

# 捷運工程深開挖聯合祛水案例探討

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## 摘 要

臺北捷運松山線CG290標G14北門站與鄰近之桃園機場聯外捷運系統CA450B標C1/D1基地開挖作業之景美層祛水施工時程重疊，在同時祛水相互影響的狀況下，兩工程藉由作業整合及監測確保施工開挖措施足以維持上舉穩定。開挖期間最大聯合抽水工率為7,216CMH，於G14站開挖至大底前後則保持在3,900CMH左右，同時兩開挖基地周圍景美層水頭均抽降至EL.82m以下，符合上舉穩定安全需求。兩工程之聯合抽水歷時268日，對景美層水位之影響達盆地西、南、北邊緣山區，大致涵蓋台北盆地景美層分布範圍全域。

**關鍵字：**景美層祛水、深開挖、捷運工程、聯合抽水。

## Joint Dewatering for MRT Deep Excavations – a Case Study

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## Abstract

The Chingmei Formation dewatering schedules were overlapped for deep excavations of the G14 Beimen Station of Taipei MRT Song-Shan Line and the adjacent C1/D1 site of Tao-Yuan International Airport Express Link. As the interaction of dewatering effects between two excavations could be complicated, integration of dewatering operation and groundwater monitoring were incorporated into the overall management scheme to ensure safety against potential uplift failure. Pumping and monitoring records show that the maximum pumping rate during joint dewatering was 7,216 CMH. The pumping rate was maintain at about 3,900CMH at the final stage excavation and foundation slab construction while the groundwater level of Chingmei formation was controlled below EL.82m to meet specified safety requirements. The joint dewatering activities lasted for 268 days. The influence area of the groundwater level of Chingmei Formation reaches to the south, north, and west boundaries of Taipei Basin, which almost cover the whole Chingmei Formation.

**Key Words :** Chingmei formation dewatering, deep excavation, MRT construction, joint dewatering.

## 一、前 言

臺北捷運松山線CG290標G14北門站與桃園機場聯外捷運系統CA450B標C1/D1工程中C1基地之深開挖景美層祛水施工時程重疊。由於兩工程之地下水位控制與開挖安全管理，在鄰近抽水作業下相互受到影響，因此整體祛水作業及地下水位監測必須統合考量。

本文以開挖期間維持G14站上舉穩定之抽水與相關監測作業為標的，說明G14站與C1基地聯合抽水下兩工程抽水井操作與轉換方式，並依監測記錄評估祛水作業的性能與成效，同時依水利署地下水位監測記錄，評估祛水作業期間台北盆地景美層水位變化與影響範圍，以及景美層祛水對上方松三層水位變化的影響。