

潛盾施工遭遇既有地錨處理方式之探討

陳俊融 廖惠生

萬鼎工程服務股份有限公司

余念梓

臺北市政府捷運工程局中區工程處

摘 要

早期深開挖工程常見以預力地錨工法作為擋土支撐系統，且因使用工法上的限制，在結構物完成後無法完整移除地錨結構，致使後續新建工程可能遭遇殘留地錨的風險。本文主要說明案例為台北捷運系統後續路網潛盾及共同管道新建工程，於共同管道推管工作井連續壁施工過程發現地下不明障礙物，經研判應為鄰近建物地下室開挖殘留之預力地錨，該地錨預估位於後續推進的捷運潛盾路徑上，必須於潛盾施工前移除。處理方式除變更潛盾隧道線型外，再藉由變更潛盾路徑上方共同管道的擋土設施型式，以連續壁施工機具移除殘留地錨構件；另考量部分地錨位於路口無法事先移除，以補強潛盾機結構方式採切削方式直接通過，並考量於預設定點進行潛盾受損的修復準備，本文將一併說明後續處理方式。

關鍵字：地錨、潛盾機、潛盾障礙物。

Countermeasures of Shield Tunnel Construction for Mitigating Ground Anchors

Chun-Jung Chen Hui-Sheng Liao

Resources Engineering Services Inc.

Nien-Tzu Yu

Department of Rapid Transit System, Taipei City Government

Abstract

In previous years, a prestress anchor method was used in an earth support system for deep excavation in Taiwan. Because the method was limited to removing whole anchors after construction, the follow-up construction may encounter such anchors. This paper presents a case study of a shield tunnel in the Taipei MRT. During the construction of a diaphragm wall in a driving shaft, anchors for excavating the adjacent building were found. These anchors on the path of the shield tunnel had to be removed before shield driving. This problem was solved by changing the alignment, and a diaphragm wall method was used to remove the remaining anchors. Because some anchors located within the intersection were difficult to remove, we strengthened the cutter bit of the shield machine and considered a repair plan for the supposed location. This paper proposes other special measures.

Key Words : anchor, shield tunnel, obstacle.

一、前 言

台北捷運系統從初期路網發展至今已逾

20年，而為因應廣大運輸需求，後續路網目前也正持續施工中。台北捷運路網之規劃，考量都會區的高度開發，及兼顧減低交通衝擊與用地需求，大多採地下工法為主，除地下車站與