連續壁近接施工引致捷運潛盾隧道受損案例之探討

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摘　要

一般深開挖工程無論設計與施工，大多僅著重開挖期間之影響，經常忽略連續壁體施工可能造成之影響，由於開發案與捷運設施越來越接近，實有必要正視此施工對潛盾隧道影響。本文除介紹大眾捷運系統兩側禁限建之相關規定外，並以實際施工案例，探討連續壁體施工引致潛盾隧道受損之原因及狀況、並進一步探討潛盾隧道復舊及後續開挖之補強方式，以提供類似工程設計及施工之參考。

關鍵字：連續壁、深開挖、潛盾隧道、禁限建。

Case Study of Shield Tunnel Damage Induced by the Adjacent Construction of Diaphragm Wall

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Abstract

For the design and construction of the general deep excavation engineering, most cases are emphasis on the influence during excavation and neglect the influence induced by the construction of diaphragm wall. By the reason of the space between development project and MRT facilities gets closer and closer ,it's necessary to face the influence of shield tunnel squarely which induced by the construction of diaphragm wall. In this article, not only the requirement for the building permit bans and restrictions alongside MRT facilities is introduced, but also the reasons why the shield tunnels damage induced by the construction of diaphragm wall in construction case are discussed, and further explore the restoration of shield tunnel and the reinforcement of the following excavation. It is used as reference for the similar case constructed and designed by the future engineer.

Key Words： diaphragm wall, deep excavation, shield tunnel, building restriction.

一、前　言

臺北為一典型之盆地地形，受周圍山區及河流阻隔，故以往市區平面鐵公路大多以山岳隧道及橋樑與周圍衛星市鎮相互連接。然而，隨著臺北都會區高度的開發，地面交通已無法符合民眾之需求，為減低交通之衝擊及解決用地之困擾，臺北捷運於路線之規劃，大多採地下工法，以增加都會區土地之利用。目前，臺北捷運經過多年之努力，大臺北地區民眾，已享受到舒適、便捷之交通運輸系統，捷運系統