



Expansion of Hong Kong International Airport into a Three-Runway System

12th Professional Liaison Group Meeting

17 November 2023



Agenda

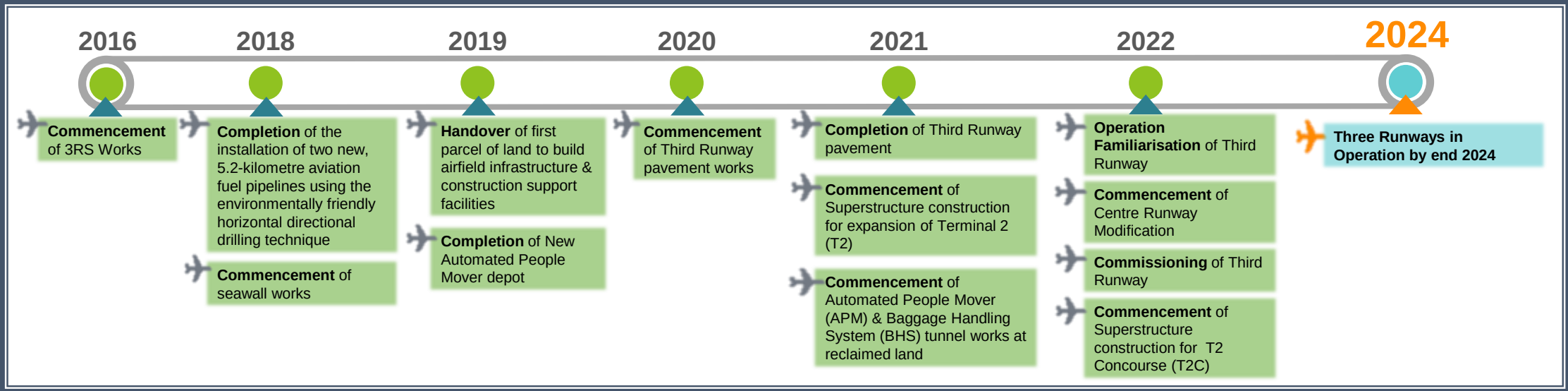
1. Update on 3RS Project and Other Airport Development
2. EM&A Updates
3. Marine Ecology and Fisheries Enhancement Strategy
4. Carbon Management
5. Climate Adaptation and Resilience
6. Other Updates



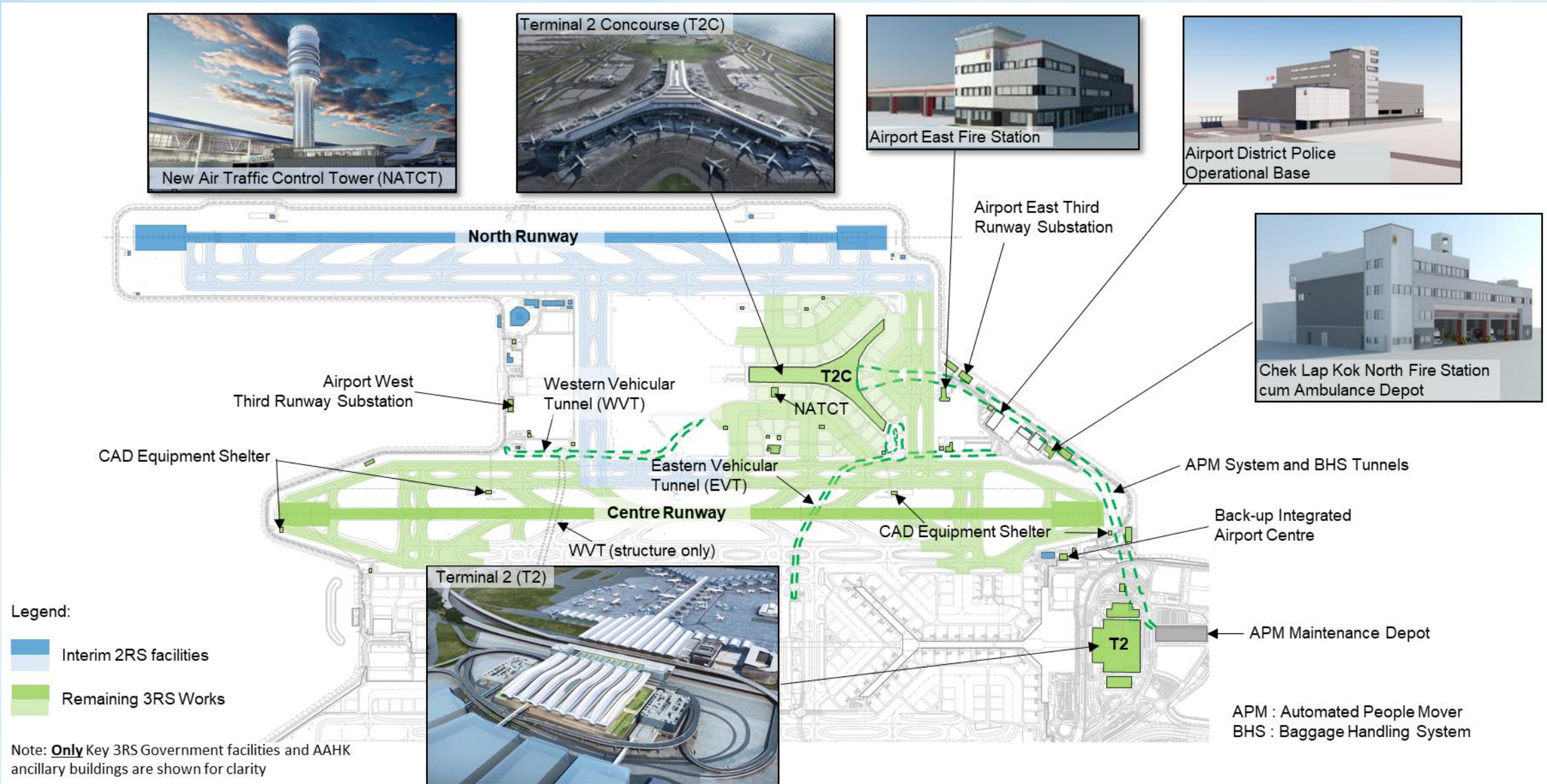
Update on 3RS Project (till end October 2023)

3RS Project Overview

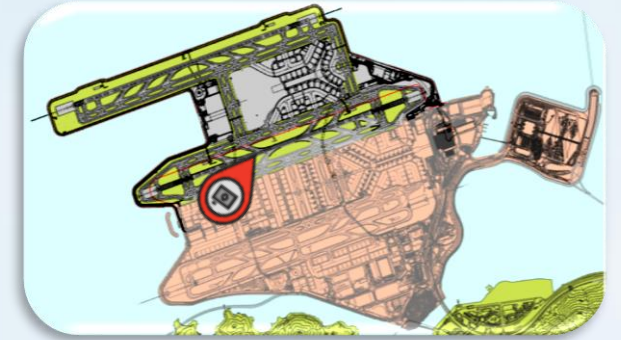
North Runway and Reclamation have been completed



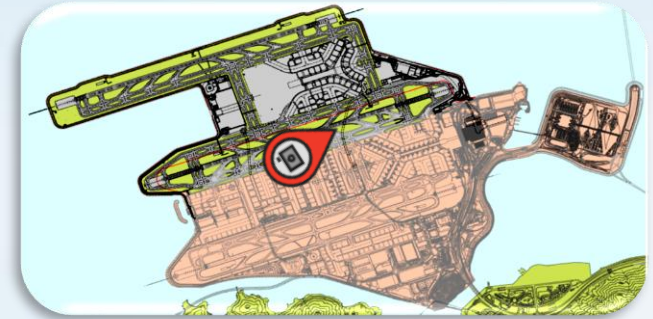
On-going Works for 3RS Project



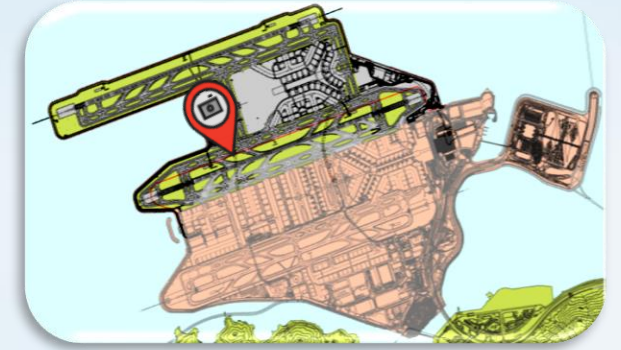
Centre Runway Pavement Works and Airfield Ground Lighting (AGL) Installation Works



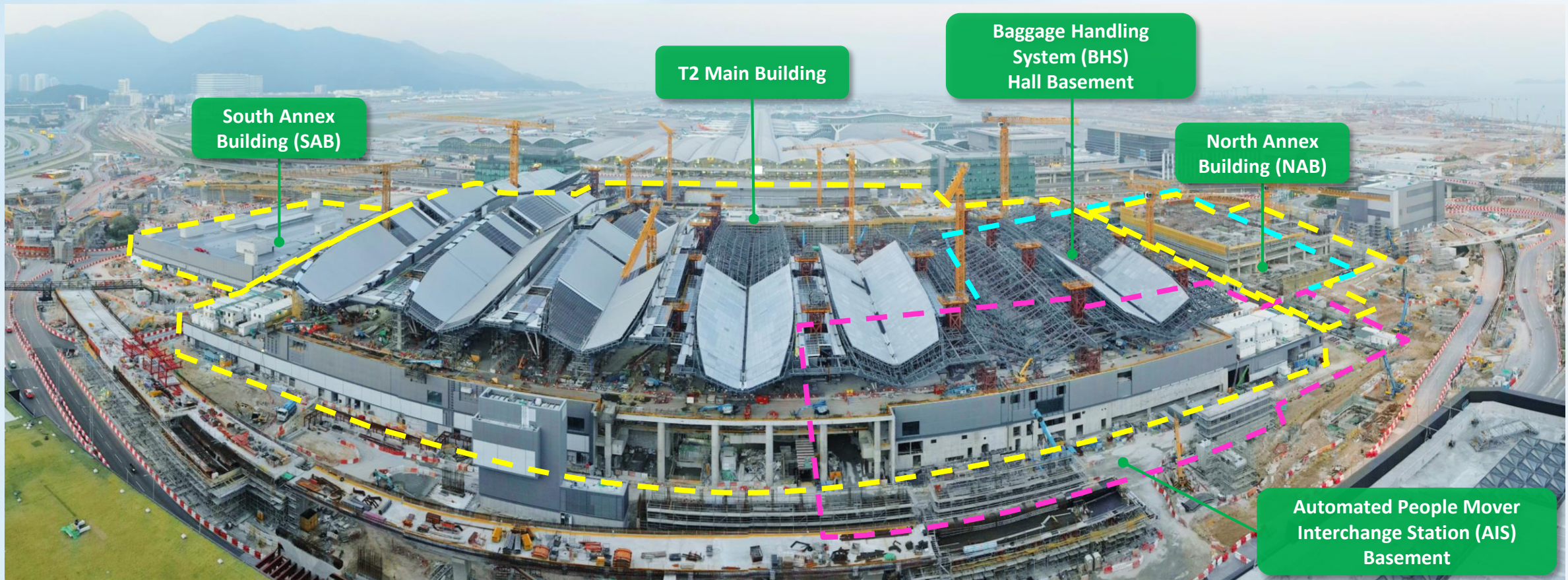
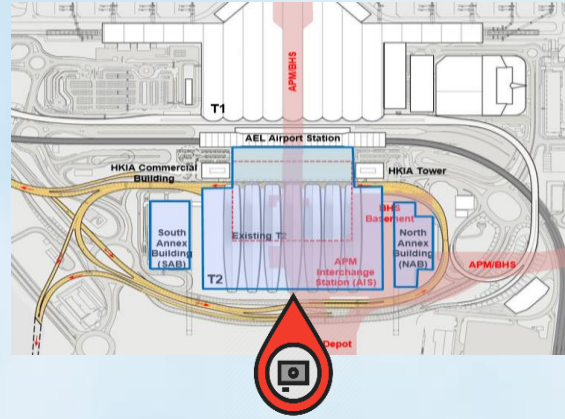
Eastern Vehicular Tunnel



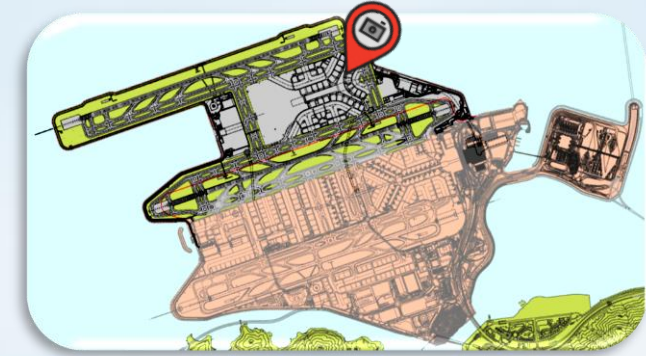
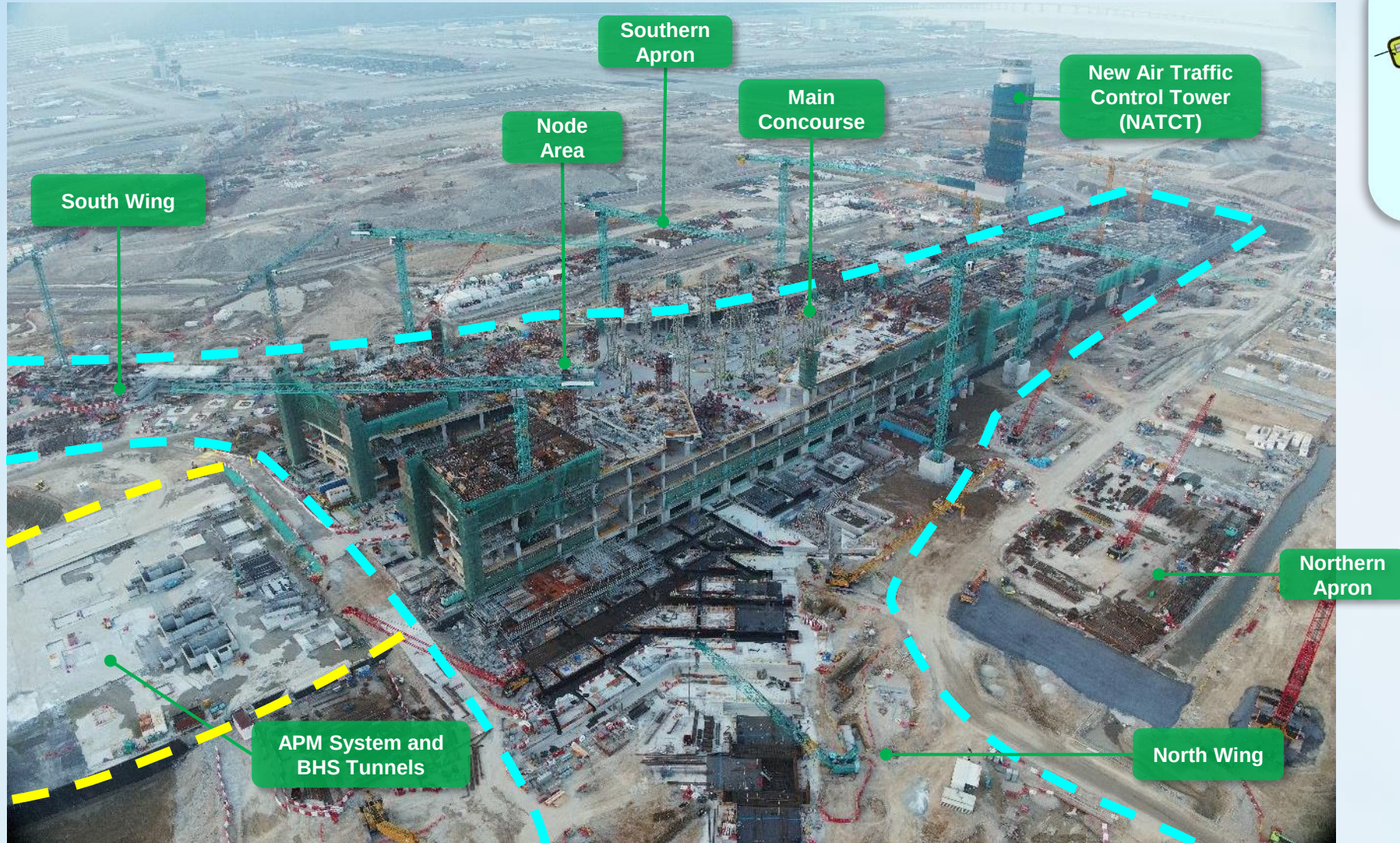
Western Vehicular Tunnel



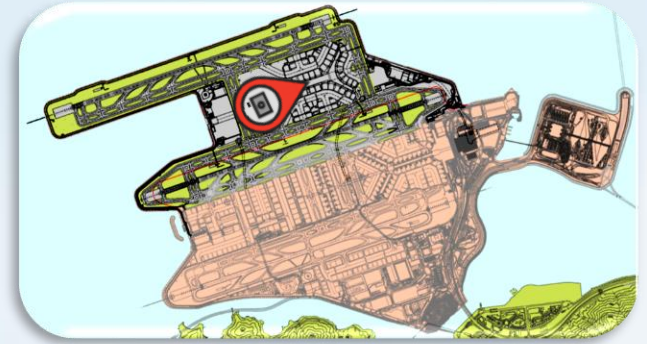
T2 Expansion



Terminal 2 Concourse (T2C)



T2C – Closer View at Node Area



New Air Traffic Control Tower (NATCT)

Superstructure works substantially completed

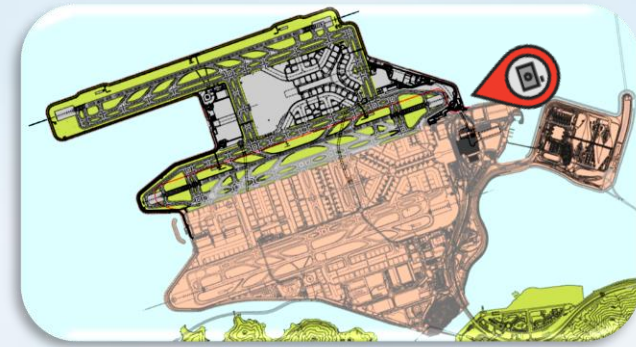


Tower Cab

Façade works and installation of glass panels substantially completed, ABWF and E&M works in progress

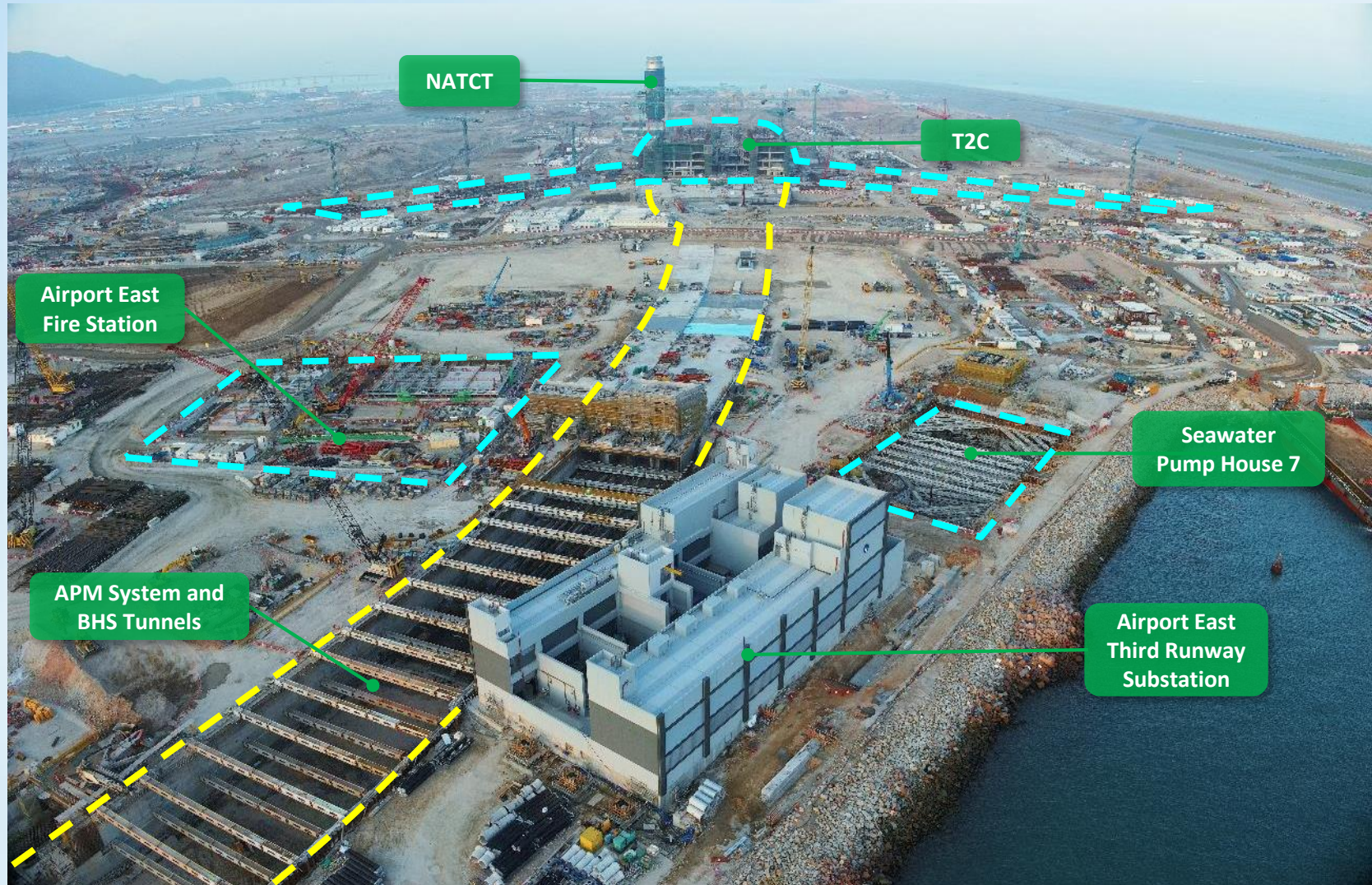
Tower Core and Podium Building
Façade, ABWF and E&M works in progress

13



25⁺
A NEW
TAKE-OFF
讓香港再騰飛

APM/BHS Tunnels (2)



3RS Progress Video



Hong Kong International Airport

THREE-RUNWAY SYSTEM PROJECT PROGRESS

Oct 2023



Airport Tung Chung Link

Airport Tung Chung Link

- Expands autonomous transportation service to Tung Chung
- 8-10 mins journey time between Tung Chung and SKYCITY / Hong Kong Port
- EIA Report approved and Environmental Permit issued
- Roadworks and sewerage works to be gazetted early next year



Integrates with Airportcity Link to form an autonomous transportation system





EM&A Updates

EM&A Monitoring – Air Quality & Noise (Apr-Oct 2023)

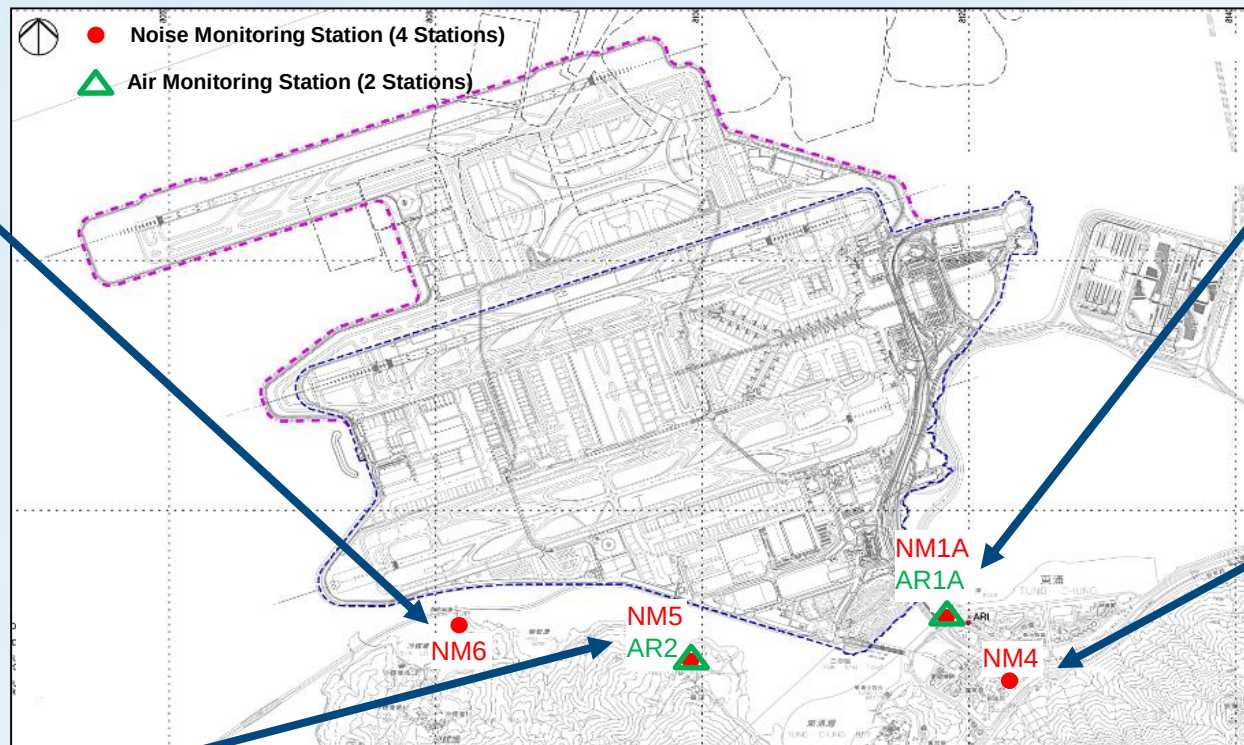
- Air Quality Monitoring Events (2 stations): 222
- Noise Monitoring Events (4 stations): 120
- **No exceedance** of project-related Action / Limit Level was recorded



Noise Monitoring Station (NM6)



Air Quality Monitoring Station (AR2)
Noise Monitoring Station (NM5)



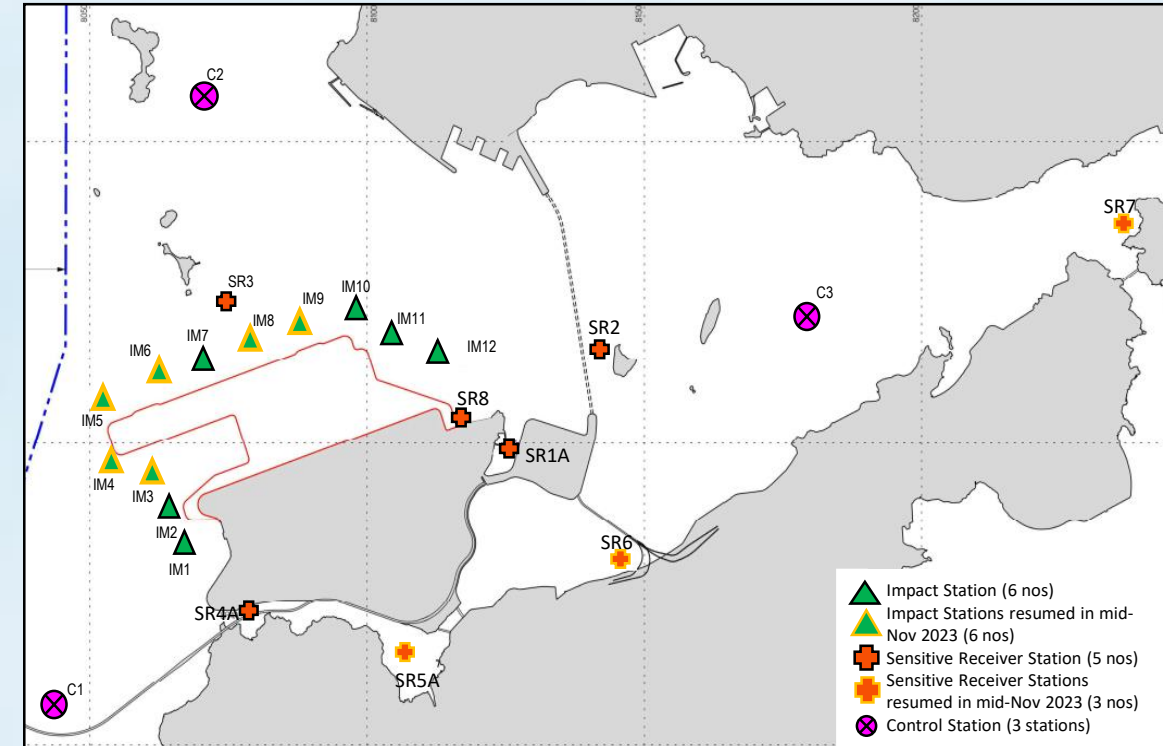
Air Quality Monitoring Station (AR1)
Noise Monitoring Station (NM1A)



Noise Monitoring Station (NM4)

EM&A Monitoring – Water Quality (Apr-Oct 2023)

- Water Quality Monitoring Events (14 stations): 90
- **No exceedance** of project-related Action / Limit Level was recorded
- 3RS land formation works including seawall construction and all marine filling works have been completed – impact water quality monitoring discontinued in end-Oct 2023
- 4 weeks post-construction water quality monitoring kick-started in mid-Nov 2023



EM&A Implementation (Apr-Oct 2023) (1)

Air Quality Mitigation Measures



Dusty material surfaces are sprayed with cement mortar to reduce fugitive dust emission

Curtains are provided at dusty material storage areas to control fugitive dust emission



Regular water spraying to reduce fugitive dust emission

Noise Mitigation Measures



Noise insulation materials were erected to reduce noise nuisance



NRMM labels are provided on PMEs to remind frontline staff regarding restricted hours for the equipment

Water Quality Mitigation Measures



Bunds were provided along temporary drains to prevent seepage of surface runoff into diversion channel

Refresher Training for staff



EM&A Implementation (Apr-Oct 2023) (2)

Reuse of Excavated Materials

Asphalt and armour rocks generated from 2RS excavation works and seawall re-construction were reused

- Asphalt – total ~**147,000 tons** were used for paving main haul roads in 3RS project
 - Surplus asphalt were transferred to EPD North East New Territories (NENT) Landfill for other projects reuse
- Armour rocks – total ~**61,000 tons** were used
 - ~43,000 tons for seawall construction works
 - ~18,000 tons for land formation works as transition layer



Excavated materials are segregated and stockpiled for reuse



Reuse of asphalt for paving main haul roads



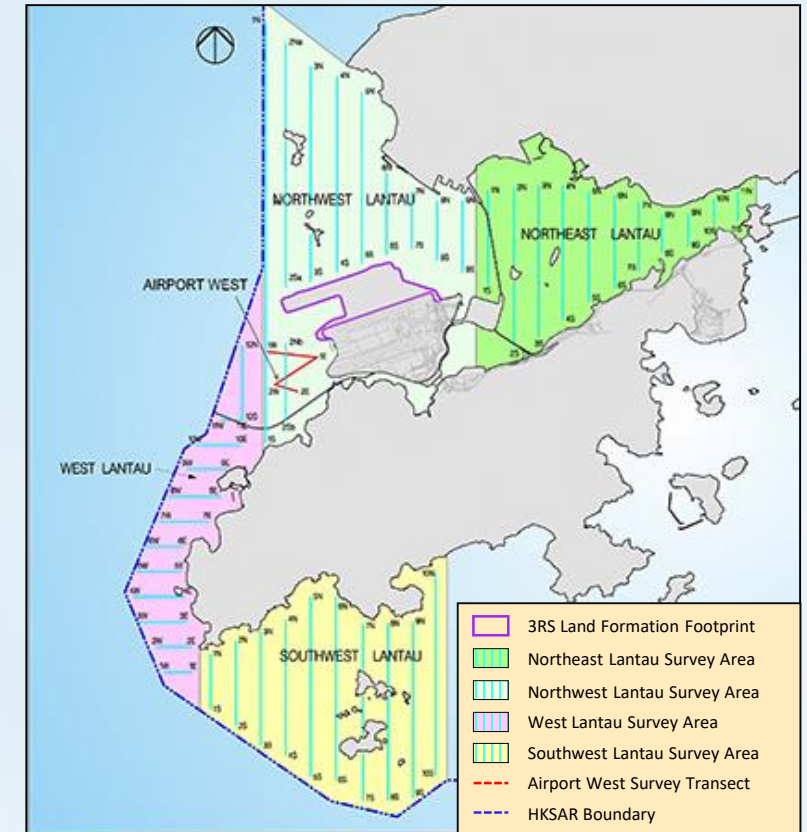
Reuse of armour rocks for seawall construction



Reuse of armour rocks for land formation works

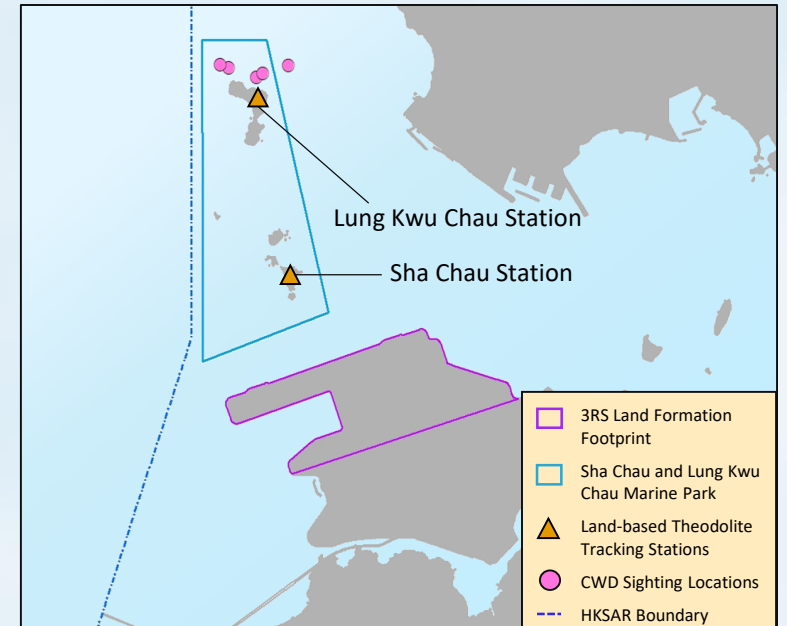
CWD Monitoring Results – Vessel Line Transect Survey (Jan-Oct 2023)

- 20 rounds of vessel line transect surveys, covering a total distance of approx 4,490 km
- 134 groups of CWD with 463 dolphins sighted
- Around 70% of CWD sightings were recorded in WL survey area followed by SWL and NWL survey areas
- 26 sightings with mother-and-unspotted calf and/or mother-and-unspotted juvenile pair(s) observed
- Average group size was 3.46 dolphins, ranging from 1 to 15 dolphins



CWD Monitoring Result – Land-based Theodolite Tracking (Jan-Oct 2023)

- 20 days (120 hours of on-effort) Land-based Theodolite Tracking were carried out on Lung Kwu Chau (LKC) and Sha Chau (SC) stations
- 5 CWD groups were tracked from LKC station, with group size ranged 1-4 dolphins
- 4 sightings were recorded inside the Sha Chau and Lung Kwu Chau Marine Park
- No CWD groups were tracked from SC station
- Foraging and traveling behaviour were observed



CWD detections recorded from Jan-Oct 2023



CWD foraging

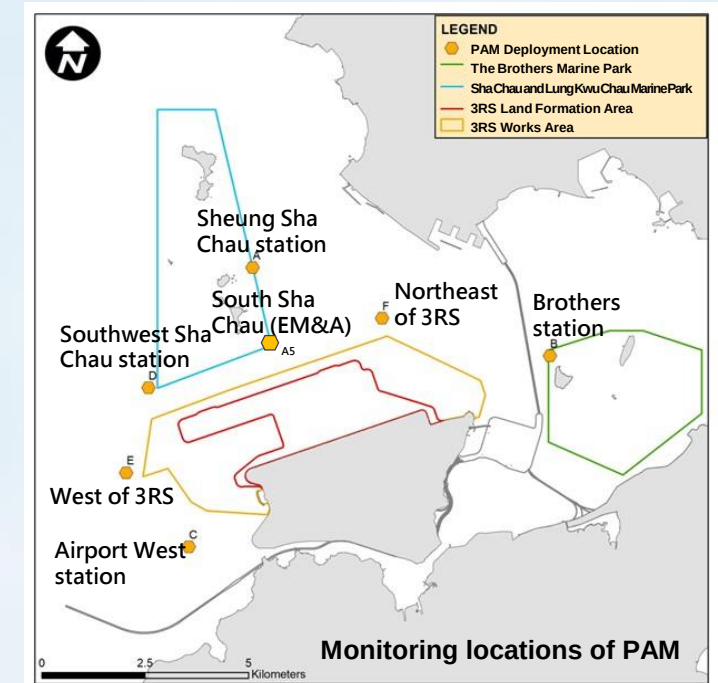


CWDs traveling

CWD Monitoring Result – Passive Acoustic Monitoring (Jan-Aug 2023)

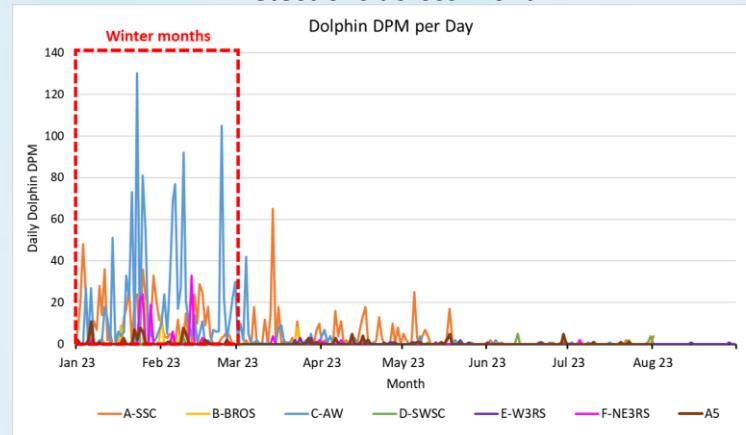


Retrieval of the underwater PAM device

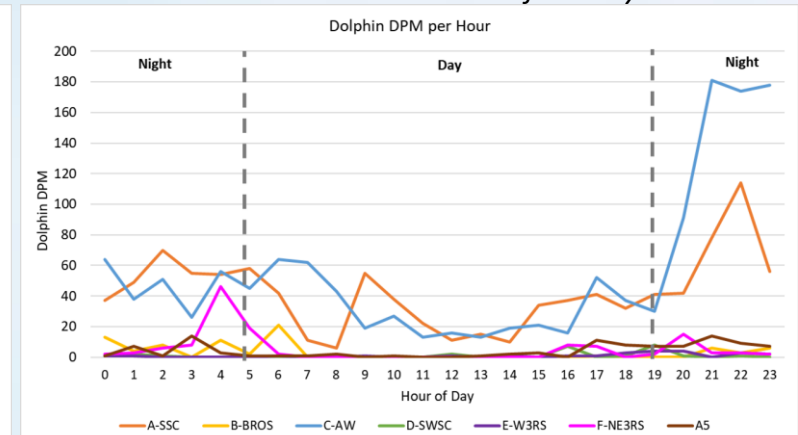


- 7 monitoring stations with preliminary results
- Detected CWDs at all locations
- Higher detections at Sheung Sha Chau station & Airport West station – 45% & 44% logged days respectively
- Higher detections during Winter months, i.e. Jan & Feb 2023
- Slightly more CWD detections recorded during night-time than daytime across all stations, with more apparent diel pattern observed at Airport West station

Detections across month



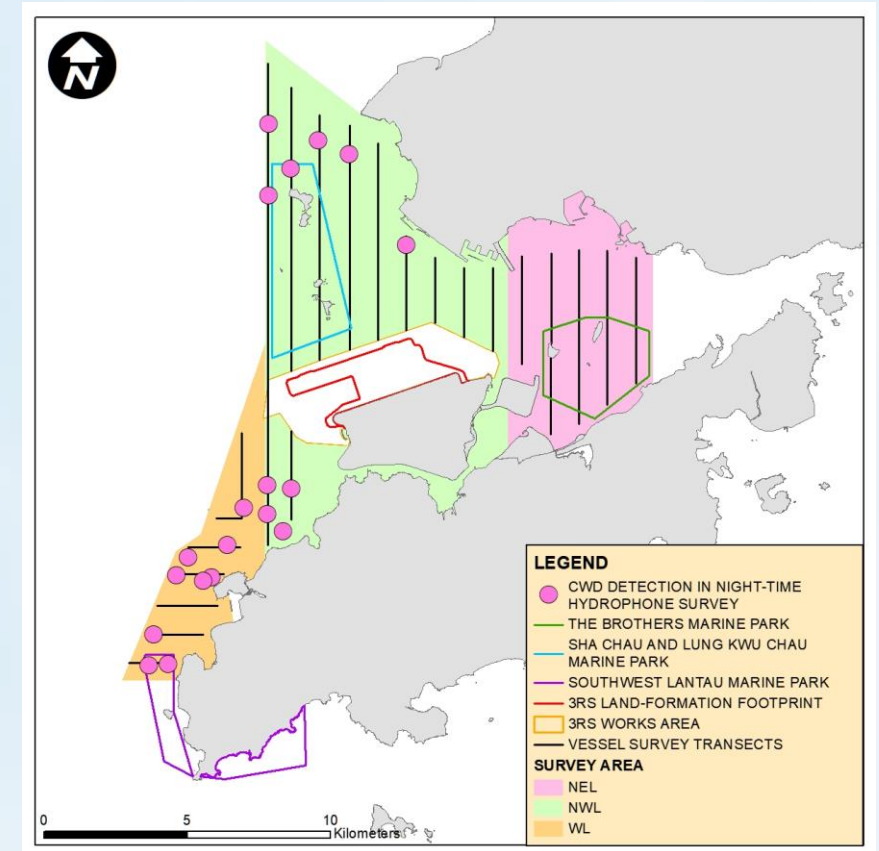
Detections across hour of the day



CWD Monitoring Result – Night-time Hydrophone Survey (Jan-Oct 2023)

Beyond EM&A requirements

- 19 on-effort CWD detections
- 10 detections at NWL – recorded at waters around Lung Kwu Chau and off Sham Wat
- 9 detections at WL – mostly recorded at waters off Tai O and Yi O
- Results indicated CWDs were also using NWL and WL waters during night-time with the distribution of detections similar to sightings distribution recorded by 3RS daytime CWD vessel line transect monitoring

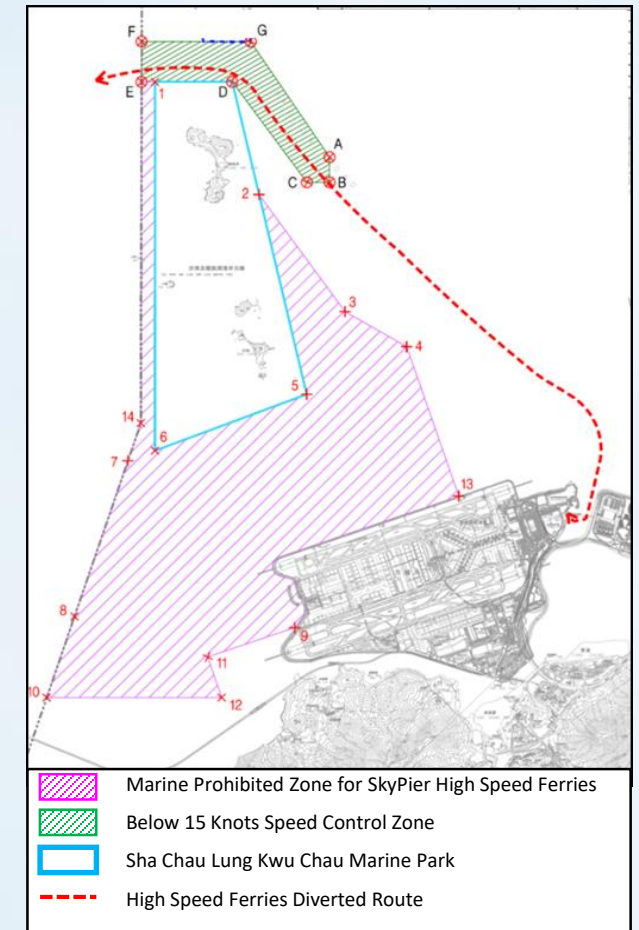


CWD detections recorded from Jan-Oct 2023

Implementation of Marine Traffic Route & Management Plan for High-Speed Ferries of SkyPier (SkyPier Plan) (Apr-Oct 2023)

	Apr – Oct 2023
Total no. of SkyPier High Speed Ferries (HSF) trips	8,511
Maximum daily no. of SkyPier HSF movement*	54
Total no. of diverted SkyPier HSF trips	178
Diverted SkyPier HSF trips with average speed within 15 knots within the Speed Control Zone (SCZ)	100%

**Note: within the maximum daily cap of 125 movements*



Complaints and Enquiries Handling

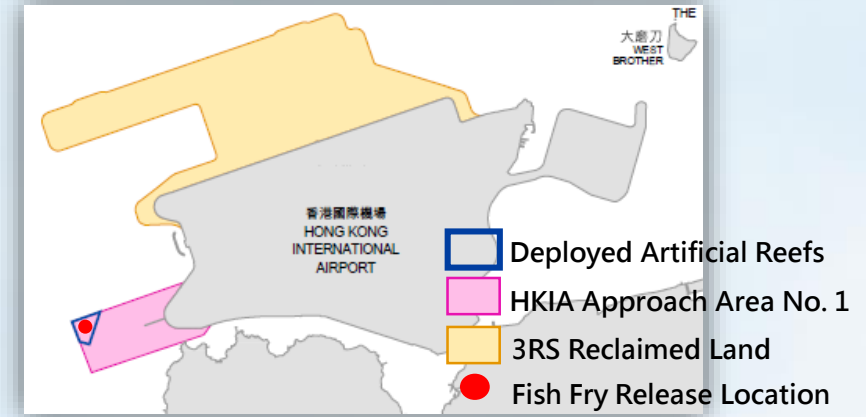
	2015 (From 28 Dec)	2016	2017	2018	2019	2020	2021	2022	2023 (Jan-Oct)
Complaint	0	1	7	8	1	10	21	11	6
Enquiry	0	25	16	19	20	9	13	2	7
Total	0	26	23	27	21	19	34	13	13



Marine Ecology and Fisheries Enhancement Strategy

Fish Fry Release Pilot Study – Phase 2

- **2 rounds** of release conducted in May and September 2023
 - Total **~20,000 fish fry released** at the pilot Artificial Reef site in Hong Kong International Airport Approach Area (HKIAAA) No. 1
 - **~1 million shrimp fry released** at Sham Wat Wan and Sha Lo Wan of Lantau
- 6-month post-release monitoring – acoustic monitoring, remote underwater video and underwater visual census



Yellowfin
Seabream



Green
Grouper



White Flower Croaker



Black Seabream



Shrimp Fry



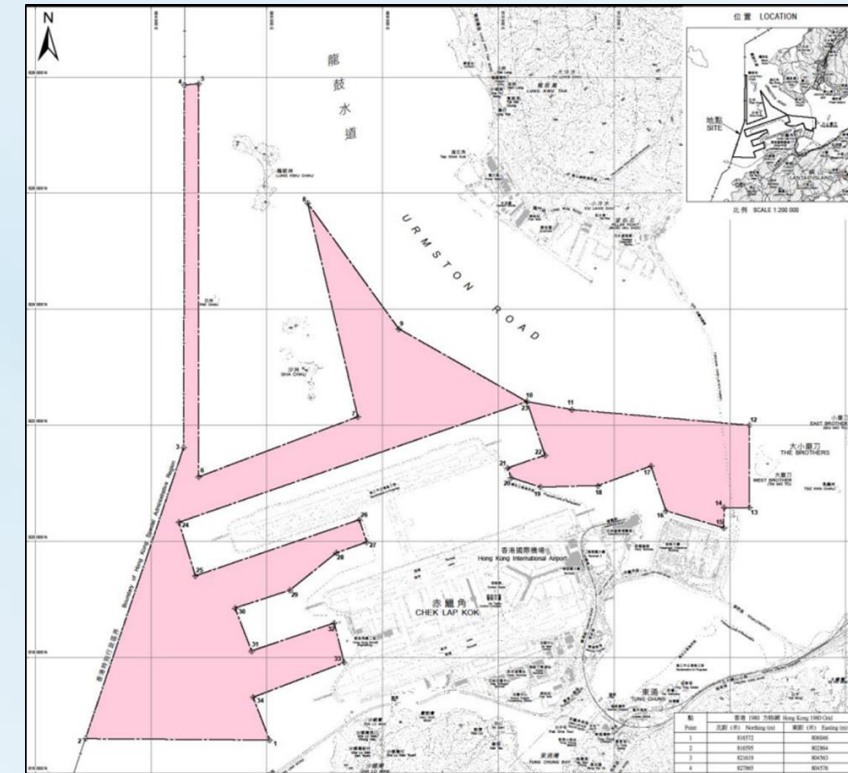
Fish Fry Release Pilot Study – Phase 2 (video)



Fish Fry and Shrimp Fry Release

Proposed North Lantau Marine Park (NLMP)

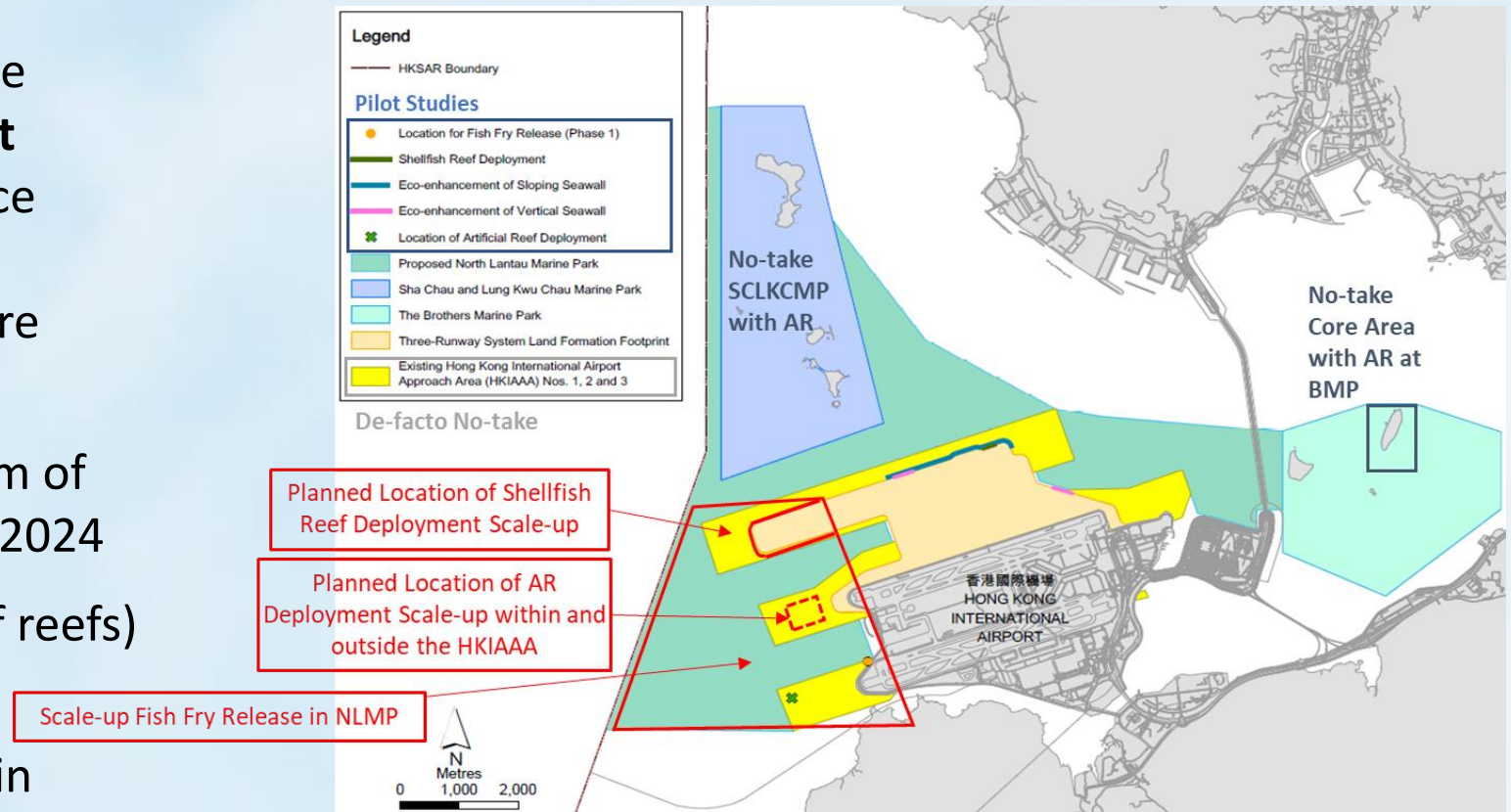
- AFCD has sought ExCo's approval on the draft map for the proposed NLMP on 5 Sep 2023
- Gazette notice on the approved map published by AFCD on 29 Sep 2023
- AFCD proceeding with the statutory process and aims to complete the NLMP designation in 2024 to tie in with 3RS commissioning



建議中的北大嶼海岸公園未定案地圖
DRAFT MAP OF THE PROPOSED NORTH LANTAU MARINE PARK

Scale up of Marine Enhancement Measures

- **3 enhancement initiatives** are being scaled up in the **Airport West** area, seeking to enhance natural habitats and add biodiversity value to the future NLMP area:
- **Shellfish Reefs** (along ~1 km of seawall) to be deployed in 2024
- **Artificial Reefs** (~400 m³ of reefs) to be deployed in 2024
- **Fish Fry Releases** planned in 2024 and beyond 2025



Marine Ecology Enhancement Fund (MEEF)

- A total of **37 projects** have been approved with a total funding amount of approximately **HK\$40.19 million since 2017**

No. of Funded Projects / Total Funded Amount	Approved MEEF projects in Year 2023/24 (July 2023 – June 2024)
8 Projects ~ HK\$5.43M	- Sea turtle as an ocean health indicator of marine debris impact in the Hong Kong-Macau Greater Bay Area - Save Our Shells: Repurposing Shells to Reduce Landfill Waste and Restore Marine Habitats - Assessing Ecological and Human Health Risks of Weathered Microplastics with Coexisting Organic Pollutants in Marine Water in Hong Kong - Assessing the Ecological Impacts of Anthropogenic Activities on the Coastal Wetlands in Hong Kong from the Optical Properties of Sedimentary Dissolved Organic Matter - Smart Fish For Oceanic Microplastics Degradation In The Coastal Area - Conservation of ardeids by understanding their foraging ecology through dietary investigation - Unearth the forgotten cetaceans in Hong Kong-Macau Greater Bay Area - Conservation Ecology of Chinese White Dolphins across the Pearl River Estuary – Phase 4 (FINAL): Validation, Synthesis and Recommendations*



Virtopsy of deceased sea turtles



Smart Fish



3D surface scanning of cetacean specimens

Fisheries Enhancement Fund (FEF)

- A total of **22 projects** have been approved with a total funding amount of approximately **HK\$41.29 million since 2017**

No. of Funded Projects / Total Funded Amount	Approved FEF projects in Year 2023/24 (July 2023 – June 2024)
3 Projects ~ HK\$5.34M	- Tai O Fishing Village Tourism Project - Fishermen Fisheries In-depth Tour Project* - Establishment and Application of Specific Pathogen Free Grouper Fry Culture Techniques in Hong Kong SAR



Tai O Fishing Village Tour



Fishermen Fisheries In-depth Tour

* 2nd Phase of Project



各自独立的循环水养殖系统

Pathogen Free Grouper Fry Culture



Carbon Management

HKIA Carbon Capacity Building Programme

- 3-year programme tailoring to the needs of Business Partners
- Partnership with the Business Environment Council (BEC)
- At least 5 events per year
- 9 events held to date, including:
 - Training on Carbon Audit and Reporting
 - Introductory Training on Science-based targets
 - Value Chain Management and Scope 3 Mapping
 - Climate Change and Impacts to Aviation
 - Communication and Engagement on Carbon Policy/Strategy



Programme kick-started in Q1 2022



Climate Change and Impacts to Aviation



Introductory Training on Science-based targets

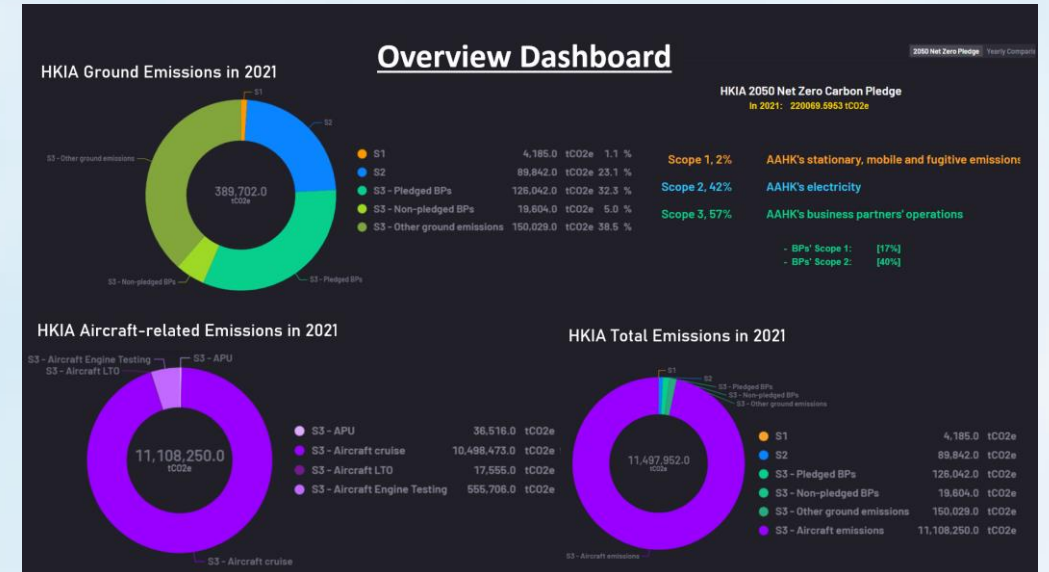
Carbon Management Senior Executive Roundtable Luncheon

- Roundtable with senior management representatives from pledged BPs in June 2023
- Theme: The Importance of Green Recovery for the Aviation Sector
- Guest speaker from the HKSAR: Mr Tse Chin-wan, BBS, JP, Secretary for Environment and Ecology



Carbon Management System

- To replace the existing Carbon Audit Software launched in 2010
- AA and BP's to record & track individual and collective carbon performance
- Provides dashboards and graphs to view the organisation's performance and track against own trajectory
- BPs can generate own reports on specific time periods and selected data



ACI's Airport Carbon Accreditation

HKIA was upgraded from Level 3 'Optimisation' to **Level 4 'Transformation'**, recognises that:

- The **HKIA 2050 Net Zero Carbon Pledge** is aligned with global climate goals to reduce absolute emissions
- AA has expanded the carbon footprint reporting to **cover all significant operational Scope 3 emission sources**
- A comprehensive **Carbon Management Plan** was developed to demonstrate our pathway to achieving the target
- A **Stakeholder Engagement Plan** is in place for continuous collaboration with business partners and third parties to accelerate carbon reduction across HKIA





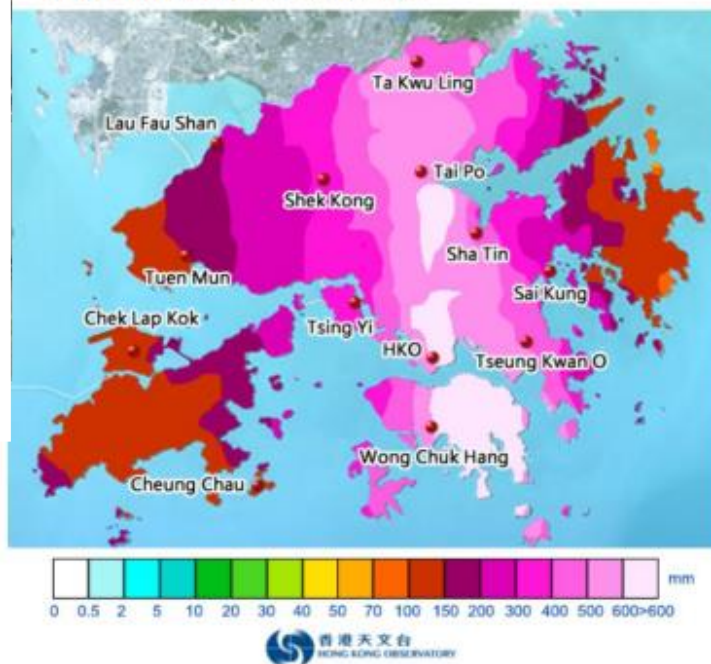
Climate Adaptation & Resilience

Recent Extreme Weather Events in HK

Black rainstorm (7 Sep – 8 Sep 2023)

- Record-breaking rainfall since 1884
- More than 600mm of rainfall was recorded, amounting to a quarter of the city's total annual level – 1 in 500 year event
- Flooded roads, shopping malls and railway stations
- No flooding at the construction sites, with only manageable localized flooding reported at HKIA

Hong Kong 24-hour rainfall received at 10:00 HKT, September 8, 2023.



Typhoon Koinu (8 Oct – 9 Oct)

- Typhoon signal 9 was issued
- Limited damage was reported at HKIA, and flight operations gradually resumed
- Thousands of stranded passengers after suspension of open-air rail services and buses
- Localized flooding at construction sites

Hong Kong 24-hour rainfall received at 09:15 HKT, October 9, 2023.



Climate Projections for Hong Kong under RCP8.5

Temperature increase



Climate projections	2030	2050	2100
Annual temperate increase (°C relative to 1986-2005)	1.4°C	2.4°C	5.5°C

Typhoon and storm surge



Climate projections	1986-2005	2030	2050	2100
Frequency	~6 affecting HK each year	-5.5%	-9%	-17.7%
Intensity (10-min wind-speed)	--	+3.4%	+5.4%	+10.5%
Frequency of Cat 4-5 typhoons	--	+7.7%	+12.5%	+24.5%
Typhoons-associated precipitation	--	+9.8%	+15.9%	+31.2%

Extreme rainfall and related flooding



Climate projections	1986-2005	2030	2050	2100
Annual number of extreme rainfall days (daily rainfall $\geq$ 100mm)	4.2	6.2	7.6	7.4
Annual maximum daily rainfall	221m	359mm	413mm	534mm

Drainage Modelling undertaken under Climate Resilience Study

- Assessed the network performance of existing and planned drainage network
- In addition to the projected sea level rise, data of extreme tidal levels and wave overtopping rates were adopted from seawall study from modelled typhoon scenarios

Timeframe	Data Inputs	Modelled Scenarios
2030	Tide	1) Historic Typhoon Hato; 2) constant at max. tide level
	Rainfall	Constant hourly rainfall of ~90mm for 24 hours, i.e. daily rainfall of ~2100mm
	Overtopping Rate	Synthetic Typhoon Hato
2050	Tide	1) Historic Typhoon Hato; 2) constant at max. tide level
	Rainfall	Constant hourly rainfall of ~100mm for 24 hours, i.e. daily rainfall of ~2400mm
	Overtopping Rate	Synthetic Typhoon Hato
2100	Tide	Historic Typhoon Hato
	Rainfall	Constant hourly rainfall of ~130mm for 24 hours, i.e. daily rainfall of ~3200mm
	Overtopping Rate	Synthetic Typhoon Hato



Other Updates

Green Airport Design and Construction



Third Runway and Associated Works

- **Excellent** rating (CEEQUAL's Sustainability Performance Assessment for Interim Client and Design Award, 2020)
- **Excellent** rating of 86.3% (CEEQUAL's Sustainability Performance Assessment for Whole Team Award 2023 with award received in October 2023)



Sky Bridge connecting Terminal 1 with North Satellite Concourse

- **Gold** rating (BEAM Plus Provisional Assessment 2020)
- **Platinum** rating (BEAM Plus Final Assessment 2023)



AsiaWorld-Expo Phase 2

- **Gold** rating (BEAM Plus Provisional Assessment 2023)
- Final PA result to be confirmed

Sustainability Report 2022/23

- Released in August 2023
- Five key focus areas – Airport City, World-class Gateway, Greenest Airport, Community and Our People
- 2nd Sustainable Finance Transactions Annual Report and 3rd Taskforce on Climate-related Financial Disclosures (TCFD) Statement published



https://www.hongkongairport.com/iwov-resources/file/sustainability/sustainability-report/AA_Sustainability_Report_202223_ENG.pdf

Corporate Environmental Policy Statement

- Policy updated in July 2023 to strengthen AAHK's commitments on climate-related issues and circularity
- Available on AAHK's corporate website



AAHK's ESG Rating – Sustainalytics

- Received a "**Low Risk**" rating with a score of 10.3 in Nov 2023 – improvement from 10.8 in 2022
- Ranked in **Top 4 in the airport sector** (out of the 86 evaluated airports – vs 5/82 in 2022)
- Maintained **Top 3 percentile globally**





Thank You