

# 遭遇舊地下結構之大尺寸樁施工

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## 摘 要

近年都會區之高層建築結構，除巨大的柱載重，亦有地下室深開挖的擋土需求，在縮短整體工期考量下常選擇採逆打工法進行地下室構築。因此，施工時置入逆打鋼柱的大尺寸場鑄樁基礎普遍地被應用在都會區高層結構。在都更的大樓重建案例中，克服舊地下結構之施作障礙則成為另一項重要施工考量。

本文介紹在遭遇舊地下結構之大尺寸樁基礎施工時，反循環鑽掘、套管鑽掘、導鉸抓斗抓掘與土鑽等鑽挖工法所遭遇的問題與克服要點。另外，進一步針對拆除與重建過程中常見的課題討論，包括舊地下室之拆除、坍塌保護、新舊樁衝突處理、鋼柱置入與校正等。

**關鍵字：**場鑄基樁、基樁施工、大樓重建。

## Large-Diameter Piling Works on Existing Basement Structures

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## Abstract

In recent years, top-down method is often adopted to construct basement for high-rise buildings in urban area. In these cases, huge column loads are often encountered that requires the use large diameter bored piles in conjunction with the installation of steel column at the stage of pile construction. Another major pile construction issue for urban renewal project is how to overcome the obstacle presenting by the existing old basement structure.

This article outlines possible difficulties that may be encountered when constructing piles on top of existing basement structure, either by reverse circulation drilling, cased drilling, long-bucket grabbing, or earth drilling method. Solutions or measures to overcome these difficulties are also provided. Other details, including the removal or strengthening of existing basement structure, borehole collapsing prevention, installation and adjustment of steel columns are also addressed.

**Key Words :** bored piles, pile construction, building rehabilitation.

## 一、前 言

近年都會區之高層建築結構，除巨大的柱載重，亦有其地下室深開挖的擋土與止水需求，在縮短整體工期考量下常選擇採逆打工法進行地下室構築。因此，施工時置入逆打鋼柱

的大尺寸場鑄樁普遍被應用，而樁孔的鑽挖技術主要有反循環鑽掘(reverse circulation drilling)、套管鑽掘(casing drilling)、導鉸抓斗抓掘(long-bucket grabbing)與土鑽(earth drilling)；而沖擊鑽、正循環鑽掘、螺旋鑽等方式則較少用於大尺寸樁(施，2015)。各種工法均有其特點但並無絕對之優劣，因此