

# 潛盾隧道面臨不同障礙物之處理對策

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## 摘 要

潛盾隧道鑽掘施工遭遇地中障礙物，如既有結構物之擋土措施或基樁等等，一直是大地工程師棘手的課題之一。隨著臺北捷運路網持續之發展，潛盾隧道處理地中障礙物之經驗，已愈來愈多。今以臺北捷運松山線DG166設計標為例，探討潛盾隧道面臨之各種不同型式之地下障礙物，包含擋土結構物、高架橋基樁、地下室基樁及橋梁基樁等障礙物之處置。考量現地條件及限制，於設計階段先以調整隧道平縱線形方式，先行避開部分之障礙物，其他無法避免之障礙物，則採用各種不同排除方式及處理對策，並輔以自動化監測系統，確保潛盾隧道順利之穿越，並達到維護既有結構物正常營運使用。

**關鍵字：**潛盾隧道、地中障礙物、自動化監測系統。

## Design Considerations and Removal Strategies Against Obstructions in Shield Tunneling

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## Abstract

Shield tunneling that encounters obstructions, such as existing retaining structures and piles, has been a troublesome concern for geotechnical engineers. With the continual development of the MRT network in the Taipei metropolis, removal obstruction experiences for shield tunneling works have increasingly accumulated. This paper presents the design lot DG166 of the Songshan Line of the Taipei MRT network as an example in which design considerations and strategies against obstructions such as retaining structures and pile foundations for viaducts, basements, and bridges were applied. Because of site conditions and restraints, the adjustment of the alignment to prevent conflicts with most obstructions was the first step at the design stage. For obstructions which could not be avoided, certain removal strategies and mitigation measures were applied, and an automatic monitoring system was introduced to sure smooth construction of shield tunnels and to maintain the normal operations and functions of the existing structure.

**Key Words :** shield tunnel, obstruction conflicts, automatic monitoring system.

## 一、前 言

DG166設計標為臺北捷運松山線其中一個標段，透過本計畫可順利銜接現有之板南

線、淡水線及新莊線，並在北門站預留未來銜接機場捷運之連通道，更可串聯西門町、臺北車站後站商圈至南京東路之金融區。由於本計畫主要位於臺北市發展較早之區域，且鄰近臺北交通輸紐中心，本計畫路線預定經過之區