



SCHOOL OF ARCHITECTURE,
INDUSTRIAL DESIGN, & THE BUILT
ENVIRONMENT

Built to Fly: Comparative Insights into Airport Form, Function, and Future

In Partial Fulfillment of the Requirements of the
Course AR147-1 Design 7:
Community Architecture and Urban Design

Instructor

Ar. Leiron Mark De Guzman

Student Name

**ACURANTES, Hazel Louise P.
ALEJANDRO, Carmina Isabel C.
JAMPAS, Adriale Caryl P.
MANIMTIM, Zachary R.**

Section E02

July 16, 2025

Date of Submission

I. Local Case Studies

A. Francisco Bangoy International Airport (Davao International Airport)

1. Location: Barangay Sasa, Buhangin District, Davao City, Philippines
2. Completion: Original terminal (1950s), major upgrade completed December 2003
3. Facility Type:
 - a) Primary international and domestic airport serving Davao Region (Mindanao)
4. Main Terminal: Two-storey international passenger terminal
5. Runway: Single runway (Runway 05/23), 3,000 meters long, asphalt/concrete
6. Annual Capacity (as of 2023): 3.84 million passengers, 25,000 aircraft movements
7. Background & Site Context
 - a) Regional Significance: Main gateway of southern Mindanao; third-busiest airport in the Philippines after NAIA and Mactan-Cebu.
 - b) Site History: Evolved from Sasa Airfield in the 1940s to a fully functional civil airport in 1958, with a major modern terminal constructed from 2000–2003.
 - c) Strategic Role: Supports the BIMP-EAGA economic corridor, a key trade and tourism initiative in Southeast Asia.
8. Design Concept & Philosophy
 - a) Design Approach: Practical, utilitarian, with a focus on increasing passenger capacity and safety.
 - b) Architectural Character: Clean, institutional facade with functional concourses; original design aligned with 2000s airport infrastructure standards.
 - c) Vision: Establish Davao as an international gateway while facilitating regional development and tourism.
9. Spatial Planning & Functionality
 - a) Terminal Zoning:
 - (1) Arrival and departure zones are split between the lower and upper levels
 - (2) Separate processing for international and domestic flights
 - (3) Baggage claim, customs, and immigration areas are adequately spaced
 - b) Circulation:
 - (1) Linear passenger flow, but current congestion and inefficiencies are observed
 - c) Ongoing Expansion: 8,000 sqm expansion underway to improve customs, lounges, and flow
10. Architectural Form & Aesthetics
 - a) Massing: Rectilinear form, low-rise profile; apron visible from departure lobby
 - b) Facade: Neutral gray tones, steel and glass curtain walls, covered walkways
 - c) Design Features:
 - (1) Focused on functionality over expressive form; limited ornamentation
 - d) Passenger Experience: Plain but effective interior; improvements in lighting and seating underway

11. SWOT Analysis

STRENGTHS	<ol style="list-style-type: none"> 1. Strategic location in growing urban region (Davao City, gateway to Mindanao) 2. Recent terminal expansion and connectivity upgrades (Doha, Singapore) 3. Funding support from multilateral banks and government 4. Named among world's most efficient small airports (ACI, 2013)
WEAKNESSES	<ol style="list-style-type: none"> 1. Poor facility maintenance (restrooms, seating, HVAC) 2. Congested layout with minimal architectural character 3. Dependent on CAAP budget, limiting local management control 4. Lacks advanced baggage handling and cargo logistics
OPPORTUNITIES	<ol style="list-style-type: none"> 1. Public-Private Partnership (PPP) for ₱56 B modernization 2. Smart airport tech integration—biometrics, green MEP upgrades 3. More international connections through Southeast Asia and the Middle East 4. Davao's growth in tourism and agro-industrial exports
THREATS	<ol style="list-style-type: none"> 1. Competing airports in General Santos, Laguindingan, and Cebu 2. Natural hazards: earthquakes, flooding (low-lying site) 3. Cost overruns and political delays in PPP or expansion execution 4. Poor user reviews and public dissatisfaction are impacting the reputation

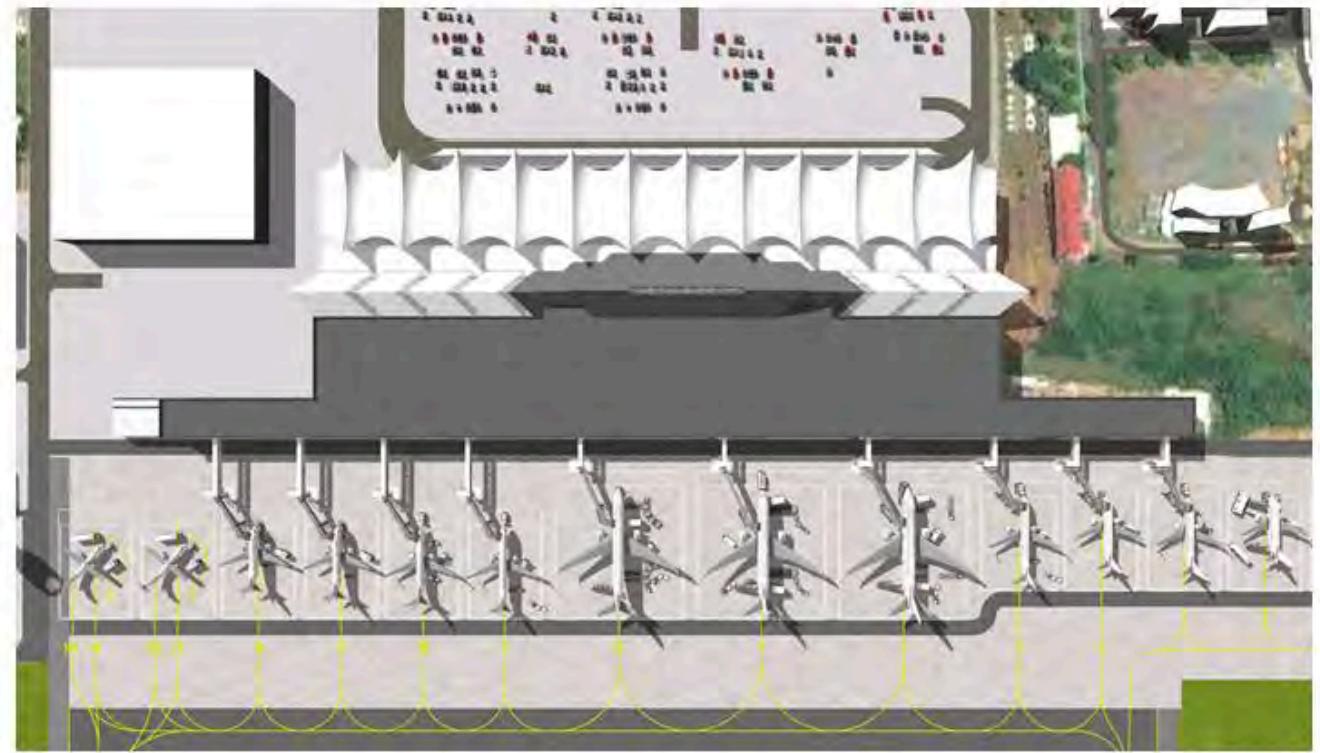
12. Plans and Perspectives:

DAVAO INTERNATIONAL AIRPORT



DAVAO INTERNATIONAL AIRPORT

EXISTING SITE PLANS



B. Daniel Z. Romualdez Airport (TAC) Tacloban City, Region 8

1. Location: Barangay San Jose, Tacloban City, Eastern Visayas, Philippines
2. Completion:
 - a) Original airfield established during WWII (San Jose Airstrip).
 - b) Commercial conversion post-war; named after Daniel Z. Romualdez.
 - c) Expanded terminal in March 2018; ongoing modernization to international standard by April 2026.
3. Facility Type: Class 1 principal domestic airport, transforming toward international category
4. Terminal & Runway:
 - a) Existing two-storey terminal; Post-2013 Typhoon Haiyan rebuild
 - b) Runway 18/36: 2,142 m asphalt; planned extension pending
5. Historical Importance:
 - a) Built by US Seabees during WWII as San Jose Airstrip
 - b) Renamed for Leyte congressman and House Speaker Daniel Z. Romualdez
6. Haiyan Impact & Recovery:
 - a) Severely damaged in Nov 2013; terminal and tower destroyed, runway compromised
 - b) Reopened for turboprops Nov 11; resumed full operations by Nov 14, 2013
 - c) Hosted Pope Francis's outdoor mass in January 2015
7. Design Concept & Philosophy
 - a) Focus on capacity, resilience, and evacuation flows. Terminal designed for easy scalability
8. Spatial Planning & Functionality
 - a) Terminal Layout:
 - (1) Renovation in 2017–18 nearly doubled seating from 360 to 600+
 - (2) New PTB under construction in three phases: foundation, structure, interior/utilities
 - b) Passenger Flow:
 - (1) Separation of domestic and future international processing
 - c) Progress:
 - (1) As of March 2025: ~56% complete; surpassing targets (target finish by April 2026)
9. Architectural Form & Aesthetics
 - a) Massing & Facade: Clean, low-rise silhouette with pitched roof forms. Temporary construction materials, to be refined with new terminal
 - b) Experience: Current aesthetic basics; new terminal emphasizes natural light and user comfort

10. SWOT Analysis

STRENGTHS	<ol style="list-style-type: none"> 1. Strategic location as the primary gateway to Eastern Visayas 2. Quick post-disaster recovery and continuity after Typhoon Yolanda
-----------	---

	<ol style="list-style-type: none"> 3. Ongoing ₱2.3 billion modernization project (target: 2026) 4. Steady passenger growth (~1.7 million in 2024) 5. Government support through the Aviation Infrastructure Program 6. Potential to become an international airport in Region VIII
WEAKNESSES	<ol style="list-style-type: none"> 1. The current terminal is still limited in capacity and facilities 2. Runway length (2,142 m) may not yet support wide-body international aircraft 3. Site vulnerability to flooding, typhoons, and bird strikes 4. Lack of international flights and route diversity as of 2025 5. No formal green or sustainability certifications 6. Basic retail and passenger services until the new terminal is completed
OPPORTUNITIES	<ol style="list-style-type: none"> 1. International operations by 2026–2028 could boost tourism and trade 2. Potential for increased cargo and logistics use for regional products 3. New terminal will include modern systems: escalators, boarding bridges, STPs 4. Can serve as a disaster response and evacuation hub for Eastern Visayas 5. Opening up to private investment for F&B, duty-free, and commercial services 6. Integration with better road access and multimodal transport
THREATS	<ol style="list-style-type: none"> 1. High exposure to natural disasters (typhoons, flooding, storm surges) 2. Delays or cost overruns in the modernization project 3. Competition from other growing regional airports (e.g., Cebu, Iloilo) 4. Informal settlements and land-use conflicts near airport perimeter 5. Limited current infrastructure may discourage foreign carriers

11. Plans and Perspective



**DANIEL Z. ROMUALDEZ AIRPORT
(TAC) TACLOBAN CITY**

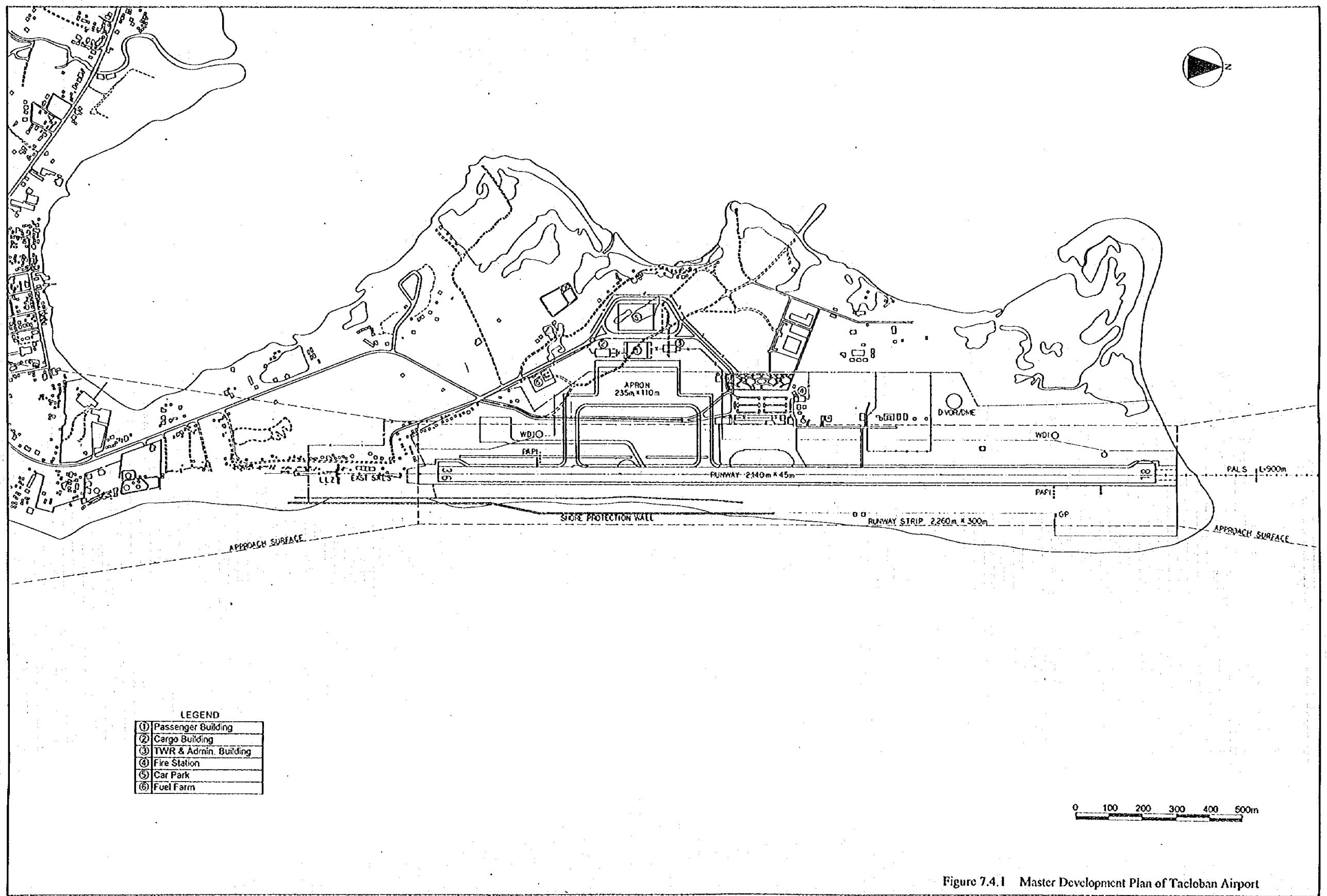


Figure 7.4.1 Master Development Plan of Tacloban Airport

C. Basco Airport (BSO) - Batanes, Region 2

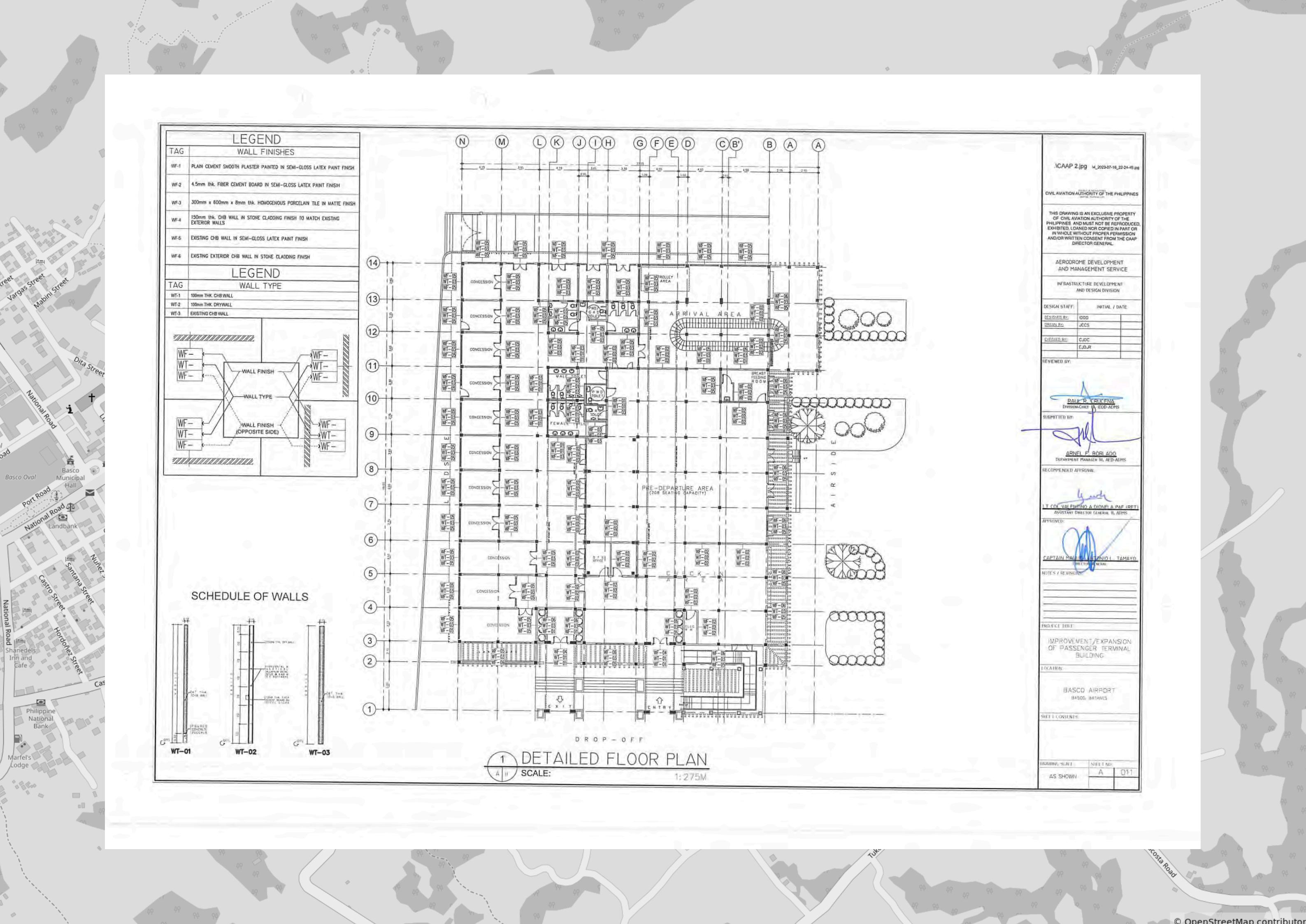
1. Location: Basco, Batanes, Cagayan Valley Region (Region II), Philippines
2. Completion: Originally built during the American period; current runway and facilities upgraded post-2000s
3. Facility Type:
 - a) Class 2 Principal Domestic Airport (Civil Aviation Authority of the Philippines)
4. Runway: 1,244 meters asphalt runway (Runway 06/24), suitable only for turboprop aircraft
5. Terminal: Single-storey passenger terminal with basic amenities; under improvement
6. Background & Site Context
 - a) Geographic Importance: Only major airport serving the isolated Batanes archipelago, the northernmost part of the Philippines
7. Site Conditions: Scenic coastal setting with mountainous terrain and high wind exposure
8. Historical Role: Essential link for transport, food supply, medical access, and disaster response for Batanes residents
9. Connectivity: Direct flights from Manila and Clark via PAL Express and Sky Pasada
10. Design Concept & Philosophy
 - a) Design Focus: Simple, functional, and resilient architecture that suits the local climate and limited footprint
 - b) Cultural Integration: Modest Ivatan-inspired form, designed to withstand typhoons and preserve heritage aesthetics
 - c) Purpose-Driven Planning: Aims to provide essential access rather than accommodate high-density passenger flows
11. Spatial Planning & Functionality
 - a) Terminal Layout:
 - (1) One main entrance with check-in, waiting area, and security
 - (2) Segregated arrivals and departures zones (partially shared)
 - (3) Parking lot and covered drop-off point outside
 - b) Flow Efficiency:
 - (1) Passenger capacity limited; few flights per day allow minimal congestion
 - c) Support Services:
 - (1) Minimal—no jet bridges, limited concessions, and basic comfort facilities
12. Architectural Form & Aesthetics
 - a) Massing: Low-rise building, rectangular plan with gable roof
 - b) Facade: Painted concrete walls, corrugated roofing; open breezeways
 - c) Character: Simple, weather-adaptive architecture reflecting Ivatan minimalism
 - d) Water Management: Dual cistern/storm tank, centralized garbage disposal.
13. SWOT Analysis

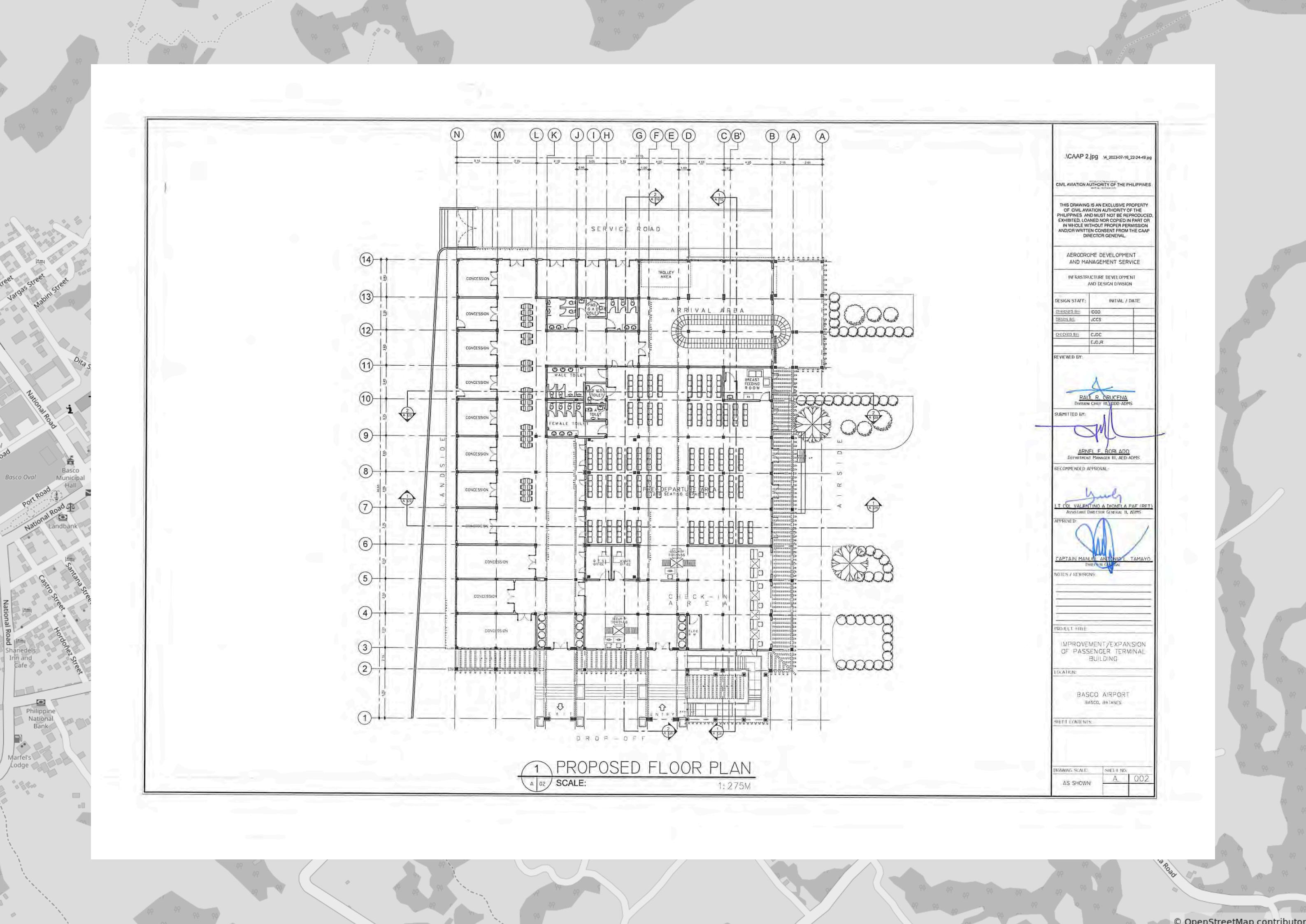
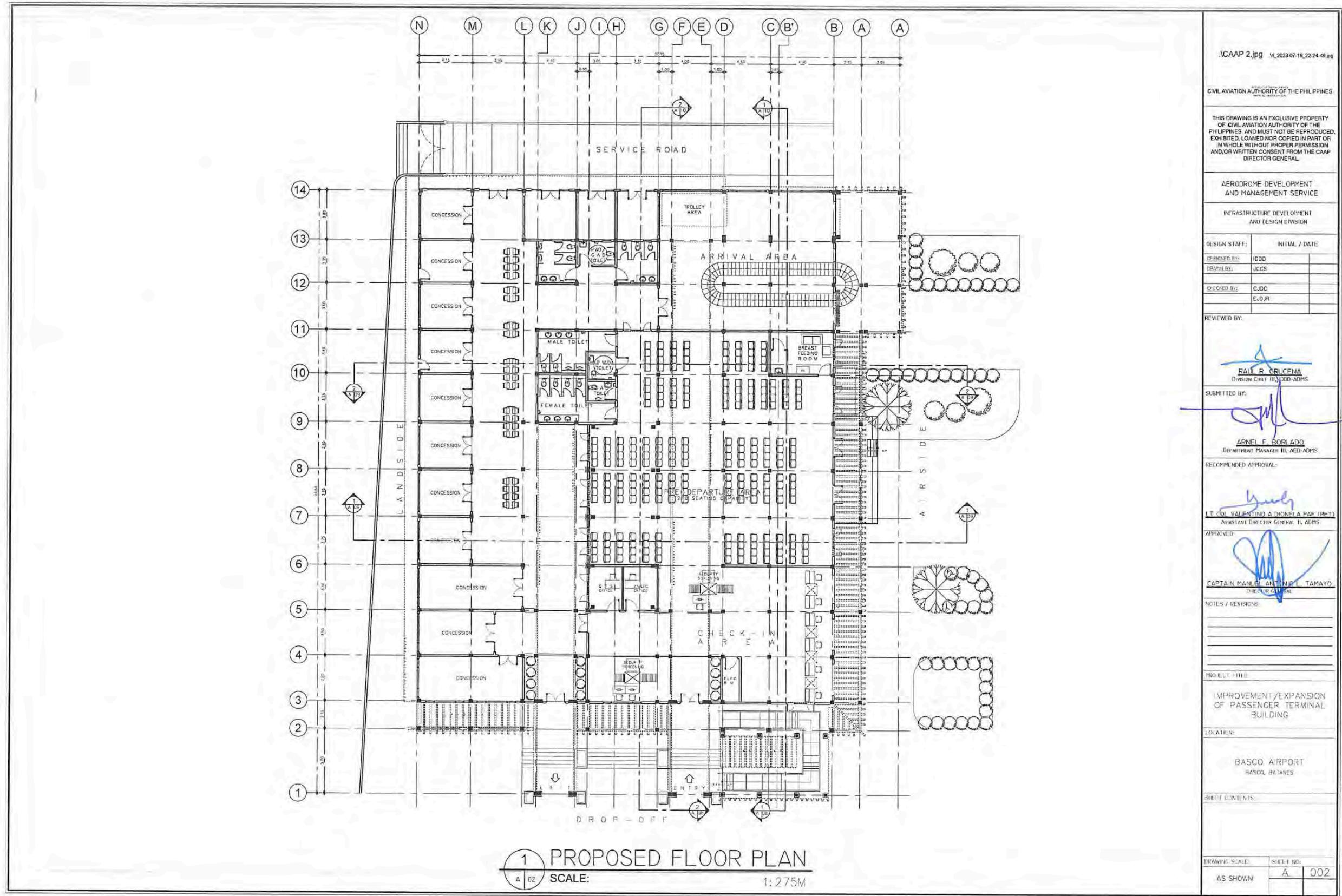
STRENGTHS	<ol style="list-style-type: none"> 1. Sole air gateway to the Batanes Islands Vital for connectivity, emergency response, and basic logistics 2. Cultural tourism destination with growing appeal 3. Ongoing infrastructure upgrades funded by the national government 4. Scenic approach and take-off offering a unique tourist experience
WEAKNESSES	<ol style="list-style-type: none"> 1. Short runway limits aircraft types and frequency 2. High airfare due to low supply and geographic remoteness 3. Minimal passenger amenities 4. Frequent cancellations due to bad weather 5. No night-time operations; no ILS (Instrument Landing System)
OPPORTUNITIES	<ol style="list-style-type: none"> 1. Runway extension and overlay underway (CAAP 2025 program) 2. Possible entry of new airlines to offer more competitive pricing 3. Potential for eco-tourism and cultural tours from Taiwan and Luzon 4. Development of sustainable terminal designs adapted to Ivatan architecture 5. Use of solar energy and other low-impact infrastructure upgrades
THREATS	<ol style="list-style-type: none"> 1. Highly susceptible to typhoons, earthquakes, and storm surges 2. Limited land area for future expansion 3. Seasonal demand and flight cancellations hurt tourism consistency 4. Over-tourism may strain local culture and resources 5. Reliance on government funding for any major improvements

14. Plans and Perspectives:

BASCO AIRPORT (BSO) - BATANES, REGION 2







II. Foreign Case Studies

A. Narita International Airport

1. LOCATION: Narita, Chiba Prefecture, Japan
2. ARCHITECT/s: Nikken Sekkei Ltd. / Azusa Sekkei Co., Lt
3. AIRLINE HUB: All Nippon Airways, FedEx Express, Japan Airlines, Nippon Cargo Airlines, Polar Air Cargo
4. DESIGN CONCEPT:
 - a) "from a place to wait, to a place to spend time".
 - b) "Connect"
5. Inclusive Facilities: Narita Airport incorporates universal design principles across all terminals, ensuring accessibility for all passengers.
6. Accessibility Features:
 - a) Mobility Aids: Availability of electric carts, wheelchairs, and baby carriages.
 - b) Guidance Systems: Tactile walking surface indicators, tactile maps, and intercoms to assist visually impaired passengers.
 - c) Restrooms: Accessible toilets equipped with features like L-shaped handrails and audio guidance.
 - d) Communication Aids: Hearing assistance speakers and videophones for passengers with hearing impairments.
7. Terminals:
 - a) Terminal 1 Layout
 - (1) Design Layout: Terminal 1 employs a satellite terminal design, comprising a central building connected to multiple satellite concourses. This layout facilitates efficient aircraft operations and passenger movement.
 - (2) Airline Alliances: The terminal is structured to accommodate major airline alliances, with the North Wing designated for SkyTeam carriers and the South Wing for Star Alliance members.
 - (3) Passenger Amenities: Features include duty-free shopping areas, lounges, and various dining options, enhancing the travel experience.
 - b) Terminal 2 Layout
 - (1) Design Layout: Terminal 2 features a linear concourse design, initially connected by a shuttle system, which has since been replaced to improve passenger flow.
 - (2) Operational Use: This terminal handles both international and domestic flights, serving as the hub for Oneworld alliance carriers and other international airlines.
 - (3) Facilities: Amenities include a large duty-free mall, various retail outlets, and dining establishments to cater to diverse passenger needs.
 - c) Terminal 3 Layout
 - (1) Purpose: Opened in 2015, Terminal 3 is dedicated to low-cost carriers (LCCs), designed to minimize construction and operational costs while maintaining functionality.
 - (2) Innovative Features:
 - (3) Wayfinding: Instead of traditional moving walkways and illuminated signs, the terminal uses color-coded running tracks

on the floor—blue for departures and red for arrivals—to guide passengers.

- (4) Interior Design: The terminal boasts an industrial aesthetic with exposed ceilings and minimalist furnishings provided by Muji, aligning with its cost-effective approach.

8. SWOT Analysis

STRENGTHS	<ol style="list-style-type: none"> 1. Primary international gateway for Japan, especially for long-haul flights 2. Two operational runways with high-capacity (4,000 m & 2,500 m) 3. Well-connected via Narita Express, Keisei Skyliner, highways 4. Terminal 3 praised for innovative, user-friendly LCC design (color-coded tracks) 5. Modern cargo terminal (ZEB-oriented, solar-powered) 6. Major hub for Japan Airlines (JAL), ANA, and several international carriers 7. Advanced immigration and security systems 8. High-quality passenger amenities: retail, dining, lounges, prayer rooms
WEAKNESSES	<ol style="list-style-type: none"> 1. Located ~60 km from central Tokyo (longer travel time than Haneda) 2. Historical delays due to land acquisition opposition (Sanrizuka Struggle) 3. Limited late-night operations due to noise regulations 4. Terminal 1 and 2 design seen as aging compared to newer hubs 5. Operational congestion during peak travel periods 6. Labor shortage challenges during ongoing expansion
OPPORTUNITIES	<ol style="list-style-type: none"> 1. Construction of 3rd runway (3,500 m) and extension of Runway B to 3,500 m 2. Terminal consolidation plan to boost passenger handling efficiency 3. Growth of cargo logistics and smart warehousing (AI, automation) 4. Increasing inbound tourism (Japan aims for 60M visitors by 2030)

	<ul style="list-style-type: none"> 5. Airport City development for mixed-use economic zones 6. Integration of sustainability measures and smart airport technologies
THREATS	<ul style="list-style-type: none"> 1. Competition from Haneda Airport, which is closer to Tokyo and expanding 2. Local opposition and regulatory delays in expansion projects 3. Global uncertainties (pandemics, travel bans, fuel prices, etc.) 4. Environmental impact and noise pollution near expansion zones 5. Rising construction costs and inflation are affecting project timelines

9. Plans and Perspectives



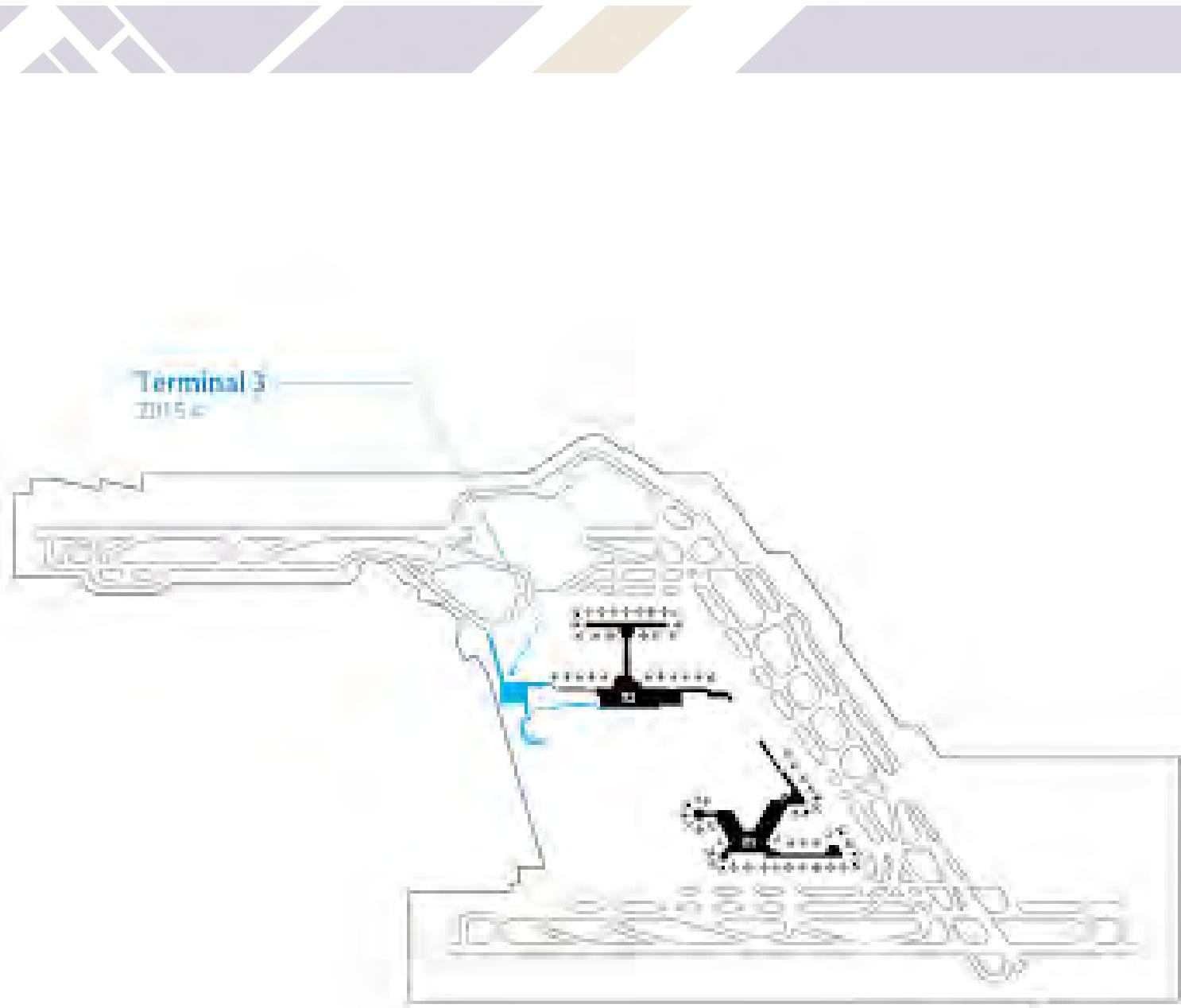
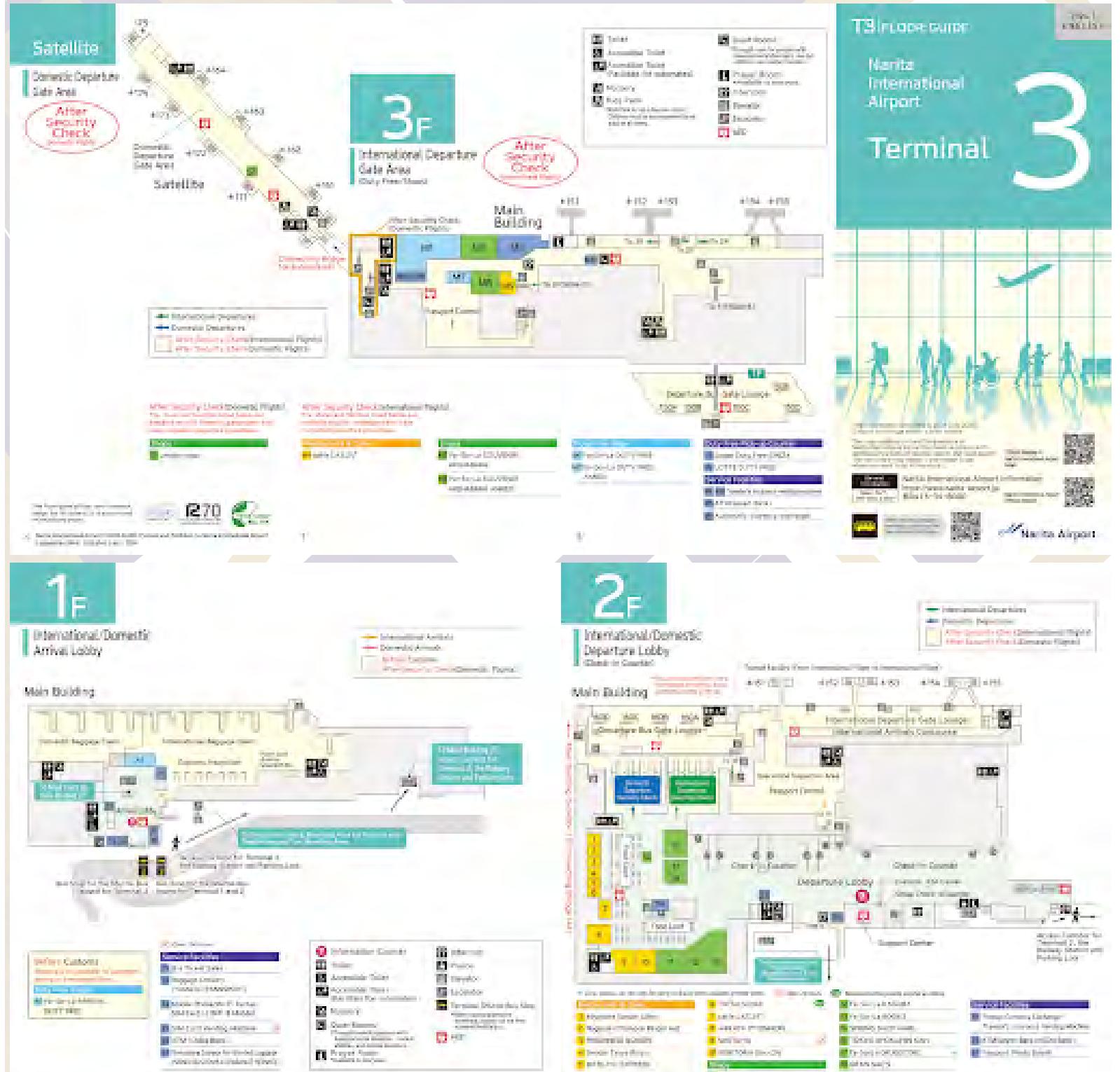
**NARITA INTERNATIONAL
AIRPORT**



NARITA INTERNATIONAL AIRPORT- TERMINAL 1

NARITA INTERNATIONAL AIRPORT- TERMINAL 2





NARITA INTERNATIONAL AIRPORT- TERMINAL 3

B. Taiwan Taoyuan International Airport

1. LOCATION: No. 9 號, Hangzhan S Rd, Dayuan District, Taoyuan City, Taiwan 33758
2. ARCHITECT/s: Norihiko Dan and Associates
3. AIRLINE HUB: China Airlines, EVA Air, FedEx Express, Starlux Airlines, Tigerair Taiwan
4. DESIGN CONCEPT:
 - a) "Modern with a Touch of Tradition"
5. Completion:
 - a) Opened March 1979 ("Chiang Kai-shek Airport")
 - b) Terminal 2: Completed 2000s; new gates added for A380
 - c) Terminal 3: Construction started 2015, opening expected by 2026–2027 (capacity ~45 M pax) ([turn0search21])
6. Facility Type: Taiwan's largest international gateway, major regional hub for long-haul flights, cargo, and transit
7. Background & Site Context
 - a) Developed to relieve overcrowding at Taipei Songshan and support economic growth
 - b) Project pivot toward an "aerotropolis"—Taoyuan Aerotropolis plan spans ~4,500 ha, drives economic zones and connectivity
 - c) Infrastructure includes MRT Green Line, existing Airport MRT, Skytrain shuttle systems
8. Design Concept & Philosophy
 - a) Terminal 3, designed by Rogers Stirk Harbour + Partners with Arup & CECI, blends fluid architecture with Taiwan's natural imagery
 - b) Spatially dynamic, emphasizing passenger clarity, 40 min optimal connection time, and a "hard shell" roof with soft interiors
9. Spatial Planning & Functionality
 - a) Terminal structure: four-legged "banyan columns" lining concourse spine, open floor plan, natural light
 - b) Phase 1: 21 contact gates served by APM and Skytrain; future satellite concourse connects via people mover
 - c) Ground access: Rapid transit, MRT Green Line (opening 2026–2032), highways, integrated urban zones
10. Architectural Form & Aesthetics
 - a) Sculptural wave-form roof with visible natural light entry, undulating ceilings
 - b) Interiors: warm wooden tones, large spans with minimal columns
 - c) Harmonious flows akin to a city center; tactile serenity and scale for arrivals and departures
11. SWOT Analysis

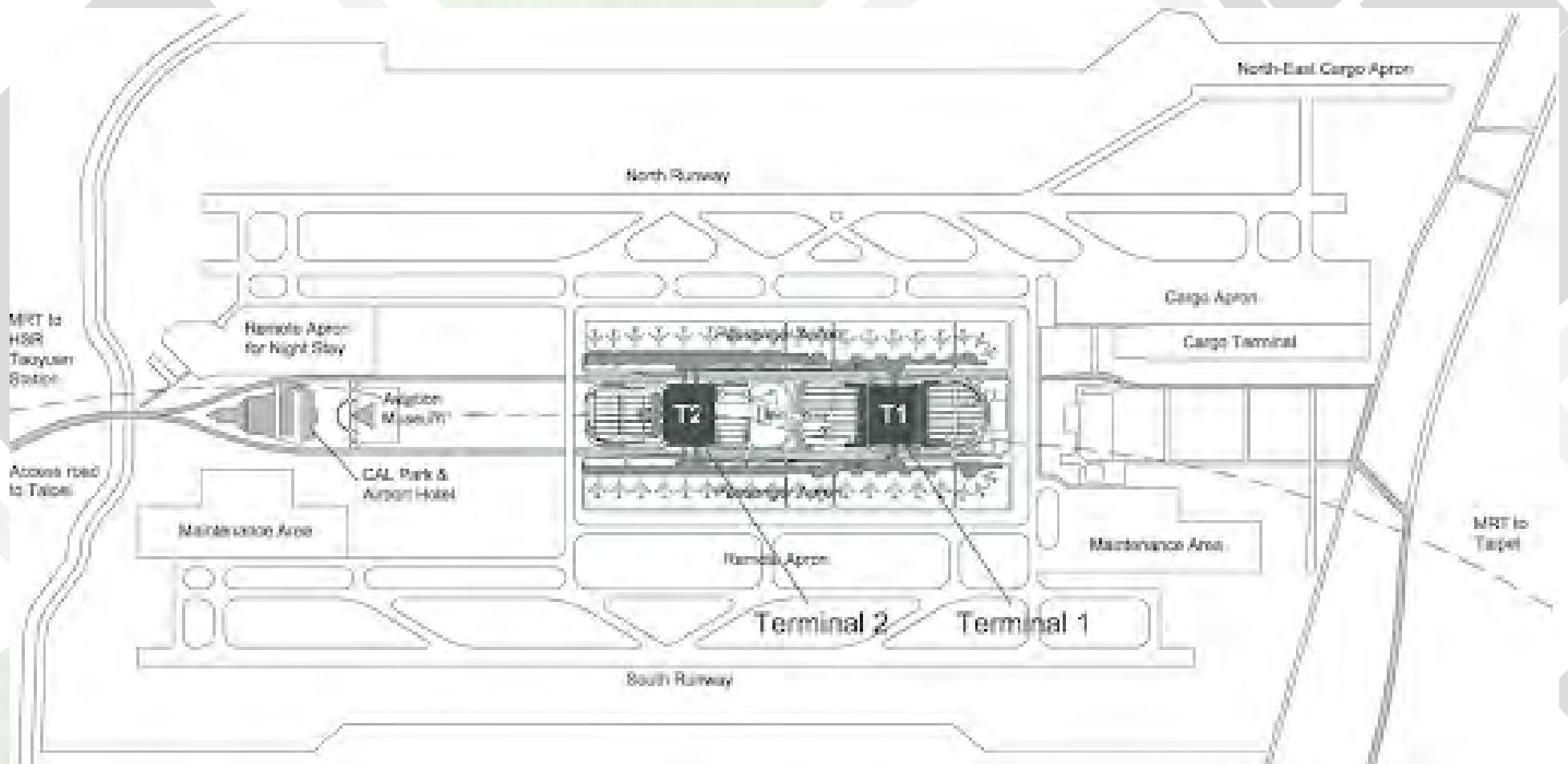
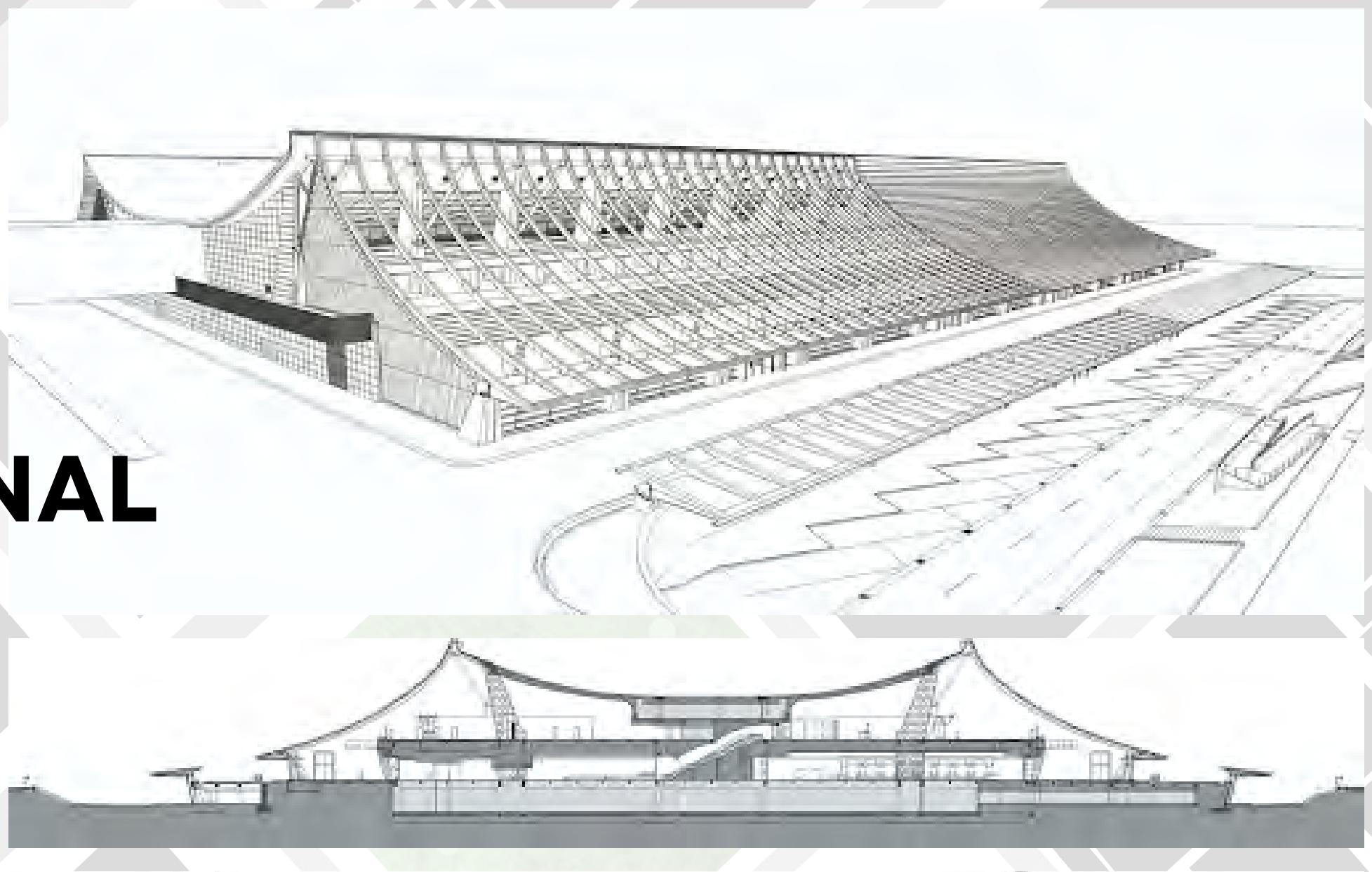
	<ol style="list-style-type: none"> 4. Terminal 3 (under construction) designed by world-renowned architects (Rogers Stirk Harbour + Arup) 5. Achieved Airport Carbon Accreditation Level 4 (high sustainability standard) 6. Strategic location in East Asia for trans-Pacific and regional routes 7. Catalyst for Taoyuan Aerotropolis economic development plan (~4,500 ha) 8. Comprehensive amenities: lounges, duty-free, cultural zones, and digital services
WEAKNESSES	<ol style="list-style-type: none"> 1. Older Terminal 1 and parts of Terminal 2 need modernization 2. Located ~40 km from Taipei city center (longer transfer time than urban airports) 3. Limited current runway capacity compared to expected future demand 4. Delays and complexity in land acquisition for expansion (e.g., Aerotropolis zones) 5. Past issues with overcrowding and insufficient gate availability during peak
OPPORTUNITIES	<ol style="list-style-type: none"> 1. Terminal 3 will add ~45 million passenger capacity (opening expected by 2026–2027) 2. Proposed third runway will enhance operational capacity (target 2030) 3. Aerotropolis development offers growth in logistics, tech, MICE, and free-trade industries 4. Integration of smart airport technologies, automation, and AI systems 5. Potential to become a leading green airport in Asia with ongoing sustainability efforts 6. Increased demand for regional travel and air cargo post-pandemic

STRENGTHS	<ol style="list-style-type: none"> 1. Taiwan's largest and main international gateway 2. High international connectivity with long-haul and regional flights 3. Advanced infrastructure: Airport MRT, Skytrain, and freeway access

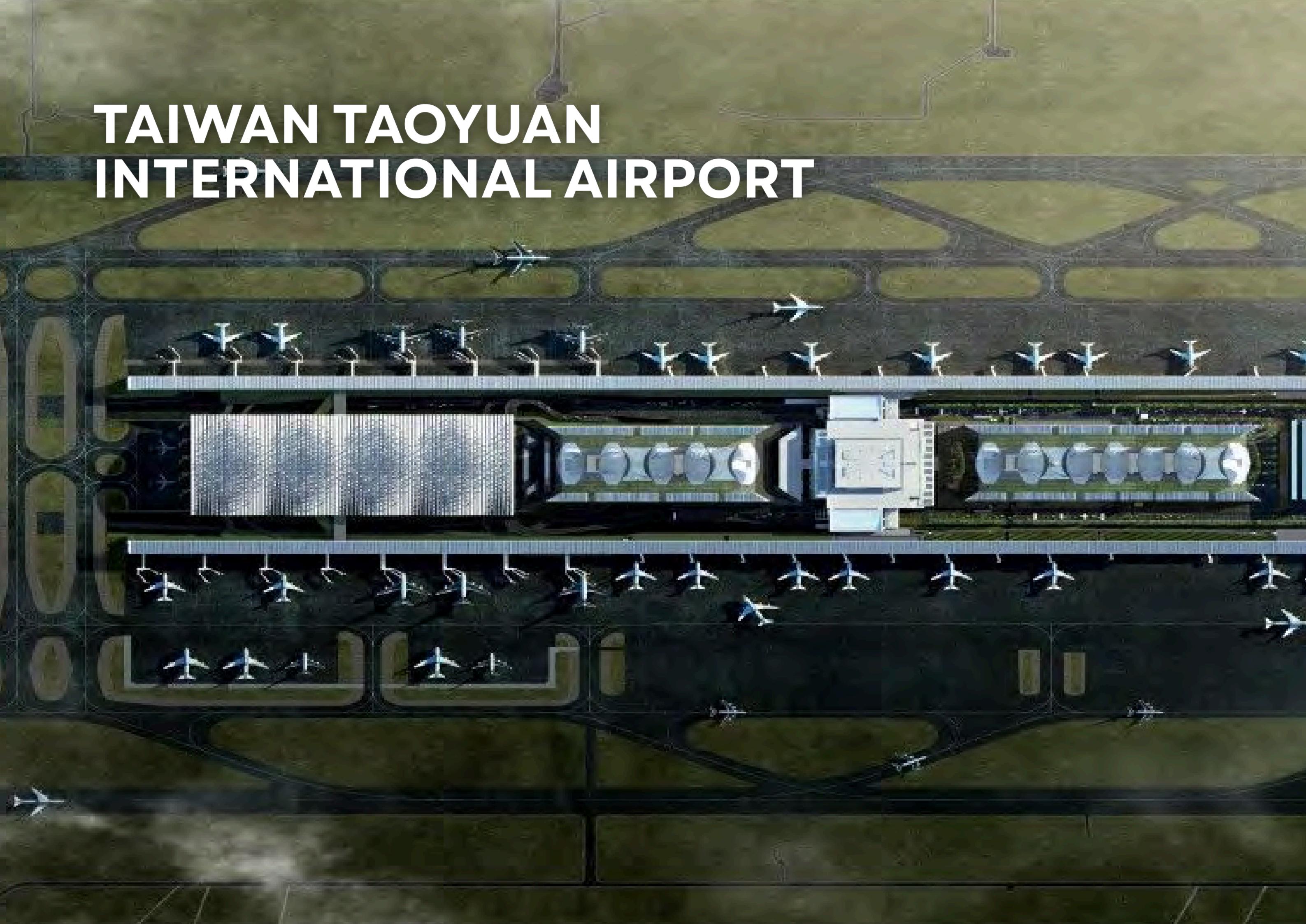
THREATS	
	<ol style="list-style-type: none">1. Competition from other regional hubs (Incheon, Hong Kong, Changi, Haneda)2. Global travel disruptions, fuel price volatility, and economic uncertainty3. Environmental and noise concerns around third runway and Aerotropolis plans4. Political tensions in the region may affect international airline strategies5. Risk of construction delays or cost overruns affecting timelines and investments

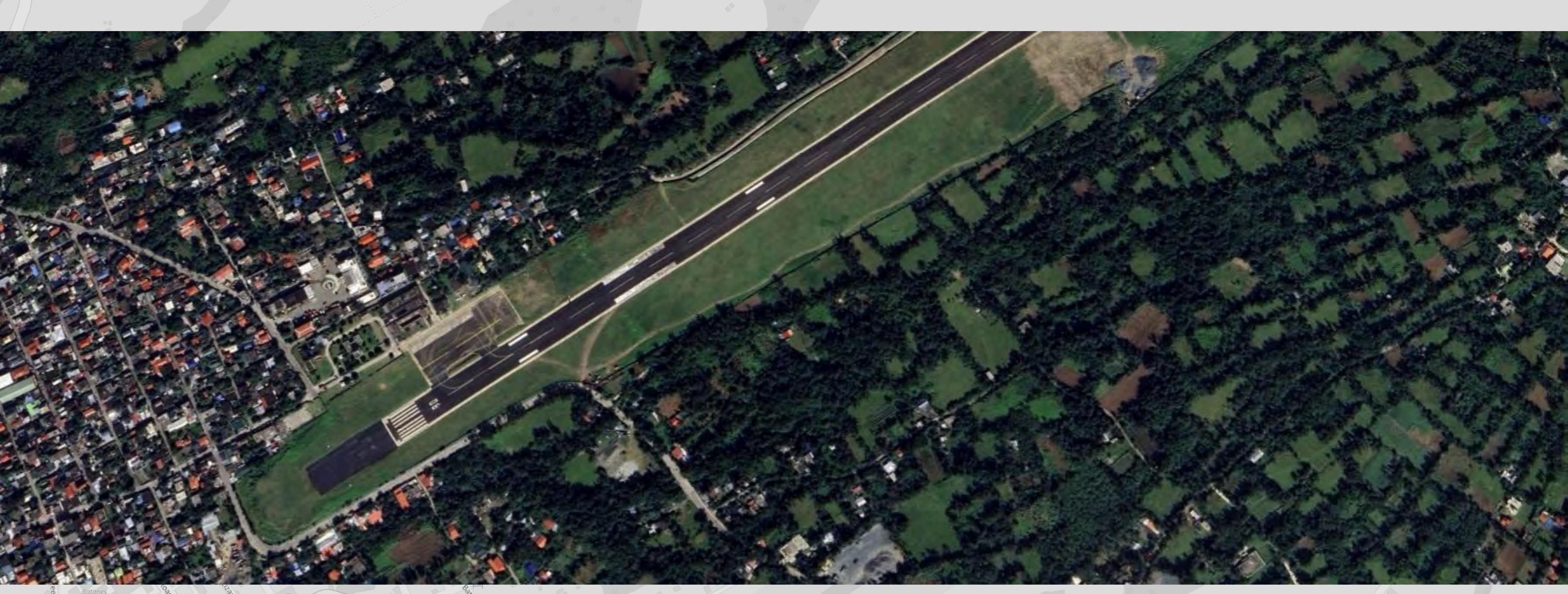
12. Plans and Perspectives

TAIWAN TAOYUAN INTERNATIONAL AIRPORT



TAIWAN TAOYUAN INTERNATIONAL AIRPORT





III. Comparative Analysis

Airports are vital gateways to regional development, economic growth, and global connectivity. In this comparative case study, five airports—Davao International Airport (DVO), Daniel Z. Romualdez Airport (TAC), Basco Airport (BSO), Narita International Airport (NRT), and Taiwan Taoyuan International Airport (TPE)—are examined to understand how their design, infrastructure, sustainability strategies, and regional roles reflect their unique contexts and ambitions.

Davao International Airport, located in Mindanao, serves as the principal aviation hub of southern Philippines. It accommodates both domestic and international flights, with a single 3,000-meter runway and an aging terminal facility. Though operationally effective, it faces pressing needs for modernization and expansion to keep pace with growing passenger demand. Daniel Z. Romualdez Airport in Tacloban, Eastern Visayas, is a Class 1 domestic airport that became nationally significant following the devastation of Typhoon Yolanda in 2013. Since then, the terminal has been reconstructed to incorporate resilient features and a contemporary coastal aesthetic, reflecting a more responsive approach to climate adaptation. Meanwhile, Basco Airport in Batanes serves as the region's sole aerial link, a lifeline for a remote island community. With its short 1,244-meter runway and modest terminal, it primarily supports small turboprop aircraft and essential inter-island connectivity.

In contrast, Narita International Airport in Japan and Taiwan Taoyuan International Airport represent two of East Asia's premier international hubs. Narita, located approximately 60 kilometers from Tokyo, handles millions of international passengers annually through three terminals and two major runways. Its Terminal 3, designed for low-cost carriers, is known for its minimalist, efficient layout, featuring an industrial aesthetic and intuitive wayfinding elements. However, Narita has long struggled with its remote location and historical land acquisition controversies. Still, its strategic expansion, including a third runway and terminal upgrades, aims to reinforce its role as a global transit hub. Taiwan's Taoyuan International Airport, about 40 kilometers from Taipei, stands as the country's largest and most ambitious airport. Its upcoming Terminal 3, designed by Rogers Stirk Harbour + Partners with Arup, introduces a fluid, sculptural architecture inspired by Taiwan's natural topography. The airport is central to the larger Taoyuan Aerotropolis—a massive urban and economic development plan integrating logistics, smart industry, and sustainability.

From a design and architectural standpoint, the differences between the domestic Philippine airports and the large East Asian hubs are stark. Davao and Tacloban airports favor utilitarian layouts that prioritize functionality over expressive form, though Tacloban's new terminal begins to reflect contextual sensitivity. Basco Airport maintains an honest, vernacular aesthetic, drawing from local Ivatan architecture and focusing on durability against harsh weather. On the other hand, Narita and Taoyuan embrace architectural narratives. Narita's Terminal 3 is minimalist yet playful, using colored floor markings to guide passengers efficiently. Taoyuan's Terminal 3 exemplifies world-class terminal design—merging structural elegance with spatial clarity, passive lighting strategies, and expansive volumes.

In terms of environmental performance, the international hubs clearly lead. Basco and Tacloban operate on low energy by scale, but lack formal sustainability frameworks.

Davao has minimal documented efforts toward environmental integration. In contrast, Narita incorporates solar-powered cargo buildings and runway efficiency improvements. Taoyuan Airport has achieved Airport Carbon Accreditation Level 4, with its upcoming terminal built to green building standards. The Aerotropolis plan furthers this commitment with low-emission zones and a focus on renewable energy, smart infrastructure, and transit-oriented development.

Finally, each airport faces distinct challenges and opportunities. Davao Airport's strategic location makes it a key player in Mindanao's development, yet it struggles with limited capacity. Tacloban, now a model for resilient airport recovery, still deals with geographic vulnerability and lacks international service. Basco's isolation is both a strength in cultural preservation and a limitation for scale. Narita, though globally significant, must compete with the more centrally located Haneda Airport while navigating expansion resistance. Taoyuan, in contrast, is positioned for transformative growth—its expansion, smart infrastructure, and integration with national economic strategy making it a model for 21st-century airport-led development.

In conclusion, these five airports illustrate the diverse roles, scales, and ambitions of airport infrastructure. From rural airstrips ensuring community access to world-class transport hubs driving national economies, airports are more than just points of arrival and departure—they are reflections of place, policy, and possibility. The comparative study underscores how scale, geography, design, and vision can shape the future of air travel and regional development.

IV. References

Narita International Airport Terminal 3 / Nikken Sekkei + Ryohin Keikaku + PARTY. (2015,

April

17).

ArchDaily.

https://www.archdaily.com/620345/narita-international-airport-terminal-3-nikken-sekkei-ryohin-keikaku-party?ad_medium=gallery

Narita International Airport Floor Guide. (2024). NARITA INTERNATIONAL AIRPORT

OFFICIAL WEBSITE. https://www.narita-airport.jp/en/discover/official_guide/

ism." *Geoforum*, 55, 87–99. <https://doi.org/10.1016/j.geoforum.2014.05.006>

The Civil Aviation Authority of the Philippines (CAAP). (N.d.). Historical Background.

<https://caap.gov.ph/historical-background/>

Hengchun Airport. (2023). *Frist Floor Plans.* Hca.gov.tw;

<https://www.hca.gov.tw/english/AIRPORTINFO/LAYOUTOFAIRPORT.htm>