

NEW BASEMENT

HORNSEY STREET, LONDON (2005)



Major UK contractor Kier London, in conjunction with Corus Hydrobarrier, used the Dawson Contract Piling Ltd, to form the watertight retaining walls of a new rectangular basement. The basement formed part of a new £26m development. This contract was to be the first time that the new “wide” U profile sheets were to be installed using hydraulic pressing.

The sheets had to be installed quietly and without vibration, because of their close proximity to housing and the East Coast Main Railway Line. In the vicinity of the railway line a crane was not permitted, hence the pitching

and driving of the sheets had to be done by the rig alone. The basement had to be watertight, so the design required the interlocks to be welded and the sheets also carried significant vertical load from the seven storey building above ground.

Technical Specifications

Dawson Contract Piling used a Liebherr LRB255 rig and four-cylinder Push-Pull attachment, to install 150No, AU16 sheets. The sheets were between 6.5m and 8.5m long (fully driven into stiff London Clay - cohesion in excess of 150kN/m²) and were used to form the watertight retaining walls of a new rectangular basement.

The sheets and corners were installed within 10 working days without the use of pre-augering or water jetting. This high productivity was

achieved despite the restrictions due to the railway. The productivity was combined with excellent positional accuracy (within $\pm 25\text{mm}$) and verticality using only a ground beam.

Significant cost savings were offered to the client by using "AU" sheets, specifically:

- Efficient use of steel
- Handling and installation savings
- 20% saving in welding of interlocks

Summary of Soil Conditions

Layer	Depth Range of Soil units (m BML)		Soil Description
	Top	Base	
1	0.0	1.2	Maixed soil - Soft to firm
2	1.2	2.2	Sandy Clay - London Clay Formation
3	2.2	3.2	Clay - London Clay Formation
4	3.2	-	Clay - London Clay Formation

ADVANTAGES OF DAWSON SYSTEM

- Fast installation techniques deliver high productivity, resulting in economic savings.
- Quiet and vibration-less.
- Easily configured to suit Z, U & H-pile profiles in groups of between 2 to 6.
- No reaction frame required to start pile installation or for corner piles - unlike conventional pile presses.
- Standard Z-piles can be installed close to property boundaries - maximising development footprint.
- Leader guided operation reduces interlock friction and produces high quality, accurate installations.
- Piles can be removed, returning site to original 'greenfield' condition.
- The piling rig can pitch its own piles so no crane required
- Quick and simple replacement of front end equipment on piling rig, saving on time and money with the need for only one piling rig to do all operations.



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