

CASE STUDY

Locking, Weston-Super-Mare



MULTI SECTOR

CLIENT

Persimmon Homes
KMW Building Ltd
Wilmott Dixon
Construction Ltd

TECHNIQUES

Driven Precast Concrete
Piles
RBeam

ACHIEVEMENTS

Efficient installation
across three sectors.
Reduced spoil and
accelerated programme.

Project Brief

Roger Bullivant Limited (RBL) were appointed to deliver piling solutions for three adjacent developments at the historic Locking site in Weston-Super-Mare. Formerly Weston Airfield, the site has a rich aviation heritage dating back to 1936, including WWII aircraft production and later helicopter manufacturing until its closure in 1987. Today, the area is being transformed into a vibrant mixed-use community.

RBL was engaged by three separate clients to support:

- Residential housing and flats for Persimmon Homes
- Light industrial units for KMW Building Ltd
- A new primary school for Wilmott Dixon Construction Ltd

The ground conditions, topsoil over made ground and soft tidal flat deposits, posed significant challenges. With Mercia Mudstone bedrock at 20m depth, traditional foundations were unsuitable. CFA piling was ruled out due to soil strength limitations, making Driven Precast Concrete Piles the optimal solution.



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RESIDENTIAL/INSTITUTIONAL/INDUSTRIAL



Key Issues & Requirements

- Reduced Spoil: Minimal excavation and off-site removal
- Specialised Equipment: Quiet Hammer 5500 series rigs used to reduce noise and disruption near completed properties
- Accelerated Programme: Fast installation of precast piles
- Efficient Logistics: Segmental pile lengths (3m, 4m & 6m) tailored to site conditions

Solutions

- Residential – Persimmon Homes
To date, 1,553 units have been completed, with a further 1,195 in the pipeline. The use of segmental piles enabled efficient installation and reduced environmental impact.
- Commercial – KMW Building Ltd
For the warehouse development, RBL installed Driven Precast Concrete Piles to support light industrial buildings. The driven piles ensured structural integrity and accommodated the site's variable ground conditions.
- Institutional – Wilmott Dixon Construction Ltd
RBL installed precast piles for a new primary school, deploying quiet hammer rigs to minimise disruption in a residential setting. The accelerated programme supported timely delivery and reduced environmental footprint.
- Technical Overview
 - Pile Type: 250x250mm precast concrete piles (C50 strength), manufactured to BS/ISO standards
 - Design: Static load transfer into Mercia Mudstone
 - Testing & Verification:
 - o Restrike testing for soil recovery
 - o Dynamic testing with CAPWAP analysis
 - o Broms analysis for lateral load validation

All piles were installed under fixed head conditions, ensuring consistent load transfer and structural performance.
- Sustainability Impact: The use of precast driven piles significantly reduced spoil and transport movements. Quiet rigs and efficient logistics minimised disruption and carbon emissions. RBL's early involvement and tailored solutions contributed to group sustainability targets, demonstrating our commitment to low-impact construction across all sectors.
- This project at Locking, Weston-super-Mare showcases the versatility and reliability of Driven precast concrete piles in supporting a wide range of building types. From high-volume residential housing to industrial units and educational facilities, the same core piling technique was adapted to meet the unique demands of each sector. The ability to tailor pile lengths, minimise spoil, and accelerate installation made precast piles the ideal solution across the board, reinforcing their value in both residential and non-residential developments. As RBL continues to expand its portfolio, precast piles remain a cornerstone of sustainable, efficient, and high-performance foundation engineering.