

# HONG KONG AIRPORT RAILWAY, WESTERN HONG KONG, HONG KONG

## OVERVIEW

**LOCATION:** WESTERN HONG KONG  
**SCOPE:** INTER-URBAN  
**TRANSPORT MODE:** RAIL  
**PRINCIPAL CONSTRUCTION:** AT-GRADE  
**NEW LINK:** YES

## PRINCIPAL OBJECTIVES

**STRATEGIC TRANSPORT LINK**  
**CONGESTION RELIEF**  
**LOCAL TRANSPORT LINK**

## PRINCIPAL STAKEHOLDERS

**CLIENT/PROJECT MANAGER:**  
**MASS TRANSIT RAILWAY CORPORATION**  
**FUNDER:** HONG KONG GOVERNMENT  
**PRINCIPAL CONTRACTOR (TUNNEL):**  
**KUMAGAI TARMAC JV**  
**PRINCIPAL CONTRACTOR (TRACK):**  
**GAMMON/BALFOUR BEATTY JV**

## PLANNING AND IMPLEMENTATION

**PLANNING START DATE:** 11/1989  
**CONSTRUCTION START DATE:** 07/1994  
**OPERATION START DATE:** 06/1998  
**MONTHS IN PLANNING:** 56  
**MONTHS IN CONSTRUCTION:** 48  
**PROJECT COMPLETED:** 12 MONTHS  
**BEHIND SCHEDULE**

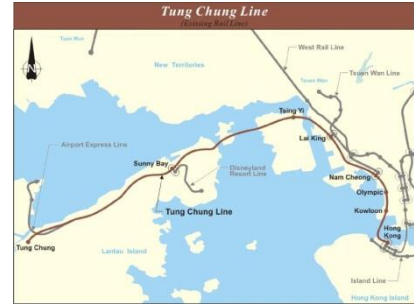
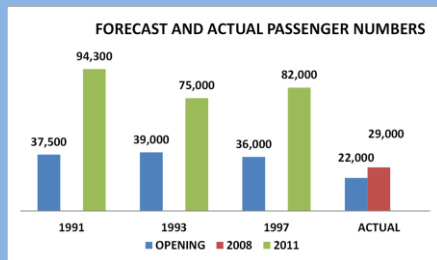
## COSTS (IN 2010 USD)

**PREDICTED COST:** 4.29BN  
**ACTUAL COST:** 4.37BN  
**PROJECT COMPLETED:**  
**2% OVER BUDGET**  
**FUNDING:** 68% PUBLIC/33% PRIVATE

## INFRASTRUCTURE QUANTITIES:

**LENGTH:** 34KM  
**LENGTH IN TUNNEL:** 8KM  
**LENGTH (ELEVATED STRUCTURES):** 6KM  
**COST PER KM (2010 USD):** 0.13BN

## PATRONAGE



## INTRODUCTION

The Hong Kong Airport Railway is the first world's first railway built specifically as a dedicated express service between city centre and airport, but also serves the new town of Tung Chung in Lantau. It has two lines, Tung Chung (TCL, 31.1km) and Airport Express (AEL, 34.8km). It opened in 1998 with six stations. Nam Chung station opened in 2003, and Sunny Bay station and the extension to AsiaWorld Expo opened in 2005.

## BACKGROUND

The project was conceived by the Government and the Government-owned Mass Transit Railway Corporation (MTRC), and was designed to be built in conjunction with other components of the Airport Core Programme (ACP), including government highways, reclamation works and bridge construction. Early feasibility studies suggested combining an express service without intermediate stops and a slower stopping service on the same alignment could be viable. The latter became the Tung Chung Line and was intended to relieve congestion on the existing mass transit system. The two lines would also serve the new developments on the West Kowloon Reclamation and provide a third cross harbour rail link.

A feasibility study, environmental impact assessment and financial appraisal were conducted. Although initial ridership was predicted not to meet original expectations, the project was considered viable based on assumptions about road bridge tolls and growth in air passenger traffic. A final environmental impact report recommended measures to reduce air and noise pollution during construction, although some residents complained about the noise.

The project was built mostly on newly reclaimed land, granted to MTRC by the government. It is associated with major property developments at five sites, totalling nearly 3.5million m<sup>2</sup> of floor area. MTRC has consent to develop the airspace above or adjacent to stations and has aimed to provide integrated developments, self-sufficient in social, recreational, retail and employment terms.

## TIMELINE

**CONCEPTION: 1989: GOVERNMENT ANNOUNCES NEW AIRPORT LOCATION AND AIRPORT RAILWAY FEASIBILITY STUDY**

**CONCEPTION: 1990: PLANNED COMPLETION DATE 1997 BUT CONCERNS ABOUT COST**

**CONTEXT: 1991: BRITISH-CHINESE GOVERNMENTS SIGN MEMORANDUM OF UNDERSTANDING**

**INCEPTION: 1991: FEASIBILITY STUDY FINAL REPORT PUBLISHED**

**INCEPTION: 1992: GOVERNMENT SIGNS DEAL WITH MRTC TO BUILD RAILWAY**

**INCEPTION: 1992/94: FOUR SUCCESSIVE FINANCIAL PACKAGES PROPOSED**

**INCEPTION: 1994: ENVIRONMENTAL IMPACT FINAL REPORT**

**CONSTRUCTION: 1994: TUNNEL CONTRACT AWARDED, FIRST SECTION TOWED INTO HARBOUR**

**INCEPTION: 1994 (NOV): BRITISH-CHINESE GOVERNMENTS AGREE FINANCIAL PACKAGE, SINO-BRITISH LAND COMMISSION AGREES TO ALLOCATION OF LAND**

**CONSTRUCTION: 1994: 16 CONTRACTS LET, CONSTRUCTION 42% COMPLETE**

**INCEPTION: 1994: MRTC INVITES TENDERS FOR FIRST PHASE OF PROPERTY DEVELOPMENT**

**INCEPTION: 1995: LEGISLATIVE COUNCIL AGREES TO EQUITY INJECTION**

**INCEPTION: 1995: GOVERNMENT/MRTC SIGN DBFO AGREEMENT FOR HKD 35.1BN**

**CONSTRUCTION: 1995: LAST CIVILS CONTRACT AWARDED (HONG KONG STATION)**

**DELAY: 1996: SIX WORKERS KILLED IN ACCIDENT ON RAMBLER CHANNEL BRIDGE**

**DELAY: 1996: WORKERS IMPORTED IN RESPONSE TO LABOUR SHORTAGE**

**CONTEXT: 1997 (JUL): HONG KONG TRANSFERS TO CHINESE RULE**

**DELIVERY: 1998 (JUL): AIRPORT AND RAILWAY OPENED**

**DELIVERY: 2005: ASIAWORLD EXPO STATION OPENS**

## CHARACTERISTICS

The cost of the project was estimated in 1989 at HKD 8.98bn, less than the combined cost of building the AEL and TCL separately (HKD 5.75bn and HKD 7.96bn respectively). In 1991, the estimated cost had risen to HKD 22.1bn, due to modifications to the scheme and the addition of other ACP components. This figure was expected to increase to HKD 33.5bn (at 1997 prices; USD 4.29bn at 2010 prices)<sup>i</sup> once construction was complete. In 1995 the cost was agreed at HKD 35.1bn. The project was at an advanced stage by this time and was completed within budget; the final cost at 2010 prices was USD 4.37bn.

MRTC managed the design and construction process, letting 18 separate main contracts and entrusting some aspects to the government. The two lines run in parallel but with separate platforms, crossing the harbour via the Western Immersed Tube Tunnel and Rambler Channel via the 1km Rambler Channel Bridge.

## TIMELINE ISSUES

Government support for the project was reaffirmed in 1990, when completion was planned to coincide with the new airport's opening in 1997. However, early progress was affected by concerns about the cost of the project, particularly within the Chinese government.

The 1991 memorandum of understanding between British and Chinese governments guaranteed the latter's support for the Airport Core Program before the handover of Hong Kong in 1997. However, negotiations about financing and the allocation of land for property development continued, with the fourth proposed financing package finally agreed in 1994. The uncertainty over funding restricted MRTC's ability to raise capital and to let construction contracts.

## FUNDING

In the financial package agreed in 1994, the Government agreed to inject HKD 23.7bn of equity into MTRC and to grant it 62 hectares of adjacent land for property development. MTRC raised HKD 11.4bn in loans from more than 170 financial institutions (to be repaid in 1997).

Although passenger numbers have been below forecasts, MTRC has shared in the profits from associated property developments.

<sup>i</sup> Costs have been converted to USD at 2010 prices, using historic inflation rates and current exchange rates, to allow comparison between projects.