

# 正交潛盾隧道鄰近施工設計考量

周忠仁 吳定恩 蘇鼎鈞 趙曉周

陳俊宏

亞新工程顧問股份有限公司

臺北市政府捷運工程局中區工程處

## 摘 要

隨著臺北捷運路網之陸續發展，近年來捷運工程常遇到鄰近施工之課題，因此對於既有設施之施工保護便愈顯重要。本文主要討論後續規劃之捷運路線，未來將正交穿越已完工營運之捷運潛盾隧道下方，由於該規劃之線形尚未完全定案，因此須針對兩路線適宜之淨間距及先設潛盾隧道的設計因應方案進行研析，期降低後續捷運路網施工時對營運隧道之影響。

**關鍵字：**潛盾隧道、鄰近施工、地盤改良、隧道環片

## Design Considerations for Orthogonal Adjacent Shield Tunnel Construction

Chung-Ren Chou Ting-En Wu Ting-Chiun Su Hsiao-Chou Chao

Moh and Associates, Inc.

Chun-Hung Chen

Central District Project Office, Department of Rapid Transit Systems, Taipei City Government

## Abstract

With the development of the Taipei MRT network, the adjacent construction issues for existing facilities have been encountered in recent years. Hence, the protection of the existing facilities due to the adjacent construction will be more and more important. This paper will discuss the future line of Taipei MRT will orthogonally pass through the completed MRT shield tunnel. Because the alignment of the future line has not yet completely, the preferred spacing between two lines and the protection measures for the existing tunnels will be studied and evaluated. It is expected that that the influence due to the adjacent construction of the future line on existing tunnels can be minimized to ensure the safety of the operational services by adequate strategies.

**Key Words :** shield tunnel, adjacent effect, soil improvement, segment.

## 一、前 言

隨著臺北捷運路網之陸續興建，近年來常遇到既有或興建中之捷運工程鄰近施工之議題，尤其是與已完工營運之潛盾隧道相關之鄰近施工議題，較明挖覆蓋之站體複雜。施工稍一不慎，將造成潛盾隧道變形或漏水，嚴重者將可能造成營運中之捷運路線暫停服務，影響

每日通勤之旅客權益甚大。

本文主要探討目前規劃中之後續路網潛盾隧道(以下簡稱後設隧道或下方隧道)，未來可能穿越已施工完成之潛盾隧道下方(以下簡稱先設隧道或上方隧道)。為免未來後設潛盾隧道施作時，對先設潛盾隧道造成影響，衝擊捷運之營運安全，因此在先設隧道尚未施工前，須評估後設隧道與先設隧道合適之淨間距，以及相關之配套措施，俾使先設隧道進行