



# PROJECT REPORT

## THURROCK NR. LONDON - UK

<b>EQUIPMENT:</b>	RIC 7000
<b>PROJECT:</b>	IKEA WAREHOUSE EXTENSION
<b>LOCATION:</b>	THURROCK NR. LONDON - UK
<b>PURPOSE:</b>	TREAT BACK-FILL TO SUPPORT FLOOR LOAD OF WAREHOUSE

Furniture retailer IKEA extended their warehouse at Thurrock. The original construction was built over an abandoned chalk quarry. The quarry had been back-filled with 5-6m of contaminated loose granular material overlaying the chalk bedrock.

Floor loads of 50kN/m<sup>2</sup> were required and conventional Dynamic Compaction was ruled out because the potential for high vibrations to damage the nearby existing building was high.

Drilling for Vibro stone columns was also not suitable as the disposal cost for the the contaminated ground would be prohibitive.



RIC 7000 in operation close to existing structure



RIC 7000 mounted on Daewoo DH450

A UK operator of the RIC system - Pennine Vibropiling Ltd, (part of the Balfour Beatty group), chose RIC for the project and the technique was successfully used to treat the fill. 20-30 blows per point were imparted across the site at around 2m intervals. The depressions were back-filled and a second pass done.

The required bearing load was achieved and RIC was able to be carried out up to 10m from the existing structures before the measured ground vibrations were excessive.

### GOOD VIBRATIONS!

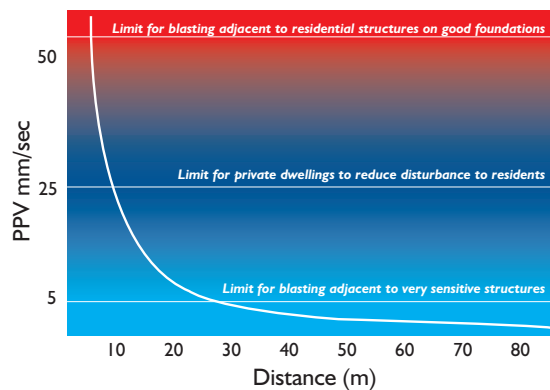
In the USA a Peak Particle velocity of 50mm/sec is acceptable for some projects.

In Canada 25mm/sec is the normal level, with a more stringent limit of 10 to 12mm/sec sometimes employed.

It has also been recognised that the frequency band of RIC is higher than other compaction techniques, and less damaging to nearby structures!

This has meant RIC being successfully used as close as 5-6m from adjacent buildings.

A cut-off trench can also be used to interrupt the the passage of vibrations.



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