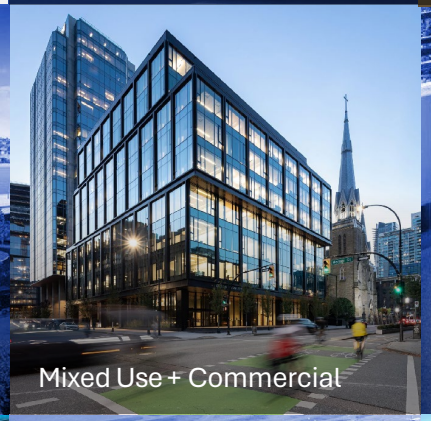

Water & Environment


Energy

Buildings + Cities


Urban Development + Residential


Transport (Buildings)


Mixed Use + Commercial


Healthcare + Institutional

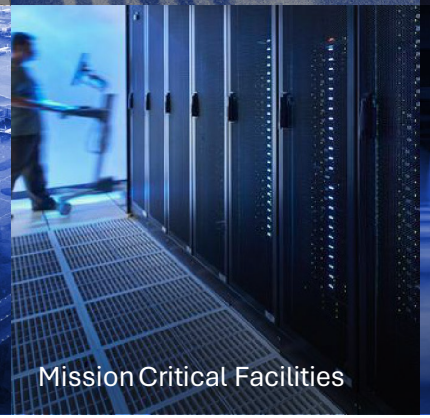

Industrial

Integrated Solutions

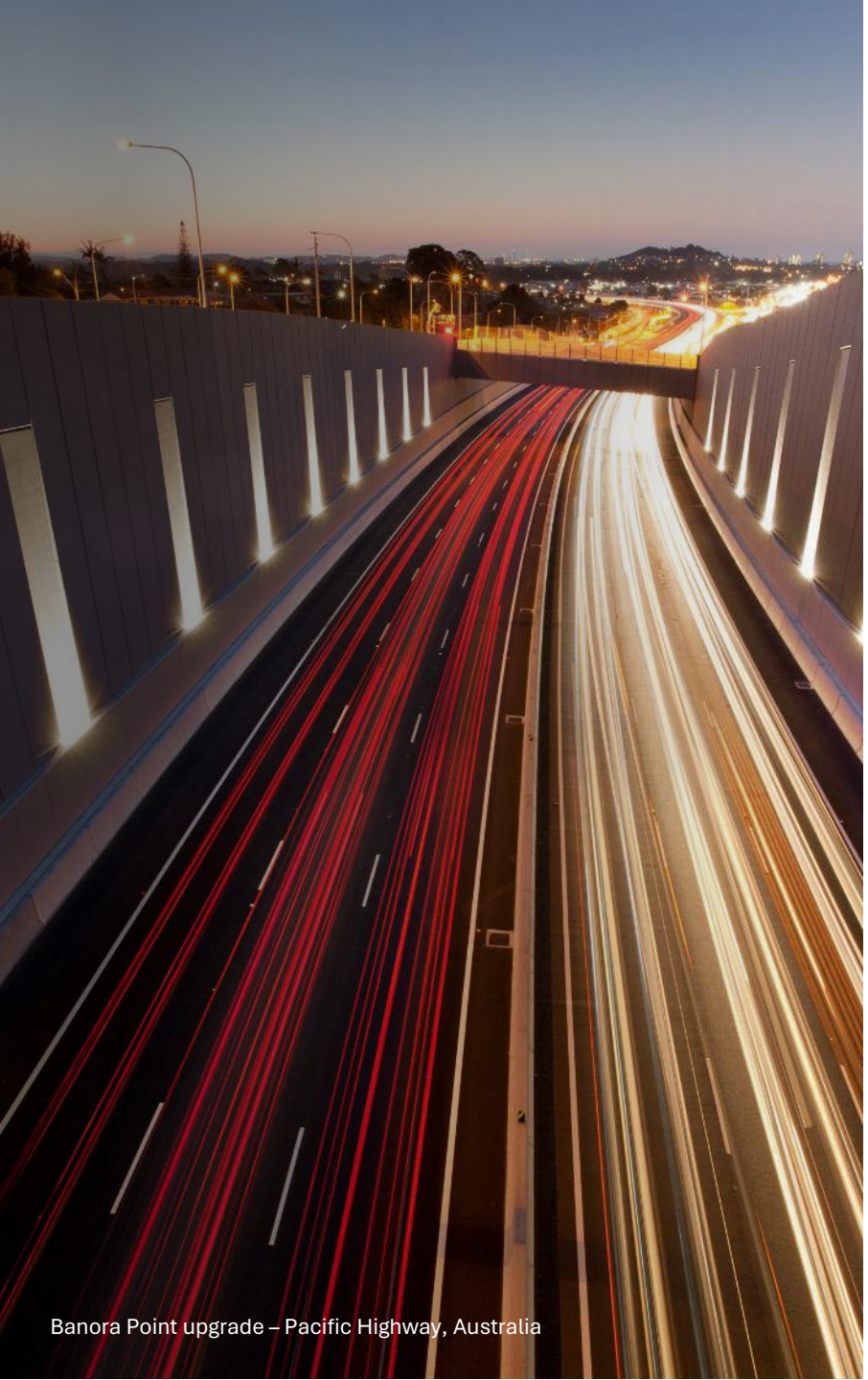

Security


Digital Technology Services


Facilities Management + Asset Management


Mission Critical Facilities


Defence



Banora Point upgrade – Pacific Highway, Australia

Infrastructure + Energy

For over 75 years we have brought advanced, sustainable design thinking to deliver nation building infrastructure that meets the practical challenges of today as well as the needs of tomorrow. Our specialist teams draw on deep expertise and systems thinking to deliver integrated engineering solutions that help connect, move and power people and communities.

Transport (Infrastructure)
- → Aviation & Aerospace
- → Geotechnics & Tunnels
- → Ports & Maritime
- → Roads & Highways
- → Rail & Metro

Water & Environment
- → Coastal Engineering & Management
- → Environment, Waste & Resource Recovery
- → Hydropower & Dams
- → Resources & Irrigation
- → Water Infrastructure

Energy
- → Energy Transition
- → Fuels
- → Power & Gas
- → Renewables

Google London King's Cross, London United Kingdom

Buildings + Cities

We are a global consulting + design platform that delivers world class urban solutions through a diverse portfolio of highly specialised brands. From single service lines to multidisciplinary teams, we tailor our approach to every project's unique needs. For over 70 years we have shaped our urban fabric through bold, human-centric, and regenerative design that positively impacts communities, cities, and the world.

Urban Development + Residential

- Residential
- Urban Development

Transport

- Rail Stations
- Terminals (Airports, Ground Transport, Marine, Inter-modal)

Mixed-Use + Commercial

- Office
- Retail
- Hospitality
- Transit Oriented / Mixed-Use Development

Healthcare + Institutional

- Healthcare + Life Sciences
- Education, Civic + Culture, Sports + Entertainment
- Defence + Government

Industrial

- Data Centre + Technology
- Manufacturing + Logistics

5G Integrated Command Centre, Singapore

Integrated Solutions

We are innovating sustainable and scalable digital technologies that ensure our clients' assets are managed optimally. Our best-in-class solutions ranging from security, engineering & facilities management are seamlessly delivered through our proprietary suite of integrated solutions & applications.

Security
- → Integrated Command Centre
- → Ports and Terminals
- → Integrated Training
- → Events

Facilities Management (FM) / Asset Management (AM)
- → Infrastructure
- → Education
- → Healthcare
- → Aviation

Defence
- → Training and Services
- → Wellness

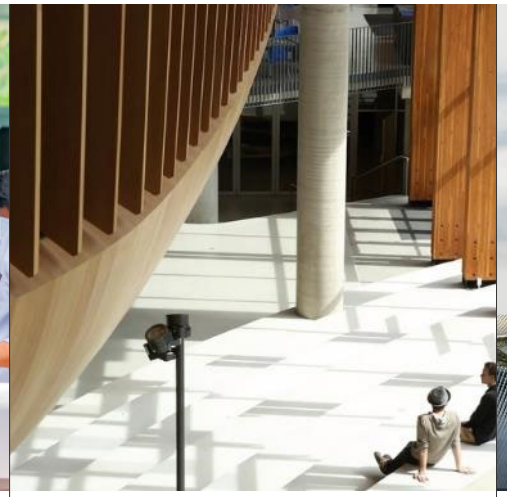
Digital Technology Services
- →Assets monitoring
- →24K Platform
- → Software development and integration

Mission Critical Facilities (MCF)
- → Critical facilities
- → Blast Tests and Innovation
- → Infrastructure Protection
- → Transport (Rail, Aviation)
- → Data Centres

Our DNA pillars

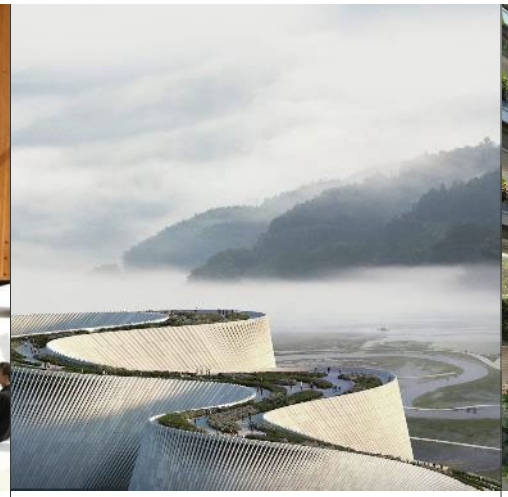
Unlocking Excellence

We assemble specialist teams and create innovative approaches to deliver excellent outcomes.



Limitless Imagination

We are powered by our intelligence and ingenuity – continuously challenging what's possible.



Solutions at Scale

We are creating a smart and sustainable world with regenerative approaches for buildings, cities and economies.

Future Legacy

We are committed to creating a collective legacy that is greater than our individual pasts.

Our brand attributes

Expert & Experimental

Diverse & Purposeful

Real & Transparent

Brave & Nimble

Collaborative & Empowering

Our expertise across sectors

Buildings & Cities (B + C)

Urban Development + Residential
- Residential
- Urban Development

Transport
- Rail Stations
- Terminals (Airports, Ground Transport, Marine, Inter-modal)

Mixed-Use + Commercial
- Office
- Retail
- Hospitality
- Transit Oriented / Mixed-Use Development

Healthcare + Institutional
- Healthcare + Life
- Education, Civic + Culture, Sports + Entertainment
- Defence + Government

Industrial
- Data Centre + Technology
- Manufacturing + Logistics

Infrastructure & Energy (I + E)

Transport (Infrastructure)
- Geotechnics & Tunnels
- Roads & Highways
- Rail & Metro
- Aviation & Aerospace
- Ports & Maritime

Energy
- Renewables
- Power & Gas
- Energy Transition
- Fuels

Water & Environment
- Environment, Waste & Resource Recovery
- Water Infrastructure
- Coastal Engineering & Management
- Water Resources & Irrigation
- Dams & Hydro

Integrated Solutions

Security
- Integrated Command Centre
- Ports and Terminals
- Integrated Training
- Events

Facilities Management (FM) / Asset Management (AM)
- Infrastructure
- Education
- Healthcare
- Aviation

Defence
- Training and Services
- Wellness

Digital Technology Services
- Assets monitoring
- 24K Platform
- Software development and integration

Mission Critical Facilities (MCF)
- Critical facilities
- Blast Tests and Innovation
- Infrastructure Protection
- Transport (Rail, Aviation)
- Data Centres

We believe in healthy, resilient and regenerative development.

The SJ Sustainability Charter

Our Mission: “to catalyse the transition to a regenerative future.”

Our Sustainability Charter features a customized ‘six capitals’ definition, Nature, Life, Society, Knowledge, Economy, and Built Environment, which uses terms that are tailored to the group’s activities.

We have aligned our work to the goals outlined in the 2030 Agenda, the UN’s blueprint for all countries to promote prosperity while protecting the planet.

For us, this means delivering sustainable solutions that safeguard the planet. Our architects, designers, planners, engineers and other specialists are applying their multidisciplinary expertise in the quest for a safe, sustainable and resilient future for all.

We Move People and Goods

More than

70

years of successful transport and mobility project deliveries

More than

100

awards and recognition in the past 20 years

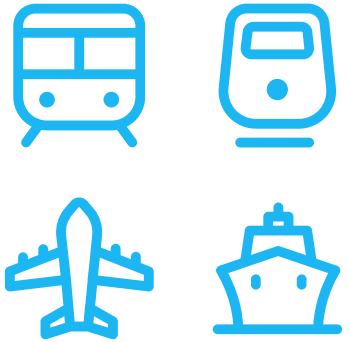
Projects in

100+

Countries

200+

transport and mobility projects worldwide



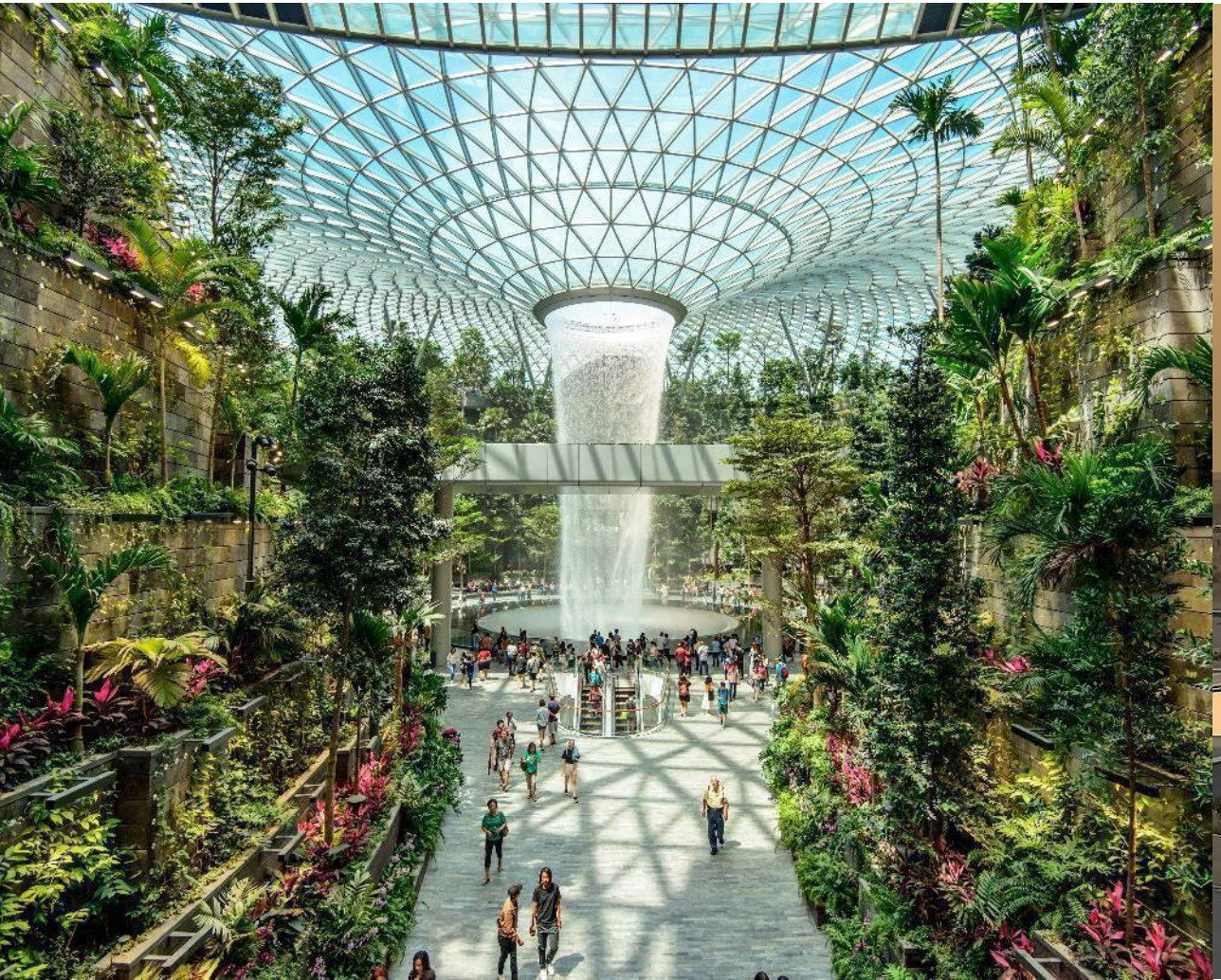
2

Our Brands

Our impact

SJ atelier ten

Environmental design consultants behind the sustainability approaches of iconic projects including Theodore Roosevelt Presidential Library, Jewel Changi and Bee’ah Headquarters.



Our impact

50 years securing Singapore’s critical economic growth sectors in air, sea and land

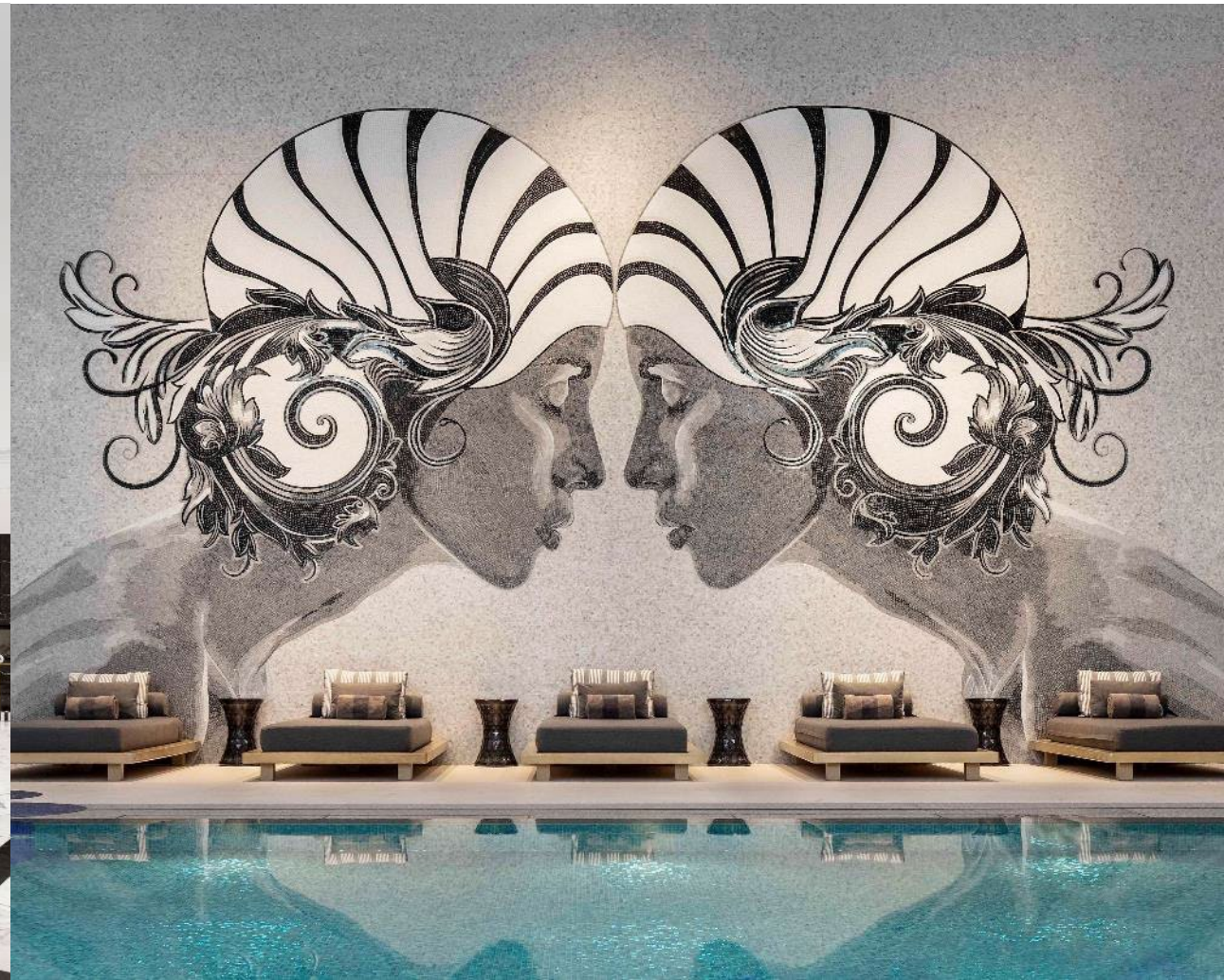
Our impact

Designed Canada’s first Zero Carbon Building

Our impact

SJ CHIL

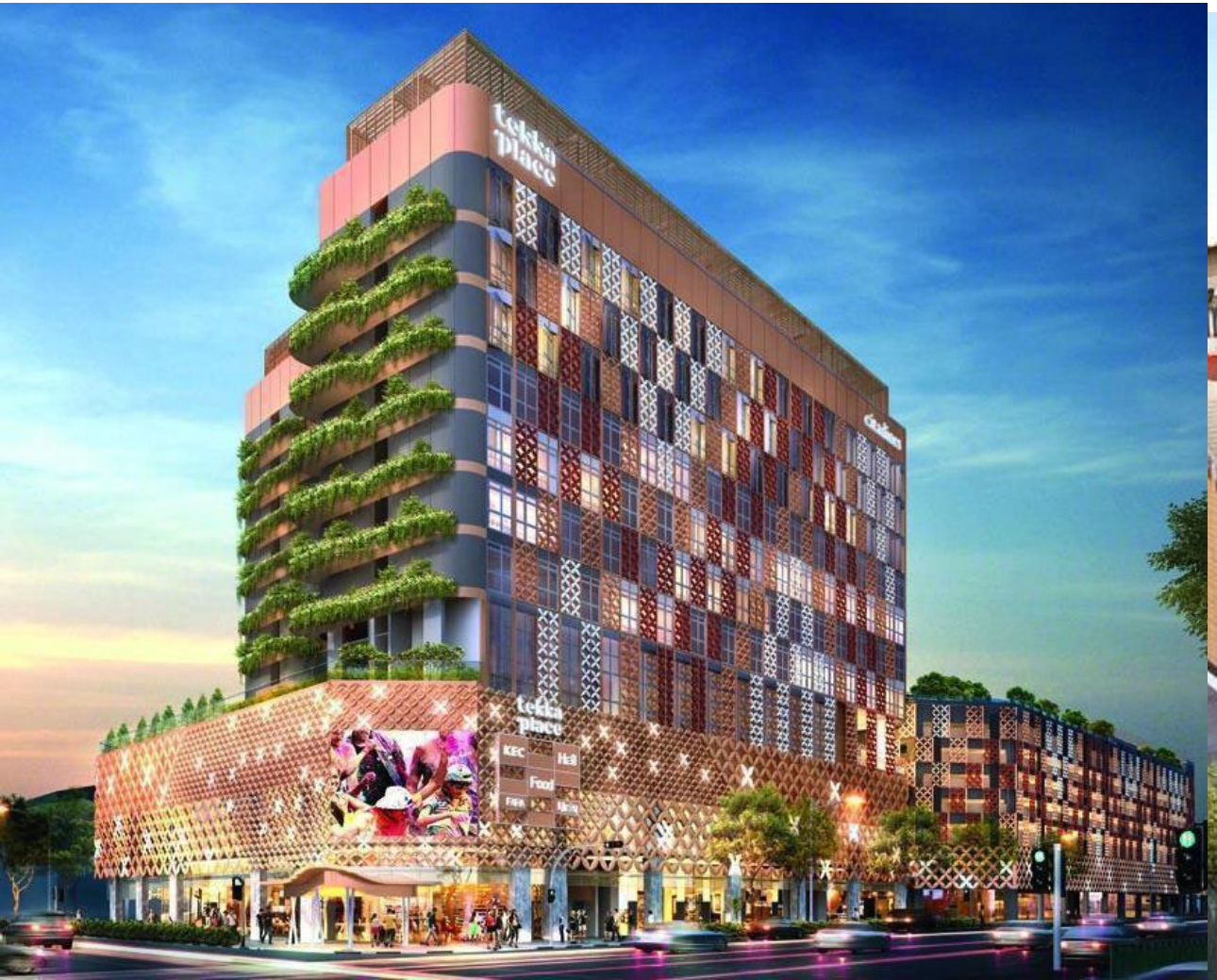
A 50-year legacy of unparalleled award-winning luxury interior design, creating iconic spaces globally



Our impact

SJ KTP

Engineering Singapore’s first integrated corridor connecting North and CBD



Our impact

PROSTRUCT CONSULTING

Operates Singapore’s only accredited lab to conduct blast testing on building structures

Our impact

SJ Robert Bird Group

Engineered the Southern Hemisphere’s tallest residential building

Our impact

SJ SAA

Designed and delivering one of Singapore's largest healthcare facilities

Our impact

Designing Australia’s biggest green energy project to power the equivalent of half a million homes

Our impact

SURBANA JURONG

Expanded Singapore’s land area by 16% through land reclamation, and built a million homes in the city state

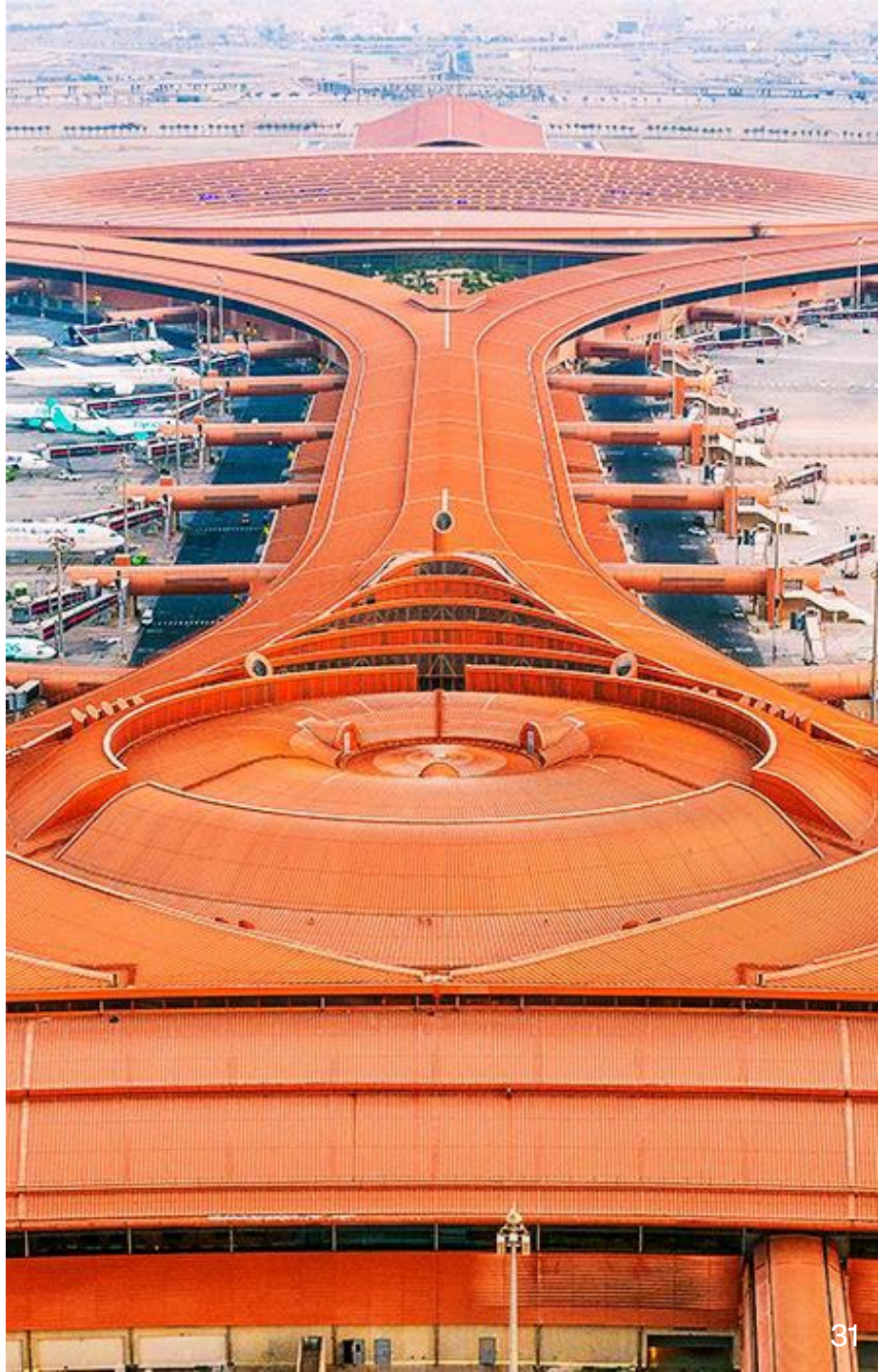
3 Our Expertise

Our Expertise

Advanced infrastructure solutions cater to the rapidly evolving needs of the aviation industry

Aviation is a dynamic market with continually evolving regulations, operational systems, and user needs. Through the adoption of advanced infrastructure solutions, we are helping our clients and partners simplify the complex, embed sustainable practices into their projects and deliver a future focused aerotropolis.

SJ Group delivers integrated aviation solutions that optimise capacity, improve passenger experience, and streamline operational efficiency while prioritising safety and sustainability. Our services extend to project management, procurement, construction management, institutional strengthening, and development of management systems.

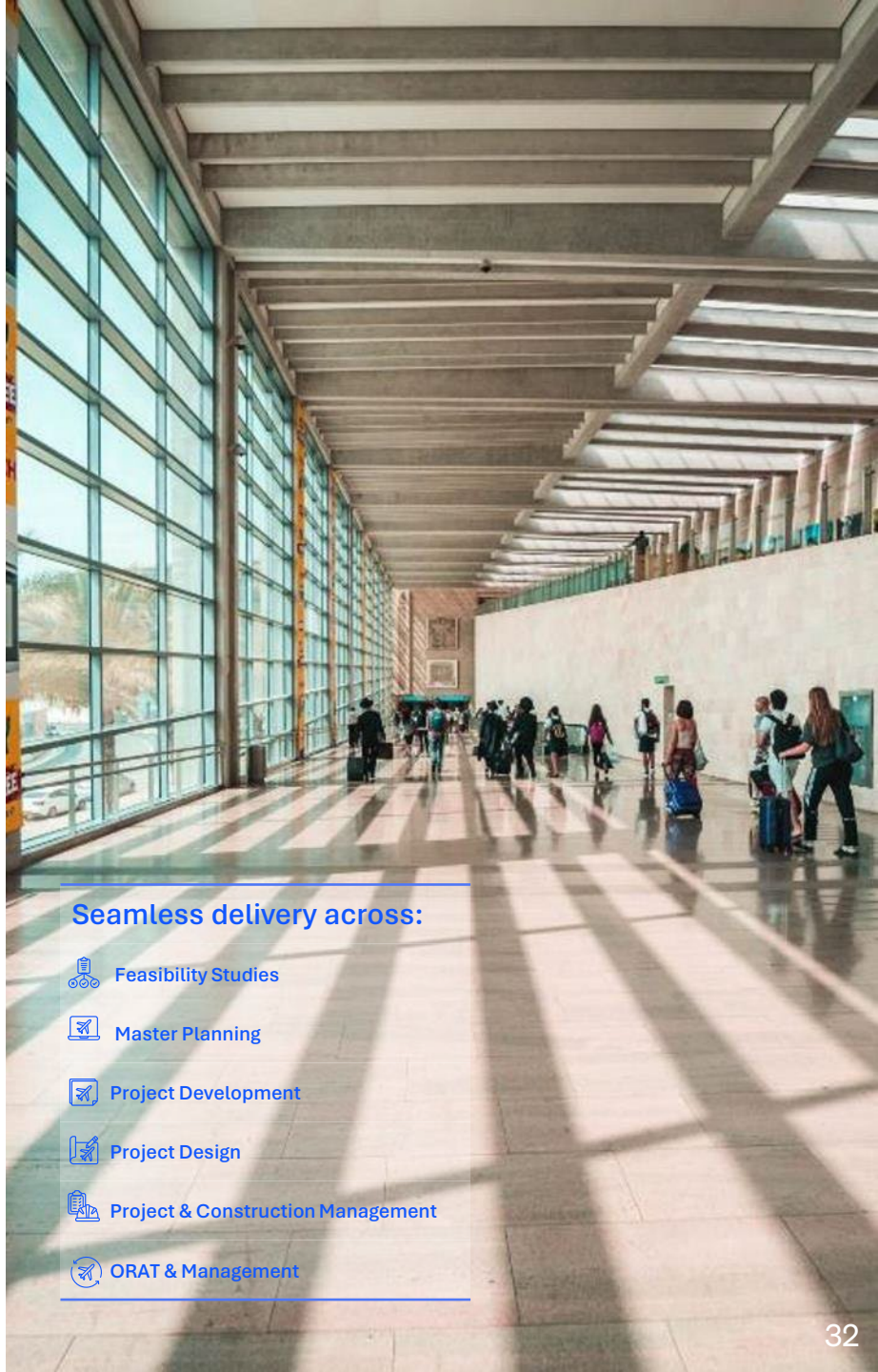


Our Expertise

Together we create future-ready airports that help shape human connection, communities, and business

With the aviation sector experiencing unprecedented change, we're supporting our clients and partners with a connected ecosystem of experienced global specialists to maximise emerging opportunities.

As part of the SJ Group, SMEC provides experienced global specialists to cater to all aspects of aviation planning, engineering, design, and delivery. Through our global network, we have partnerships with Changi Airport, CAPE and ST Engineering, positioning us as a leading aviation consultancy. Major airports in our group portfolio include Changi (Singapore), London Heathrow, Noida (India), Western Sydney Airport (Australia) and Jedda Airport (Saudi Arabia).



Aviation Consultancy – Eco-system

Integrated solutions for scalable, future-ready aviation

Connecting Global Expertise to Local Needs

Experienced in Delivering Aviation Infrastructure

Designing for a Regenerative Future

Unlocking potential to deliver greater benefits on a global scale

Our integrated services have been applied to some of the largest and most complex transport projects around the world and include roads and highways, rail and metro, ports and maritime, geotechnics and tunnels, aviation and aerospace. Our expertise in transport, infrastructure, and management is enhanced by long-standing associations with international development agencies, governments, and educational institutions.

Roads and Highways

Using our skills in transportation planning, design program management and asset support services, we help our clients to develop, expand, reconstruct and rehabilitate roads, bridges and highways around the world.

Rail and Metro

We provide a whole-of-life approach to the design, construction, operation and maintenance of railway infrastructure, helping to transform mass transportation worldwide.

Ports and Maritime

Our expertise comprises the planning and development of new and upgraded port and maritime facilities, wharves, terminals, dredging and reclamation works, coastal protection works, and associated infrastructure for transportation of goods and people.

Geotechnics and Tunnels

Our geotechnical and tunnelling teams bring a comprehensive suite of engineering skills and services to projects of all sizes. We provide a wide range of solutions to our clients and are ably supported by other discipline groups within the SJ Group.

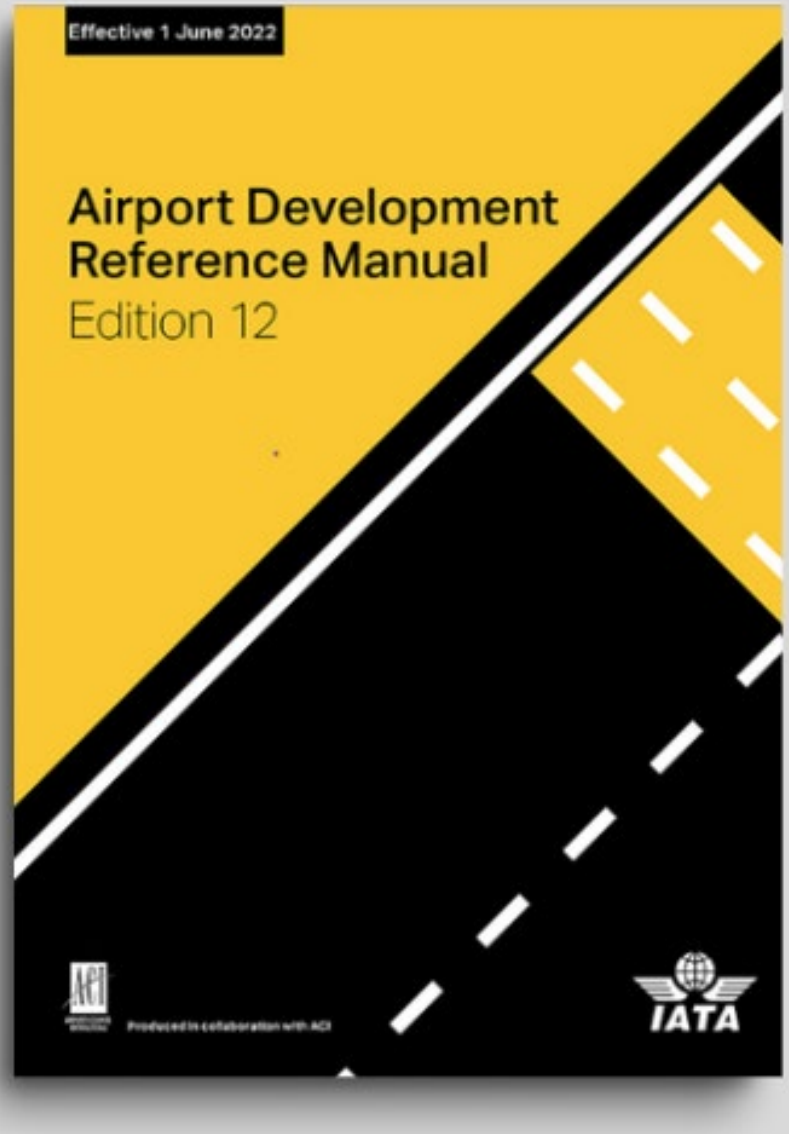
Aviation and Aerospace

Our global team of aviation specialists provide multi-disciplinary consultancy services for both airside and landside aviation infrastructure.

Aviation experts focused on the future

Our specialist knowledge of airside and landside conditions ensures design and construction methodologies align with future operational and maintenance requirements. Working in close collaboration with our partners, we develop world class systems that encapsulate new technologies to optimise flow between departures and arrivals.

- Feasibility Studies
- Master Planning
- Project Development
- Project Design
- Project & Construction Management
- ORAT & Management

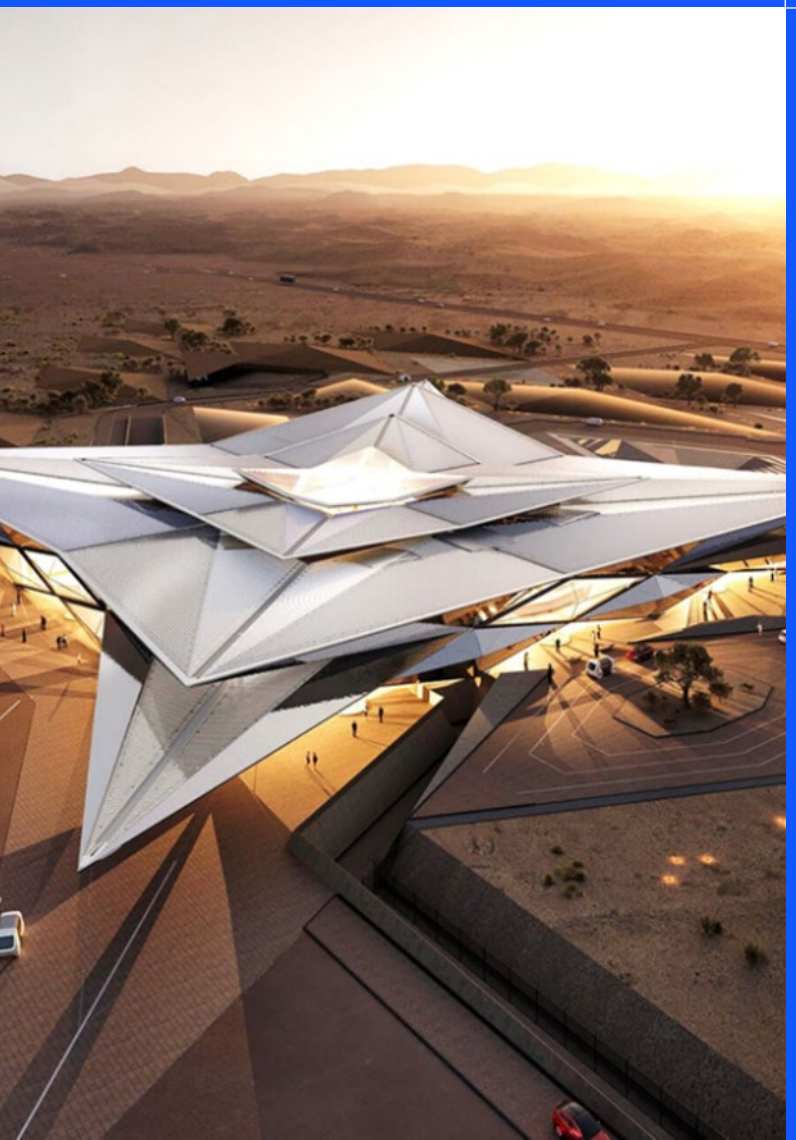


Contributed by SURBANA JURONG

We believe in supporting the wider Aviation industry.

Involve in reviewing the Airport Development Reference Manual

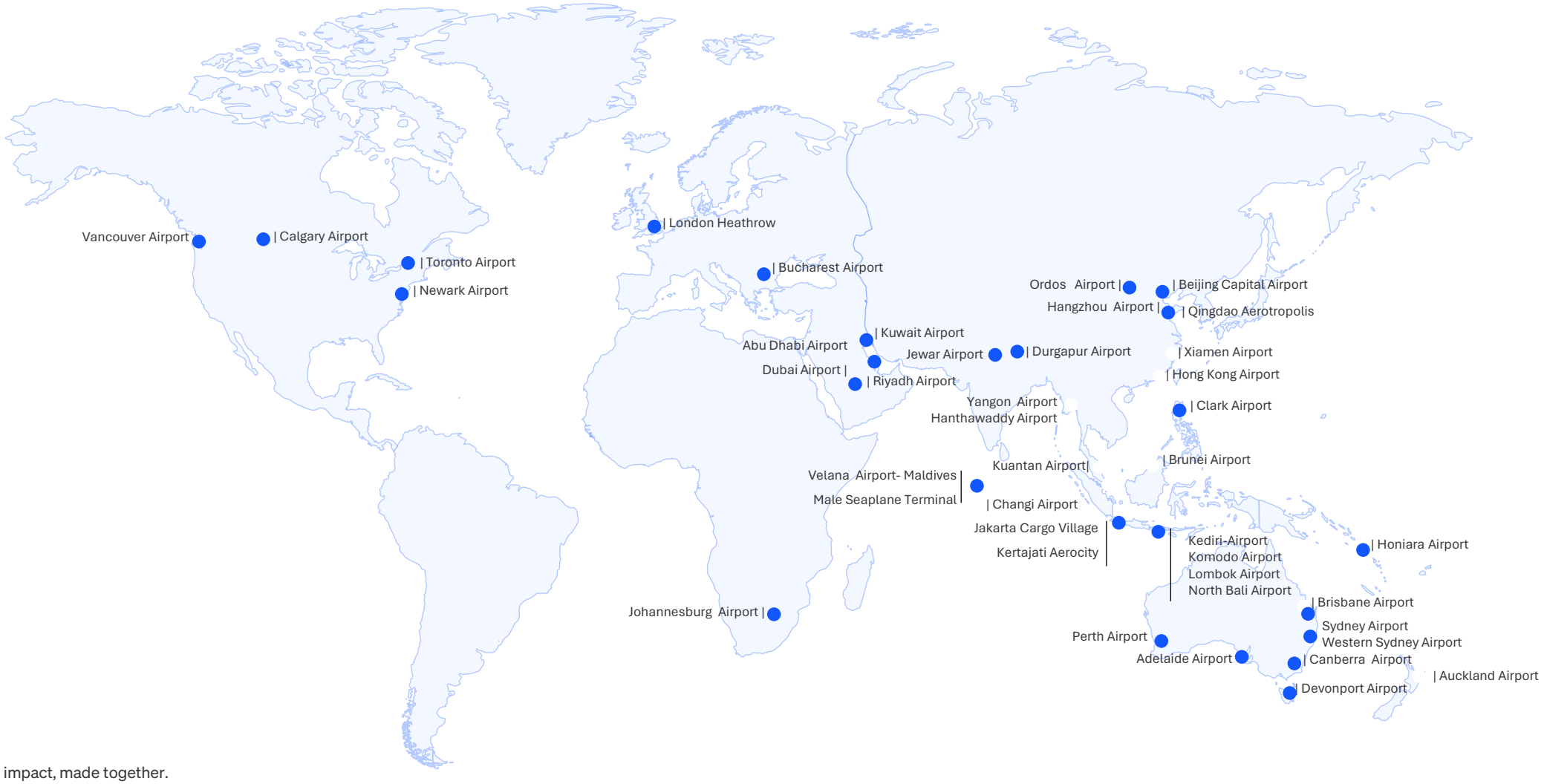
Surbana Jurong is involved in the ADRM committee reviewing, refreshing and adding additional information to the IATA ADRM. This allows SJ to utilize our expertise to influence airport design parameters and promote industry best practices to a wider audience.



7 Project Experience

Recent Projects

SJ Aviation Projects Locations



Global Project Experience

Changi East Development (Changi T5)

Location:
Singapore

Client:
Changi Airport Group

Services:

Brand:
Surbana Jurong

Status:
In progress

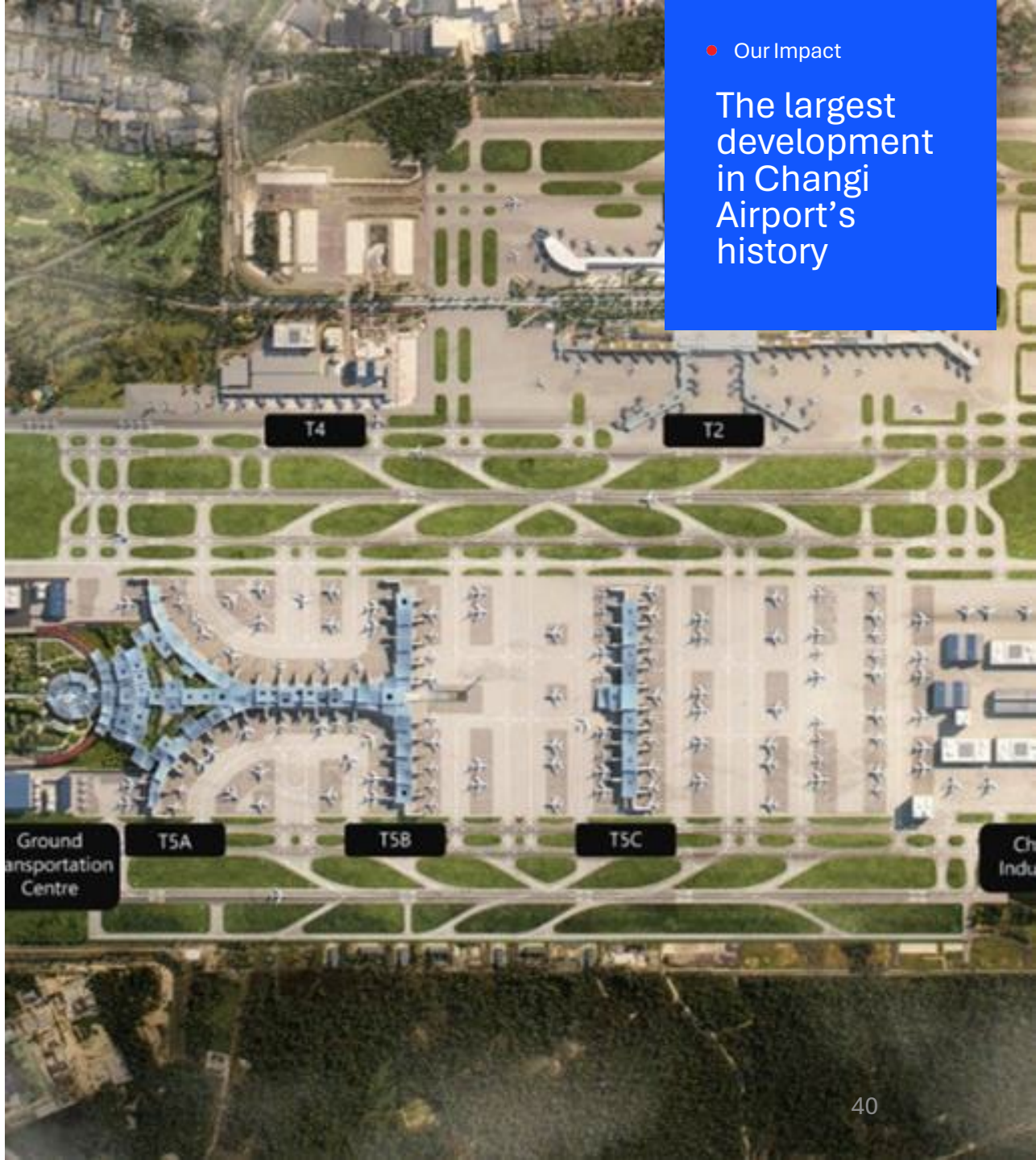
Surbana Jurong is assisting the Changi Airport Group in a number of projects as part of the development of Changi East which is a major addition to the existing Changi Airport (the current airport is called Changi West).

Spanning a massive 1,080 hectares (equivalent to more than 660 football fields), the Changi East project is Changi Airport's largest development in its history. An inter-agency Changi 2036 Steering Committee was established in 2012 to develop a plan for this mammoth expansion for Changi, which included a recommendation to construct a fifth terminal, Terminal 5 (T5) .

Besides T5, the scope of works for this mega-project also includes the operationalisation of a three-runway system, the construction of tunnels and other underground systems, and the development of cargo complexes and other supporting infrastructure. Being a greenfield development site, located to the east of the existing airport (hence the name Changi East), basic infrastructure, including utilities, water management systems, ground transportation (road and MRT) will need to be built, and this will take several years before airport facilities are commissioned.

1,080h
Project land size

3
Runway system



Our Impact

The largest development in Changi Airport's history

Changi East Land Preparation Works

Location:
Singapore

Client:
Ministry of Transport

Services:

Brand:
Surbana Jurong

Status:
In progress

Surbana Jurong is involved in assisting the client to prepare the ground for the upcoming Changi East Development.

Spanning a massive 1,080 hectares (equivalent to more than 660 football fields), the Changi East project is Changi Airport's largest development in its history. This entire expansion is planned on reclaimed land comprising underlying soft marine clay which is still undergoing consolidation. As such, a massive soil improvement exercise is to be carried out in this entire area to make it suitable to support the future aircraft loading and the additional loadings from the various upcoming facilities.

Surbana Jurong was appointed by Singapore's Ministry of Transport to plan, design and manage the land preparation works including soil improvement works, road and services diversion works in Changi East for the expansion of Changi Airport.

660+

Football fields equivalent

Operationalising a Three-Runway System, Changi

Location:
Singapore

Client:
Changi Airport Group

Services:

Brand:
Surbana Jurong

Status:
Expected completion 2030

To ensure adequate runway capacity for the airport's continued growth as well as to cater to the future T5, an existing third runway used by the military will be converted for joint military-civilian use.

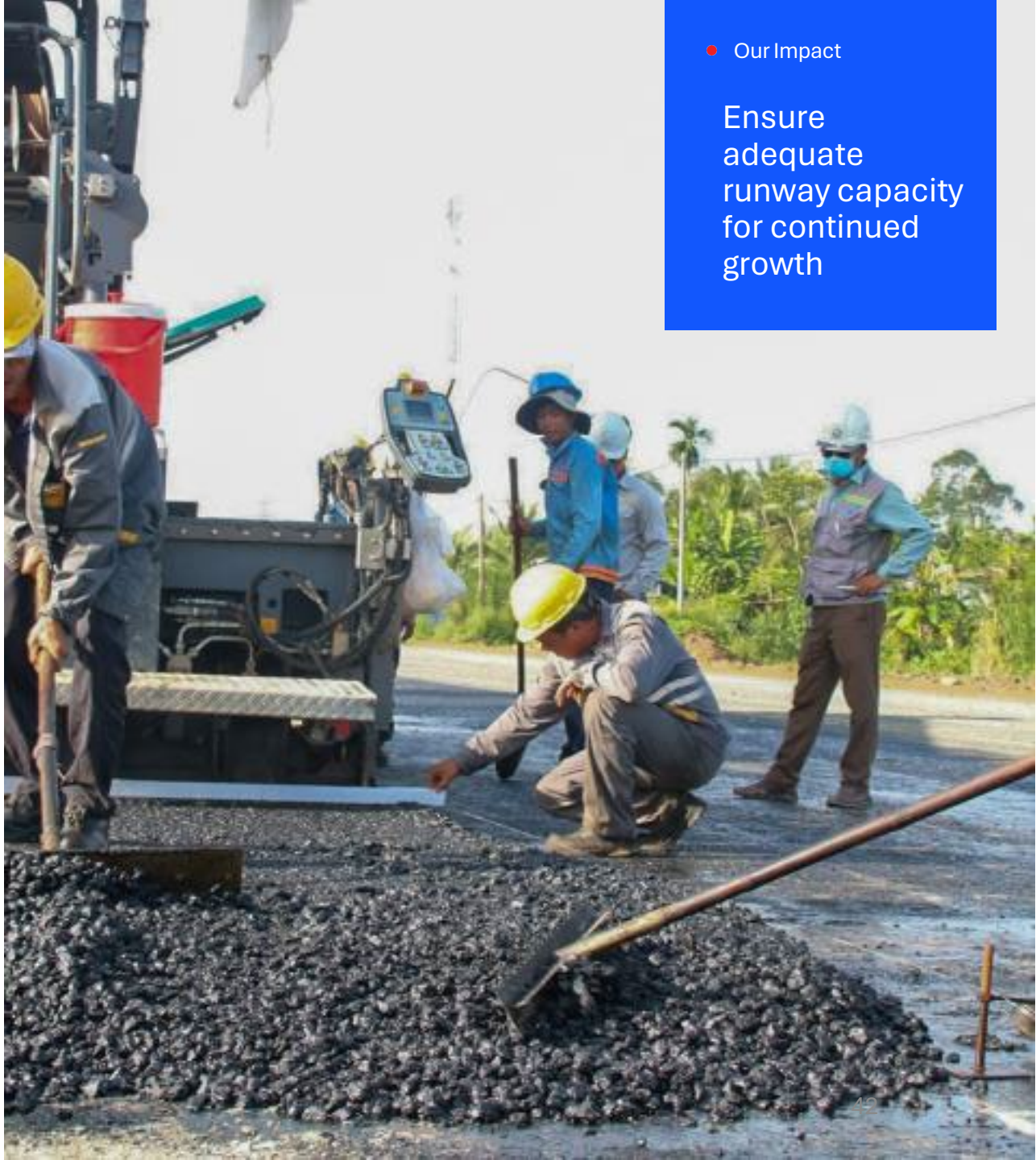
Runway 3 was lengthened to 4km, and supporting taxiways developed, to connect it to the rest of Changi Airport. The runway extension to 4km, to handle larger passenger aircraft, also involved pavement, drainage and associated works. 40km of taxiways were added to connect Runway 3 to Runway 2. This was followed by closing Runway 2 temporarily to allow for works such as underground tunnelling and the construction of additional rapid-exit taxiways.

In 2015 work began on package 1, pavement works, drainage works, security fencing and perimeter roads, mechanical and electrical works, as well as supporting works such as major services and road diversions. In 2016, Package 2, the works for this programme, were carried out near the airport's existing Runway 2, including pavement works, drainage works, mechanical and electrical works, security fencing, perimeter roads, ancillary buildings, as well as other supporting works such as services and road diversions.

40km
of taxiway added

1,080h
Project land size

4km
Added to existing runway



Our Impact

Ensure adequate runway capacity for continued growth

Changi Airport Terminal 5, Master Building Consultancy

Location:
Singapore

Client:
Changi Airport Group

Services:
Master Building Consultancy

Brand:
Surbana Jurong

Status:
Expected completion 2030

Surbana Jurong is the lead partner in the Engineering Consortium for the Master Building Consultancy for Changi Terminal Five.

Tasked by the client we are providing full engineering and management consultancy services for a Terminal facility capable of handling 50 mppa, rising Changi total capacity to 140 mppa at ultimate phase.

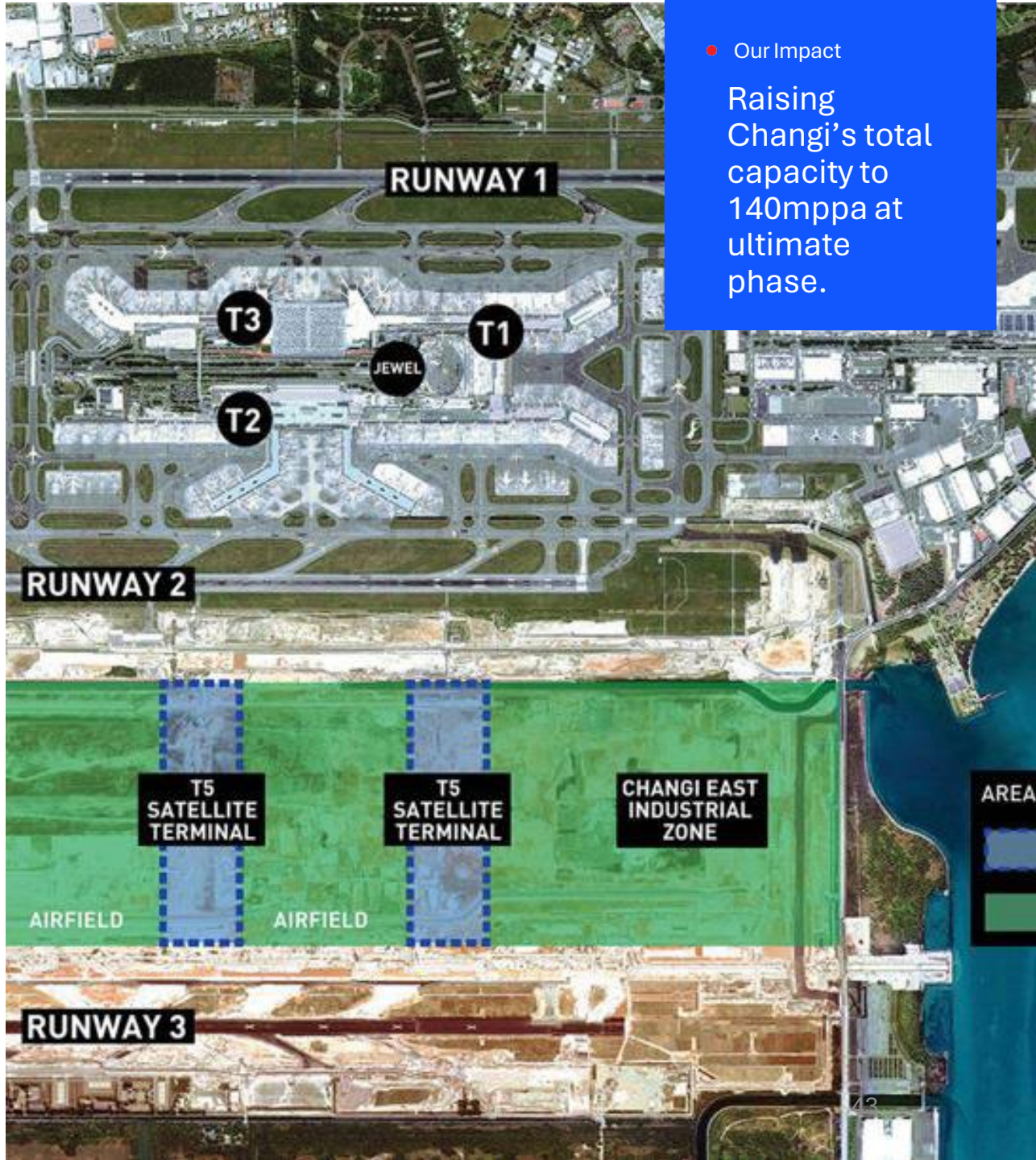
The scope of the project includes Engineering and Management Services for the Main Terminal Building, Satellite Terminal Buildings, associated Ground Transportation Centre, new airside facilities such as fire stations and Primary Landside Roadways.

Disciplines included in the scope of services:

- Architecture
- C&S Engineering
- M&E Engineering
- Quantity Survey
- Operation and Airport
- Planning
- Apron Layout Planning
- Primary Landside Roadway including Elevated Driveway
- Cost Planning
- Project Management & Project Controls
- Project Scheduling & Reporting
- Stakeholder Management
- Interface Management
- Aerodrome Safety
- Main Train/Utilities/Baggage Tunnel under Terminal

50mppa

Handling capacity



- Our Impact

Raising Changi's total capacity to 140mppa at ultimate phase.

Changi Airport Terminal 5, Master Civil Consultancy

Location:
Singapore

Client:
Ministry of Transport

Services:

Brand:
Surbana Jurong

Status:
Expected completion 2030

For Changi Terminal 5 Surbana Jurong is the lead partner in the Engineering Consortium for the Master Civil Consultancy at Changi East.

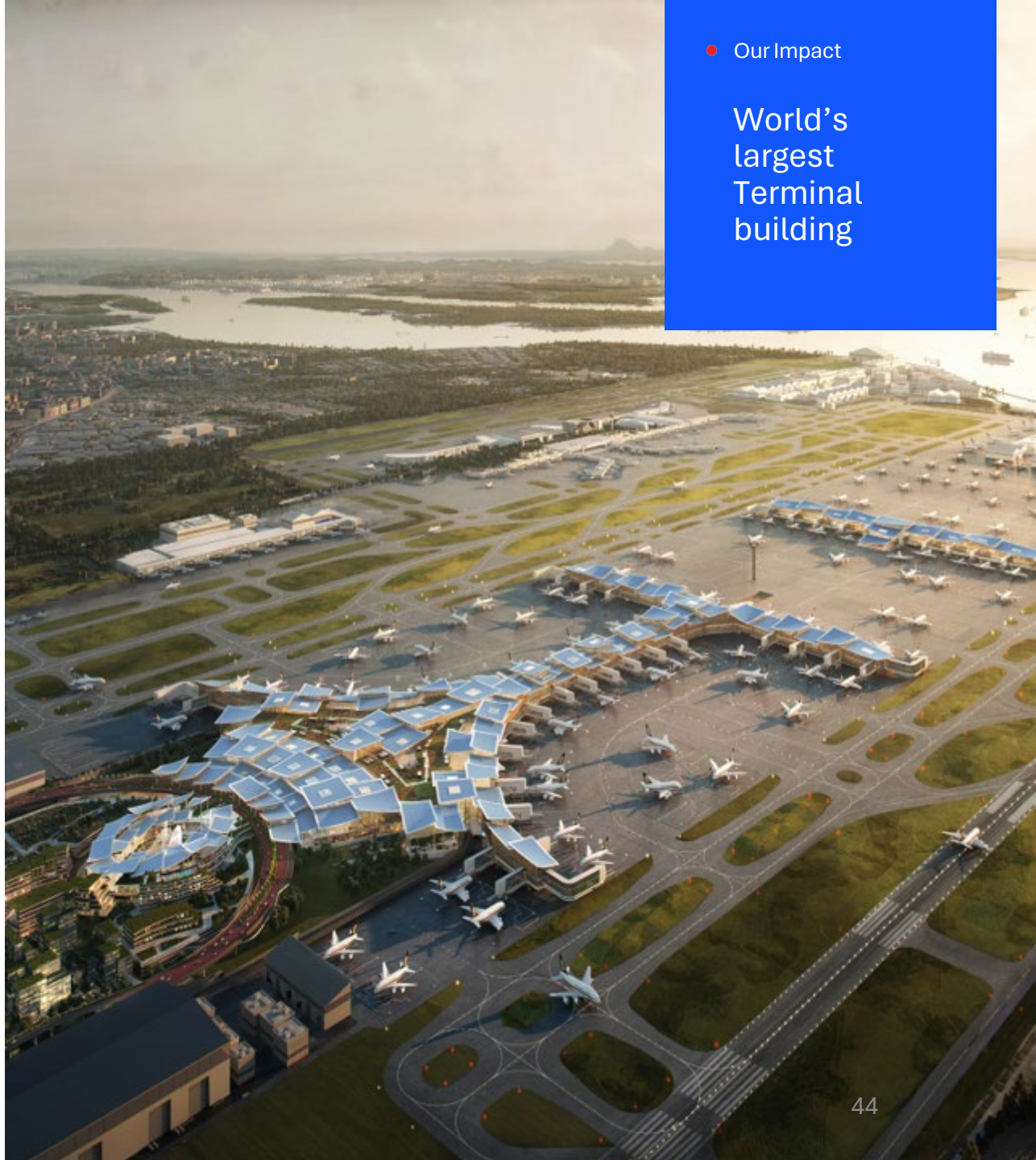
The scope of service includes consultancy services for the design of infrastructure at the landside and airside areas outside of the terminal buildings, including taxiways, aircraft parking stands, roadways and drainage systems, as well as the connections for utilities such as power, water, gas, fuel and telecommunications to the Terminal Five buildings.

Disciplines included in the scope of services:

- Architecture
- C&S Engineering
- Airfield and Apron Planning and Design
- Landside Secondary Roadway
- M&E Engineering
- Site-Wide Infrastructure Civil and Utilities Design
- Ancillary Buildings
- Project Management & Project Controls
- Project Scheduling & Reporting
- Stakeholder Management
- Interface Management
- Risk Management
- Aerodrome Safety
- Fuel Farm
- Quantity Survey

2030
Expected completion

50 million
Additional capacity per annum



Our Impact

World's largest Terminal building

Changi East, Megaspine & Inter-Terminal Tunnel

Location:
Singapore

Client:
CAG

Services:
Full consultancy services including planning, transport engineering and quantity surveying

Brand:
Surbana Jurong

Status:
Due for completion 2030

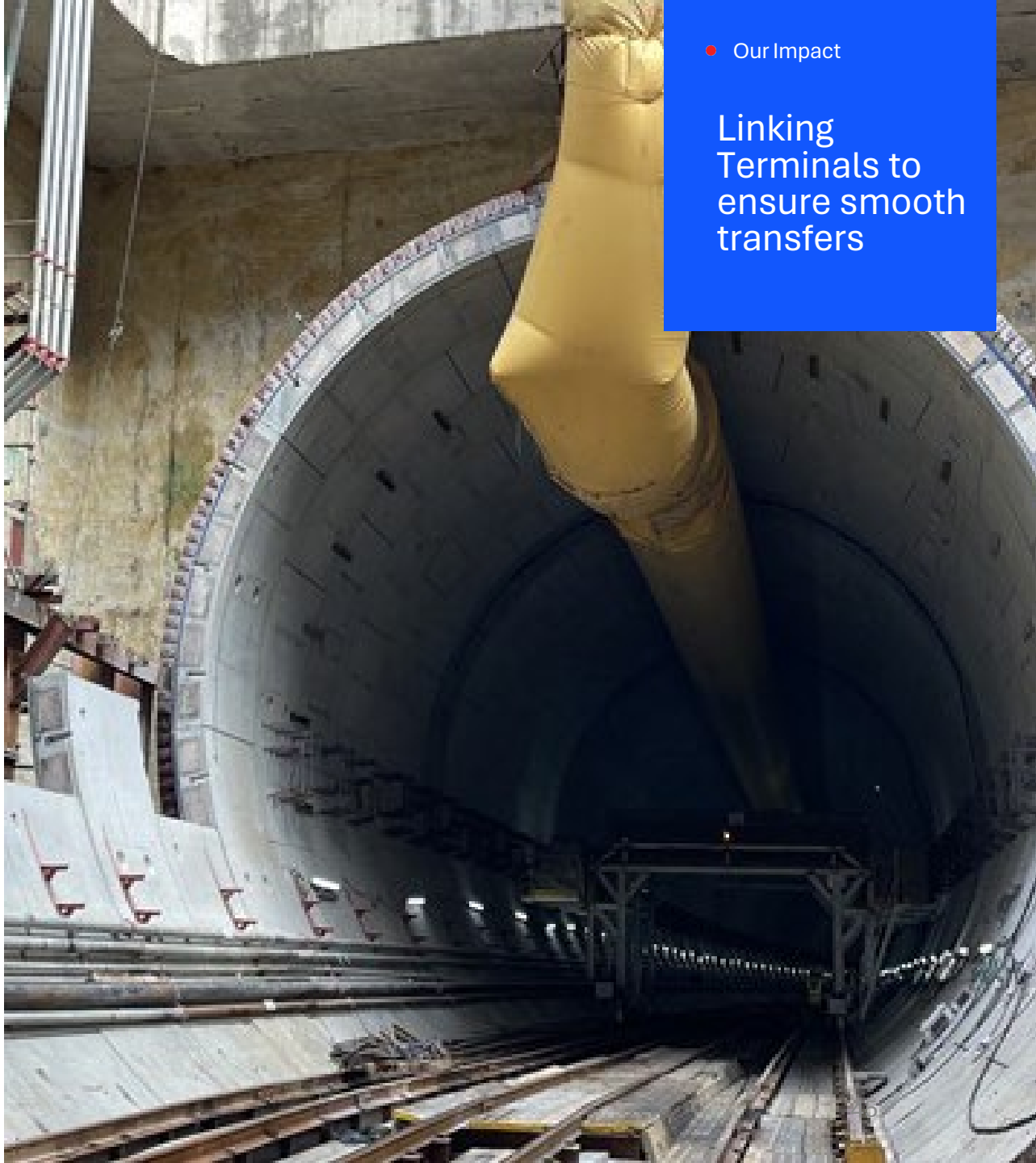
Surbana Jurong was invited by the client to provide full consultancy services including planning, transport engineering and quantity surveying for Changi East Megaspine. Surbana Jurong worked alongside our consortium partners to deliver a wide range of services.

The scope of the project includes proposing alignment options for the Automated people mover (APM) system, Baggage handling system (BHS) tunnels, space proofing configurations of the APM/BHS tunnels, designing the cut and cover at Terminal two and Terminal five and the interchange stations including A&A works at Terminal two and Terminal five. Surbana Jurong provided BIM services and risk management safety solutions for the tunnels. Disciplines included in the scope of services:

- C&S Engineering
- M&E Engineering
- Quantity Survey
- Project Management & Project Controls
- Project Scheduling & Reporting
- Architecture
- Stakeholder Management
- Interface Management
- Aerodrome Safety
- Main Train / Utilities / Baggage Tunnel under Terminal

1080h

Project land areas



Our Impact

Linking Terminals to ensure smooth transfers

Changi East Industry Zone Development

Location:
Singapore

Client:
CAG

Services:
Detailed Master Planning

Brand:
Surbana Jurong

Status:
Due for completion 2030

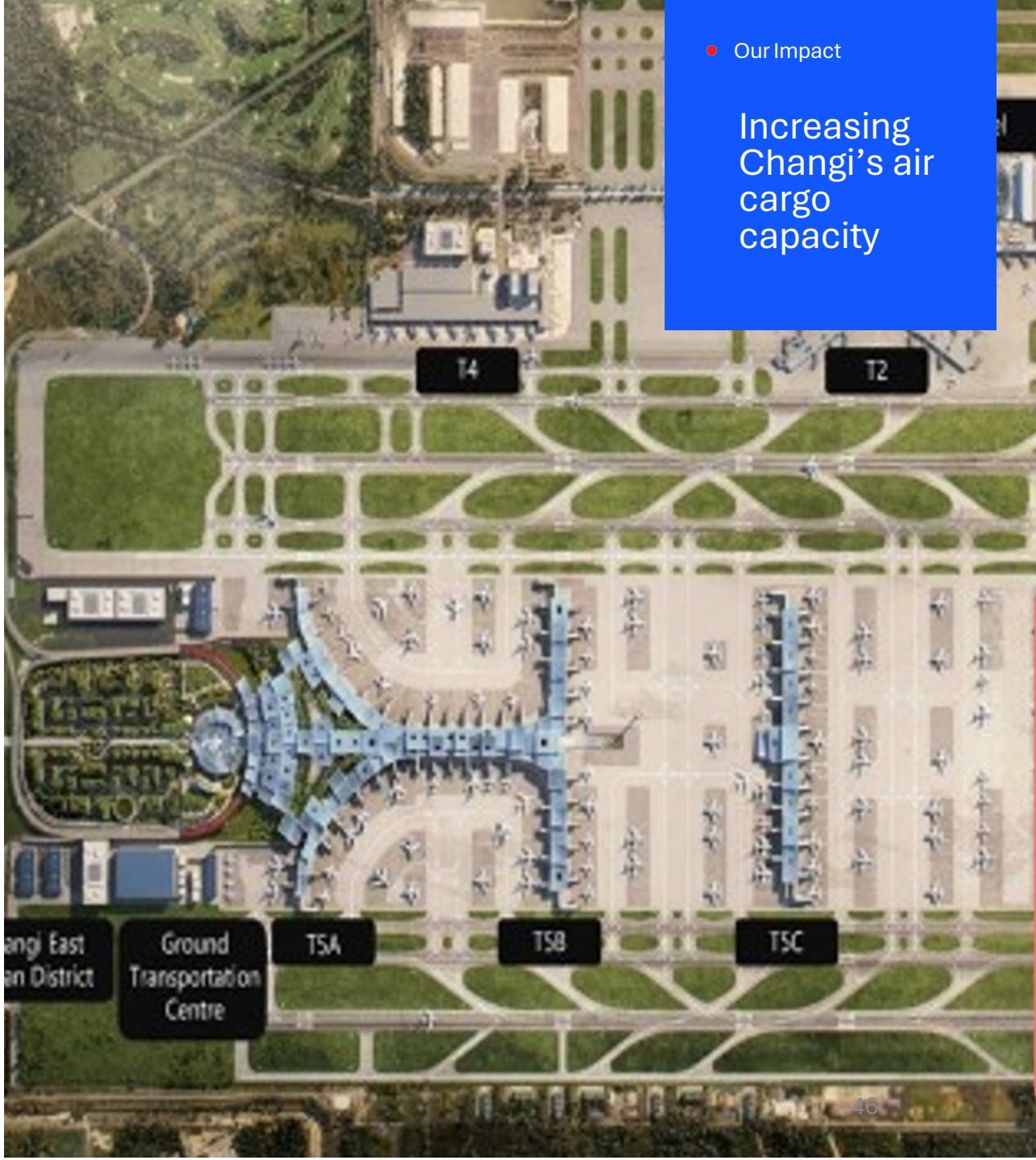
Surbana Jurong was invited to assist the client in the Detailed Master Planning of the Changi East Industry Zone.

The Changi East Industry zone comprises of a Cargo Airfreight Centre & Airport Logistic Park increasing Changi's air cargo handling abilities to 5.4 million tonnes.

This Master Planning study encompassed multiple users and interfaces with public and road transportation systems. The team also made projections for future air cargo demand as part of the study which will lead to the final detailed master plan for this important aspect of Changi Airport operations supporting air cargo and maintenance, repair and operations (MRO activities)

5.4 million

tonnes



- Our Impact

Increasing Changi's air cargo capacity

Changi East Utilities Masterplan

Location:
Singapore

Client:
CAG

Services:
Detailed Master Planning

Brand:
Surbana Jurong

Status:
Completed 2019

Surbana Jurong was invited to assist the client in the Detailed Master Planning of the Changi East site covering 1,000,000 square meters.

The team developed a Utility Master Plan (UMP) including services routing and associated infrastructure plants to serve Changi East, airport site that include Terminal 5 building, satellite building(s), landside development, industry zone and all buildings and supporting facilities and the supporting services such as Ground Services Equipment (GSE), serving the airport.

The scope included Fire Hydrant systems, Electricity and the SJ Aviation team, designed all Fixed Ground Services including plant rooms, routing, stand layouts and stand equipment. SJ Aviation developed the demand schedule and technical characteristics for aircraft requirements for all stands.

The team benchmarked utility master plan of other comparable projects in overseas airports for reference, a Risk Assessment study was conducted to identify potential system weaknesses and recommended mitigating measures. The team provided a conceptual design completed with drawings, technical considerations, data and specifications for each of the utility services, complete with locations, footprints, building and system layout, necessary for future detailed design including contingency provisions and resilience analysis.

1 million

square meters

Changi Airport, Terminal 1

Location:
Singapore

Client:
Changi Airport Group

Services:

Brand:
Surbana Jurong

Status:
Completed 2018

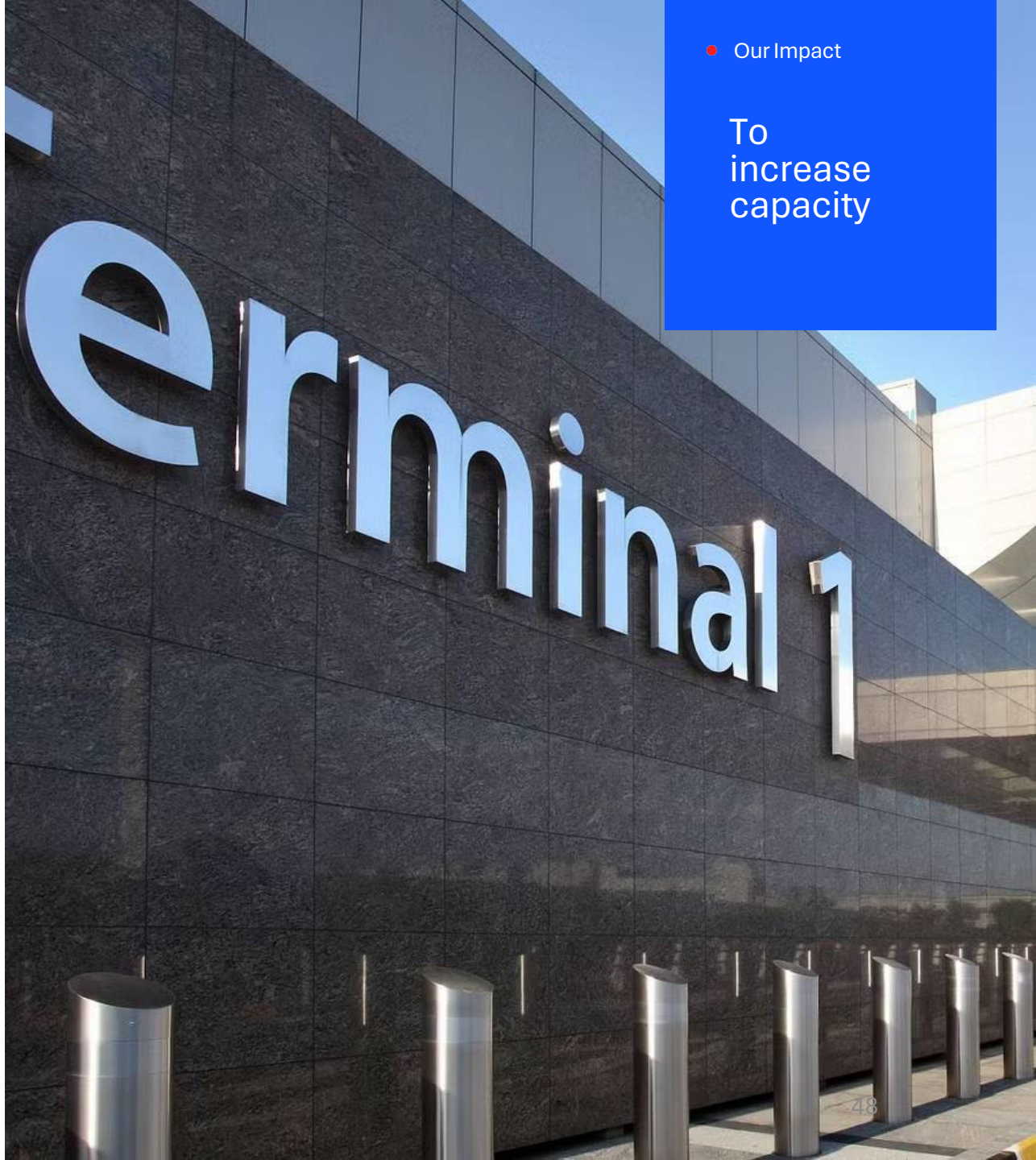
The client required a full consultancy service to study the feasibility of increasing the current capacity of Terminal 1 at Changi Airport.

Surbana Jurong conducted a thorough on-site survey focusing on the following areas: the expansion of Baggage Claim Area and Meet & Greet Area in the Arrival Hall.

In addition, space was found for three extra check-in counters and the installation of self-service check in desks in the Departure Hall, as well as other facilities such as lifts, escalators and travellators to expedite and improve the passenger experience. This has allowed Terminal 1 to increase capacity from 21 mppa to 24 mppa.

3.5ha
area

21-24
mppa



Our Impact

To increase capacity

Changi Airport, Terminal 4

Location:
Singapore

Client:
Changi Airport Group

Services:
Project Design and project development

Brand:
Surbana Jurong

Status:
Completed 2016

Surbana Jurong held key roles in the design and development Changi Airport's new Terminal 4.

The terminal has been designed to make airport transit fast, smooth and secure for the millions of passengers flying in and out of Singapore each year.

On a site of 195,000m2 the terminal building accommodates up to 16 million passengers a year with plenty of space allocated for growth in passenger numbers.

The client requested state-of-the-art facilities including self-check-in kiosks and self-bag-drops will provide travelers with a quick and easy airport journey from curbside through to the departure gates.

195,000m2
Site area

Our Impact

Improve Passenger Experience

Our Impact

Boosting capacity of the Terminal to 13.6mppa

Newark Airport, Terminal A Phase II

Location:
United States of America

Client:
Newark PA, NJ

Services:
Full life-cycle cost and net present value analysis

Brand:
Atelier Ten

Status:
Completed 2022

Atelier Ten was hired by the client to implement high-performance design strategies and help the terminal renovation project reach its sustainability goals.

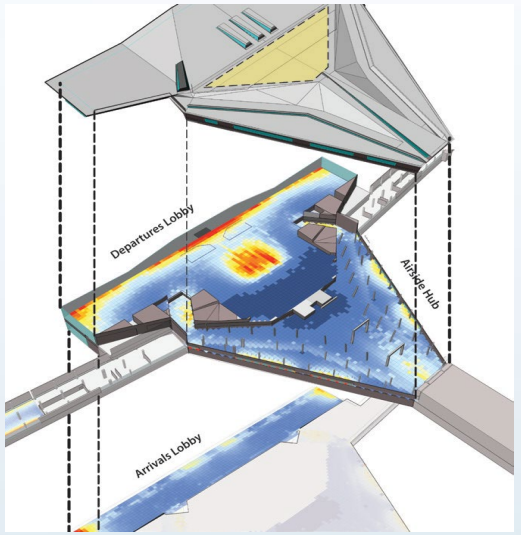
Newark Airports are upgrading to new Terminal facilities adding 33 gates, boosting capacity of the Terminal to 13.6mppa. The total facility will be one million square feet. The opportunity to upgrade the facility has allowed for comprehensive building performance energy modelling and an integrated design process, Atelier Ten identified site-wide sustainability goals and worked with the design team to develop high-performance building concepts for the façade and mechanical systems. In addition to extensive HVAC, envelope, and lighting loads analysis, Atelier Ten developed energy savings strategies, specifically to reduce the significant plug and equipment loads, especially in the back of house and baggage areas.

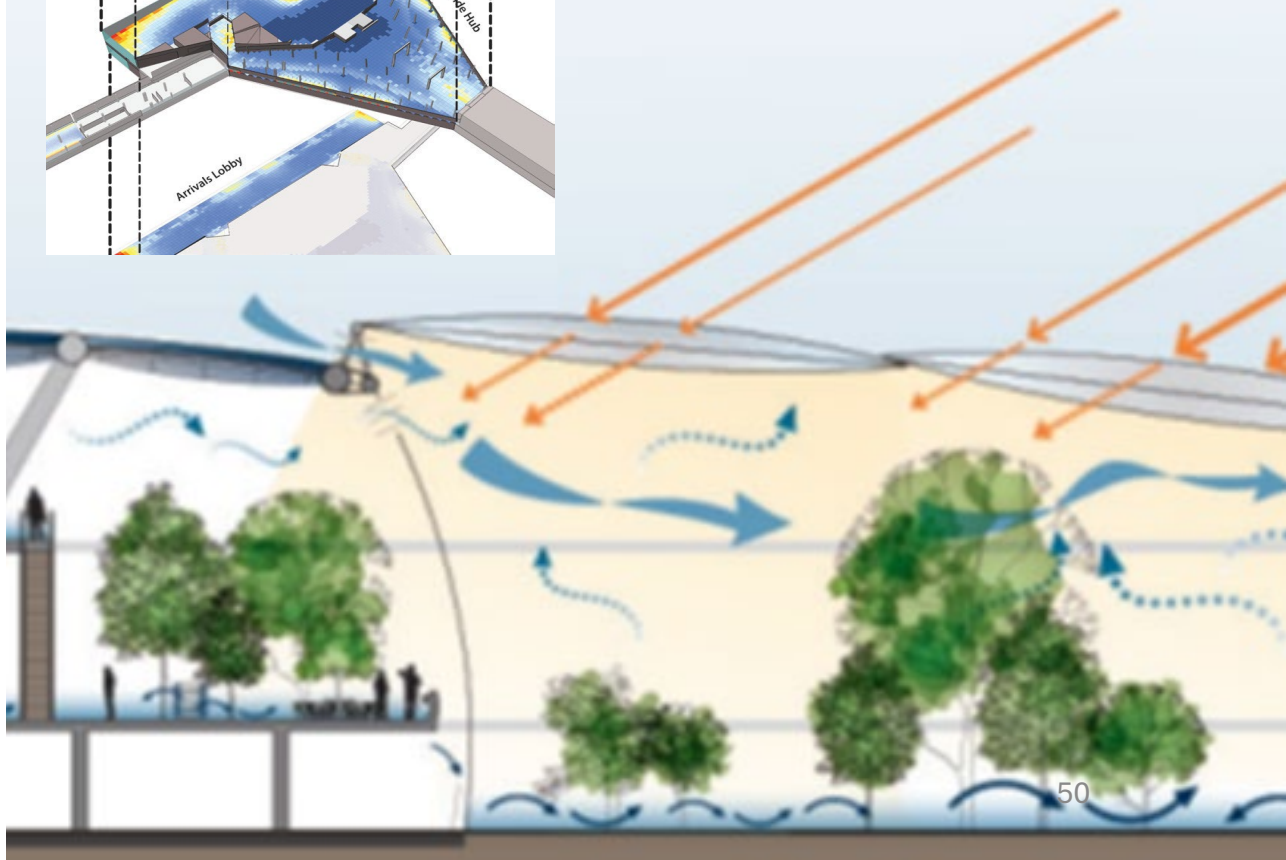
A full life-cycle cost and net present value analysis was also conducted to identify potential future costs and savings. Analyses were also conducted for each sustainable strategy, technology, and LEED related credit.

150ha
area

33
gates

13.6mppa
Capacity





Heathrow Airport, Terminal 2

Location:
London, United Kingdom

Client:
Heathrow Airport Limited

Services:

Brand:
Surbana Jurong

Status:
Completed 2014

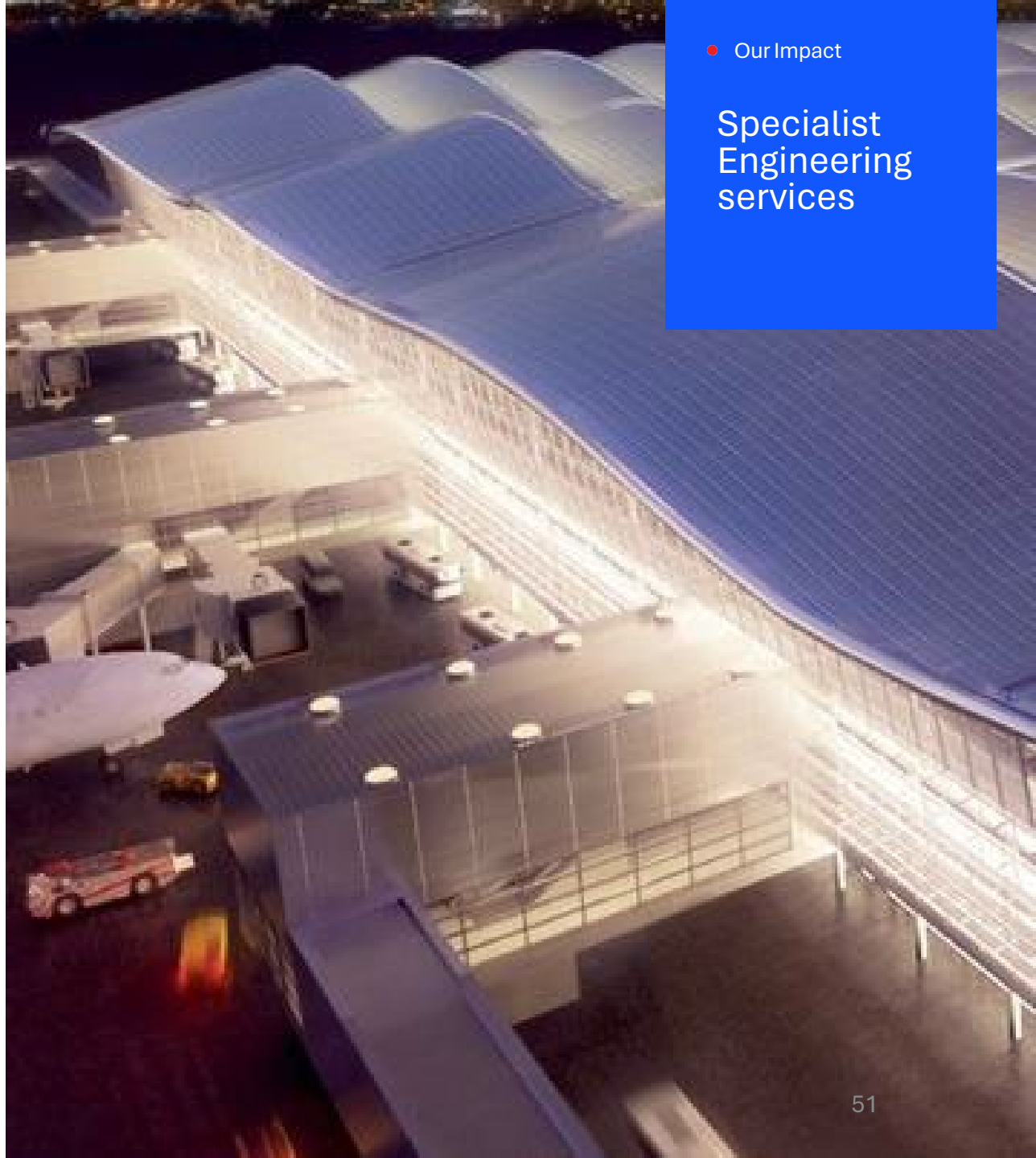
The construction of London Heathrow Terminal 2 marks the next phase of development to maintain Heathrow's standing as a world class airport with exceptional passenger experience.

Terminal 2 is one of the most modern airport terminals in the world, offering passengers improved service, better facilities and faster connections for up to 30 mppa over a space of 40,000 sqm

Robert Bird Group provided structural engineering design services to support the Contractor in their application of a Design for Manufacture and Assembly strategy on this prestigious project.

40,000sqm
Project land area

30 mppa
Capacity



Abu Dhabi Airport (Midfield Terminal)

Location:
United Arab Emirates

Client:
Abu Dhabi Airport Company

Services:
Tender support through to construction support.

Brand:
Robert Bird Group

Status:
Completed 2019

The ‘X’ shaped Terminal building has overall dimensions of approximately 1.6km by 1.6km with a built-up area of approximately 700,000m2.

The Central Processor Area has a plan area of 300m by 400m with a steel roof spanning up to 180m and ceilings 50m high. Capacity of the MTB is expected to be 40 million passengers per year.

Robert Bird Group (RBG) was the main temporary works consultant for the contractor erecting the Central Processor Roof at Abu Dhabi’s new airport, Midfield Terminal.

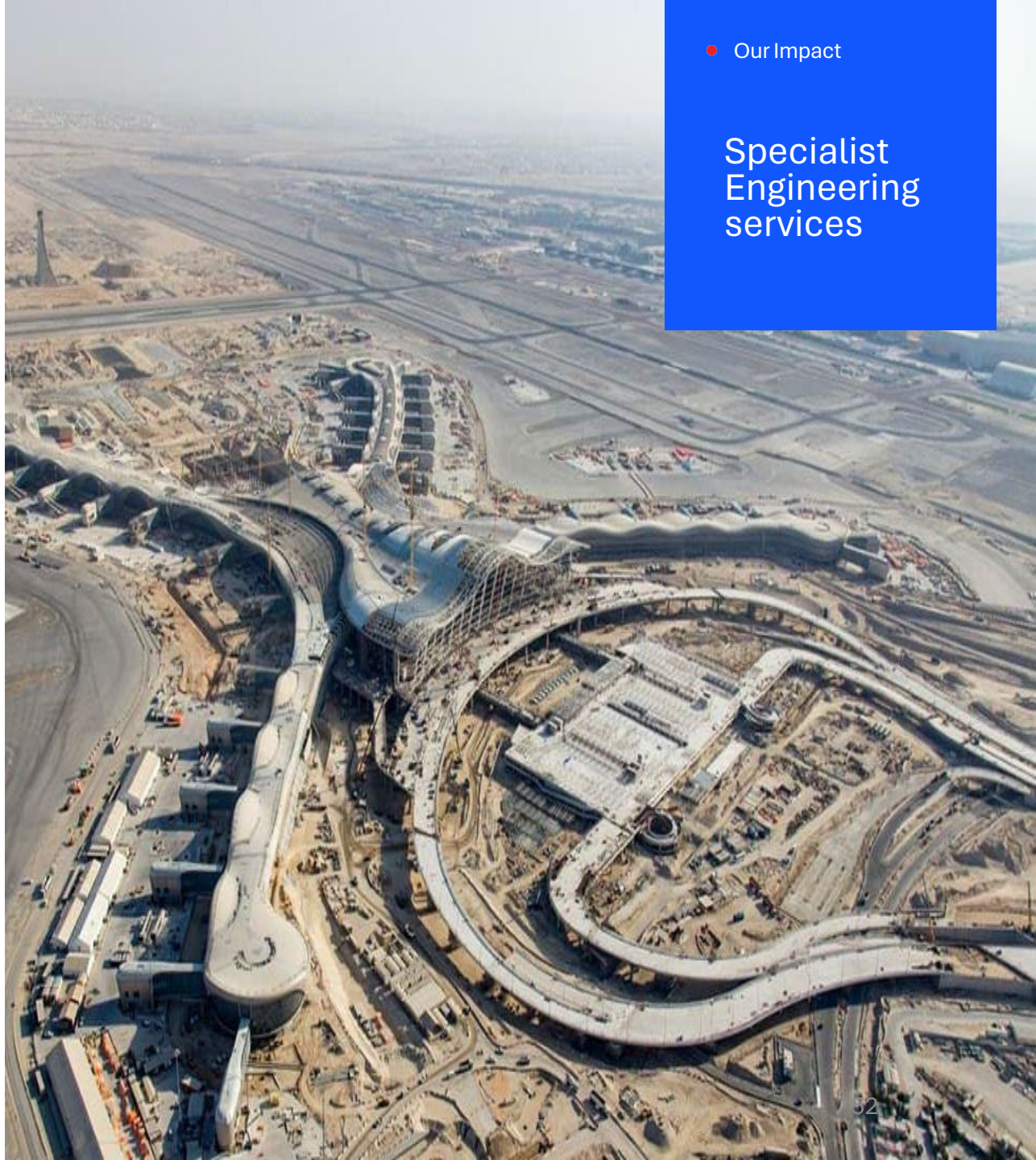
The extent of RBG’s role with the Midfield Terminal Project was from tender support through to construction support.

RBG performed an erection stress analysis of the main central processor roof which included more than 200 analysis stages and designed all necessary temporary works in the roof members did not become overstressed during the construction phase. RBG also designed all temporary works which supported the Central Process Roof, including steel temporary towers, spreader beams and jacking frames.

180m
Steel roof span

700,000m2
Project land area

40 million
Passengers per year



Hong Kong International Airport (Terminal 2 Expansion)

Location:
Hong Kong

Client:
Airport Authority Hong Kong

Services:

Brand:
Robert Bird Group

Status:
Completed 2024

Robert Bird Group (RBG) is assisting the client in the Terminal 2 Expansion project at Hong Kong Airport in support of the three-runway system project.

The Terminal 2 expansion which will double the size of the existing building and increase capacity to 50 mppa, involves the demolition of the existing terminal and construction of the new Terminal 2 whilst maintaining as much of the existing foundations as possible.

RBG has been involved with developing and engineering of the demolition sequence for the existing roof, development of the Envisaged Construction Methodology and Erection Sequence (CMES) for the new roof structure and development of the detailed CMES and preliminary temporary works design associated with the Roof Mock-up.

50 mppa
capacity

3-runway
system project

Our Impact

Specialist Engineering services

Hong Kong International Airport (Third Runway Concourse)

Location:
Hong Kong

Client:
Airport Authority Hong Kong

Services:

Brand:
Robert Bird Group

Status:
Completed 2024

Hong Kong Airports Third Runway Concourse project involves construction of a new passenger concourse with a floor area of 280,000 sqm, with space 57 new aircraft parking stands.

A new Automated People Mover (APM) system for passengers and Baggage Handling System (BHS) system will connect the new concourse to the existing Terminal building.

Robert Bird Group (RBG) has been involved since the design bid stage assisting the client with specialist Construction Engineering advice for this project which includes investigation of different potential construction methods and further develop in detail a concept Construction Methodology and Erection Sequence (CMES) for the new steel roof and the associated fixed link bridges FLB's.

28ha
Land areas

57
New aircraft parking spaces

Kuwait International Airport (Terminal 2)

Location:
Kuwait

Client:
LIMAK Holdings

Services:

Brand:
Robert Bird Group

Status:
Completed 2020

Robert Bird Group (RBG) was engaged to provide Construction Engineering for the new terminal facility at Kuwait International Airport.

The Kuwait International Airport has a built area of approximately 710,000m2 with a roof area of approximately 300,000m2 and a structural steel design tonnage of 150,000t. The new terminal will cater to 13 mppa on opening with the flexibility to cater to 25 mppa with 28 gates. Further development will allow the terminal to handle up to 50 mppa.

RBG was tasked to assist with the construction methodology and erection sequence (CMES) of this mega-structure.

71ha
Project land area

150,000t
structural steel design tonnage

50 mppa
Terminal capacity

Dubai International Airport, Terminal 3

Location:
UAE

Client:
Laing O'Rourke

Services:

Brand:
Robert Bird Group

Status:
Completed 2008

The Dubai International Airport Terminal 3, comprises of a 1 kilometer long by 90 meters wide, 50 meters high, six level concourse building, a six level below ground 20-metre-deep terminal and baggage handling facilities, a three-level car park and a mosque.

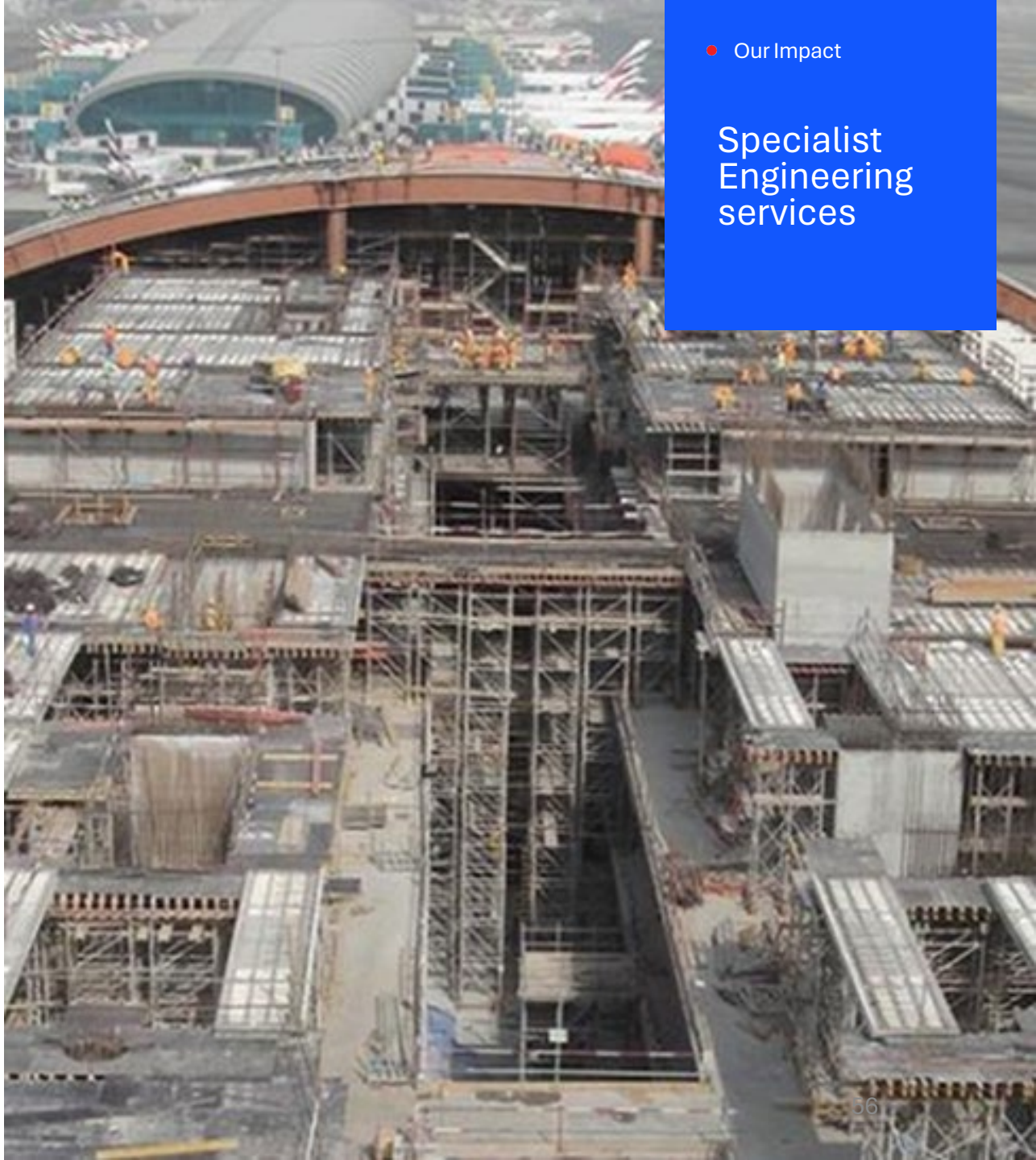
The concourse covers one million square meters with 46 aircraft gates and 27 remote stands.

Robert Bird Group assisted the client during the bid process with a wide range of value engineering solutions to meet cost and time targets. Some of these solutions were accepted by the client as beneficial to the project after rigorous evaluation by the engineers of record.

51.5ha
Project land area

6
Level below ground

46
Aircraft gates



Dubai International Airport Terminal 3
United Arab Emirates

Velana International Airport

Location:
Maldives

Client:
MACL

Services:

Brand:
Surbana Jurong Group

Status:
Due for Completion 2026

The current Maldives International Airport has multiple capacity constraints. Airside, the single runway without parallel taxiway creates capacity constraints as planes are required to taxi on the runway. Due to the configuration of the undersized apron, some planes are ‘pushed back’ onto the runway which creates safety issues.

The current terminal complex has been expanded over the years in an ad-hoc fashion that has not kept pace with passenger volumes or the expectations of an international airport that is a gateway to numerous 5-star resorts and outstanding natural scenery. Surbana Jurong was appointed to modify and improve an existing plan for the Terminal building that had been prepared previously. The revised design was then tendered as a D&B contract where Surbana Jurong would review the detail design by the contractor’s consultants.

Surbana Jurong was also engaged to undertake the role of Client Project Manager to represent and advise the client during the project execution stage. This scope of work increased to include pre-construction management and contractual advisory services.

7.8ha
Project area

5-star
Resorts

Velana International Airport
Maldives

Velana International Airport Terminal

Location:
Maldives

Client:
MACL

Services:

Brand:
Surbana Jurong Group

Status:
Due for Completion 2026

The new Velana Airport Terminal has been designed to give customers a truly local and cultural welcome to the Maldives, while maintaining an efficient and flexible design across three main levels and 78,000 sqm of space.

The terminal will be able to cater for up to 7.3 million passengers per annum and up to 9 million passengers per annum at the ultimate phase.

With six multiple aircraft receiving stands (MARS) equipped with twelve boarding bridges and a further six remote aircraft stands the passengers will experience smooth transits through the terminal.

A significant number of passengers transfer to the Sea Plane Terminal, special attention has been made for passengers transferring to and from resorts utilising a unique specialist transfer system.

78,000 sqm
Of space

7.3 million
passengers per annum

6
Multiple aircraft

Our Impact

Improved Passenger Experience

Velana International Airport Airside & Terminal

Location:
Maldives

Client:
MACL

Services:
Project Management
Construction Management

Brand:
Surbana Jurong Group

Status:
Due for Completion 2026

Surbana Jurong oversaw the construction of a new Code F runway of 3400 meters, 60 meters wide with ICAO Category 1 approach lighting.

The new runway was constructed to improve the airports capacity as it allows the old runway to be utilised as a parallel taxiway reducing runway occupancy time.

The newly constructed apron expansion has space for 3 Code E MARS stands, two Code E stands and one Code C stand.

The major challenges were working on a restricted site with a lack of physical space. Surbana Jurong were able to complete the project without impacting airport operations or compromising aircraft safety on the 130,000 sqm apron.

3400m
runway

60m
wide

130,000sqm
apron

- Our Impact

Improve the airports capacity

Support the Clients vision

King Abdulaziz International Airport

Location:
Jeddah, KSA

Client:
JEDCO

Services:
Technical Advisory
PMC Services

Brand:
Surbana Jurong

Status:
On-going

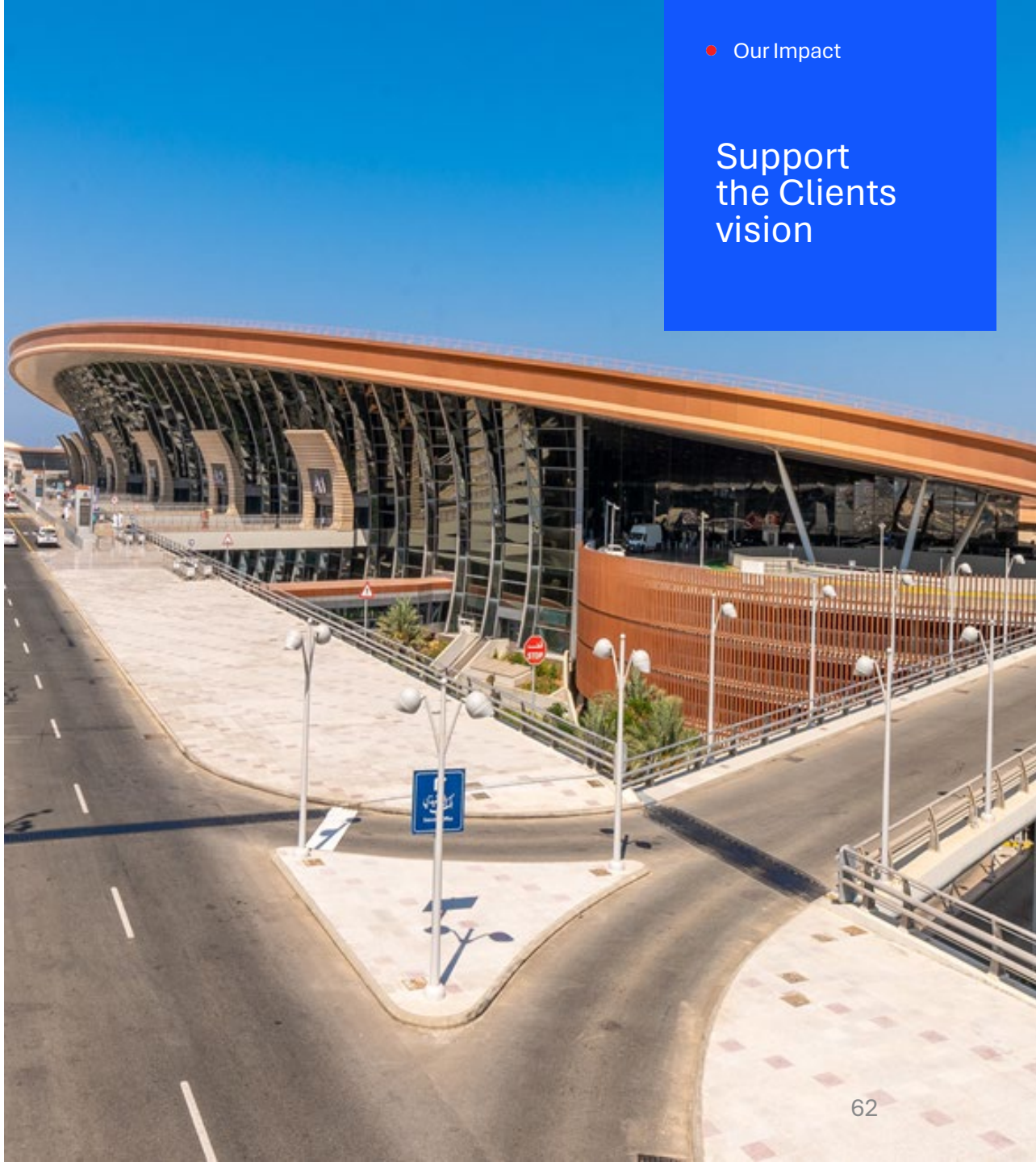
King Abdulaziz International Airport (KAIA), overseen by Jeddah Airport Company (JEDCO), is a strategic aviation hub in the region, serving as the primary entry point for Hajj and Umrah pilgrims and providing easy connectivity to Western and Eastern nations.

JEDCO, established as an independent entity under MATARAT in 2022, is steering the enhancement and expansion of KAIA as part of Vision 2030.

As JEDCO's chosen Project Management Consultant, Surbana Jurong (SJ) has been managing various CAPEX projects in collaboration with the JEDCO Engineering team since early 2023. SJ is dedicated to delivering comprehensive solutions for the portfolio of projects under Vision 2030, aiming to augment the airport's operations and passenger experience. Currently SJ is managing more than 100 projects within KAIA spread across multiple sectors for both landside and airside facilities.

Early 2023

SJ started managing CAPEX projects



Bucharest South Airport

Location:
Romania

Client:
SDG

Services:
Master planning

Brand:
Surbana Jurong

Status:
Completed 2020

Surbana Jurong Aviation Team have been assisting the client to provide strategic planning for a new hub Airport in Romania. The project will provide a hub airport to Central Europe.

A new world class Airport & Airport City will provide excellent connections to Central Eastern Europe and the world. This will allow Romanian Aviation to grow and attract businesses to the region.

Opening to serve 15 million passengers per annum with an ultimate phase of 35 million passengers per annum the airport will serve as a gateway to Central Eastern Europe.

Surbana Jurong has played a key role in developing and refining the airport Masterplan, business plan and commercial plans for the airport and wider airport city.

15 million
Passengers per annum at opening

2800 ha
Project area

35 million
Passengers per annum at ultimate phase

Western Sydney Airport

Location:
Australia

Client:
Aerowest (Jv Seymour White Pty Ltd And BMD Pty Ltd)

Services:
Landside Civil and Building Works

Brand:
SMEC, SJ, SAA Architects

Status:
Due for completion by 2026

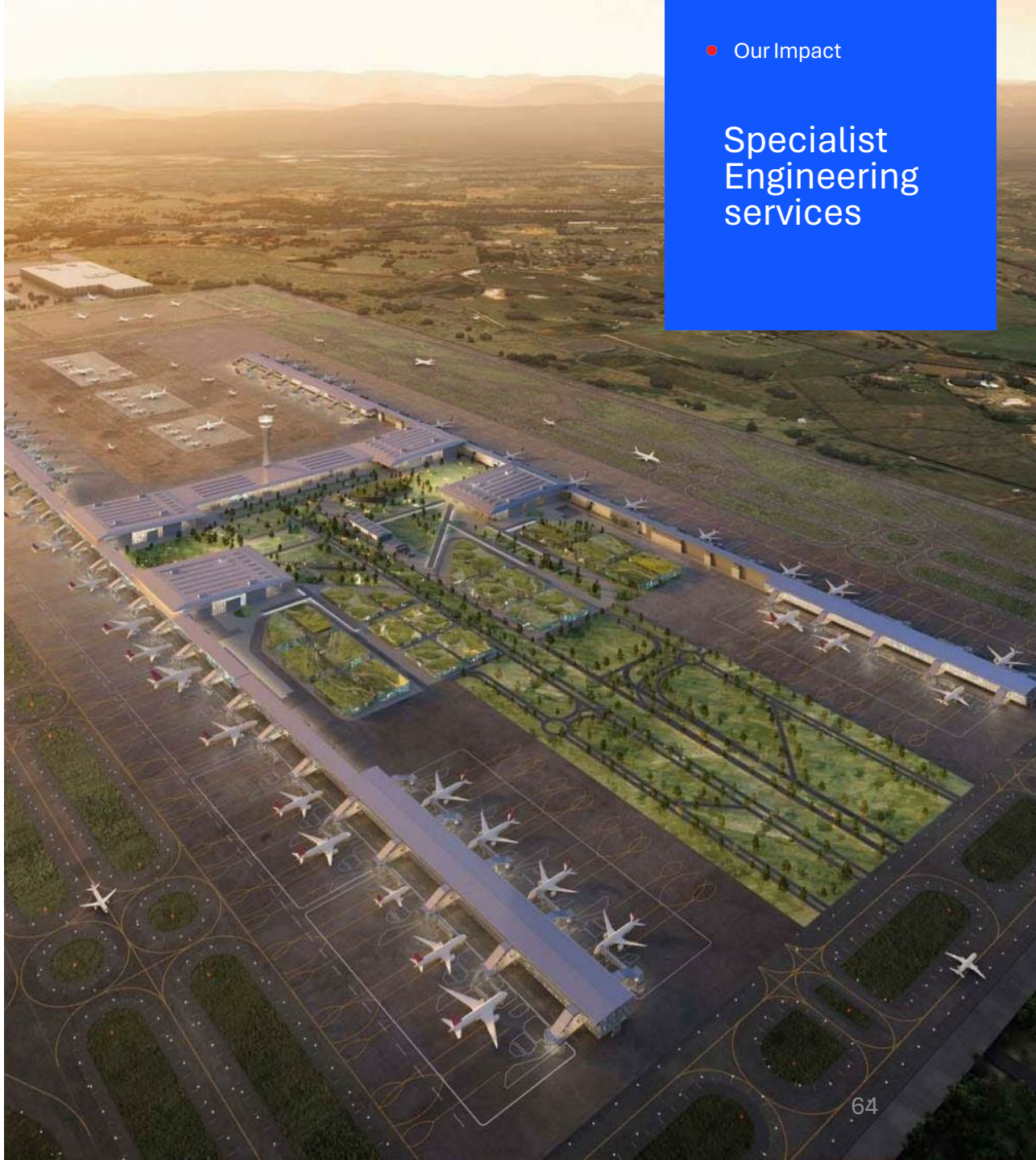
Western Sydney International Airport (WSIA) is a new greenfield airport in Sydney. It will be built in four stages of expansion, beginning with 10 million passengers annually (MPA) by 2026, with further increments to 82 MPA, to become the largest international gateway to Australia by 2060.

WSIA will provide direct connections to the world, allowing opportunities for residents and the community to enhance Western Sydney's connection to world economies. With direct rail connections into the city centre, it is also intended to attract landside investment from local businesses, ranging from manufacturing and logistics to hospitality, education and other professional services, enabling them to have quicker and more convenient access to overseas markets.

Respecting the natural environment and the cultural legacy of the area was an important driver for the client.

10 million
Passengers annually

82
MPA



Planning for New Airport.

Hanthawaddy International Airport

Location:
Myanmar

Client:
Yongnam Holdings

Services:
Airfield Masterplan

Brand:
Surbana Jurong

Status:
Completed 2016

With Yangon Airport running at full capacity a new international airport is required to serve as a gateway to Myanmar. A site 80km outside of Yangon was chosen.

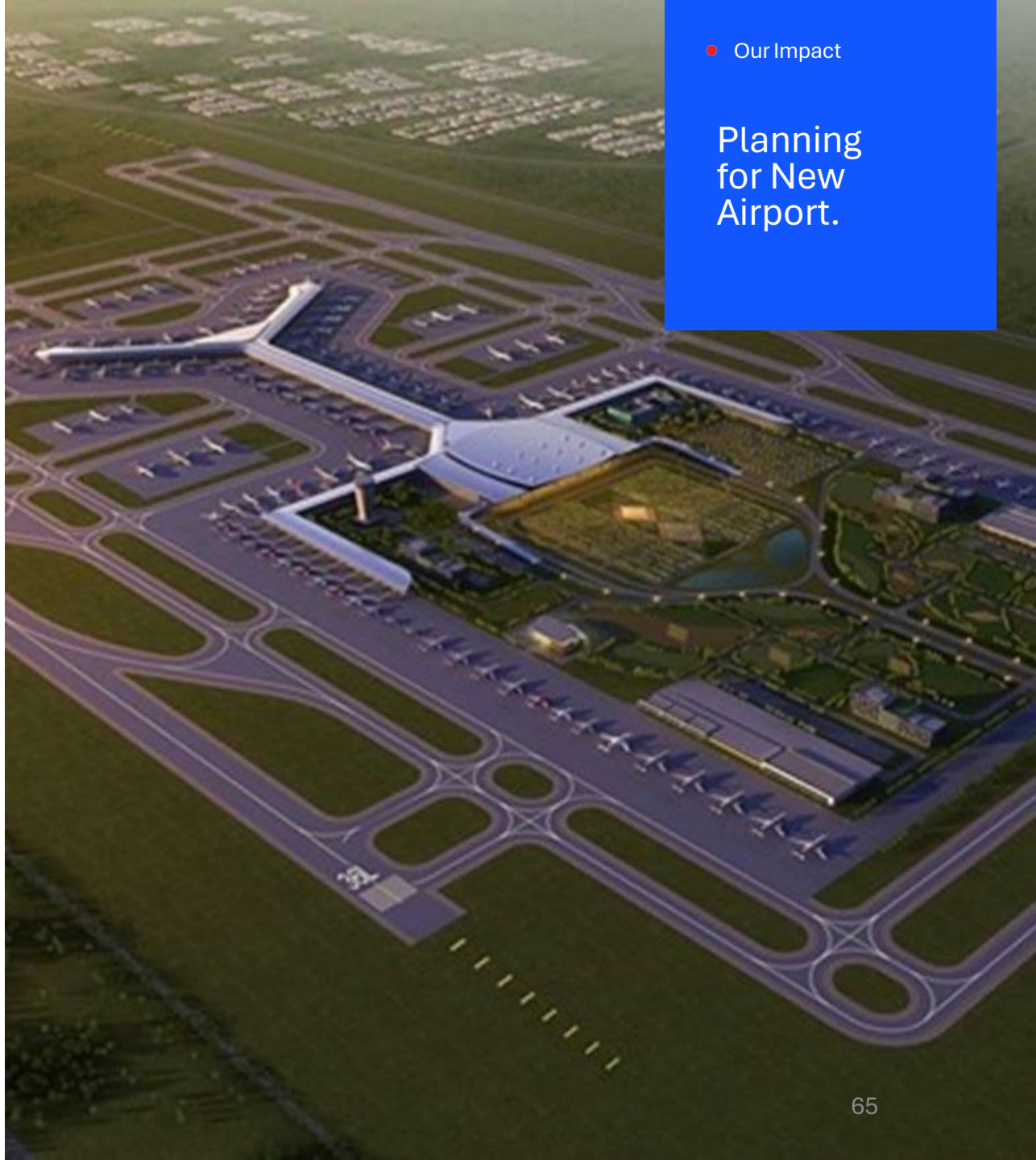
Hanthawaddy International Airport is expected to have an initial capacity of 12 million passengers per annum, making it the largest airport in Myanmar serving as gateway to the country and SE Asia.

Surbana Jurong was engaged by the client to design and develop an Airfield Masterplan considering environmental modelling and sustainability. Surbana Jurong also provided Architectural concepts of the Airfield.

3642ha
Land area

12 million
Passengers per annum

80km
outside of Yangon



Pier A Expansion

Location:
Zurich Switzerland

Client:
Zurich Airport Authority

Services:

Brand:
Surbana Jurong
Robert Bird Group

Status:
Design Competition

Robert Bird Group (RBG) and Surbana Jurong were asked to join the client's team in assessing the construction logistics, sequencing and impact on airport operations the building of the new Pier A and Air Traffic Control Tower at Zurich Airport.

The team produced value engineering solutions for the various phasing of construction and demolition of the existing pier which would not impact the airport operation or reduce airport capacity.

The new Pier A at Zurich will increase capacity above 30mppa and improve the passenger experience in the new spacious and bright facility, while offering improved commercial facilities which benefits the airport operator and offer more commercial space.

1.8 ha
Land area

30+ mppa
capacity

Our Impact

Increase capacity

Auckland International Airport

Location:
New Zealand

Client:
AIAL

Services:
Operational assessments

Brand:
Surbana Jurong
Robert Bird Group

Status:
Completed: 2022

Robert Bird Group and the SJ Aviation team were tasked by the client to assist in the Terminal Integration enabling works at Auckland Airport.

The team provided specialist Aviation operational assessments on the impact of planning and construction on the existing airport facilities.

- The impact on airside access and operations.
- The impact to the passenger experience and passenger spend.
- Access to the airport for passengers and construction materials and staff.

The new facilities at the airport will improve the passenger experience and increase the size of the domestic terminal 3-fold, as well as make the transfer between International and domestic flights easier.

2.5ha
Land area

3-fold
Increase the size of the domestic terminal

AMAALA Airport

Location:
Amaala, Saudi Arabia

Client:
NEOM

Services:

Brand:
Robert Bird Group

Status:
Completed 2023

AMAALA Airfield is designed to be the key transportation hub for the whole AMAALA Development.

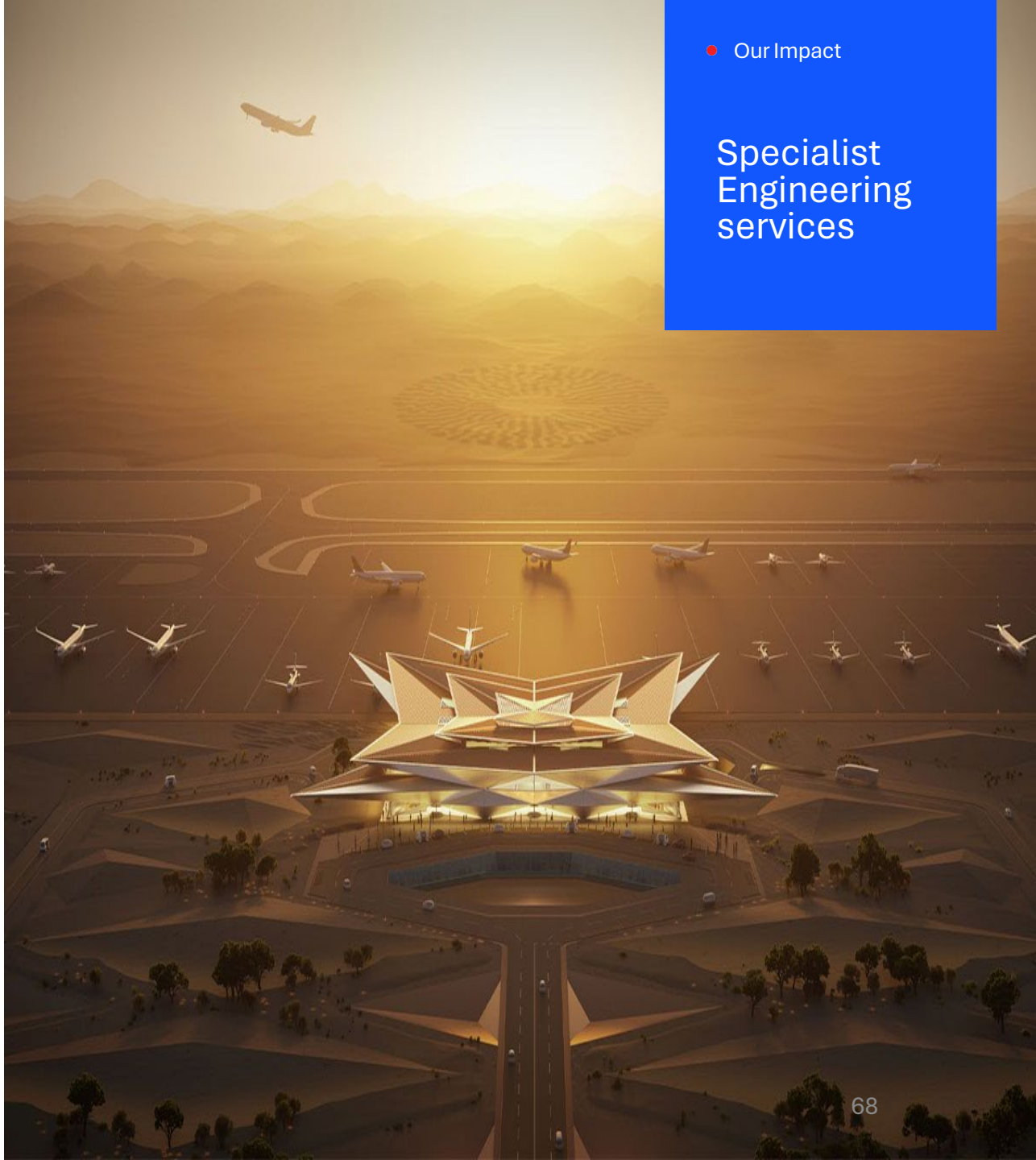
The airport will reflect AMAALA's ultra-luxury hospitality spirit, providing an exclusive private-club experience perfectly encapsulating AMAALA's pillars of art and culture; wellness and sport; and sea, sun, and lifestyle.

The project includes climate control hangers for private aircrafts, several lounges and conference rooms. Additionally, there is a broad spectre of auxiliary buildings which will allow top of the class services to be provided for up to 1 MPPA. Initially, Robert Bird Group were appointed to develop concept Construction Methodology and Erection Sequence (CMES) for the airfield. This was soon followed by demand to prepare packages for Early Contractor Involvement (ECI) Process. The key advantage of this approach is to bring constructability to the front end of the project. RBG's main aim was to develop project wide modularization to the structure and facade system which would facilitate safe, quality control and time and cost-efficient construction methods. While the concept CMES was prepared, RBG identified several the value engineering opportunities in the current design. After being instructed by the Client, RBG undertook an extensive Value Engineering study, which ended up halving the amount of structural steelwork on the project and estimated a saving of approximately 30m SAR.

9.5 ha
Land area

30m SAR
estimated saving of structural steel

1 MPPA
capacity



Noida International Airport

Location:
Jewar, India

Client:
TATA

Services:
Detailed Design Consultancy Services

Brand:
Surbana Jurong
Robert Bird Group
SMEC

Status:
Due for Completion 2026

Surbana Jurong's Aviation, Robert Bird Group, Surbana Jurong India and SMEC India were approached by the client to support them through the Tender stage of the new Jewar Airport in Noida, India.

The first phase of the airport, which is due to open in 2024 and will cater to 12 mppa rising to 30 mppa in phase 2 with a total 20 parking stands for aircraft.

The Surbana Jurong teams in India and Singapore are providing "Detailed Design Consultancy Services" to the Main Contractor TATA Project Ltd (TPL) for both Package 1 (Terminal & Associated Works) and Package 2 (Landside and Airside Developments).

Services includes

- Civil & Structures
- Architecture & Interiors
- Landscape
- Sustainability
- Infrastructure (Roads , Utilities & Drainage)
- QS
- BIM
- Signage and Way Findings
- Acoustics

12 mppa
Phase 1 capacity

5,100 ha
Land area

20
Parking stands

Our Impact

Cater to 12 mppa rising to 30 mppa in phase 2

Ordos International Airport

Location:
Inner, Mongolia

Client:
Ordos Airport

Services:

Brand:
B+H

Status:
Completed: 2013

B+H assisted the client in the design of the new Ordos Airport. The new 50,000sqm terminal is designed to handle 2.5 mppa.

Sustainable design elements include details that block the interior from the heat of the summer sun while allowing for solar gain in the winter. The sunlit departure hall and Winter Garden in the check-in area serve as bio filters that convert carbon dioxide into oxygen. Rainwater is collected for irrigation and bathrooms and natural ventilation is used throughout to reduce peak energy costs. The airport is also designed to allow for future growth and expansion. Currently maintaining an efficient flow of passengers, new gates can be added with minimal construction and cost when the region sees another increase in tourism and travel.

The airport's most compelling interior feature is a sun-filled check-in hall that's covered by a grand dome inspired by a Mongolian yurt. This space is used to highlight art reflecting the culture of Inner Mongolia with murals depicting the history of the area. Responding to its environment, the building's low profile harmonizes with its surroundings while sinuous rooflines mirror the natural landscape.

5ha
Land area

2.5 mppa
capacity

Sydney International Airport, Pier A, Australia

Location:
Sydney, Australia

Client:
SACL

Services:

Brand:
Robert Bird Group

Status:
Completed 2020

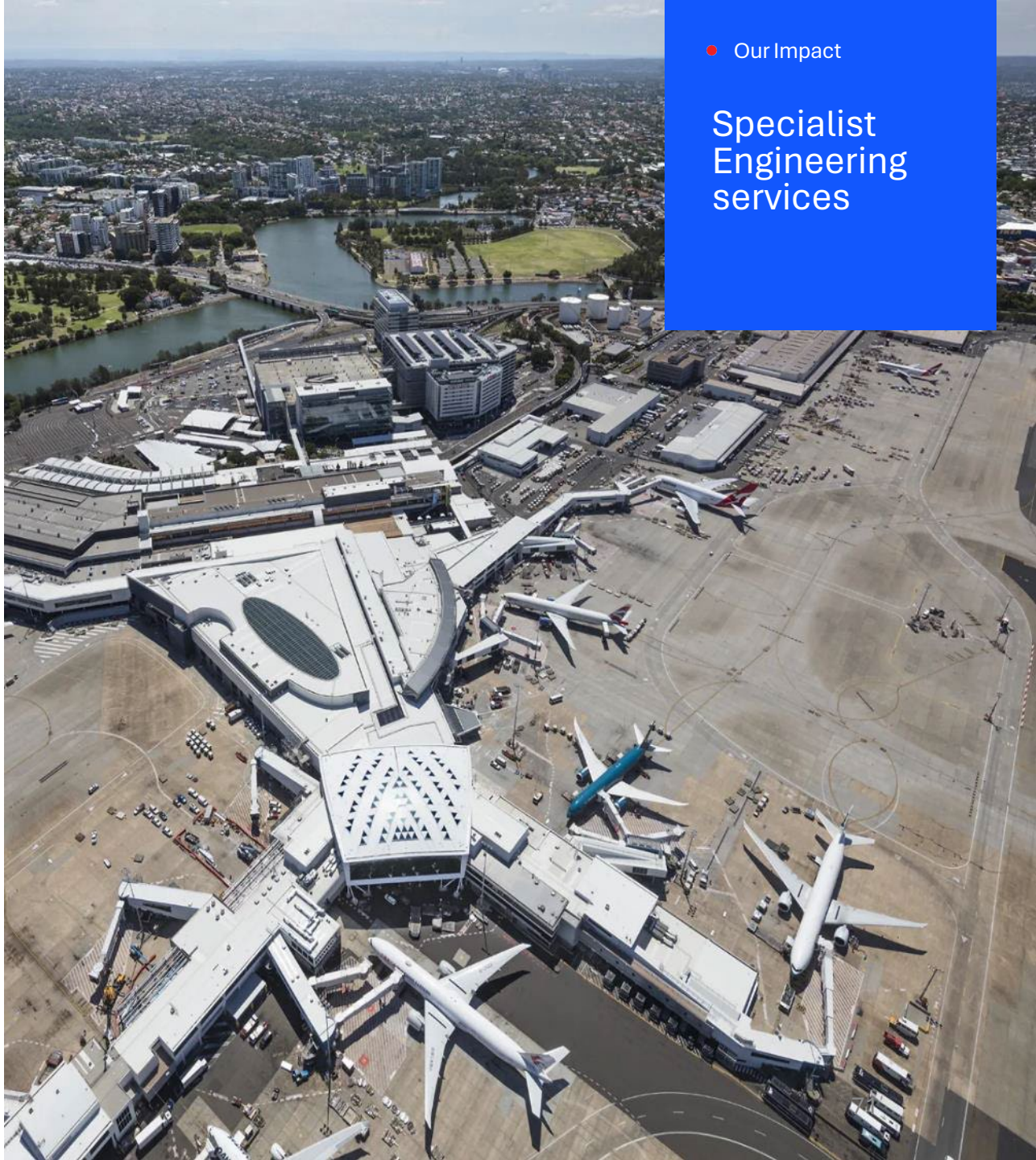
During the refurbishment and expansion of Pier A at Sydney Airport, International Terminal, Robert Bird Group were engaged by the client to assist with the Pier A International expansion and the Baggage Handling System upgrades. These upgrades will allow the airport to handle 60 mppa overall by 2039.

Construction staging assessments and planning including construction visualisation was undertaken for the Baggage Handling system without impacting ongoing operations at the airport.

The expansion of Pier A was focused on international traffic with specific drivers to Code E & F aircraft including the inclusion of new technologies at T1, such as biometrics, to improve the passenger experience .

1.5ha
Land area

60 mppa
Capacity by 2039



Sydney Airport, Domestic Ground Transport Strategy

Location:
Sydney, Australia

Client:
SACL

Services:
Temporary staging and methodology

Brand:
Robert Bird Group

Status:
Completed 2020

Sydney Airport is undertaking the replacement the current domestic airport carparks with new 10 storey, 6000 plus spaces facilities which link to the Gateway Project which will be completed in 2024.

Timing is critical due to the need to tie in with Gateway access ramps and bridges also under construction. They are also completing works over the existing station box.

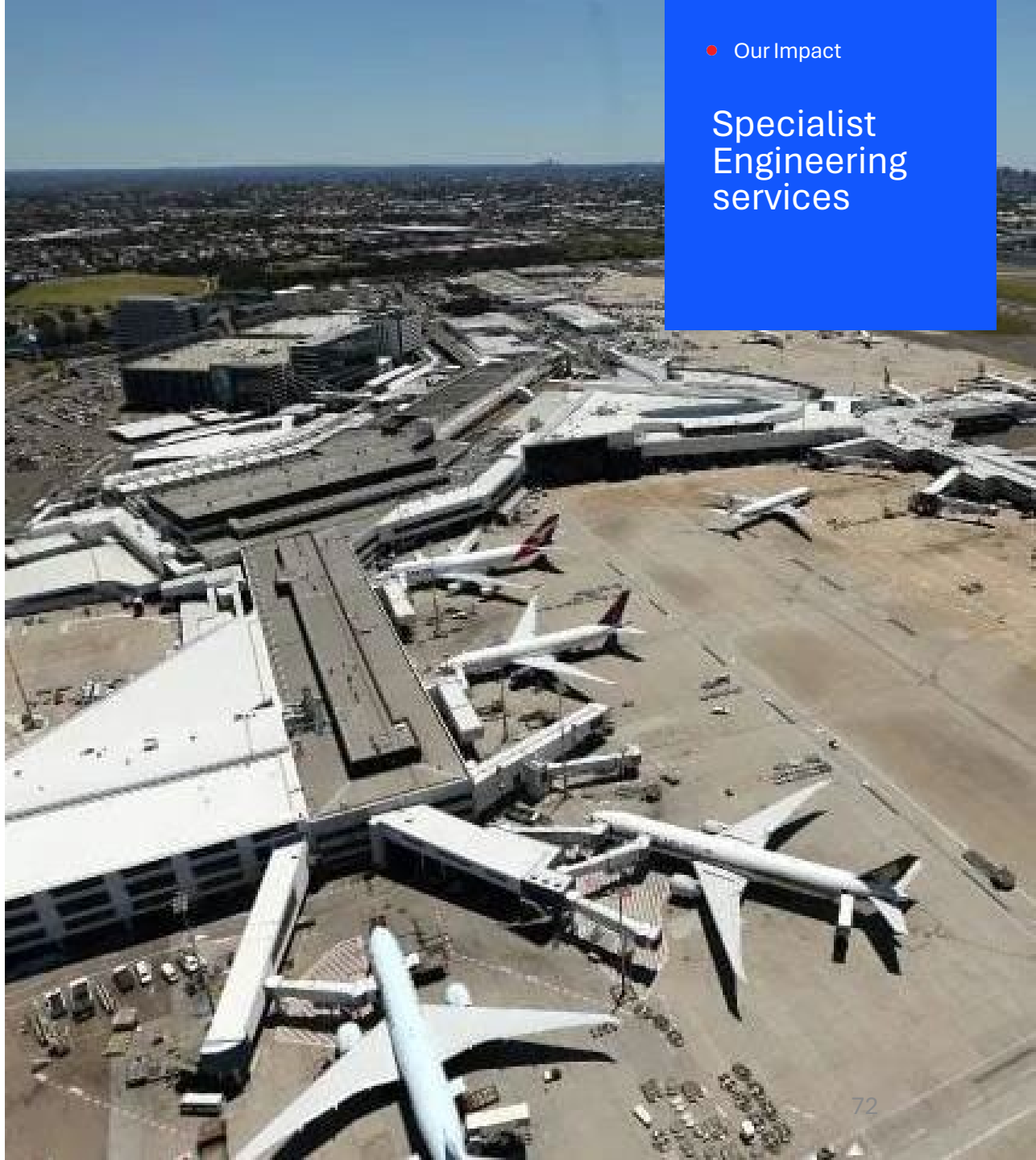
Robert Bird Group has been engaged to produce a Reveal model for a staged construction, interactive model which can simulate and describe passenger and stakeholder experiences during construction.

RBG also provided Temporary staging and methodology for the Domestic Ground Transport Strategy Project, which is essentially demolishing all of the existing carparks and re-building them larger and linked to the new Sydney Gateway road project.

1.5ha
Land area

10
New carparks

6000+
Spaces facilities



Brisbane Airport

Location:
Brisbane, Australia

Client:
Brisbane Airport Corporation (BAC)

Services:

Brand:
SMEC

Status:
Completed 2017

SMEC delivered an aeronautical design of the International Terminal Apron Expansion (ITAE) ramp operations and ICAO Code E and F aircraft parking positions at Brisbane Airport.

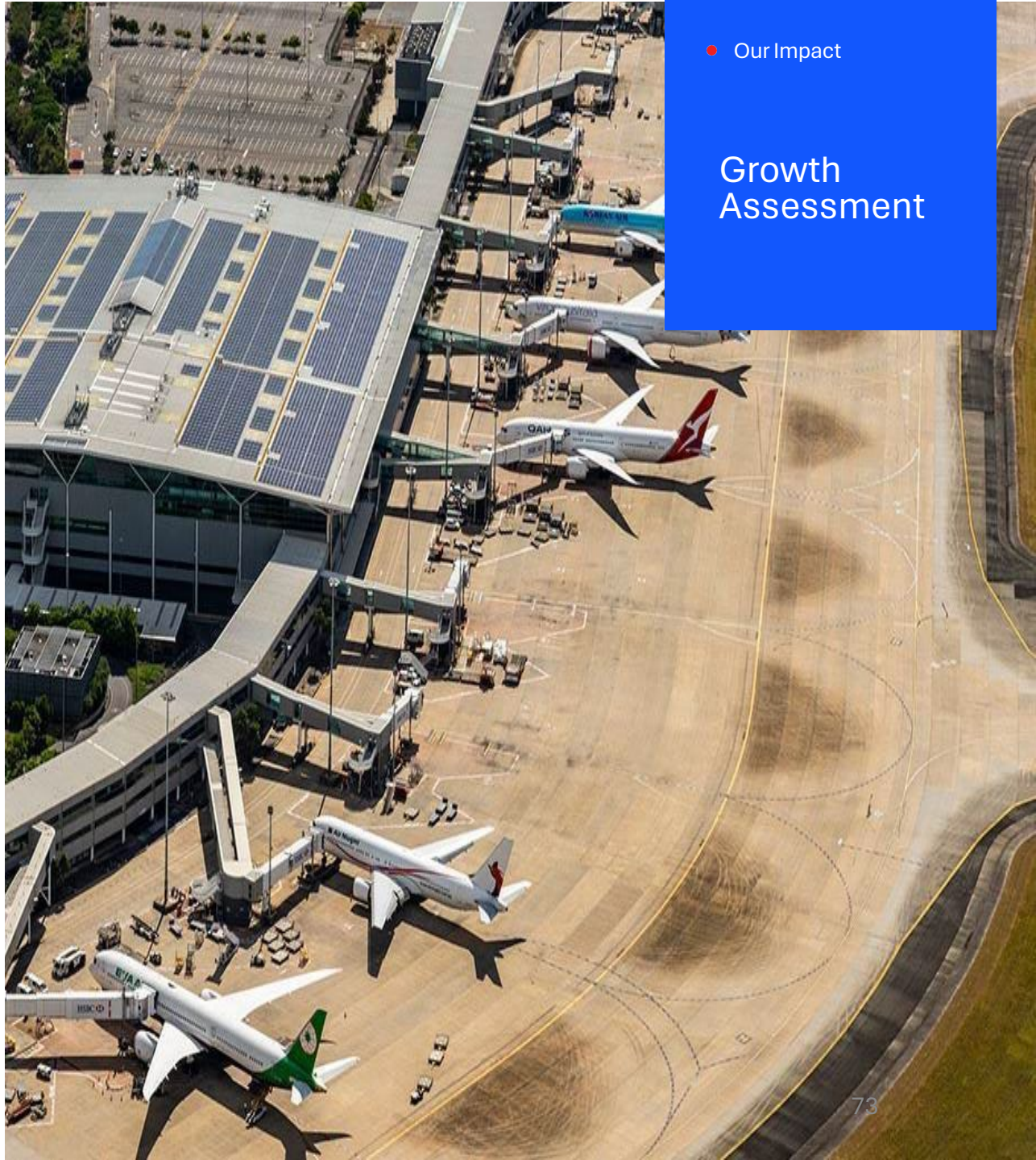
The design included three primary parking bays for Code E and F operations, two of which are suitable for Code C Multi-Aircraft Ramp Servicing (MARS) operations, with the third designed for single Code E and C capacities.

SMEC also delivered the master plan ultimate layout and technical design of the Northern Domestic Terminal Code C and MARS aircraft capacity expansion program.

55ha
Land area

3
Primary parking bays

3.3km
Long runway



O R Tambo International Airport

Location:
Johannesburg, South Africa

Client:
Airports Company South Africa (ACSA)

Services:
Technical pavement expertise

Brand:
SMEC

Status:
Completed 2016

SMEC was approached by the client for the reconfiguration and upgrade of Aircraft Stands. The project entailed the reconfiguration and upgrade of aircraft stands to accommodate larger code aircraft.

SMEC provided the technical pavement expertise required to accommodate the heavier wheel load configurations of larger code aircrafts on the aircraft stands. The reconfiguration of aircraft stands required strategic concrete slab rehabilitation and the relocation of sections of the main aircraft fuel line and fuel pits.

The Firm ensured quality implementation and optimisation of project funds and expenditure to accommodate more variety of, and larger aircraft.

2016

Project completion

King Khalid Terminal 5

Location:
Riyadh, Saudi Arabia

Client:
CCC

Services:

Brand:
Robert Bird Group

Status:
Completed in 2016

Robert Bird Group was appointed as the Civil & Structural Engineer for KKIA Terminal 5.

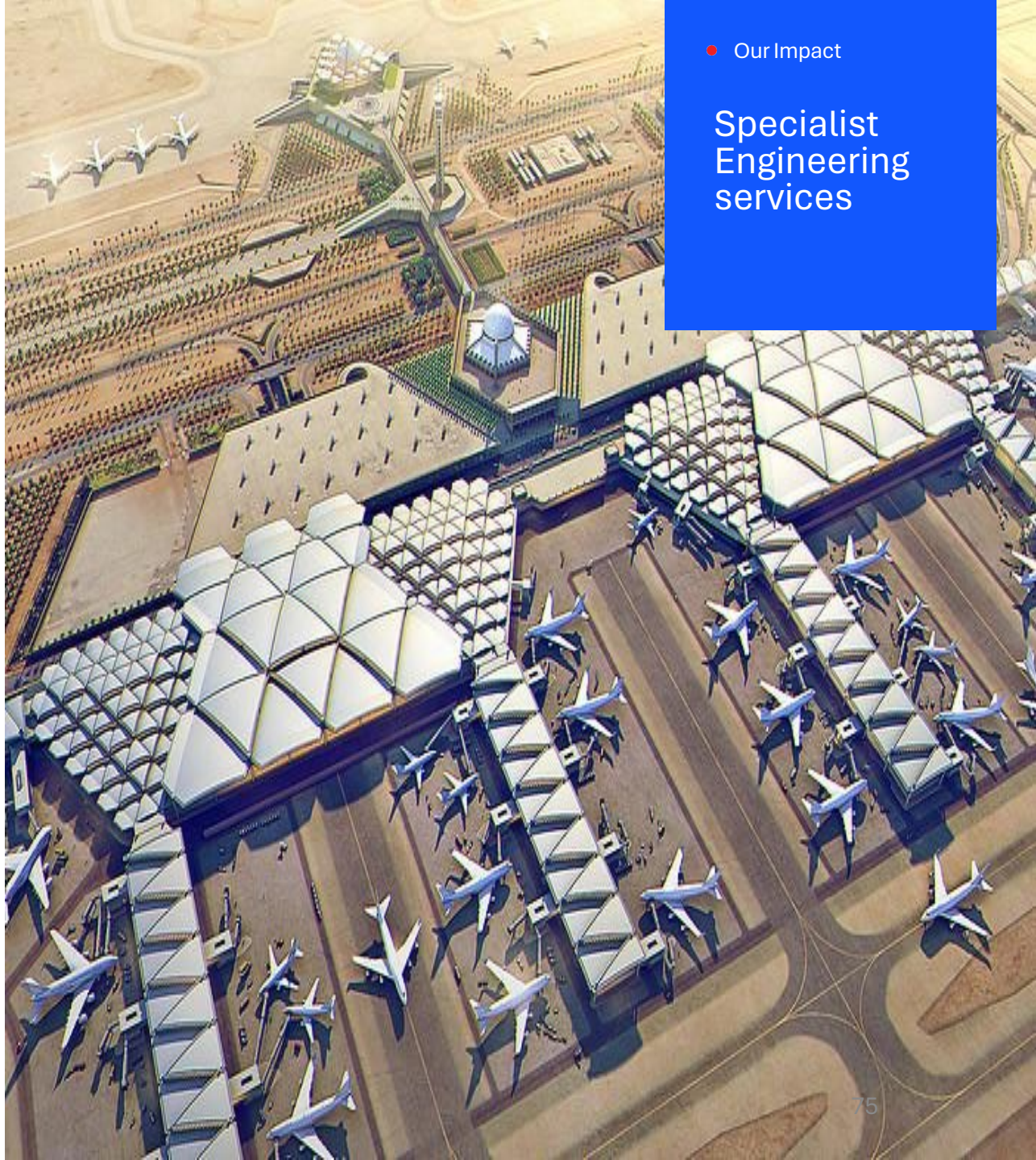
The Terminal is designed to function initially as a domestic airport with a capacity of up to 10 Million Passengers Per Annum with an option to convert to international airport terminal with an ultimate capacity of up to 75 Million Passengers Per Annum.

The overall area of the terminal building is approximately 60,000 sqm with a further 7000 sqm for the terminal's piers. The building acts a decanting facility to allow the renovation of the existing airport and as additional capacity thereafter.

6ha
Land area

75 million
Passengers Per Annum

7000 sqm
terminal's piers



Global Project Experience (Regional Airports)

Planning for new airport

North Bali Airport

Location:
Indonesia

Client:
PT SJI

Services:

Brand:
Surbana Jurong Group

Status:
Completed 2020

The Surbana Jurong Aviation team was invited to help the client make a comprehensive feasibility study and Project proposal for a new airport in North Bali to reduce congestion at the current Bali Airport and to make a positive contribution to economic equality in the North Bali region.

The scope of work Surbana Jurong undertook involved multi-disciplinary capabilities and expertise involving airport master planning, forecasting air traffic needs, airport development, airport financing, economics and investment, commercial, business planning, stakeholders and risk management.

During the Site Survey Surbana Jurong assessed multiple sites considering topographic data, physiography and meteorology. The impact on the community and environment was a key factor in site selection. Evaluation of the airspace and requirements of Air Traffic also played a significant factor.

Once a site was selected a traffic assessment was performed across the 30-year planning horizon beginning from 2019 and extending out to 2048. The ground transportation plan was drawn up to provide the airport with ease of access and limiting impact on the environment.

30-year
planning horizon

250ha
Land area

Urban Air Mobility Terminal

Location:
Singapore

Client:
SkyPorts / Volocopter

Services:

Brand:
Surbana Jurong Group

Status:
Design Competition

The Surbana Jurong Aviation team were tasked by the client to produce an innovative design for the first urban air mobility Terminal in Singapore.

The SJ Aviation team worked with the SJ Group to provide a full suite of services from Architecture, engineering, fire life safety, QS and construction supervision for this opportunity.

The Voloport is a 22,000 sqm building capable of meeting the requirements for domestic and international passengers.

As well as the terminal building, visitors centre, the SJ team have designed the supporting infrastructure including hangars and charging facilities. The design of the Apron and take off and landing points was also undertaken by SJ Aviation.

2.2ha

Land area

Our Impact

Innovative design

London City

Location:
United Kingdom

Client:
LCY Airport

Services:
Masterplanning

Brand:
Robert Bird Group

Status:
Completed 2015

The City Airport Development Programme, initiated in 2013, is a plan for developing the airport's infrastructure to meet growth demands.

This is being incorporated into the London City Airport Master Plan, maximising the use of the existing runway, creating better facilities for passengers, and developing infrastructure to accommodate the permitted flight movements per year.

The key technical challenges are related to the fact that the buildings are in a special environment, the airport, with constraints in terms of logistics and construction methodologies.

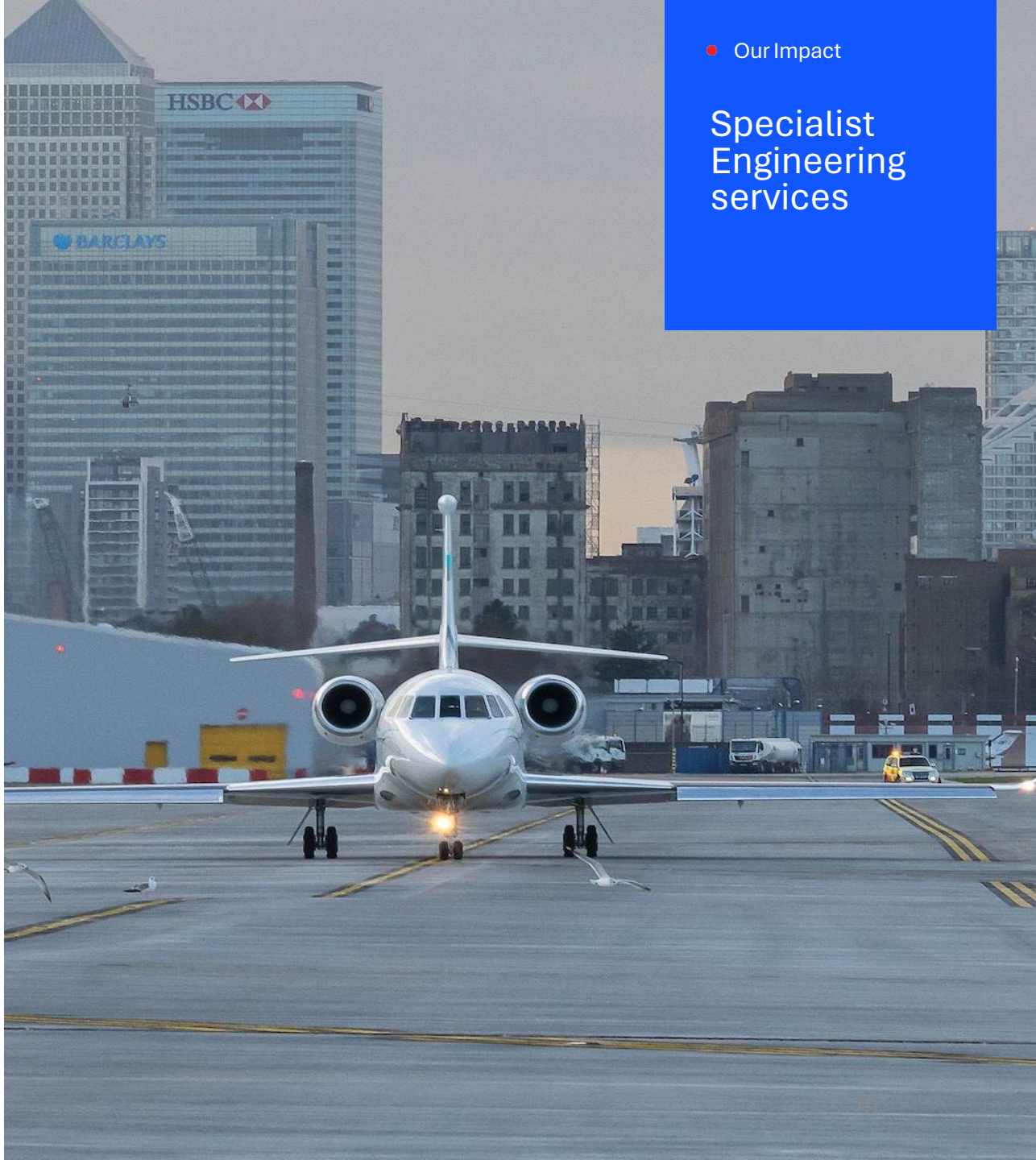
Robert Bird Group worked closely with the contractor to provide suitable solutions to these constraints, facilitating the construction to de-risk the programme.

The different structures in the project that RBG worked on do not offer a high level of complexity, however, some of their uses and requirements led RBG to develop some innovative solutions. One example is the transformer rooms, these are to be designed for 10kPa blast load and 240min fire resistance.

60ha
Land area

240min
Fire resistance

10kPa
blast load



Kertajati Strategic Review

Location:
Indonesia

Client:
Brava Capital

Services:
Strategic Review

Brand:
Surbana Jurong

Status:
Completed in 2024

Surbana Jurong Group Aviation were approached by the client to assist in reviewing and developing the underutilized Kertajati Airport.

The team reviewed all existing documentation , drawings and plans for the airport before conducting a site visit to assess the airports condition and conduct workshops with the current airport management.

Workshops with the client took place to refine the vision for the airport and the surrounding airport city, creating a phased expansion plan to grow the airport traffic from 5 mppa to up to 65 mppa and create a cargo facility able to handle 3.5 million tonnes per annum.

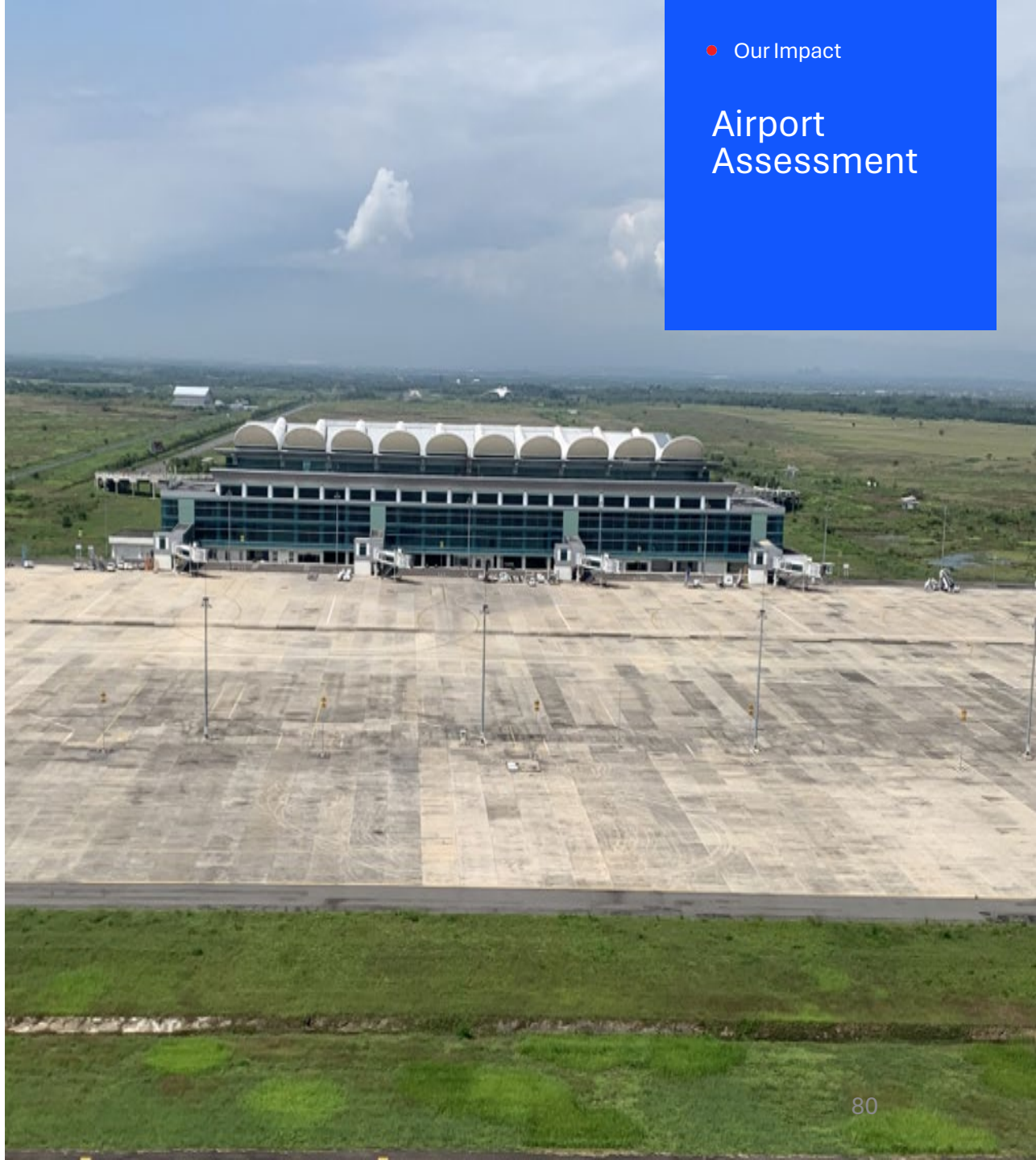
The SJ Aviation team produced a forecast for the next 25 years alongside business planning services to increase aeronautical and non-aeronautical revenue.

MRO facilities and aviation training schools are also included in the wider airport plan creating jobs for nearby residents.

1800ha
Land area

3.5 million
tonnes per annum

65 mppa
capacity



Kediri Airport

Location:
Indonesia

Client:
PT Gudang Garam

Services:
Project Management Consultancy

Brand:
Surbana Jurong

Status:
Completed in December 2023

Situated approximately 120 kilometers southwest of Surabaya city, once completed the Kediri Airport project will serve Kediri, Blitar and Nganjuk regency of East Java, Indonesia.

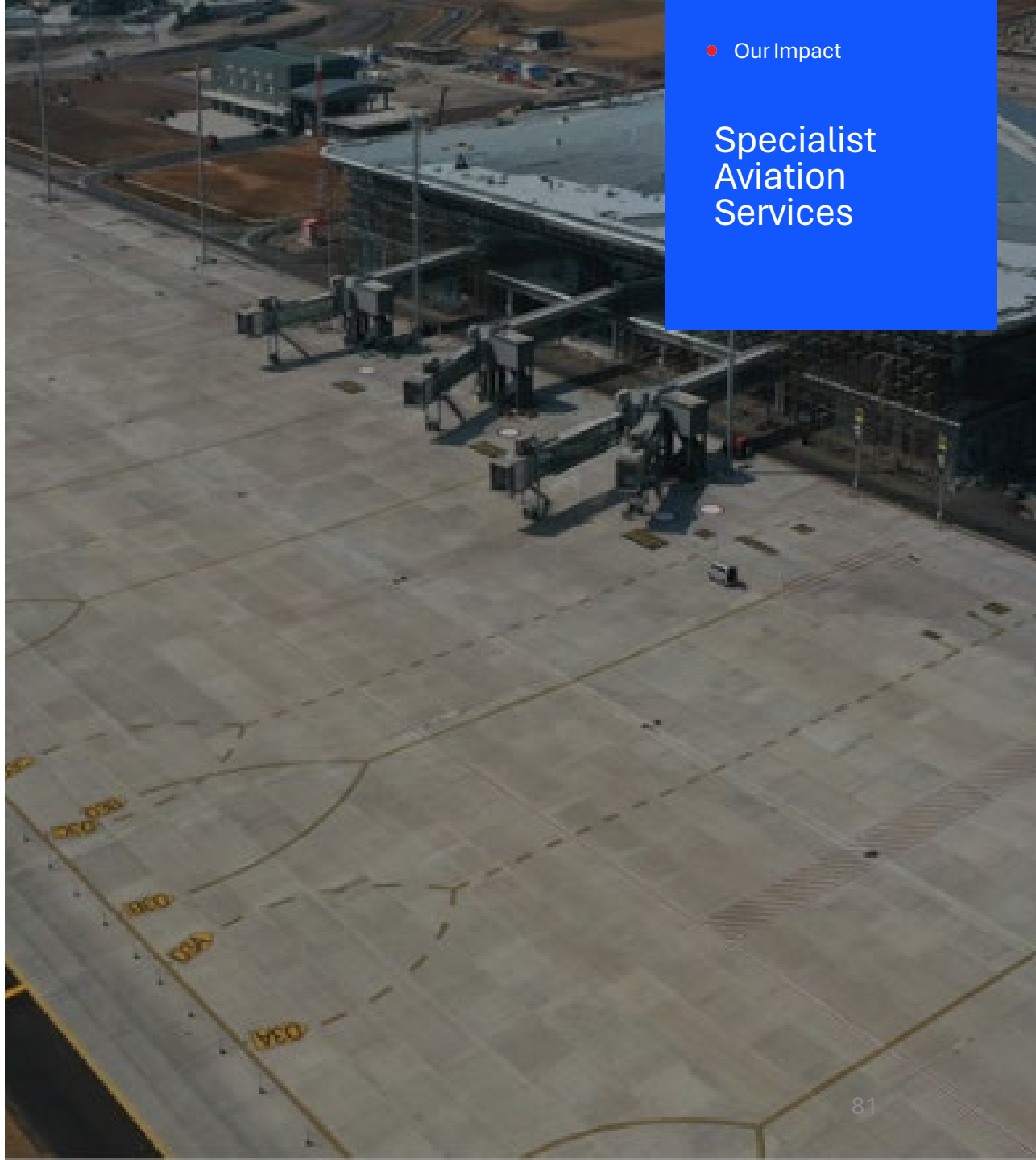
Surbana Jurong was appointed to review the overall Kediri Airport project structure and organisation. This included definition and understanding of the project as well as a full review and provision of advisory services across the work packages.

As the project has progressed Surbana Jurong has now taken on a Project Management Consultancy role to deliver this high-quality airport to the client's standards, serving 1.5 mppa on opening and 10 mppa in later stages with a 3,000-metre runway capable of handling code E aircraft.

400ha
Land area

1.5 mppa
Capacity on opening

3,000m
runway



Male Seaplane Terminal

Location:
Maldives

Client:
MACL

Services:

Brand:
Surbana Jurong

Status:
Completed 2024

Surbana Jurong was invited to propose a solution to bring the new Seaplane terminal in the Maldives to fruition.

The primary objective for this project is to work with MACL, the Seaplane Operators and other stakeholders to plan, design, tender and construct the new Seaplane Terminal. Taking into consideration the existing operations. SJ Aviation team identified the optimum plan for the development.

Surbana Jurong assembled a closely-knit team comprising of appropriate staff whose expertise and project experience had the 'best fit' for the project. This team worked closely with our clients and partners to address their goals and aspirations through design workshops and regular project meetings to drive innovative yet efficient design solutions. The project was split over five stages. Currently SJ Aviation has concluded the preliminary study and concept design.

- Stage 1: Preliminary Studies and Conceptual Design
- Stage 2: Schematic Design
- Stage 3: Design Development
- Stage 4: Contract Documentation & Tender
- Stage 5: Construction to Completion

1.8ha

Land area

Clark Airport

Location:
Philippines

Client:
LIPAD

Services:

Brand:
Surbana Jurong

Status:
Completed 2021

The Surbana Jurong Aviation Team were approached by the client to undertake a Peer Review & Detailed Design Services of the expanding Clark International Airport Apron.

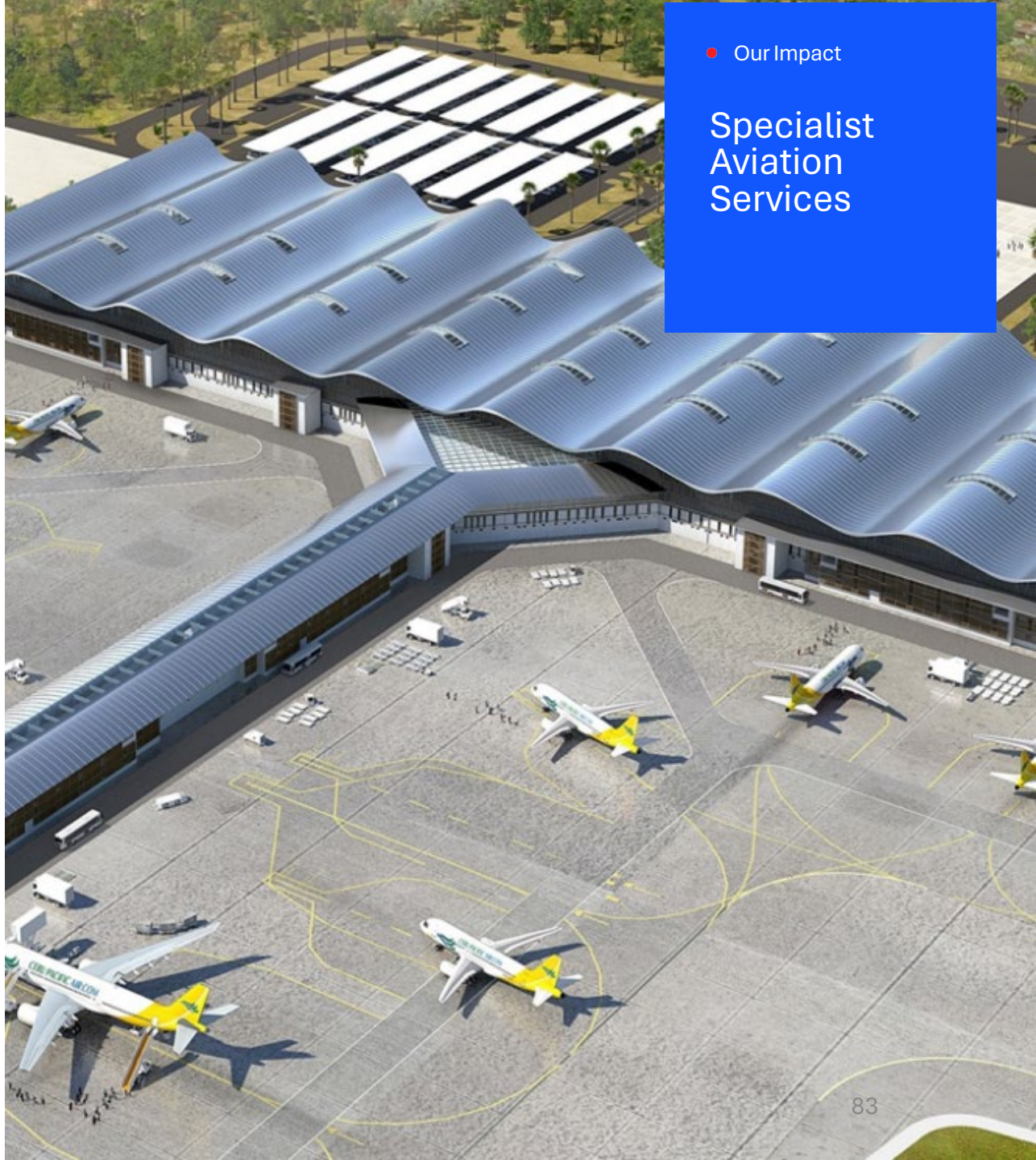
Working within in a restricted site was a unique challenge. Through the team's expertise and skill, a flexible and efficient design was achieved detailed design services for the new east ramps including adjoining taxiways.

When completed the expanded airport will allow an increase in capacity from 4.2 mppa to 12.2 mppa from a new 82,600 sqm terminal, 28 new Code C stands of which 5 are MARS stands and a new Air Traffic Control Tower.

2300ha
Land area

12.2 mppa
Increased Capacity

28
new Code C stands



Brunei International Airport

Location:
Brunei

Client:
Changi Airport Group

Services:

Brand:
SAA

Status:
Completed 2015

Brunei International Airport is located in the country's capital city of Bandar Seri Begawan.

In 2008, a masterplan was carried out to study necessary expansions due to the increase in air traffic demand. Under a Design and Build Contract package with TRC (B) Sdn Bhd, Malaysia and SAA. SAA worked on upgrading the existing passenger terminal, with a significant facelift. The $130m modernization project added an additional 18,000 sqm to the airport, doubling the annual passenger capacity from 1.5million passengers per annum (mppa) to 3 million mppa.

The upgrading works included renovations to the arrival and departure halls with numerous additional banking, tourism and retail facilities, new selection of upscale restaurants and cafes and new expansive carparks. The works that started in 2013 was completed in 2015, dramatically improving the sultanate's small international airport.

18,000
Additional sqm

3 million
Mppa increased capacity

$130m
Project value

Komodo Airport

Location:
Indonesia

Client:
CAI

Services:

Brand:
Surbana Jurong

Status:
Completed 2020

Surbana Jurong was approached to assess the expansion of Komodo Airport in Indonesia.

The client was interested in bidding for the concession to operate Labuan Bajo (Komodo) airport and to expand the airport into a major tourist destination.

Komodo Airport is situated on a very difficult site to operate from due to surrounding topography.

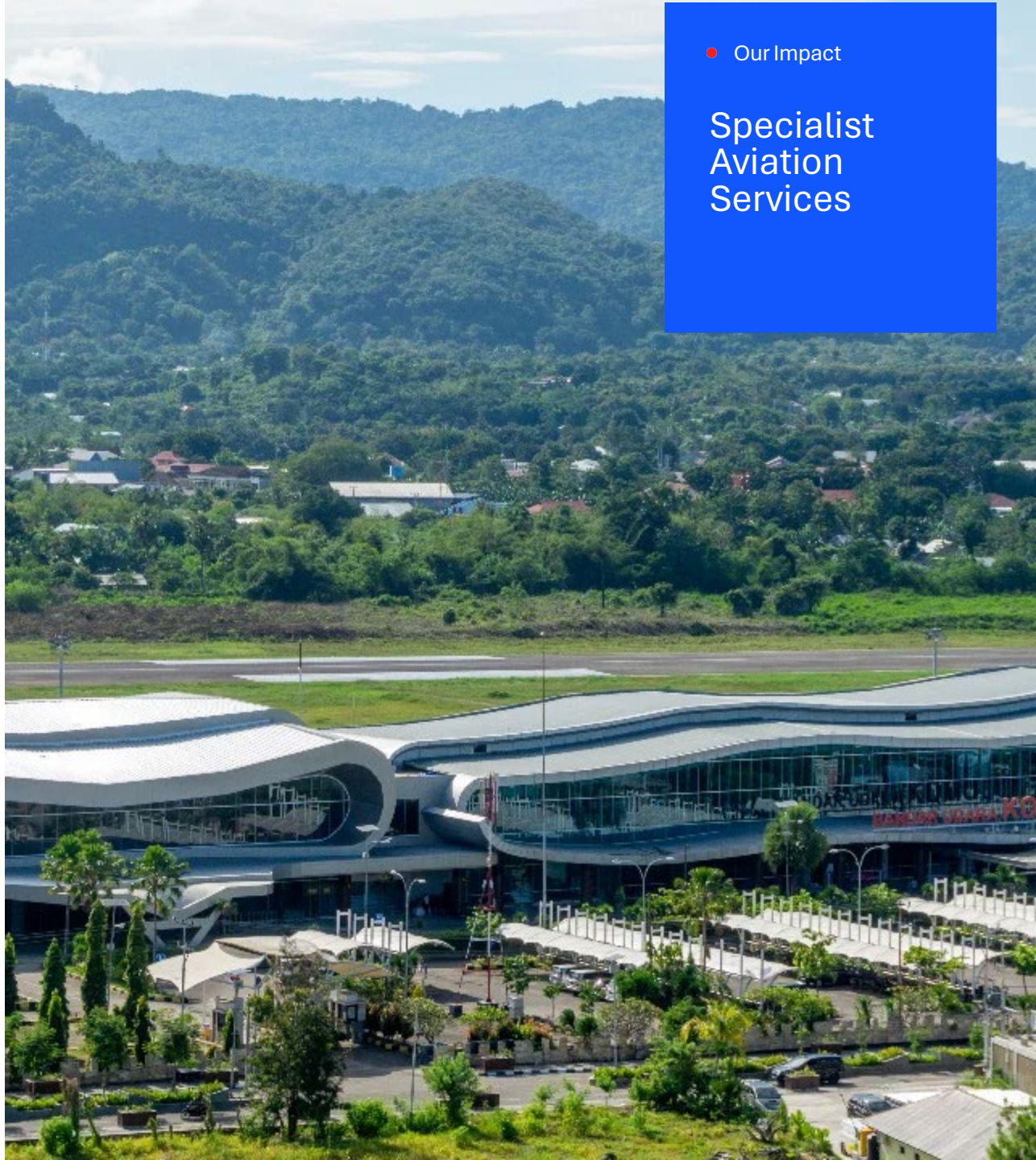
Surbana Jurong's Aviation team were able to review the preliminary and existing reports enabling our team to generate a detailed Air Traffic Demand Forecast.

After completing a detailed site survey, in depth Terminal and Airside planning took place to achieve the desired phasing to expand the airport to required capacity for 2045.

The detailed information supplied by Surbana Jurong's Aviation team enabled the client to move forward with their bid to operate Komodo Airport.

60ha

Land area



Our Impact

Specialist Aviation Services

Yangon International Airport

Location:
Indonesia

Client:
YACL

Services:

Brand:
Surbana Jurong

Status:
Completed 2010

Surbana Jurong was approached by the client to perform a technical feasibility study for a secondary hub airport to support the international airport in Jakarta.

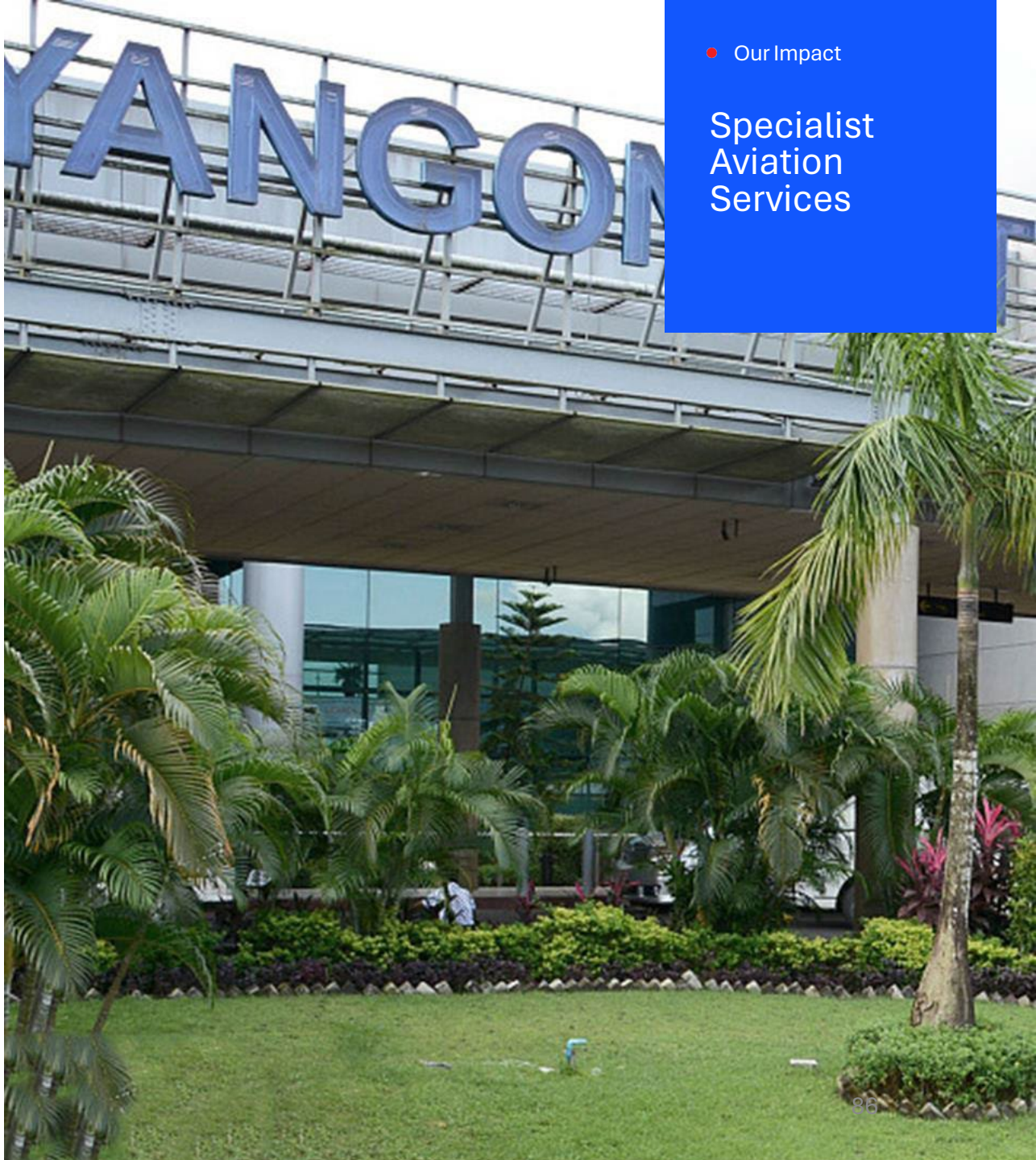
A Technical Feasibility Study was done to strategically assess the positioning and categorize the types of facilities required as well as to identify appropriate phasing development, which will be further developed as a Business Plan. The wider Airport city was studied to identify other revenue streams to create aero and non aero revenue growth through facilities such as MRO and a Cargo village.

The airport is designed to cater for up to 18 mppa and up to 1.5 million tonnes of cargo per annum to facilitate tourism and the economy to Bandung, Indonesia.

320ha
Land area

6 million
Passengers per annum.

100,000
sqm expansion



Increase capacity

Changsha Huanghua Airport

Location:
China

Client:
Changsha Airport

Services:

Brand:
Surbana Jurong

Status:
Completed 2011

A 212,000 sqm facility designed for maximum flexibility and changing operational technology the terminal building is both modern and traditional.

The arrangement of the major roof element achieves an ascending form that recalls traditional Chinese architecture. The clear view through ticketing area atrium creates a sense of openness giving passengers clear views of the aircraft parked beyond.

Emphasis in the design was placed on pedestrian flow and ease by which they travel through the terminal. A combination of ‘high-tech’ stylized components such as concrete structures, aluminium cladding, glass vaults and windows were utilised to achieve a state – of – art facility.

All of these design features provide a smooth passenger flow for up to 16 mppa both domestic and international.

2.1ha
Land area

16 mppa
[text here]

Haikou Meilan Airport Terminal

Location:
China

Client:
Hainan Airport

Services:
Design and Master planning

Brand:
B+H

Status:
Completed 2013

B+H scope of services included developing a master plan and design of the terminal building.

This major Airport Infrastructure expansion project includes an 89,000 sqm Terminal with 21 gates and 5 remote boarding positions, Air Traffic Control Tower, and 4,000-square metre administration building. The facility can handle 12 mppa.

The concourse and ticketing areas are divided into modules, providing for systematic expansion while breaking down the scale of the processor building into distinctive and more intimate pavilions. Each has an octagonal form with four major steel columns extending beyond the roof apex.

9ha
Land area

4
Major steel columns

Our Impact

Increase capacity

Lombok International Airport

Location:
Indonesia

Client:
Angkasa Pura 1

Services:
Detailed Technical and Financial Feasibility Study

Brand:
Surbana Jurong

Status:
Completed 2022

Surbana Jurong was tasked provide a feasibility study of the current airport facilities at Lombok. It is the island's only fully operational airport.

The client intends to procure a strategic partner to help develop and improve the existing airside and landside facilities at the airport. Lombok Airport city development is also in the clients plans.

Surbana Jurong conducted a detailed Technical and Financial Feasibility Study. This allowed the team to develop technical specifications and standards and allow a draft legal contractual framework.

Surbana Jurong was then able to assist the client in the administration of partner selection from inception to financial close to enable the growth of Lombok Airport.

550ha

Land area

- Our Impact

Increase capacity

Seletar Airport Terminal

Location:
Singapore

Client:
CAG

Services:
Civil and Structural Engineering Design
Quantity surveying

Brand:
Surbana Jurong

Status:
Completed 2018

Surbana Jurong provided Civil and Structural Engineering Design and Quantity surveying services for the new Passenger Terminal Building, which will be located at the eastern side of the Seletar Airport.

The terminal will be constructed to accommodate a growth in air traffic. The new Passenger Terminal building will boast improved facilities and amenities to support 1.5 mppa on regional flights with the 3 aircraft parking stands for regional aircraft directly outside the terminal. The Terminal also supports the growing business and general aviation activities as part of the larger Seletar Aerospace Park.

1ha

Land area

Our Impact

Increase capacity

Durgapur Airport

Location:
India

Client:
CAPE

Services:
Architecture, Design and Development

Tender documentation

Brand:
Surbana Jurong

Status:
Completed 2015

Surbana Jurong worked with client to provide Architecture, Design and Development and tender documentation for the new terminal at Durgapur Airport.

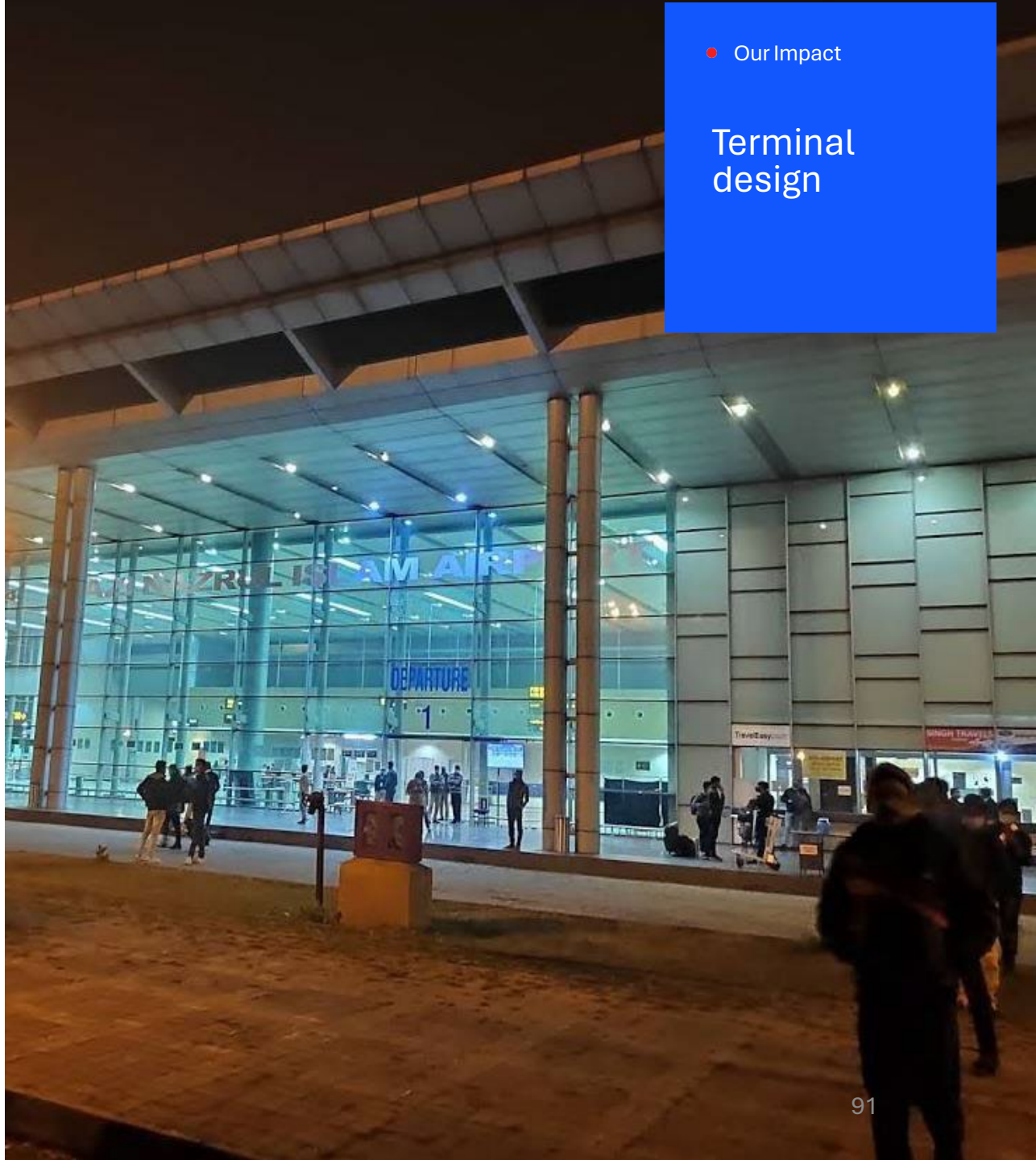
The project is a new domestic airport and part of the new Durgapur Aerotropolis, capable of handling up to 1 million domestic passengers annually from the new 5,750 sqm terminal. The modular design allows for ease of expansion up to 2.5 mppa.

The Terminal utilizes CUTE (Common Use Terminal Equipment) across the terminal building which houses 6 check in desks and two arrival baggage belts.

Conceived as the catalyst for the development of an aviation hub in Durgapur, the terminal will cater for domestic travelers and improve connectivity.

650ha

Land area



Kuantan

Location:
Malaysia

Client:
PCKK

Services:

Brand:
Surbana Jurong

Status:
Completed 2022

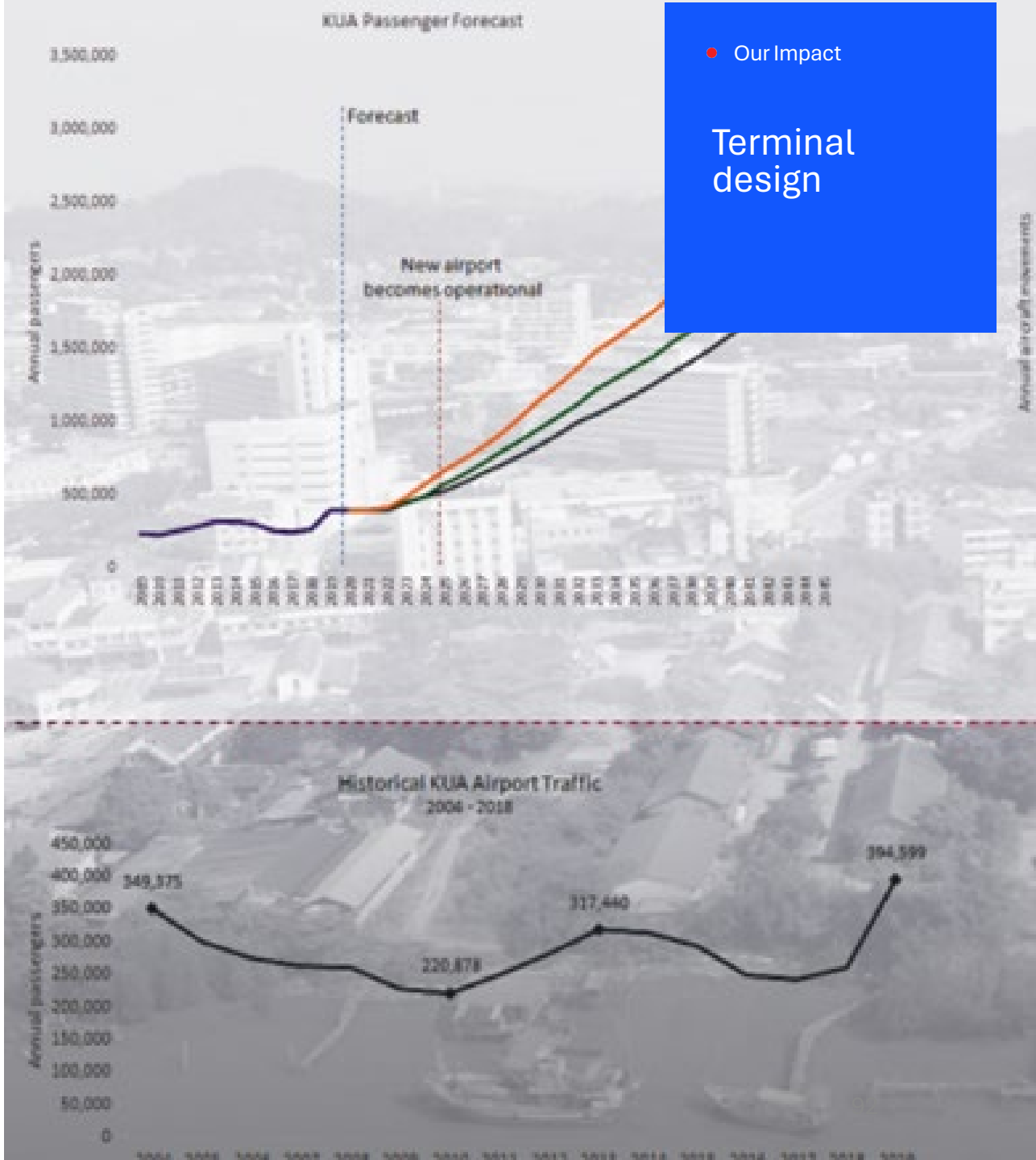
Surbana Jurong was tasked by the client to provide an extensive and deep air traffic forecast for the proposed new Airport as part of the Kuantan Waterfront concept Masterplan.

The scope of traffic projection revolves across various functions such as passenger, cargo and the overall traffic growth of the establishment. Three scenarios, high medium and low were presented to the client to show how they could achieve growth of up to 3 mppa over 25 years.

The Aviation team completed the project on a tight deadline, highlighting the flexibility and professionalism of the Aviation team to adapt to clients needs.

3 mppa

Over 25 years



Our Impact

Terminal design

Honiara Airport

Location:
Solomon Islands

Client:
ADB

Services:
Detailed Design
Technical aAvisory

Brand:
Surbana Jurong
SMEC

Status:
Completed 2021

Surbana Jurong and SMEC were appointed by the client to provide a range of services for the Solomon Islands Roads and Aviation project.

These included the detailed design and technical advisory on:

- Runway Resurfacing of the 2,200-meter runway.
- A new Rescue Fire Service Facilities
- A new Weather Operating Station
- Airport Communications systems
- Upgrades to the Terminal Building & Integrated Flight Service Tower
- Airfield Ground Lighting upgrades.

180ha
Land area

2200m
runway

Faleolo International Airport

Location:
Samoa

Client:
SAA

Services:

Brand:
Surbana Jurong Group
SMEC

Status:
Completed 2017

The project involved designing and supervising pavement rehabilitation construction works for the runway, taxiway and aprons of Samoa's Faleolo International Airport.

The project is part of a pacific-wide airport infrastructure improvement initiative under the Pacific Aviation Investment Program (PAIP) funded by the World Bank and other development partners including the European Investment Bank. Phase 2 of the PAIP includes the Samoa Aviation Investment Project (SAIP). This is implemented through the airport operator, the Samoa Airport Authority (SAA).

Specifically, the primary objectives of the project are to: improve the safety, security, efficiency and environmental sustainability of the airport. In addition, address pavement strength deficiencies on the runway, aprons and taxiway to improve regional harmonization of aviation safety standards. The airport runway is 3 km long and 45 m wide with 7.5 m wide shoulders on both sides.

3km
Long runway

45m
wide

Global Project Experience (Air Cargo and Logistics)

Maldives Cargo Terminal

Location:
Maldives

Client:
MACL

Services:
Detailed design review

Brand:
Surbana Jurong Group

Status:
Due for completion 2025

The Aviation team was tasked by the client to modify the design for MACL latest requirements to support the efficient and smooth flow of Air Cargo.

SJ Aviation assisted in the tender process to award the design and build contract. Once awarded a detailed design review of the D&B contractor design took place and the team will monitor construction and undertake other PMC activities.

The new Maldives Cargo Terminal will be able to handle 120,000 tonnes annually from a 4 storey 14,000sqm facility. From the cargo forecast 60% of the cargo will be inbound, 30% outbound with 10% transfer cargo traffic. Of the inbound cargo 60% will be perishable goods.

The new facility will create 200 to 300 jobs in the local community.

1.8ha
Land area

14,000sqm
Facility

120,000
Tonnes annually

Our Impact

Improve Cargo operations

Noida Air Cargo

Location:
Jewar, India

Client:
AISATS

Services:
Architectural design and phasing plan

Brand:
Surbana Jurong

Status:
Due for completion 2025

The Surbana Jurong Aviation team were appointed to assist the client in their planning for the Noida multimodal Cargo Village to support the new Noida Airport.

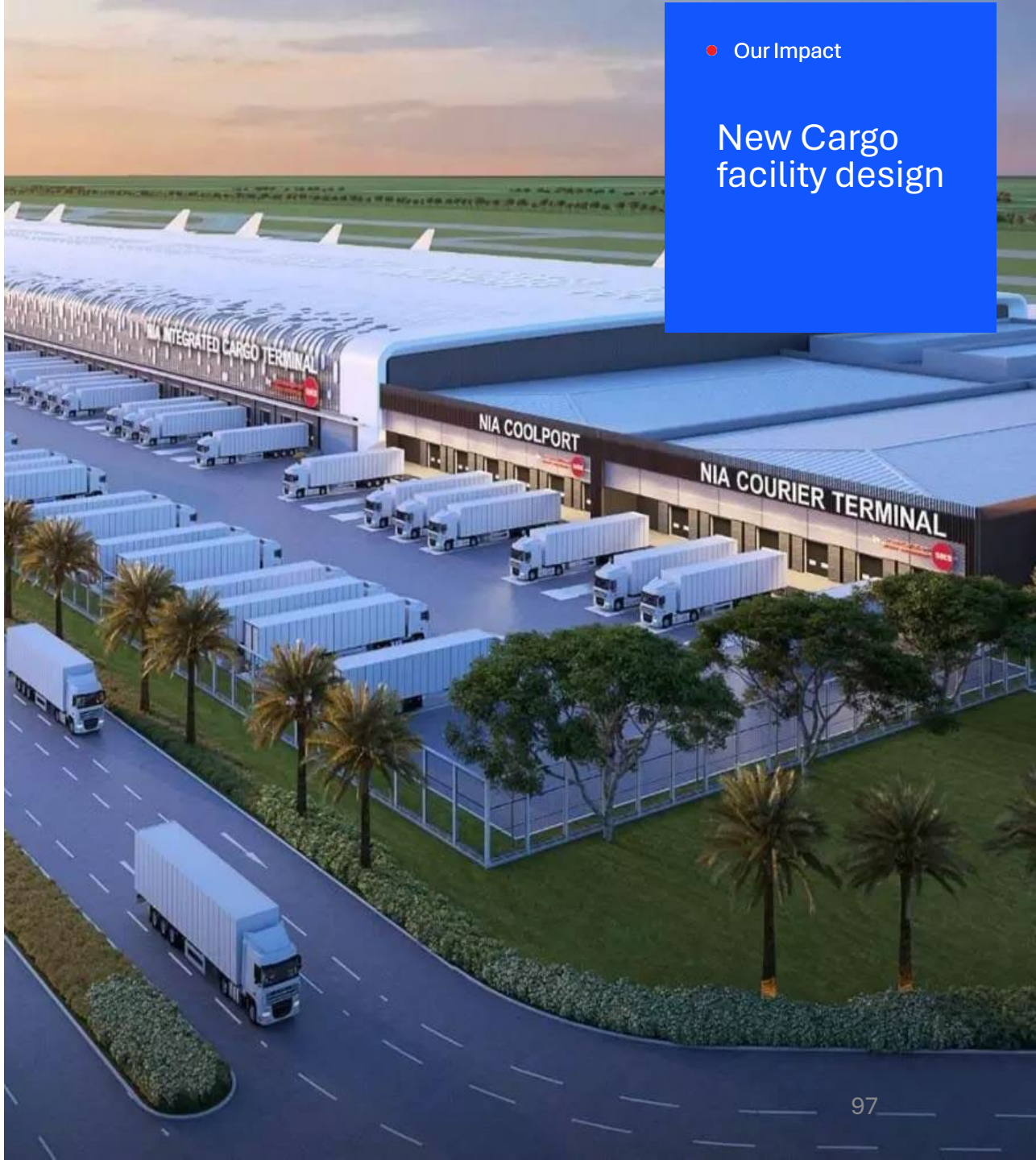
The SJ Team analyzed the forecast and provided inputs for the future development and capacity of the cargo facility up to 2040 handling 3 million tonnes per annum over a total cargo buildings of 93,000 sqm.

The Architectural design and phasing plan was provided by the SJ Team allowing for a modular and phased construction plan which allows the client to provide specialist air cargo services such as courier and chilled cargo services.

Technology and sustainability were key to the design offering the option for the facility to be a carbon neutral as well as utilising specialist cargo handling operating equipment to increase efficiency and throughput at the facility.

30ha

Land area



Our Impact

New Cargo facility design

Jakarta Integrated Cargo Village

Location:
Indonesia

Client:
Angkasa Pura II

Services:
Masterplan

Brand:
Surbana Jurong

Status:
Completed 2022

Surbana Jurong was appointed by the client to review and update the Masterplan for the Jakarta Soekarno Hatta Integrated Cargo Village.

Surbana Jurong provided a comprehensive planning review consisting of benchmarking of relevant Cargo facilities and cargo forecasting.

The business plan for the integrated cargo facility was reviewed by the Surbana Jurong team allowing the project to move forward to the next stage.

The proposed facility will cover 148,000 sqm capable of handling 1.5 million tonnes annually adding capacity to a rapidly expanding air cargo market.

Surbana Jurong supported the client to find a strategic partner for the cargo village, the SJ team assisted in the preparation of tender documents, review of proposals and partner selection.

15ha

Land area

Our Impact

Annually adding capacity to a rapidly expanding air cargo market.

RSAF, MRTT Hangar

Location:
Singapore

Client:
DSTA

Services:

Brand:
KTP

Status:
Completed 2020

KTP was assigned as the Civil & Structural Engineer for the new Multi Role Tanker Transport Aircraft Hangar. The team worked on the project from conceptualisation to completion.

To achieve a clear span of up to 90m and a lower tonnage of the roof, KTP employed a modular steel truss system supported on laced strut columns. This allowed a large column-free span without compromising the robustness of the building.

During the erection, working space and height were constrained by adjacent buildings as well as restrictions by the Civil Aviation Authority of Singapore, KTP worked closely with the main contractor and a jacking specialist to lift the entire roof from 3m above ground to its final height of about 30m in less than two days.

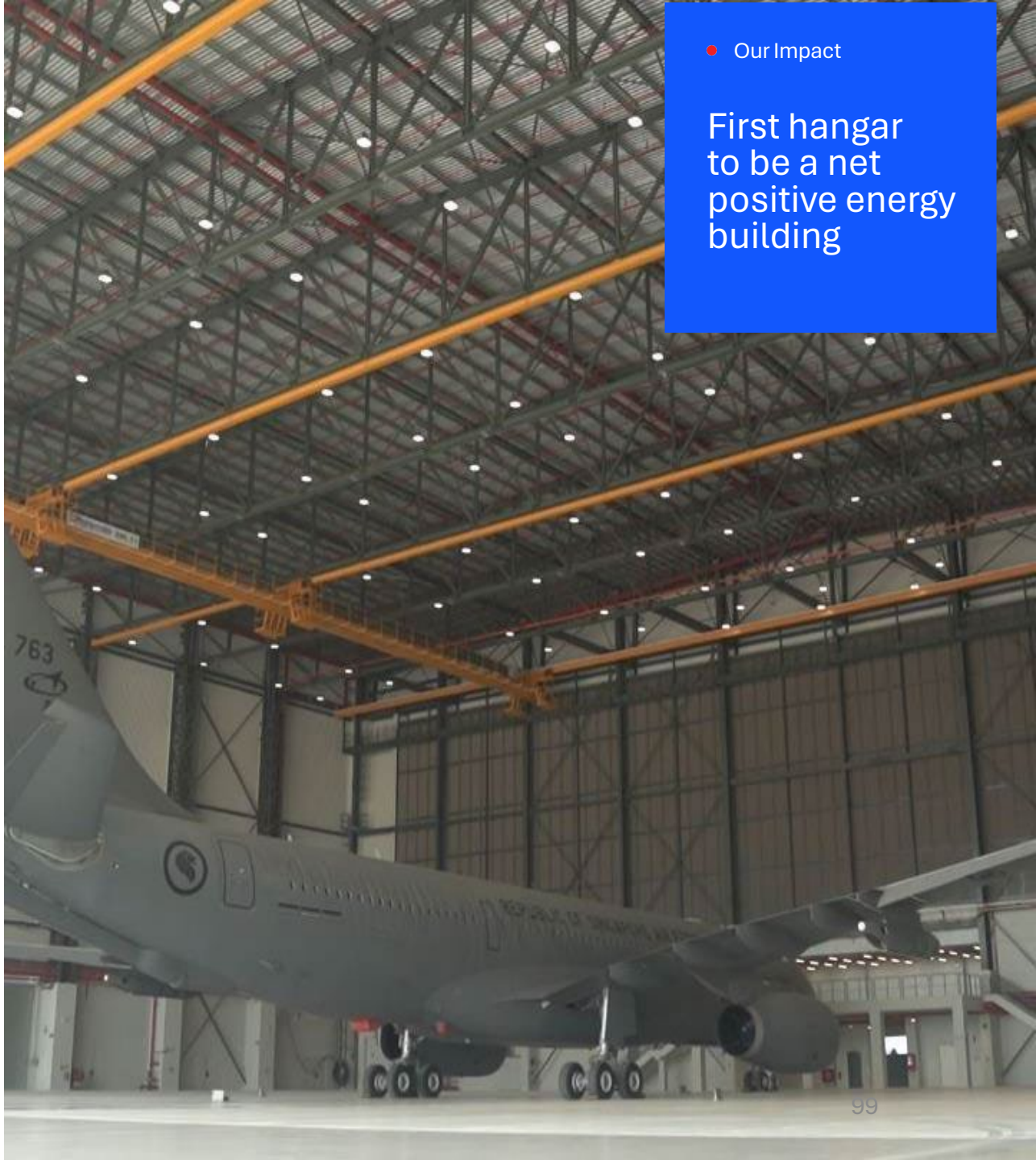
The building is among the first aircraft hangars to be a net positive energy building and can generate 30 percent more electricity than consumed. Solar panels installed on its roof will generate 1,225,000 kilowatt-hours of electricity a year. The building is positioned in a north-south orientation to optimise airflow for natural ventilation.

The office annex attached to the hangar has a green roof with carpet grass that insulates the building against heat. Rainwater is harvested and recycled for general use.

1ha
Land area

30m
Roof height

30% more
Energy generation



Our Impact

First hangar to be a net positive energy building

RNZAF Ohakea P-8 Hangers

Location:
New Zealand

Client:
RNZAF

Services:
Construction Engineering
BIM and Virtual Design Construction Services

Brand:
Robert Bird Group

Status:
Completed in 2022

Robert Bird Group were approached by the client for support for the new Royal New Zealand Air Force Hangars to support the 4 new aircraft being based at RNZAF Ohakea.

The 2 new 180 metre by 60 metre facilities which will support 250 staff and 4 P8 Poseidon aircraft.

RBG provided the client with Construction Engineering, BIM and Virtual Design Construction services. As part of the construction engineering process, RBG provided a stress analysis and design of lifting mechanism for hangar and roof trusses.

A full BIM services is being provided to support the contractor through coordination and fabrication of the project. Alongside BIM, Virtual Design Construction services are provided, showing construction sequencing videos and imagery to support the tender bid.

1ha

Land area

King Khalid Airport

Location:
Riyadh, Saudi Arabia

Client:
SATS

Services:

Brand:
Surbana Jurong

Status:

The SATS Airfreight Terminal is a new 20,000m2 cargo terminal facility located in the vicinity of KFIA and within the Kingdom's new cargo village.

The facility will be capable of handling 150,000 tonnes of cargo annually. It also incorporates a dedicated cold chain facility to meet the growing needs of the pharmaceutical and food industries to ship high value, temperature-sensitive goods.

2ha
Land area

150,000
Tonnes of cargo annually

Global Project Experience (Air Safety and Air Navigation)

Middle Marker Building Changi, Singapore

Location:
Singapore

Client:
Changi Airport Group

Services:
Multi-disciplinary Consultancy Services

Brand:
Surbana Jurong

Status:
Completed 2022

Surbana Jurong was tasked by Changi Airport Group to provide full multi-disciplinary consultancy services for the design and construction management of runway navigation aid support building including middle marker- buildings designed to house equipment for precision guidance to aircraft approaching, landing and departing at Changi Airport.

Glide Path Facilities, Changi, Singapore

Location:
Singapore

Client:
Changi Airport Group

Services:
Multi-disciplinary consultancy services

Brand:
Surbana Jurong Group

Status:

Completed 2022

Surbana Jurong was tasked by Changi Airport Group to provide full multi-disciplinary consultancy services for the design and construction management of runway navigation aid support buildings and systems designed to house equipment for precision guidance to aircraft approaching, landing and departing at Changi Airport.

Our Impact

Specialist Aviation services

Changi East Satellite Fire Station

Location:
Singapore

Client:

Services:

Brand:
Surbana Jurong Group

Status:

Completed 2022

Surbana Jurong was tasked by Changi Airport Group to provide full multi-disciplinary consultancy services for the design and construction management of the new Changi East satellite Fire Service station.

The new facility allows the expanded Changi runway network to have adequate for support in the result of an incident.

The new facility allows the Airport fire service to respond in the required time to all incidents. The station allows all vehicles to be ready to respond, conduct maintenance and servicing as required. Firefighters also have access to excellent work, gym, training and rest facilities.

Casualty Clearance Station, Changi, Singapore

Location:
Singapore

Client:
Changi Airport Group

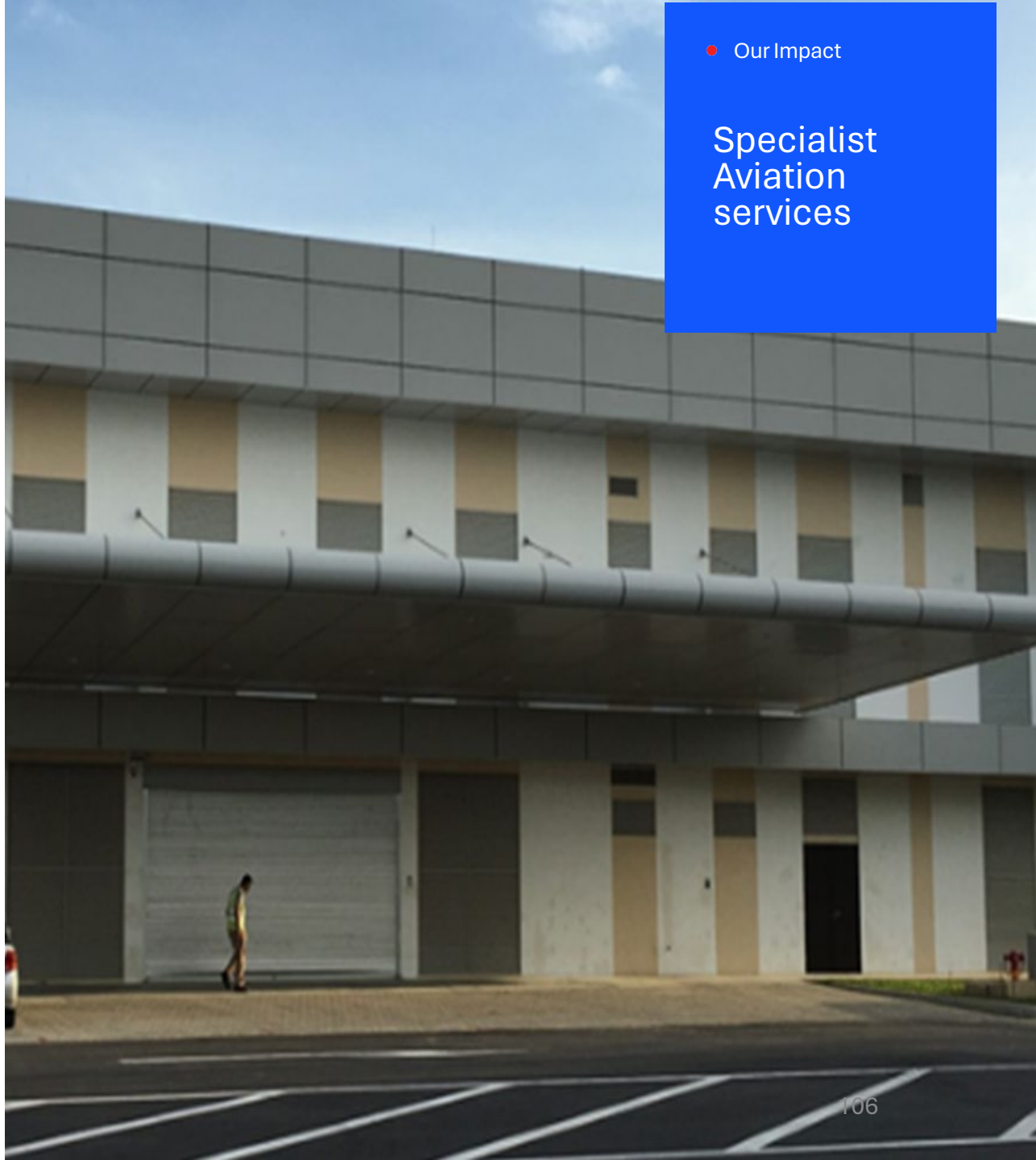
Services:
Full multi-disciplinary consultancy services

Brand:
Surbana Jurong

Status:

Surbana Jurong was tasked by Changi Airport Group to provide full multi-disciplinary consultancy services for the design and construction management of the new Changi casualty clearance station.

The new facility will be utilised in the event of an incident to assess, treat and manage casualties. The facility has numerous specialist systems and areas for casualty response.



CLP Heliports

Location:
Hong Kong

Client:

Services:
Technical Safety Perspective
Operational Perspective
Technical Safety Analysis
Environmental Impact

Brand:
Surbana Jurong

Status:

Completed 2022

SJ Aviation was involved in multiple aspects of this project.

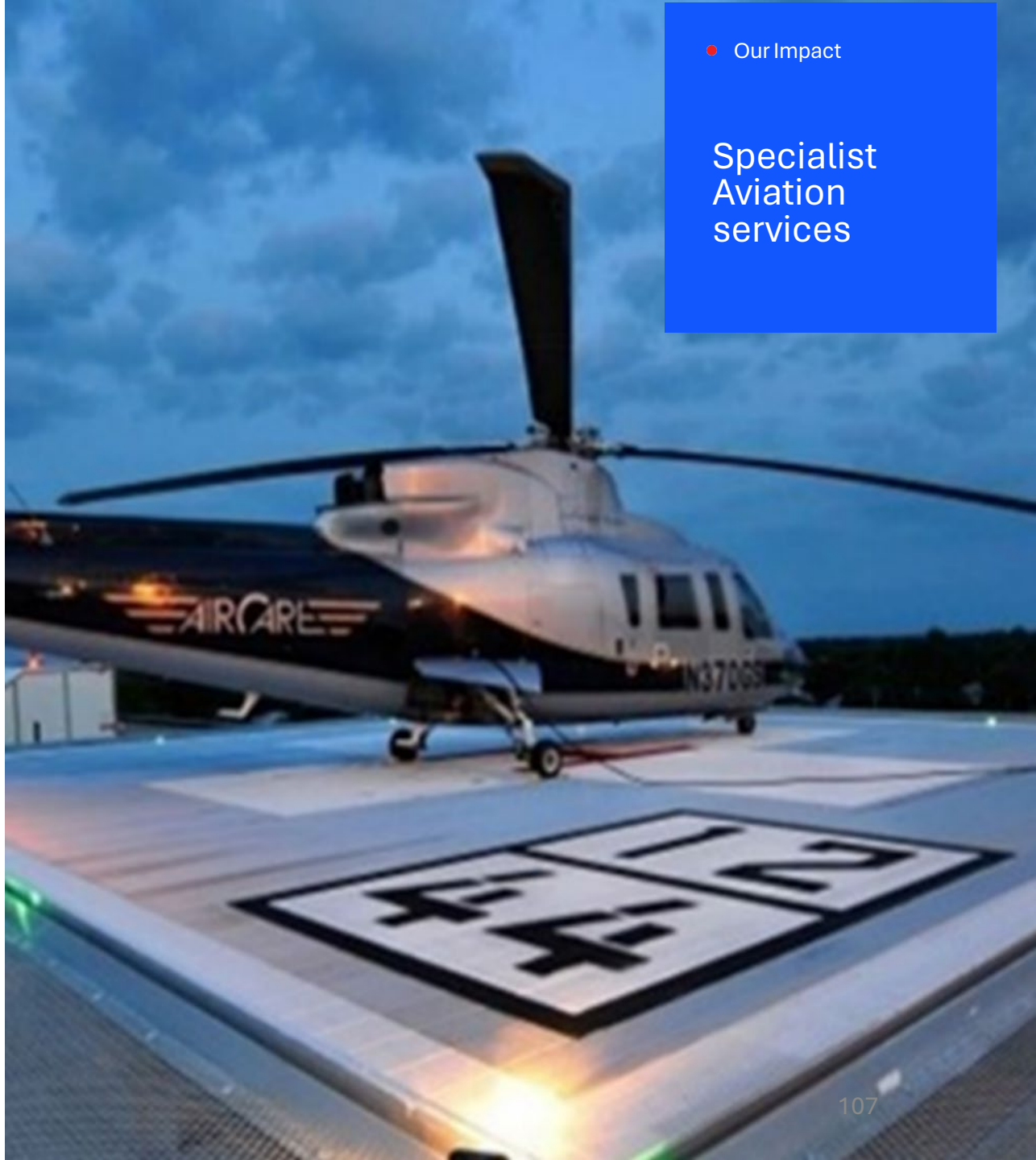
The scope of works included in this project:

SJ advised on site suitability and restrictions for helicopter operation at the potential helipad location at Shing Kai Road. This analysis included global aerodrome requirements as well as Hong Kong specific helicopter and aerodrome safety regulations.

SJ advised on operational requirements for the helicopter operation in the geometrical position and boundaries. SJ also undertook peer reviews and design checks related to the helicopter operation on the roof top of existing designs. Surbana Jurong highlighted potential exclusions such as night or low vis operations, arrival / departure procedures, embarkation, dis-embarkation, loading and unloading procedures and as part of the area requirements at Shing Kai Road.

SJ studied all site arrangements, proximity to sensitive areas, equipment requirements such as lighting and VHF communications, access permissions and circulation control, effects of rotor downwash, obstacle assessment, helicopter type specifications and exclusions, and prevailing wind as well as weather conditions in the specific location at Shing Kai Road.

SJ outlined the key environmental aspects and restrictions to the client. This included helicopter noise level restrictions, blast impact, operational noise contour requirements and handling of contamination such as fuel spillages at the suggested location.



Radar Reflectivity Study for the Civil Aviation Authority of Singapore (CAAS)

Location:
Singapore

Client:
CAAS

Services:

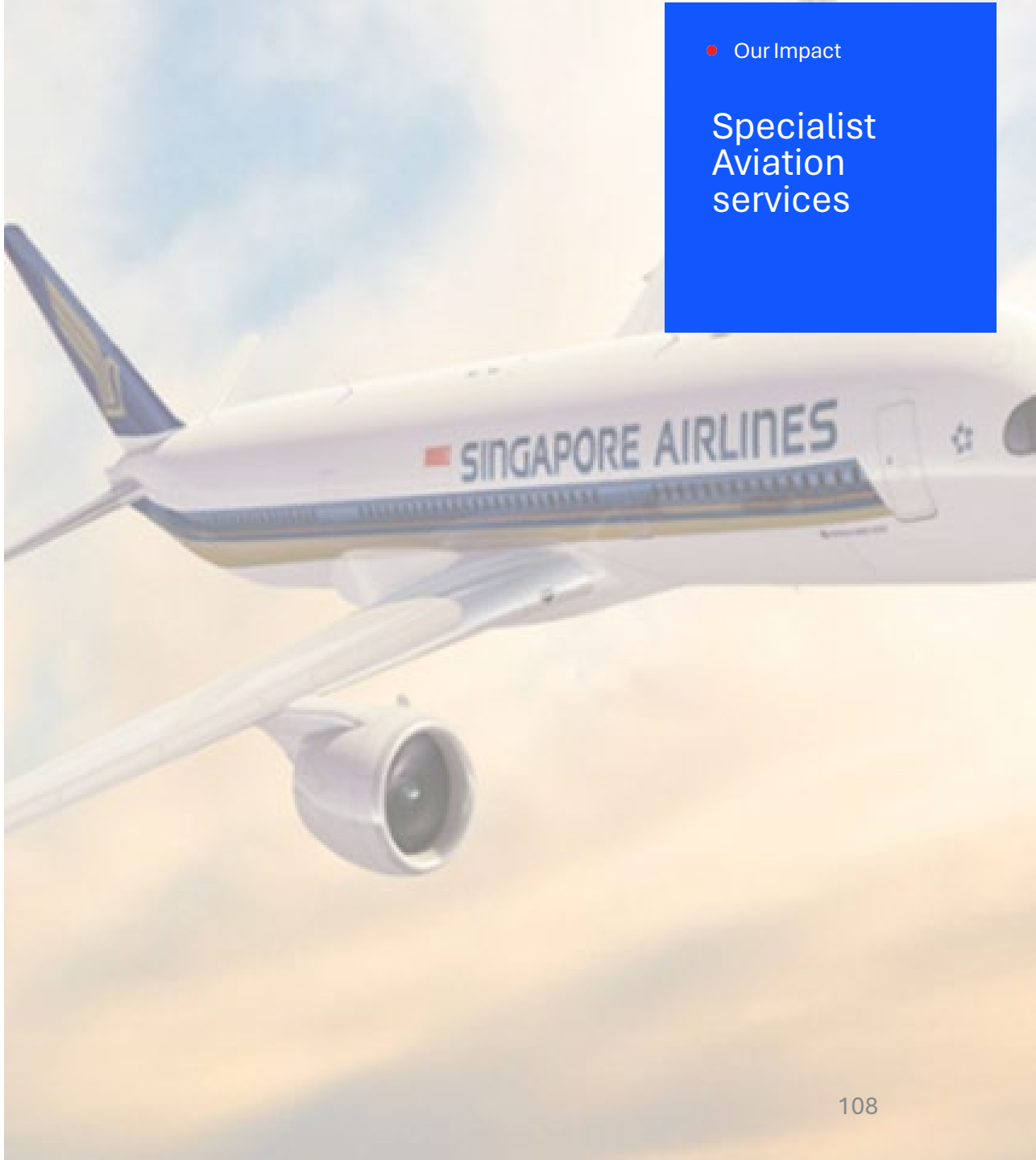
Brand:
Surbana Jurong

Status:
Completed 2020

In addition to CAAS's engagement of SAA Architects to design and deliver a new radar building in Singapore, Subana Jurong Aviation was engaged to carry out a study on the risk of radar reflectivity due to the operational buildings being designed under contract by CAAS

The scope also included an assessment of solar panels on building rooftops to identify any potential negative impact on the radar performance.

The results were validated by CAAS, the final report was submitted, and the project was completed to their satisfaction.



Seletar Airport

Location:
Singapore

Client:
CAG

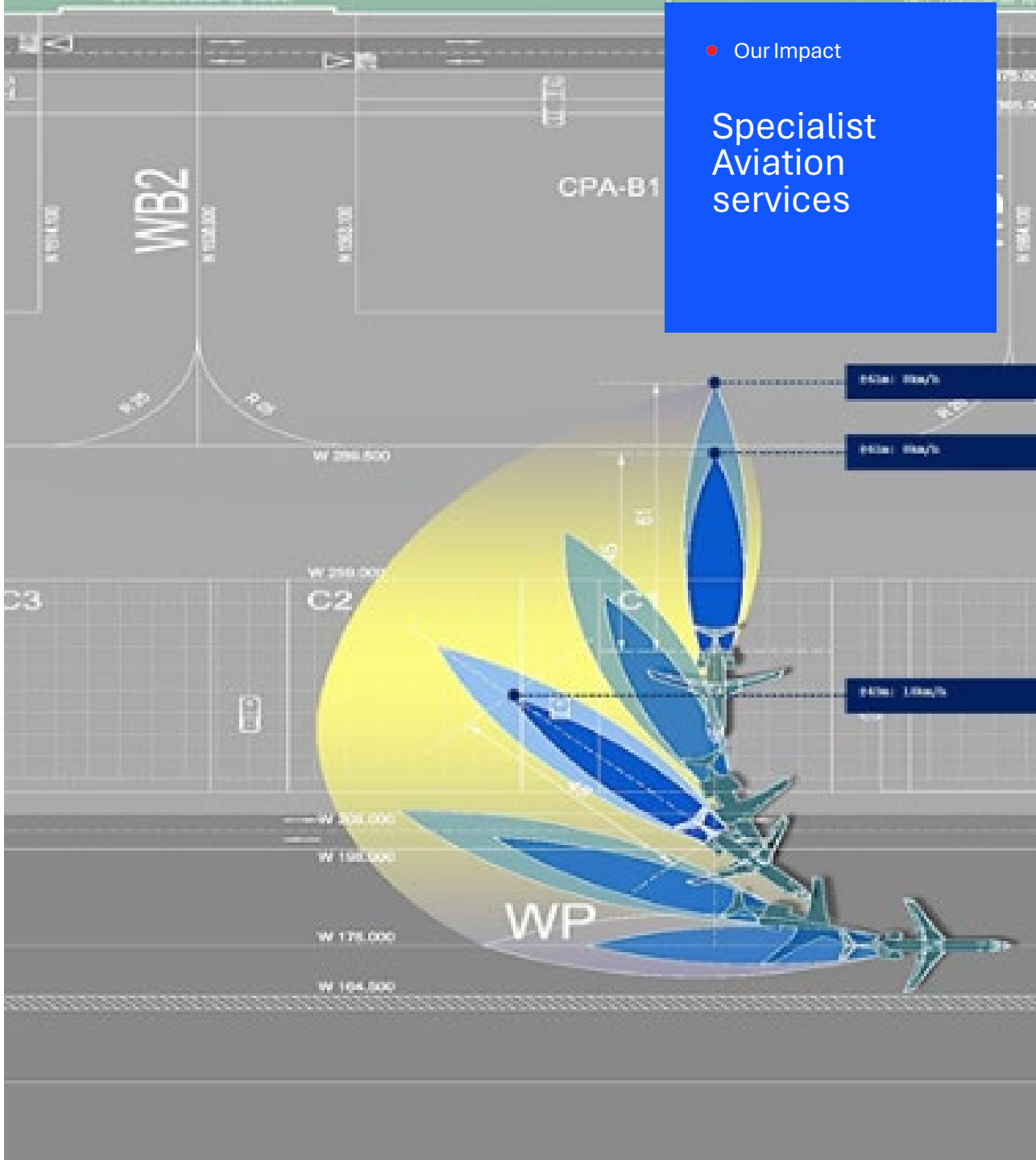
Services:

Brand:
Surbana Jurong

Status:
Completed 2016

Surbana Jurong was tasked by the client to improve operations and parking at Seletar Airport for Business Aviation.

The Team provided consultancy services to conduct verification of the actual jet blast envelope for Global Express and Gulfstream 550 aircraft. With an experienced-on ground team assessing the potential risks associated with apron operations occurring within the vicinity of the jet blast envelope a standard safety procedure was implemented, and airfield operations improved across a dozen aircraft parking stands.



Our Impact

Specialist Aviation services

Changi Airport Runway 3, Arrestor Hookwire System

Location:
Singapore

Client:
Changi Airport Group

Services:

Brand:
Surbana Jurong

Status:

Completed 2021

Surbana Jurong was engaged by the client to investigate aerodrome installations of arrestor Hookwire systems at Runway 2 and future Runway 3, and their safety impact to civil aircraft operations at Changi Airport

Runway 3 will be extended to 4,000 metres in length & will be a co-utilised runway by Changi Airport Group and the Republic of Singapore Air Force.

The system can be divided into 2 parts, a Hook wire – flushed with runway surface except when deployed and a Runway edge sheave, located at runway edge with vertical concrete plinth at height of 30 cm.

A study on the consequence of a civilian aircraft trampling a raised hook wire and the location of the edge sheave were taken into account. Studies involving aircraft manufactures, airlines and the airport operator to design a system that met the needs of the user and the safety of commercial aircraft.

4000m
Extension in length

30cm
Vertical concrete plinth

Honiara Airport, Airfield Ground Lighting

Location:
Solomon Islands

Client:
ADB

Services:

Brand:
Surbana Jurong, SMEC

Status:

Completed 2021

Honiara International Airport (HIR) currently has a Non-Precision Approach Runway, which is 2200m long and 45m wide.

In order to support the non-precision approach operation of the runway at HIR, the components of runway lighting, Surbana Jurong and SMEC proposed for HIR are the following systems:

- Simple Approach Lighting System;
- PAPIs (Precision Approach Path Indicators);
- Runway Edge Lights;
- Runway Threshold Lights;
- Runway End lights;
- Runway Turn Pad Edge Lights;
- Runway Turn pad Centreline Lights; and
- Aerodrome Beacon Light.

2200m **long**

45m **wide**

Our Impact

Specialist Aviation services

Brisbane Airport

Location:
Brisbane, Australia

Client:
Brisbane Airport Corporation

Services:
Precision Approach Path Indicator (PAPI) system

Brand:
SMEC

Status:
Completed 2019

To accommodate future passenger demand, Brisbane Airport Corporation (BAC) is constructing the new runway 01L/19R which will be 3.3 km long, 60 m wide, and be located two km west of and parallel to the existing main runway.

A critical visual landing aid for the runway is the Precision Approach Path Indicator (PAPI) system which will be located at both runway ends. SMEC assisted the client by:

- Determining the suitability of wheel to threshold heights for comparable regular aircraft operations.
- Developing a risk matrix in relation to the aeronautical approach activity associated with the PAPI operations.
- Sourcing and reviewing Australian Safety Transport Board incident data for all Australian major airport movements.
- Determining the risk assessment outcomes and mitigation methodologies.
- Preparing the final report documentation including operational and risk assessment outcomes and recommendations.

3.3km
long

60m
wide

Light beams and angle of elevation setting for PAPI 3° approach slope
MOS Part 139 Figure 9.49, September 2019

Brisbane Airport

Location:
Australia

Client:
Brisbane Airport Corporation

Services:

Brand:
SMEC

Status:

Completed 2020

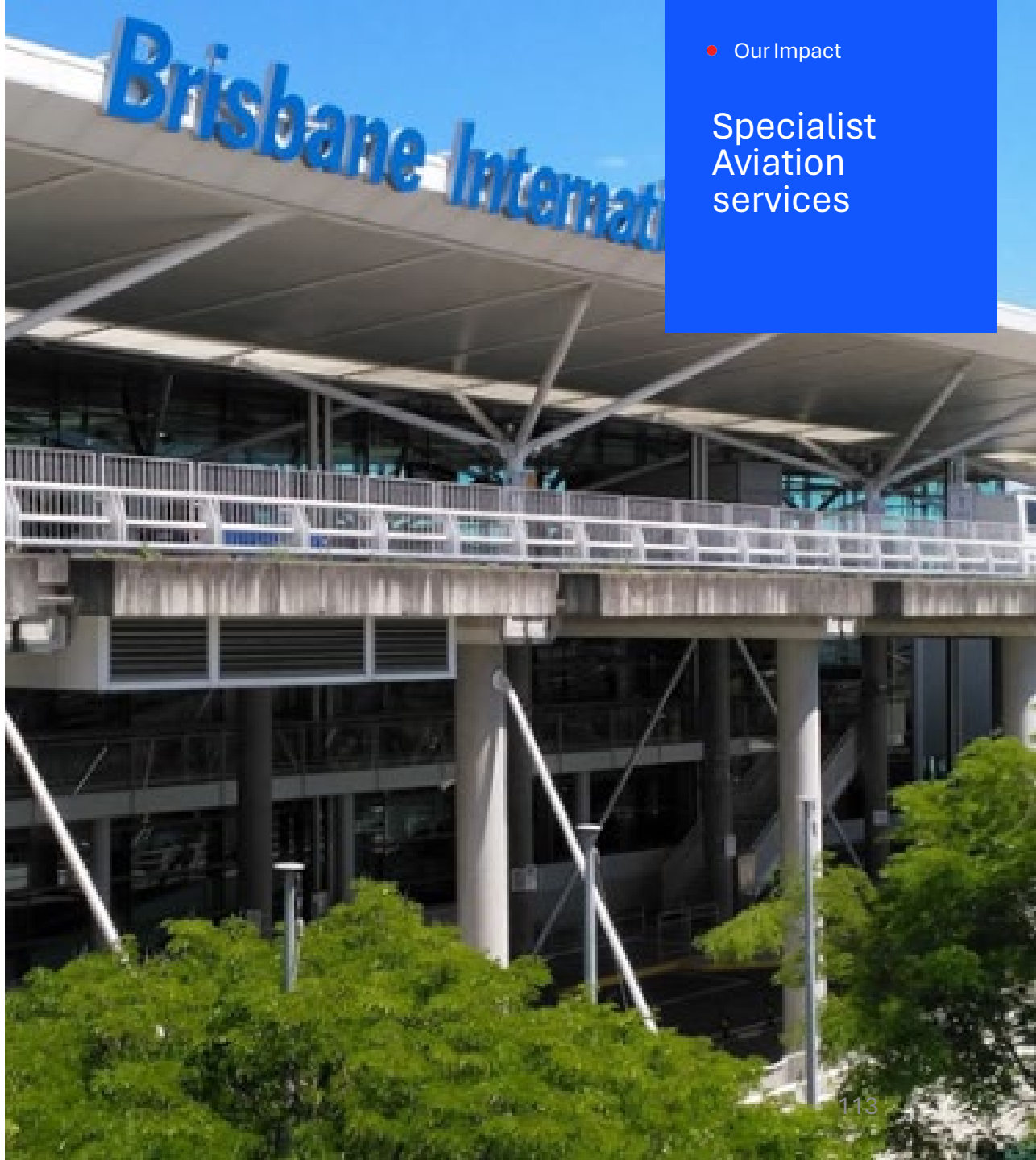
CASR 139 specified that Airports must carry out annual Aerodrome technical inspections (ATI) to identify any shortcomings, or areas for improvement relative to the regulations.

SMEC role was to provide specialist airside inspection services in relation to Brisbane Airport's CASA mandated annual ATI. auditing components, including:

- Aerodrome facilities inspection
- Airfield pavements and drainage inspection
- Aerodrome operations manual audit, AIP and operational procedure reviews
- Final aerodrome technical inspection report and exit meeting

2700ha

area



Brisbane Airport

Location:
Australia

Client:
Brisbane Airport Corporation

Services:

Brand:
SMEC

Status:
Completed 2017

Brisbane Airport Corporation (BAC) sought advice from SMEC on several issues connected with vegetation clearing beyond the airport boundary for the purposes of compliance with the Obstacle Limitation Surfaces (OLS) and Wildlife Hazard Risk Management for the New Parallel Runway (NPR) project.

The advice would influence the Airfield Works contract and the scope of vegetation clearing BAC would perform off airport. These queries concerned the compliant operation of the airport within the relevant regulations and so required

- Identification of the legislation, regulations etc. which pertain to the airport's operation and determination of their hierarchy and how they interact. Legislation considered included
- Identification of the roles, responsibilities and authorities of airport operators and government agencies to implement and monitor the regulations resulting from this legislation

2700ha

area

Canberra Airport

Location:
Australia

Client:
Canberra Airport Corporation Pty Ltd

Services:

Brand:
SMEC

Status:

Completed 2020

Canberra Airport proposed to construct a multi-story carpark in its business precinct. This would require the installation of crane which would potentially penetrate the runway 17/37 protected surfaces.

SMEC has conducted a review of the protected airspace surfaces and physical separation distances in relation to the proposed Northern Road. The identified surface infringed based was the Runway 17/37 Transitional OLS (can be mitigated, prescribed airspace implications)

The assessment found that the surfaces are infringed by the proposed crane.

17/37

protected surfaces

Canberra Airport

Location:
Australia

Client:
Canberra Airport Corporation Pty Ltd

Services:
Airfield Design

Brand:
SMEC

Status:

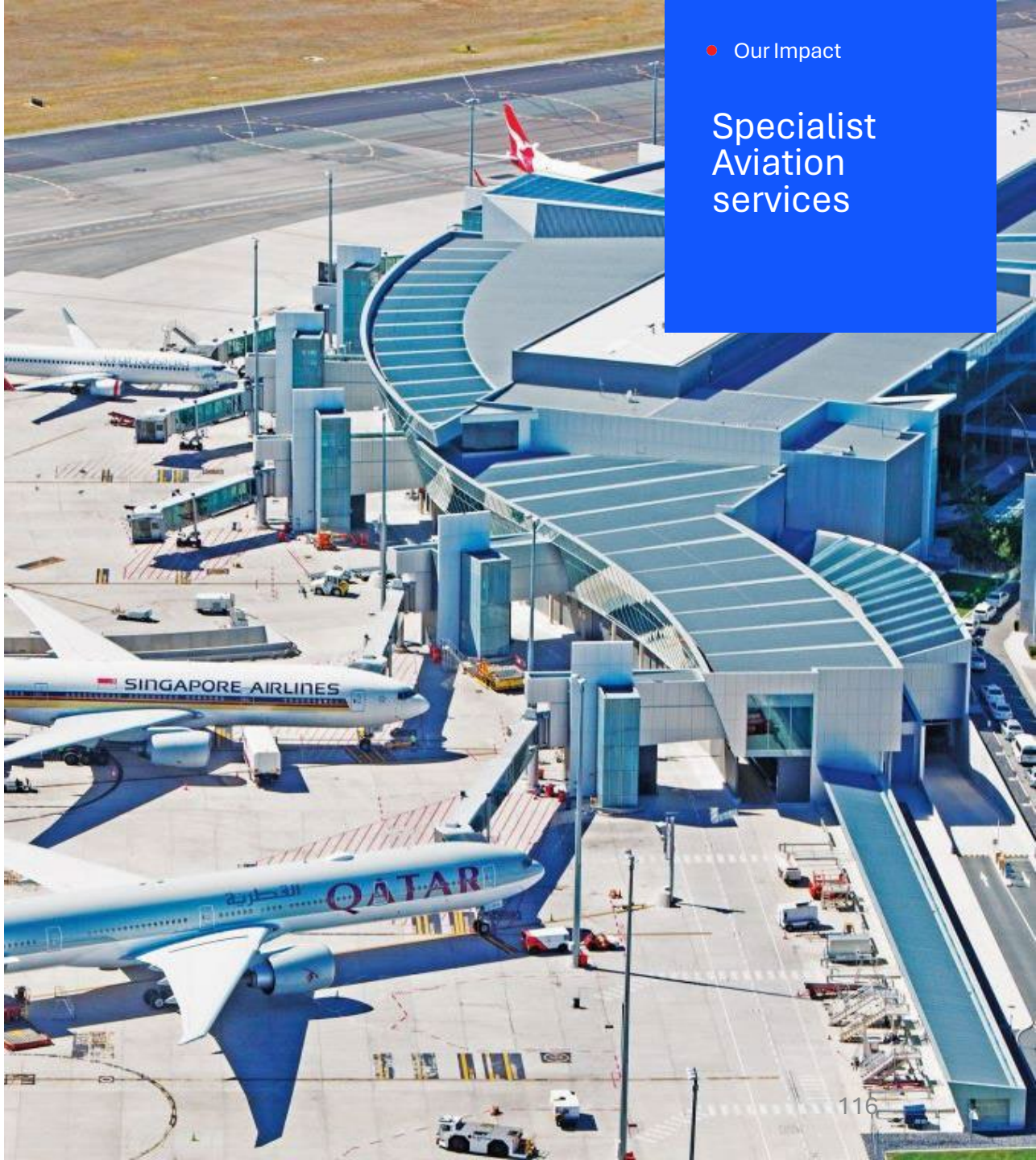
Completed 2020

SMEC provided airfield design and engineering works to Canberra Airport to facilitate the introduction of Singapore Airlines' Boeing 777 operations.

SMEC's work involved redesigning taxiways, runway operations, and apron parking bays to prepare for the arrival of B777-200 aircraft, and associated servicing requirements.

SMEC also assessed the airspace protection surfaces against the tail heights of the aircraft, updated the Boeing 777 operating procedures, and provided general regulatory and operational advice.

200
aircrafts



Canberra Airport

Location:
Australia

Client:
Canberra Airport Corporation Pty Ltd

Services:
Ongoing airside planning processes

Brand:
SMEC

Status:
Completed 2018

Canberra Airport (CA) as part of its ongoing airside planning processes investigated the impact of relocating a runway threshold

SMEC was commissioned by Canberra Airport to identify impacts of a displaced threshold

The scope included:

- Determining the optimal runway displaced threshold location
- Producing amended airport layouts showing relocated threshold
- Modifying the airport OLS model
- Assessing OLS penetrations

2018

Project completion

Canberra Airport

Location:
Australia

Client:
Canberra Airport Corporation Pty Ltd

Services:

Brand:
SMEC

Status:
Completed 2018

Canberra Airport proposed to provide a public access road between the Fairbairn airport precinct and Majura Road.

Vehicles using the road would penetrate the runway 17/37 OLS and so a safety case is required to obtain CASA approval for the road.

- Determining regulatory impacts associated with CASA MOS part 139 and under Airports Act 1996 in relation to ICAO Annex 14 OLS impacts.
- Providing a position response in relation to federal regulatory OLS impacts and obstacle restrictions.
- Investigating the potential for amended Prescribed Airspace allowable obstacle limitations infringements.
- Providing an updated analysis in relation to DoD car park and defence vehicles activities.
- Assessing CAO 20.7.1B Engine Inoperative Take-off Climb Gradient Implications and the potential impacts associated with EI climb performance in relation to road and car park movements.
- Determining AIP ERSA DAP statements and examining the requirements and availability of NOTAM.

Brisbane Airport

Location:
Australia

Client:
Brisbane Airport Corporation

Services:

Brand:
SMEC

Status:
Completed 2017

Brisbane Airport site in Brisbane CBD. Corporation (BAC) sought analysis of the additional cost imposed on BAC operations resulting from the impact of Brisbane Airport airspace and associated terminal instrument flight procedures by cranes located on a building

Information was obtained from Brisbane ATC, Air Services Australia and the airlines. SMEC provided:

Data collection

- Identifying the location and AHD of the crane/s
- Identifying the timing and duration of the penetration
- Identifying which existing or new procedures will be used instead of the impacted procedure/s
- Calculating reduction in airport capacity due to reduction in the number of procedures that can be flown

Cost calculation

- Calculating the extra fuel burn for each aircraft type for the additional distance flown by alternate procedures or delays
- Calculating additional cost of rescheduled aircraft maintenance due to additional time/distance flown and different power settings and loss of income imposed on BAC due to a reduction airport capacity

Amberley Air Base and Aviation Zone

Location:
Amberley, Australia

Client:
RAAF

Services:

Brand:
SMEC

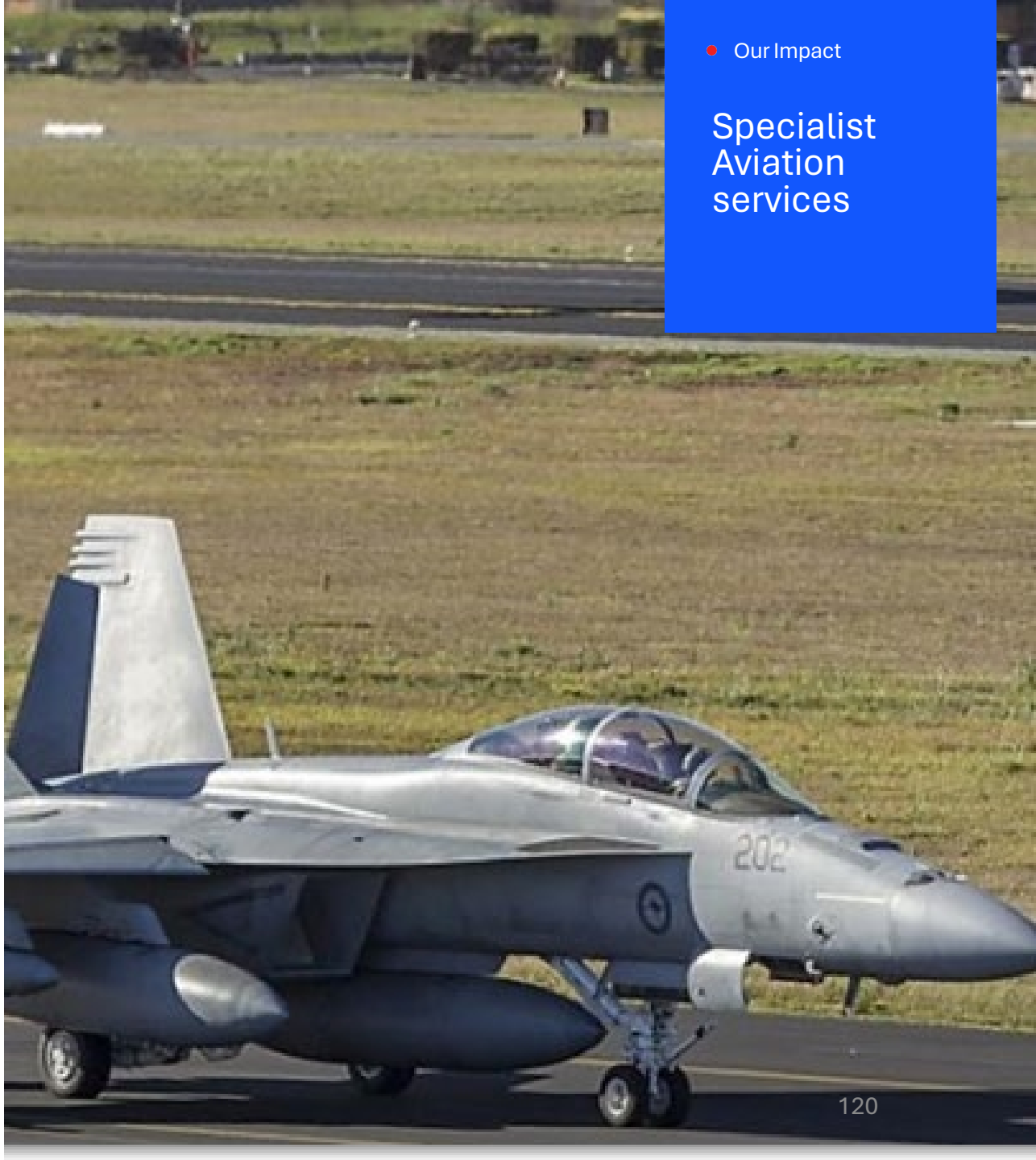
Status:
Completed 2017

Ipswich City Council required a public safety risk assessment to be carried out to determine the suitability of the proposed development in relation to the level of public safety risk associated with the operations of the RAAF Base Amberley.

The public safety risk assessment needed to take into account the types of aircraft that operate from the cross runway and the projected frequency of aircraft movements and flight paths from the cross runway.

SMEC prepared an aeronautical conditions assessment in relation to public safety associated with a future building development near RAAF Base Amberley. The assessment included

- Allowable building heights;
- Public Safety Areas (PSA);
- Accident Potential Zones (APZ);
- Navigational Aids and Communication Facilities;
- Bird hazard management;
- Aircraft Noise;
- Physical clearances from aircraft operations
- The results determined a minimum set of conditions that will be imposed on any development within the assessment area.



Adelaide Airport

Location:
Adelaide, Australia

Client:
Adelaide Airport Authority

Services:
Update of the Adelaide Airport Protected Airspace

Brand:
SMEC

Status:
Completed 2016

Adelaide Airport Corporation commissioned SMEC to undertake an update of the Adelaide Airport Protected Airspace to comply with the Aeronautical Information Publication - Departure and Approach Procedures based on the Airport Protection of Airspace Regulations as determined by DIRD.

The regulations state that the airspace to be protected is defined by reference to the OLS, PANS-OPS surfaces to ensure safe instrument and visual flight operations are maintained. The scope of services included review of existing 3D models and airspace protection surfaces., 3D modelling of the latest published air services Australia Aeronautical Information Publications (AIP) Departure and Approach Plates (DAP), Radar Terrain Clearance Charts, Visual Segment Surfaces, Navigational Aid protection surfaces and preparation of the Prescribed Airspace Definition Report.

Canberra Airport

Location:
Canberra, Australia

Client:
Canberra Airport Corporation Pty Ltd

Services:

Brand:
SMEC

Status:
Completed 2016

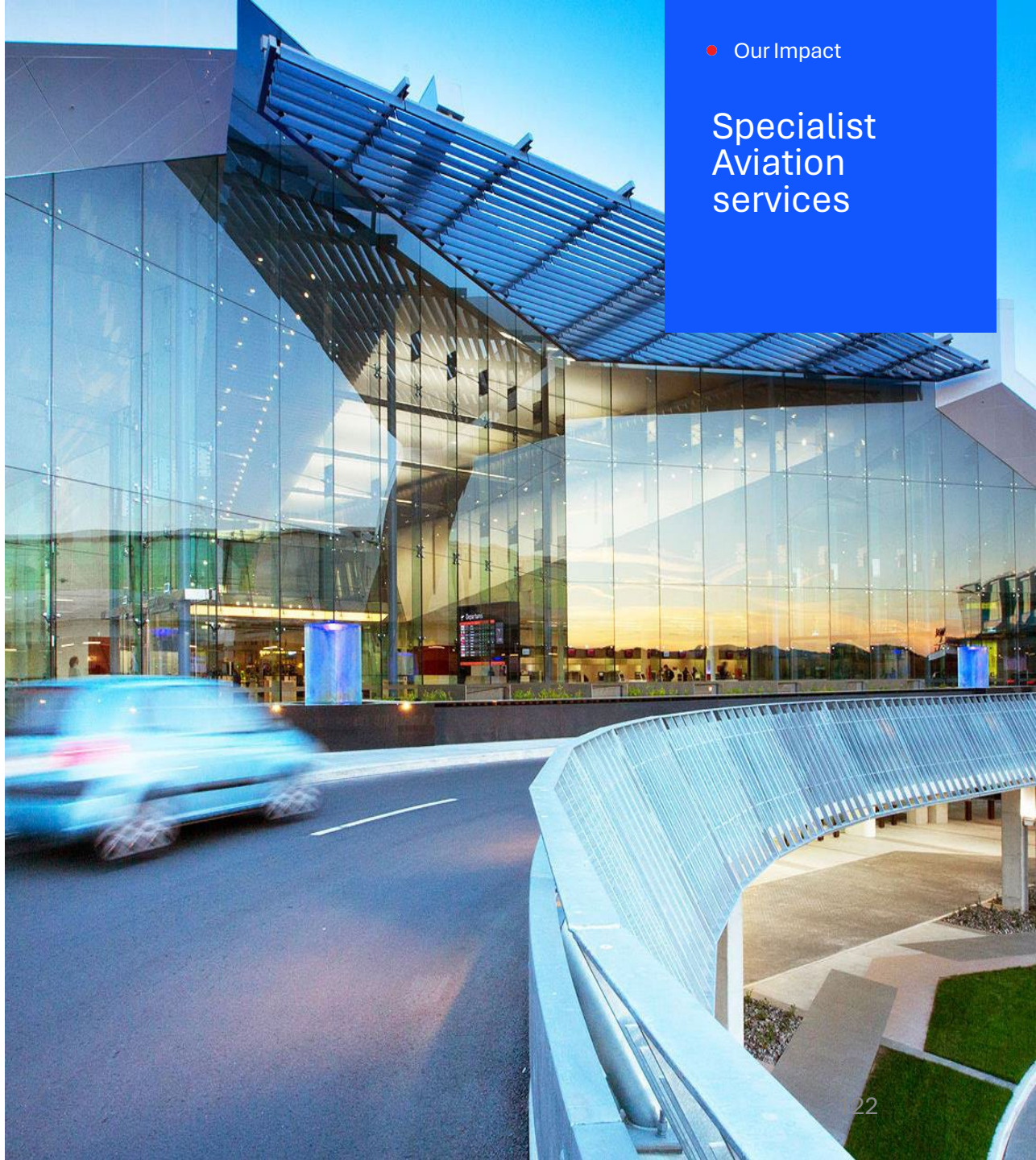
Canberra Airport Pty Ltd (CA) engaged SMEC Australia Pty Ltd (SMEC) to produce a safety case for submission to CASA to obtain a non-compliant approval for specific operations under CASR's aerodrome certification provisions related to the port side aircraft wing of Code aircraft on bay 5 Bay being positioned over the existing apron access ramp.

The SMEC scope included:

- AVR and Bay 5 Code E aircraft wing location risk assessment
- AVR operational Risk Assessment
- AVR and Bay 5 Safety Case Preparation and consultation with CASA
- AVR and Bay 5 option development based on Safety Case Findings
- Preparation of a permanent operational conditions document for CASA approval

5ha

area



Global Project Experience (SMART Facilities Management)

Changi Airport Group (CAG) Singapore

Location:
Singapore

Client:
CAG

Services:

Brand:
Surbana Jurong

Status:
Completed

The Surbana Jurong Integrated Facility Management team are providing Comprehensive Maintenance Services For Changi East Project Office for the full project duration.

The Changi East Project Office covers 14,000 square metre across 3 floors, housing the team of 200 staff, leading the design and engineering for the Changi East development.

1.4ha
area

3
floors

Our Impact

Specialist Aviation services

Specialist Aviation services

SATS Ltd Singapore

Location:
Singapore

Client:
SATS

Services:

Brand:
Surbana Jurong

Status:
Completed

The Surbana Jurong team provides integrated facilities management of SATS premises at Changi Airport Terminal 1, 2, 3 and 4. The lounges provide selected passengers a space to relax, work and refresh, before or in-between flights.

The core capabilities of facilities management:

- Integrated Facilities Management
- Engineering Support
- Asset Enhancement
- Sustainability & Smart Solutions
- Facilities Management Digitalisation

Specialist Aviation services

Singapore Airlines & Engineering Company

Location:
Singapore

Client:
SIAEC

Services:

Brand:
Surbana Jurong

Status:
Completed

Singapore Airlines Engineering company engaged Surbana Jurong for facilities management to provide maintenance, Repairs and Minor Works for SIA Airline House, AULD Centre, SIAEC Hangers and Leased Premises in Terminal buildings 1, 2, & 3.

The 6 SIAEC hangars cover an area of 56,000 square meters. Each hangar is specialised and well equipped with facilities such as versatile aircraft docking, overhead cranes and tele-platform systems. These enable our certified aircraft professionals to have full access to the aircraft during servicing, which translates to increased efficiency and shorter turnaround times for our customers

5.6ha
area

6
hangars

Global Project Experience (Aviation Security)

Specialist Aviation services

Changi Airport Terminal 2

Location:
Singapore

Client:
CAG

Services:
Security by design

Blast consultancy services

Brand:
Surbana Jurong
Prostruct

Status:
Completed

Changi Airport group approached Prostruct consulting for assistance in the terminal 2 expansion programme.

Prostruct was able to provide security by design and blast consultancy services for this 358,000 square metre extension.

35.8ha
area

Changi Airport Terminal 4

Location:
Singapore

Client:
CAG

Services:

Brand:
Surbana Jurong

Status:
Completed

Changi Airport Terminal 4 is the newest airport terminal in Singapore. It was constructed to cater to the ever-growing number of travellers to and from Singapore.

Prostruct was engaged by the client to provide a blast façade consultancy to the terminal building capable of handling 16 mppa. Terminal 4 covers 225,000 square metres. Prostruct was involved in the design protection of the glazing for the facility.

22.5ha
area

Specialist Aviation services

Clark Airport, Philippines

Location:
Philippines

Client:
BCDA

Services:

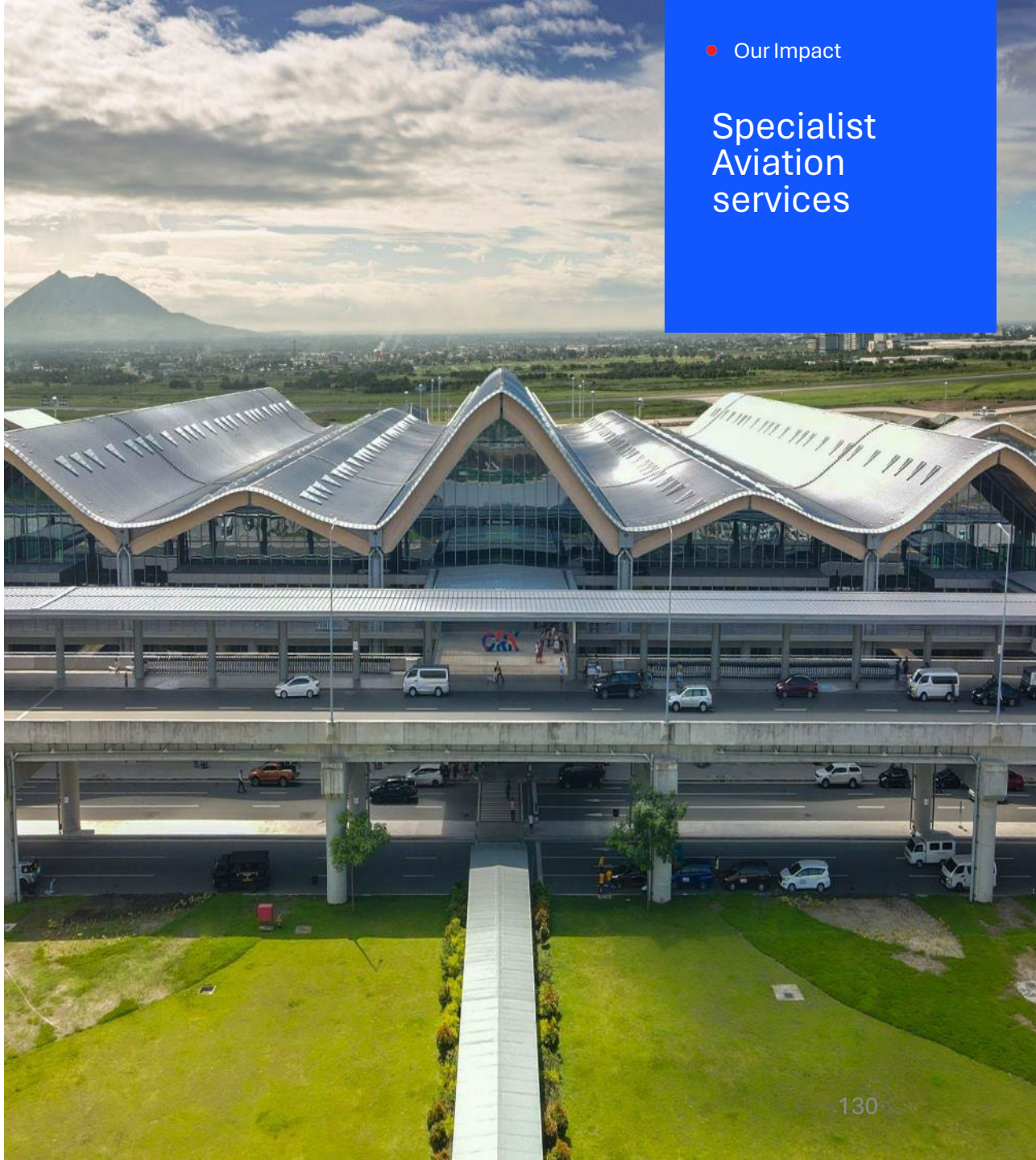
Brand:
Surbana Jurong

Status:
Completed

Clark International Airport is located in Pampanga, Philippines and serves both international and domestic flights.

Prostruct has supported the client in protection design for the external façade system of the 110,000 metres squared facility. This new facility will be able to handle 8 mppa with the ability to expand to handle 16mppa.

1.1ha
area



Changi Airport, CAAS Facilities

Location:
Singapore

Client:
CAAS

Services:

Brand:
Prostruct Consulting

Status:
Completed

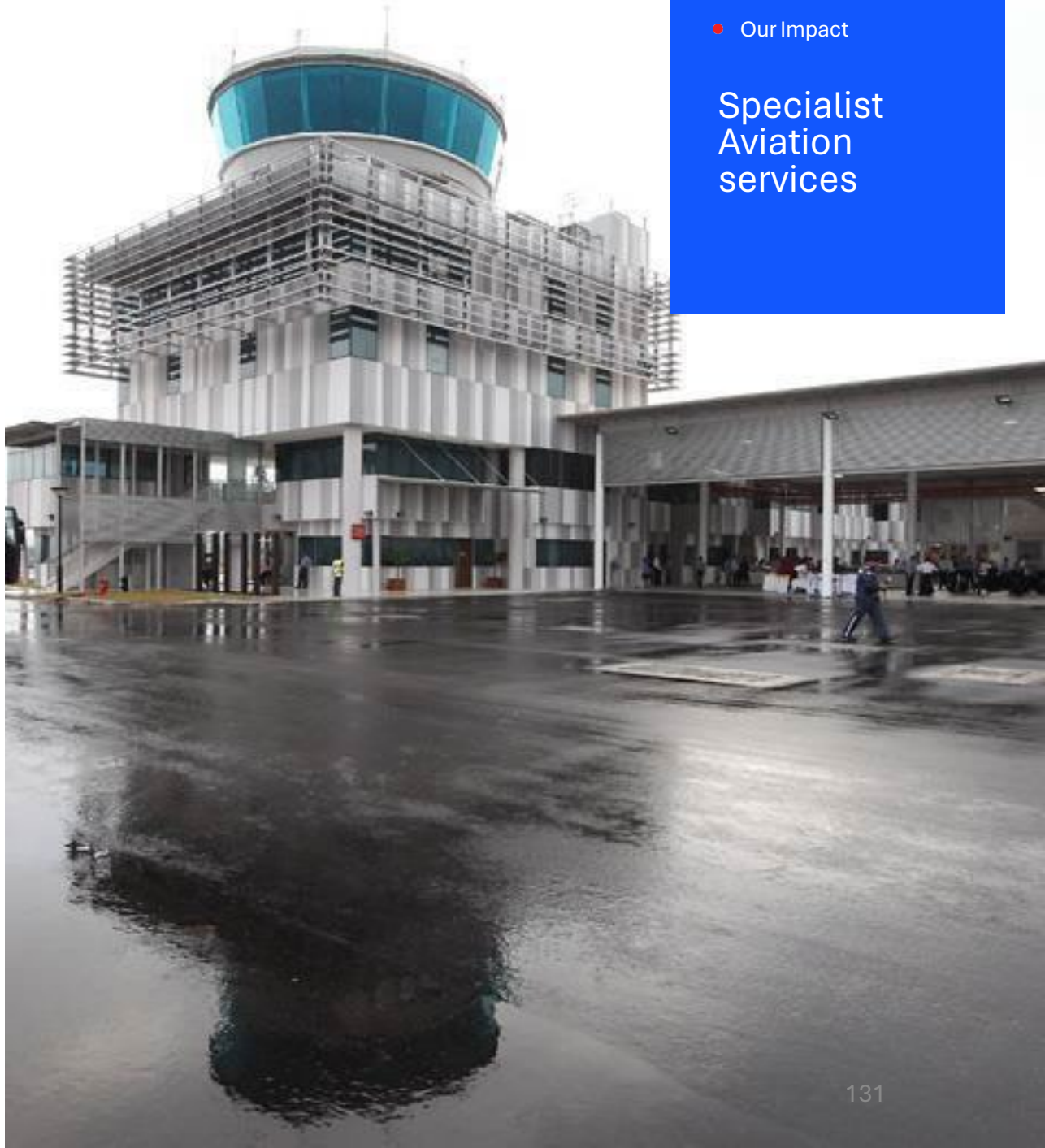
Prostruct and the Civil Aviation Authority of Singapore have worked together on numerous projects at Changi and in the surrounding areas.

Prostruct has provided Security-by-Design Blast Consultancy including protection design for all critical ancillary buildings supporting the runway operations at Changi Airport, so they can continue to function when subjected to specified threats scenarios.

The Civil Aviation Authority of Singapore is Singapore's national aviation authority which regulates civilian air traffic within the airspace jurisdiction of the Republic. Scope of work includes protection design for the facility to continue to its functions when subjected to specified threats scenarios.

3.5ha

area



Changi Airport, Jewel, Singapore

Location:
Singapore

Client:
CAG

Services:
Design services

Brand:
Prostruct Consulting

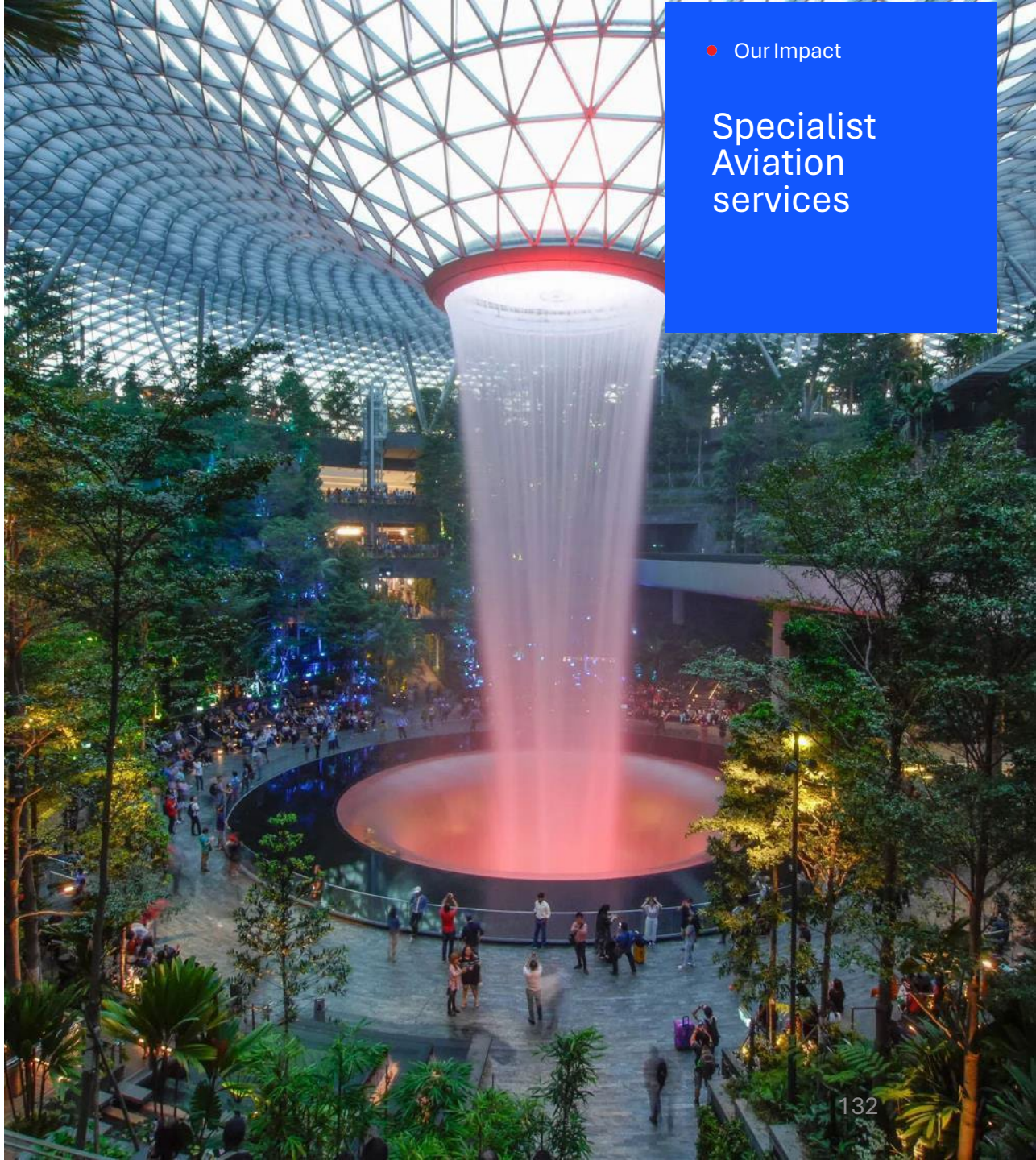
Status:
Completed

Prostruct provided security by design services for the Jewel at Changi airport.

Changi Jewel is a 135,700 metres squared entertainment and retail complex, conveniently located Changi Airport and connected by walkways to terminals 1, 2, & 3. It includes a hotel, a garden, shopping and dining options for travellers and visitors to Jewel

The scope of work included protection design for the facility to continue to its functions when subjected to specified threats scenarios.

13.5ha
area



Global Project Experience (Design Reviews)

Design Review, Maldives Airport

Location:
Maldvies

Client:
MACL

Services:
Design Review

Brand:
Surbana Jurong

Status:
Completed 2021

Surbana Jurong was approached by the client to assist in the Design Reviews for the expansion of Velana Maldives Airport.

The Surbana Jurong team ensured that the clients designs met the required standards and the designs had not overlooked potentially critical issues.

Design review involves the checking and verification of detailed calculations or more simply require the reviewer to follow through the design process to verify that appropriate assumptions and standards have been used and the conclusions reached are sound in general engineering terms and are consistent with the design process followed.

Surbana Jurong conducted multiple design reviews across all disciplines, such as architectural and civil and structural during concept , schematic & detail design phase.

7.8ha
area

Design Review, Kediri Airport

Location:
Maldvies

Client:
PT Gudang Garam

Services:
Design Review

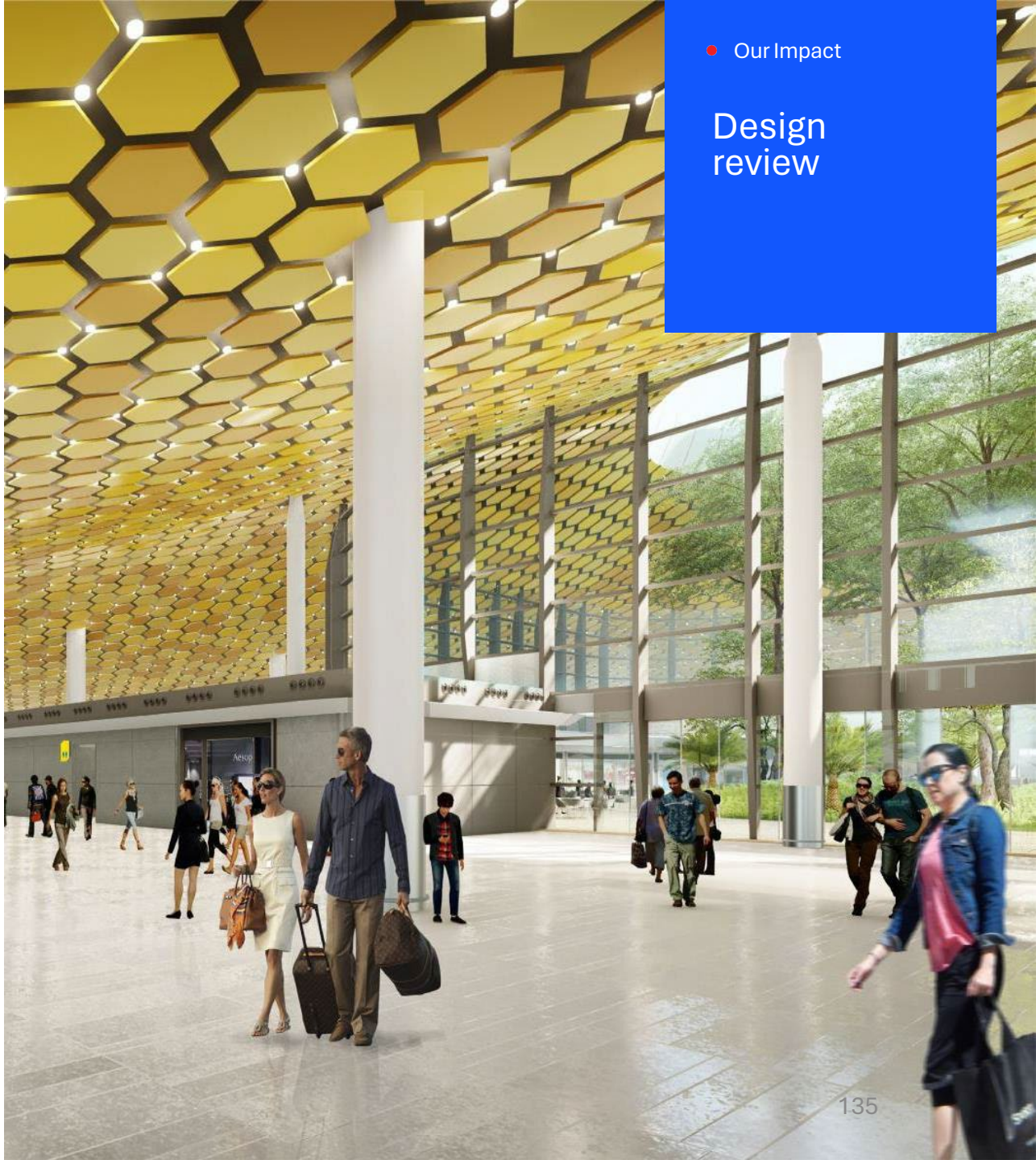
Brand:
Surbana Jurong Group

Status:
Completed 2023

As part of Surbana Jurong's role in the Kediri Airport greenfield project the Aviation team was tasked to review the design packages for the:

- Airport Master Plan
- Airside Infrastructure
- Landside Infrastructure
- Passenger Terminal Building,
- ATCT, VVIP Terminal & Ancillary buildings
- Airport Special Airport Systems

The team has also been involved in the Schematic Design reviews for the Civil & Structural Engineering, Mechanical & Electrical systems, Architectural and Airport Specialists reviews.



Global Project Experience (Aerocity and Ground Transport)

Changi Airport, Jewel, Singapore

Location:
Singapore

Client:
CAG

Services:

Brand:
Surbana Jurong

Status:
Completed 2019

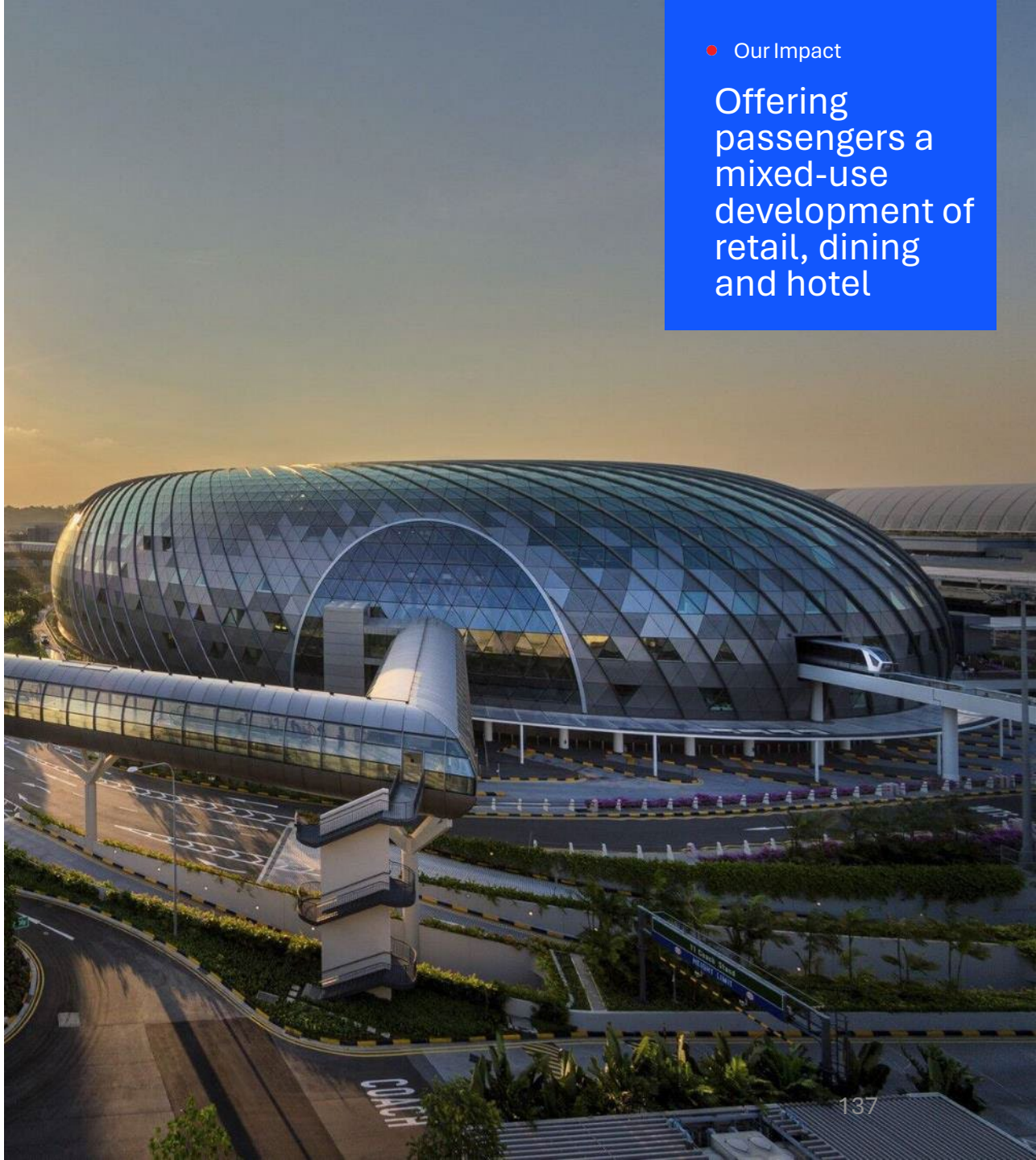
Surbana Jurong was tasked by the client to provide specialist engineering support for the Changi Jewel Project.

As Jewel involved the re purposing of an existing structure and a 70% expansion of the Terminal 1, Arrival hall and Baggage Claim, Surbana Jurong supplied Civil and Structural and Geotechnical Engineering Consultancy services for the client.

Jewel is connected to Terminals 1, 2 and 3 at Changi which serves a destination in itself, offering passengers and customers a mixed-use development of retail, dining and hotel facilities spread across 5 levels and 136,000 sqm.

13.5ha
area

70%
Expansion of the Terminal 1



Our Impact

Offering passengers a mixed-use development of retail, dining and hotel

Kertajati, Indonesia, Aerocity

Location:
Indonesia

Client:
Bandar Undara International

Services:

Brand:
Surbana Jurong Group

Status:
Completed 2016

Surbana Jurong was invited to be involved in Kertajati Aerocity. The Aerocity is set to be an integrated aerotropolis development near the new Kertajati International Airport.

The development of around 3000 Ha landside development which will be the new centre and catalyst for economic development in West Java. The Aerocity development is also planned to have operational synergy with Cirebon Seaport nearby.

The primary objective for this project was to work with the Client and their specialist consultants to strategically study the positioning and categorize the types of developments as well as to identify where should be the start-up phase to develop.

Surbana Jurong performed strategic studies to produce clear development direction for Kertajati Aerocity;

- **Stage 1:** Strategic Studies and Development Direction of Kertajati Aerocity
- **Stage 2:** Analysis of Draft Zoning and Spatial Planning of Kertajati Aerocity
- **Stage 3:** Preparation of Documents for the Grand Design of Kertajati International Airport Aerocity

3000ha

area

Our Impact

The new centre and catalyst for economic development in West Java

Al Sahan, Aerotropolis

Location:
Qatar

Client:
Bawra Real Estate

Services:
Master plan

Brand:
Surbana Jurong Group

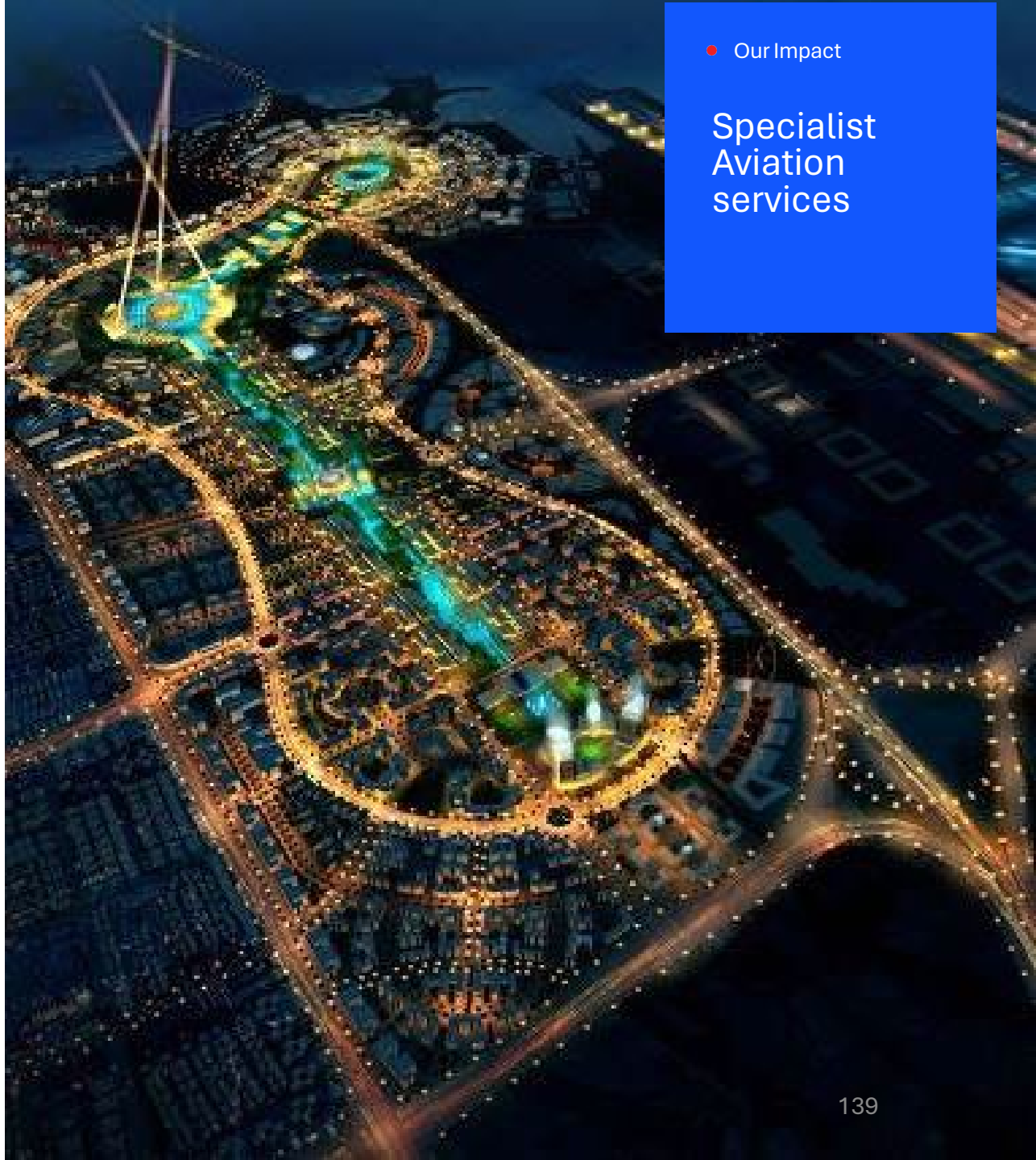
Status:
Completed 2009

Surbana Jurong Aviation was engaged by the client to perform to produce a Masterplan for Al Sahan.

Strategic to the project was the smart use of 1800 hectares of land to the south of the previous airport.

Surbana Jurong' s experience in international airports around the world allowed the team to produce a plan that encompasses the essence of what the city of Doha in Qatar represents to the region. This essence will be on full display during upcoming high-profile events in the country.

1800ha
area



Qingdao, Aerotropolis, China

Location:
China

Client:
Shandong Nanshan

Services:
Master Plan
Architecture
Landscape Architecture

Brand:
Surbana Jurong

Status:
Completed 2009

Surbana Jurong were asked to provide planning for a 600-ha Aerotropolis in the dynamic waterfront city of Qingdao, just 15 km from the new International Airport and directly adjacent to the coastline.

The Master plan needed to highlight the feasibility and viability of this project. Surbana Jurong provided a comprehensive planning study consisting of benchmarking of relevant Aerocities. An economic study was conducted followed by a Visioning Strategy and finally Master planning of the entire township.

- Actual services provided by in the assignment:
- Benchmarking of Aerocities
- Visioning Strategy & Land Use Planning
- Employment Demand & Supply Analysis
- Road Infrastructure Network Plan
- Illustrative Master plan
- Start up Area Detailed Development Plan
- Architecture Design of Aviation Academy
- Urban Design of the CBD
- Architecture design of Aviation Headquarter Building

600ha
area

15km
From the new International Airport

Yangon T.O.D Masterplan

Location:
Myanmar

Client:
YACL

Services:

Brand:
Surbana Jurong

Status:
Completed 2020

Surbana Jurong assisted the client with the masterplan for the new Yangon Railway station.

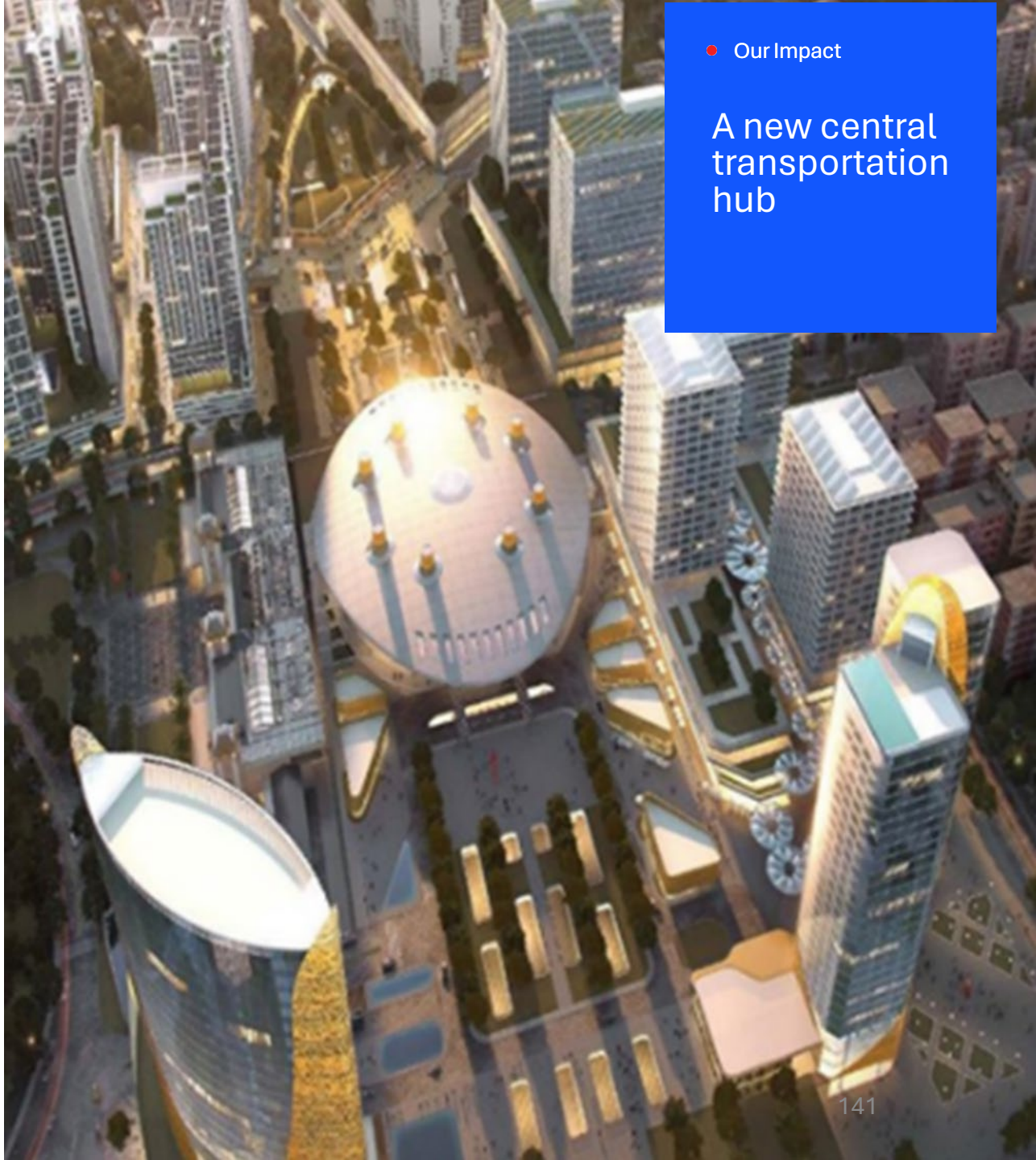
A mixed development project comprising of a new central transportation hub that integrates rail and mass transit, surrounded by amenities of housing and commerce. The facility will cover approximately 25.7 hectares, or 63.5 acres, of which 1.09 million square metres of floor space will be developed.

The facility once completed will be able to handle 250,000 passengers daily when completed.

25.7ha
Area

1.09 million
Square metres

250,000
Passengers daily



Our Impact

A new central transportation hub

Hong Kong International Airport, Passenger Clearance Building

Location:
Hong Kong

Client:
Airport Authority Hong Kong

Services:

Brand:
Robert Bird Group

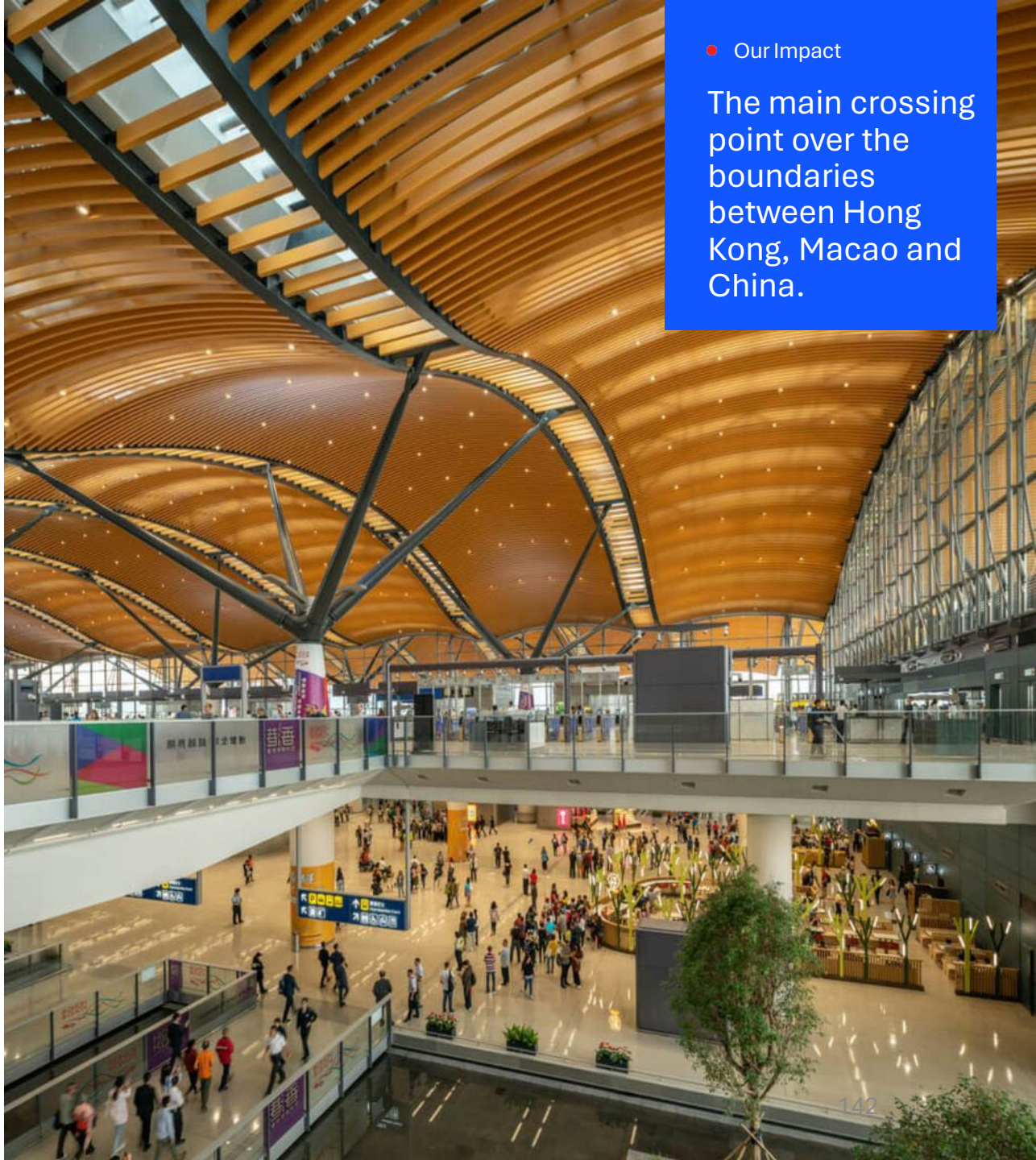
Status:
Completed 2024

Robert Bird Group (RBG) was involved in the passenger control building which was constructed on 130ha of reclaimed land and directly below the flight path of the Hong Kong International Airport.

The 39,000sqm building is the main crossing point over the boundaries between Hong Kong, Macao and mainland China.

RBG assisted the client by providing specialist engineering services to develop the Construction Methodology and Erection Sequence (CMES) which addressed the strict Air Height Restriction over the site.

3.9ha
area



Our Impact

The main crossing point over the boundaries between Hong Kong, Macao and China.


Real impact,
made together.