

# 桃園國際機場捷運DOT潛盾隧道近接施工案例

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## 摘 要

「臺灣桃園國際機場聯外捷運系統建設計畫CA450A標」潛盾隧道路段從三重端忠孝橋至台北端捷運松山線北門站(G14)之西側止長約1,584m。路線穿越了忠孝橋、環河快速道路高架橋基礎，以及淡水河河岸堤防、醫院等建物。迄本計畫為止，穿越淡水河捷運路線，未曾於淡水河河床下方開挖連絡通道施工之案例，主要之原因為其施工困難度及風險極高。經評估比較傳統單圓及雙圓型潛盾隧道(DOT)之優劣，決定採用雙圓型潛盾隧道，則可取消河中施作連絡通道的風險工作。

台灣首次使用雙圓型潛盾隧道，並穿越高架橋基礎、醫院等重要建物，藉由加強施工管理、地盤改良措施降低對鄰近建物的影響，本工程已於2010年12月完成到達工作，其監測值資料可作為經驗回饋。

**關鍵字：**潛盾隧道(DOT)、穿越高架橋基礎、施工管理、地盤改良、監測值。

## The Proximity Construction of the Double Circle Shield Tunnel (DOT) of Taiwan Taoyuan International Airport Access MRT System in Taipei City

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## Abstract

The Project CA450A of the Taiwan Taoyuan International Airport Access MRT System in Taipei City was the construction of a double-circle shield tunnel (DOT) with a length of approximately 1,584 m. The tunnel starts from Zhongxiao Bridge in Sanchong, New Taipei City and terminates at the west side of the North Gate Station, G14 in Songshan Line of Taipei MRT. The tunnel passes beneath the foundation of the Zhongxiao Bridge, the pier foundation of an expressway, the breakwater of the Dansui River and the foundation of a hospital as well. In the past, with the consideration of the high risk and of the difficulty during the construction, there was never of any construction case that the shield tunnel system having the connecting tunnels passed beneath the bed of the Dansui River. With analysis of the advantages and limitations of two cases which the one is with two separated circular tunnels but having connecting tunnels and another one is with just one single DOT shield tunnel without connecting tunnels, the latter case was adopted for the Project finally. The major reason was that the DOT shield tunnel excluded the higher risk in construction of the connecting tunnels underneath the river bed.