

# Nailing

## Soil Nailing

SUNDERLAND, ENGLAND



### Carbon Fibre Soil Nails

Soil Nails provide a wealth of advantages over other slope stabilisation methods. Half the cost and twice as quick to install as concrete piled retaining walls, they can be used to form steeper slopes than an engineered embankment.

Value Engineering and innovative thinking led to carbon fibre reinforced soil nails being used on Britain's largest soil nailing operation, the £98M extension of the Tyne and Wear metro for the Railtrack-led consortium Sunderland Direct.

Bachy Soletanche, working within the design team with Corus and the Main Contractor, jointly devised the most economic method for stabilising the 6m high steep-sided slopes for the 5km of cutting through suburban Sunderland. As the design developed the balance of the chosen techniques swung away from a predominately piled retaining wall scheme to the use of soil nails.

The carbon fibre nails made in Italy by manufacturer and supplier Sireg, using raw material from Japan, are cheaper than steel, do not require corrosion protection and are light and easy to handle.



Up to 160 nails are installed every day by six machines

CLIENT:	Railtrack
MAIN CONTRACTOR:	Skanska
CONSULTING ENGINEER:	Corus Rail Consultancy
DURATION OF WORKS:	June 2000 - June 2001
<b>WORKS QUANTITIES</b>	
45,000 linm of soil nails	
10,000 m <sup>2</sup> Bored Pile Retaining Wall	
Ground Anchors	
Minipiles	

