



# LEGCO PANEL ON ECONOMIC SERVICES

## 立法局經濟事務委員會

**26 February 2007**

**2007年2月26日**

**Replacement ATC System & Integrated  
CAD Building  
at CLK**

**更換民航處航空交通管制系統及  
在機場島興建民航處新總部**



# Proposal 建議

- To replace the existing air traffic control system 更換現有空管系統  
and 及
- To develop a new integrated CAD building at CLK to house the new ATC system and all CAD functional divisions 在赤鱸角發展一所民航處綜合大樓以容納新空管中心及各分部



爲何需要新空管系統及綜合大樓  
**Why do we need the new system  
and  
an integrated CAD Building?**





## Basic Reasons 基本原因

- Traffic growth and expansion of local airlines 航空交通及本地航空公司增長
- Ageing ATC facilities 空管設施老化
- Scattered CAD Offices 部門辦公室分散不同地點

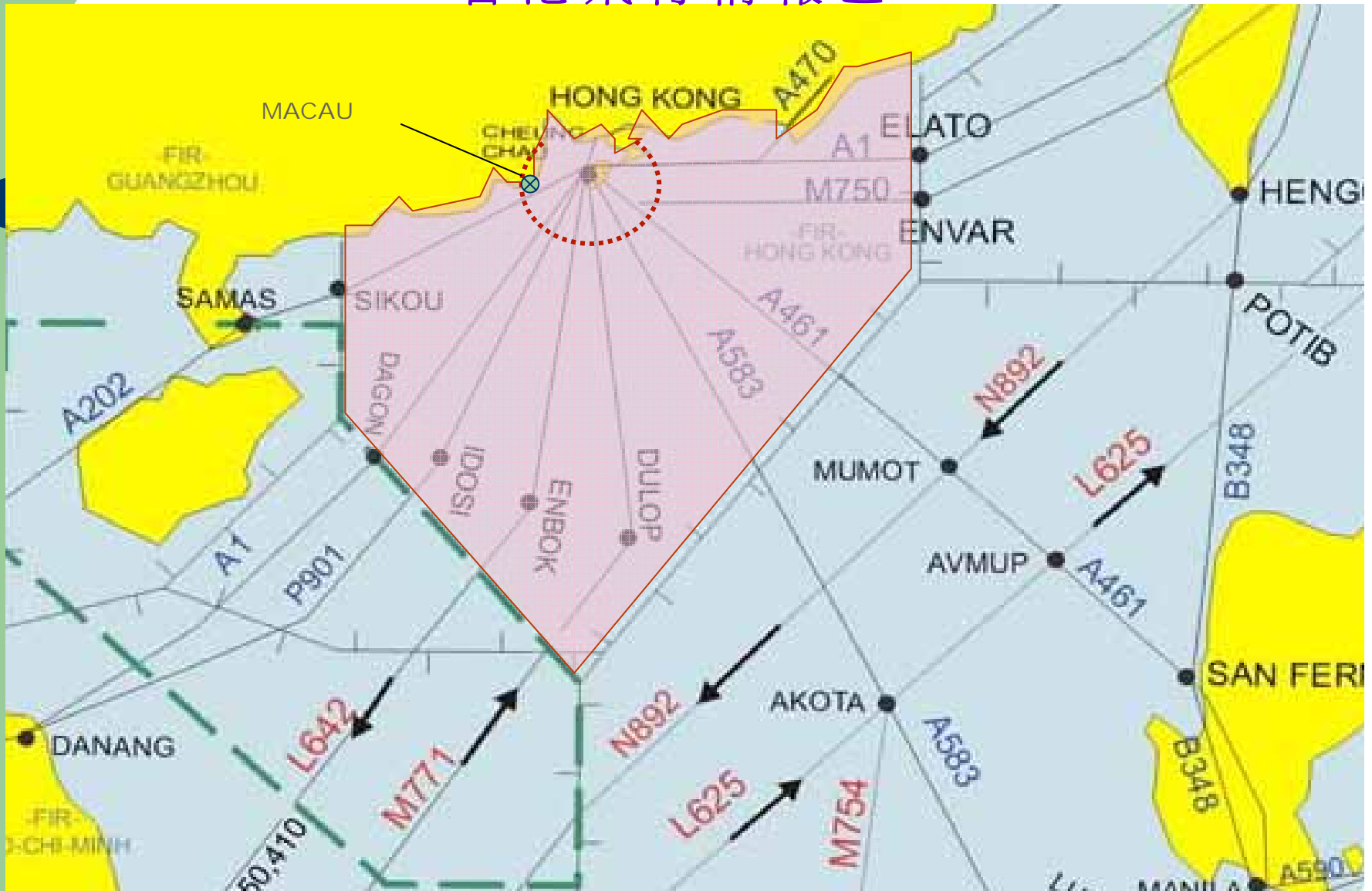


## CAD Functions 民航處主要功能

- Provider of Air Traffic Control Services 提供空管服務
- Regulator of civil aviation industry 監管航空業

# Hong Kong Flight Information Region (FIR)

## 香港飛行情報區



# 工作地點



控制塔台

Control Tower



航空交通管制中心



Approach and Area Control



## Duties of Air Traffic Control service provider 空管服務提供者的職責

- To prevent collision of aircraft, in the sky and on the ground 防止飛機在天空及地面相撞
- To maintain an orderly and expeditious flow of traffic 維持有秩序及流暢的航空交通
- To initiate alerting action in the event of aircraft emergencies and accidents. 意外及緊急事故警報





# Traffic in Year 2006

## 2006年空中交通數量

**Movements at HKIA** 進出香港國際機場航班 –

**280,000 or 768 movements per day**  
**280,000班或相等於平均每天768班**

**Overflying traffic** 過境航班 –

**140,000 or 383 movements per day**  
**140,000班或相等於平均每天383班**



Comparing the traffic with year 1998  
(the year of new airport opening at CLK)  
與1998年比較

Traffic at HKIA – has grown by **72%**  
進出機場航班增加 **72%**

Overflying traffic – has grown by **95%**  
過境航班增加 **95%**



## Estimate for Future 未來流量估計

**For the 5 airports at PRD, daily movement rate is expected to increase from 2,000 (at present) to 5,000 by 2020**

珠三角5個機場在2020年升降量由目前每天2000班增加至5,000班

**Daily overflying traffic expected to reach 850 movements by 2020**

至2020年，過境航班將增至每天850班

**HKIA would need to handle 1,300 movements per day by year 2025**

至2025年香港國際機場每天升降量預計達每天1,300班



## Existing facilities in ATCC(1)

### 現有空管中心設施(1)

- **Designed in early 90's and usable life up to around 2012**

設計於90年代初，預計可用至2012年左右

- **Unable to adopt the latest ATM technology due to limitations in capacity and processing power**

未能採用最新空管科技



## Existing facilities in ATCC(2) 現有空管中心設施(2)

- **Unable to provide direct data exchange with surrounding ATCC (essential ATC data still conveyed by direct voice link)** 未能支援與周邊航管中心直接交換數據
- **Limited scope for system upgrading and enhancement** 系統更新及改良空間有限



# Situation in nearby regions

## 周邊地區情況

- **Centre enhancements in Guangzhou and Shanghai in 2005**

廣州及上海空管中心已於**2005**年提升系統

- **Centre enhancements in Singapore, Taipei and Manila in the next few years**

新加坡、台北及馬尼拉空管中心預計在未來數年亦會提升系統



## If ATC systems not upgraded in time 如空管系統未能及時提升

- **Insufficient system capacity to cope with traffic growth**  
系統容量不足以應付交通增長
- **Unable to reap economic benefits brought by increase in traffic** 失去空運增長所帶來的經濟效益



# Considerations in facility replacement

## 設備更新須考慮因素

- **Need to maintain continuous ATC service**  
須維持無間斷空管服務
- **Lack of space for expansion in existing ATC Complex** 現有空管大樓沒有足夠擴展空間
- **Lack of suitable area in the vicinity of ATC Complex for expansion**  
空管大樓附近亦沒有適合擴建的空間

**A new Building is therefore necessary**

所以須要建造新的大樓



# Scattered Offices 辦公室分散

Queensway Government Office



金鐘政府合署

ATC Complex – middle of airfield

空管大樓



Passenger Terminal Building of HKIA  
客運大樓

貨運中心



Airport Freight Forwarding Centre



# Disadvantages of Scattered Offices

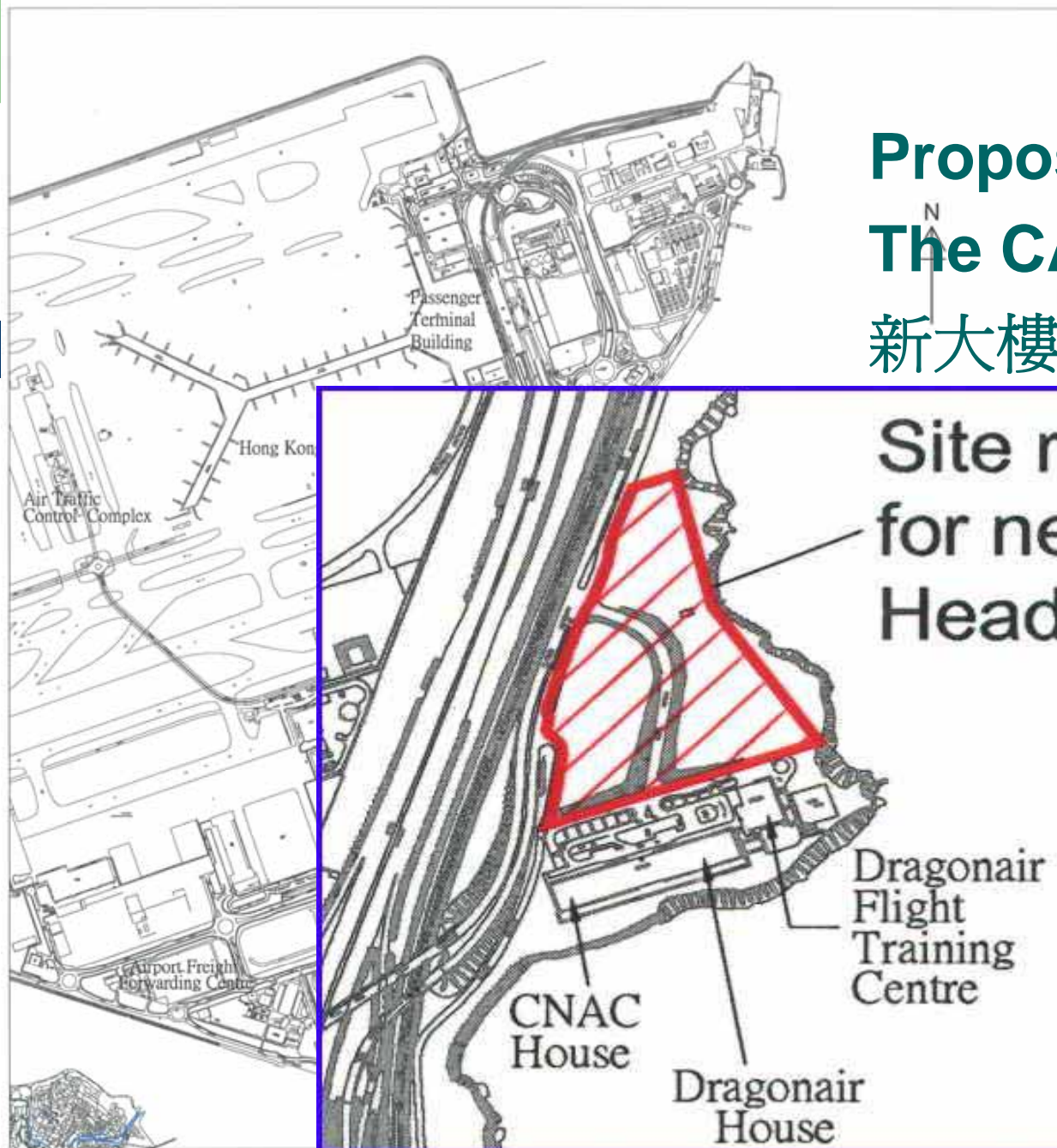
## 分散辦公室的缺點

- Ineffective communications (long traveling time between offices)  
各分部通訊及溝通未能達至最佳效率
- Duplication of support services e.g. supporting staff, vehicles etc 重複後勤支援
- Lengthened emergency response time  
延長對緊急事故的反應時間
- Hindrance of “One-Stop-Shop” service to the industry and public  
未能為業界及公眾提供一站式服務



# Proposed Site for The CAD Building

新大樓地點



Site reserved  
for new CAD  
Headquarters



# Technical Feasibility Study (TFS)

## 可行性研究

- **Study done by Architectural Services Dept**  
由建築署評估
- **Confirmed construction at site feasible**  
證實計劃可行
- **No adverse impact on environment**  
沒有對環境做成不良影響



## Cost for the Replacement ATM Systems and New CAD Building 預計費用

**CAD Building with  
Replacement ATC systems –  
大樓建築及更新空管系統**

**3,155 millions 31.55億**

**(approximately half of the cost is for the new  
building 其中約一半會用於大樓建築)**

**Funding allocation is subject to approval  
from Finance Committee of LegCo  
撥款須由立法局財務委員會通過**



# Request for Manpower

## 要求增加人力資源

1 ADGCA (D2) for 5½ years to be supported by 41 non-directorate staff for project handling

一名為期5½年的助理處長(首長級第二級)，由41名非首長級人員支援以處理整項計劃

1 CATCO(D1) to be supported by 2 non-directorate ATCOs to regulate air traffic control operations

一名總空管主任(首長級第一級)，由2名非首長級空管主任支援以監管空管運作





## The ADGCA is required for 5½ years because 需要一名助理處長5½年，因為

- Project needs detailed planning and coordination at various stages throughout 項目各階段均需仔細策劃及協調
- Long period of parallel operations of the existing and the new systems for testing and training 新系統和現有系統須長時間平行運作以進行測試及訓練
- All tasks must be carefully co-ordinated with thorough risk assessment 各項工作需小心協調並作詳細的風險評估
- Needs adequate contingency planning 要有足夠的應變計劃



# The CATCO officer is required because 需要一名總空管主任，因為

- **ATMSO posts only taken up by staff temporarily deployed from ATC** 空管標準辦公室職位，目前祇由空管部臨時借調
- **Regulator will need to develop the safety standards for the new system and oversee its implementation** 監管機構須參與制訂新系統的安全標準及監察其實行
- **Continuous oversight and further improvements to the new system taking account of new international standards and initiatives to optimize use of airspace** 持續監察及改善新系統以配合新的國際標準及空域改善措施





# Proposed Timetable for Project

## 建議時間表

**Funding approval** 撥款申請

**Planning, Design and Tendering of Building and Systems**  
大樓及系統的設計及招標

**Design and Construction** 設計及建造

**ATM System Installation, Training and Implementation**  
系統安裝、訓練及啓用

**Project Completion** ▲

2007

2008

2009

2010

2011

2012



**Thank You**

多謝