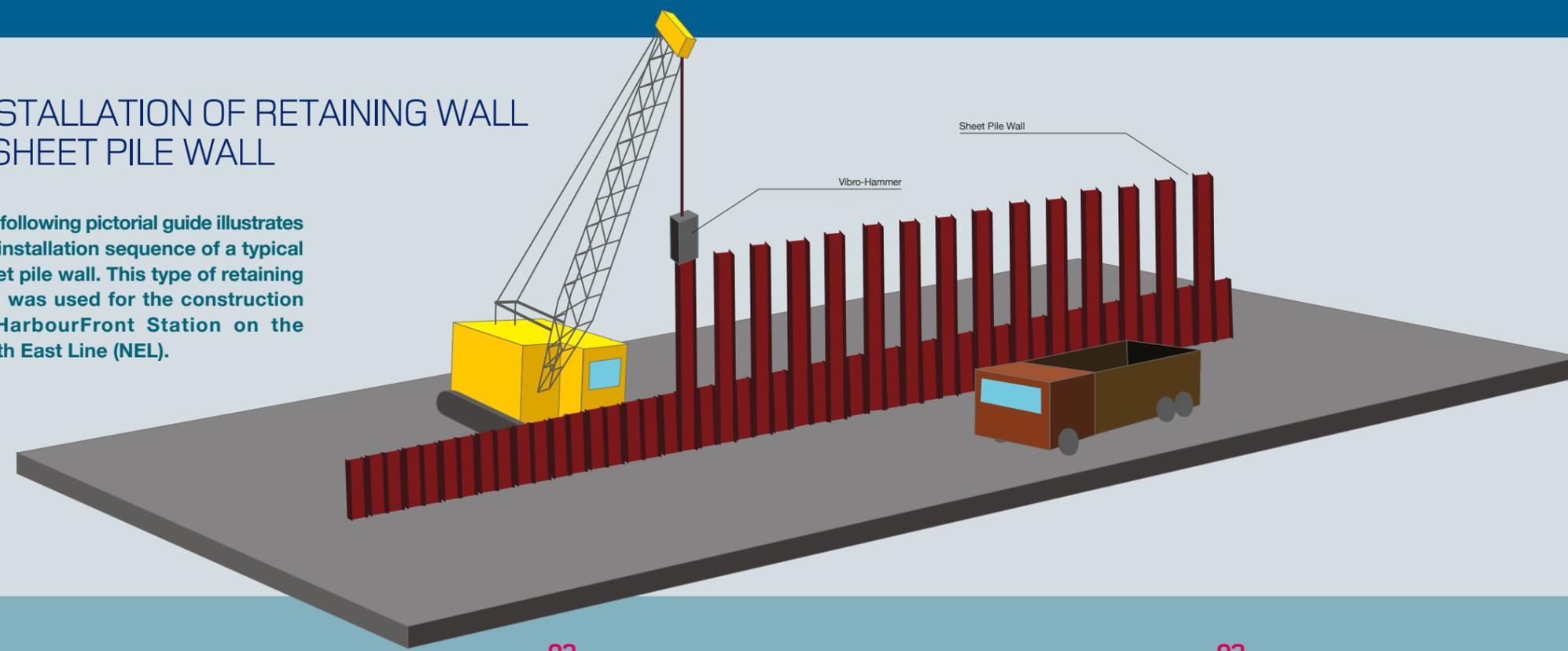




# INSTALLATION OF RETAINING WALL - SHEET PILE WALL

The following pictorial guide illustrates the installation sequence of a typical sheet pile wall. This type of retaining wall was used for the construction of HarbourFront Station on the North East Line (NEL).



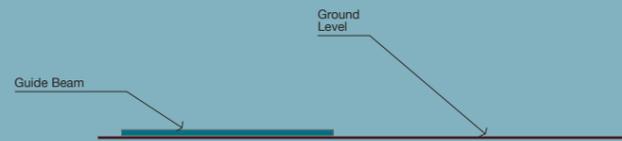
## Safety Measures

In the Land Transport Authority (LTA), we accord top priority to safety. Professional Engineers (PE) and Qualified Persons (QP) are engaged to carry out stringent checks on the temporary structures to ensure that they are installed correctly and safely before the excavation can proceed from one level to the next level. In addition, our engineers monitor the various stress and strain gauges installed on the temporary structures on a regular basis so as to be sure that the stresses fall within acceptable limits set by the design engineers. Likewise, instruments are extensively installed in the vicinity of the construction site to monitor vibrations, ground movements etc. so that the engineers are always in the know of the impact of the construction on the surrounding buildings and ensure that the buildings are safe.

## Inconveniences

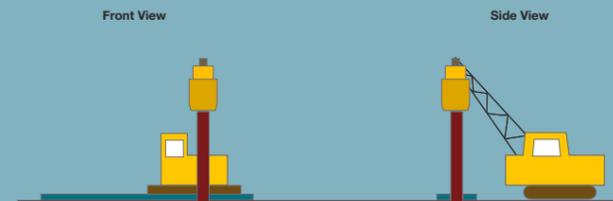
Noise and vibrations are generated when the sheet piles are driven into the ground by the vibro-hammer. Silent-piler creates significantly less noise and vibrations. However, it can be used only when the sheet piles are not required to be driven very deep into the ground.

### 01. Position of Sheet Pile



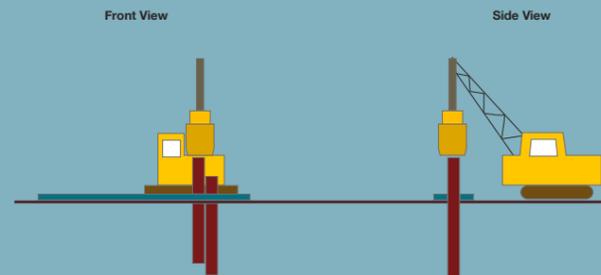
A guide frame/guide beam is placed on the ground to set out the position of the sheet pile wall.

### 02. Installation of First Sheet Pile



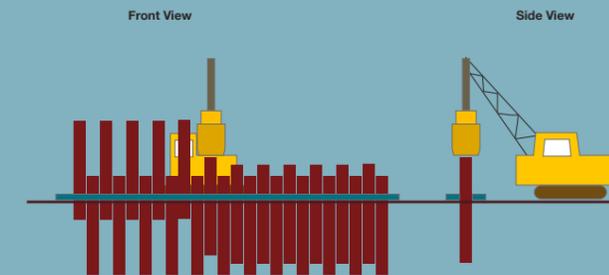
The piling rig lifts up the first sheet pile and drives it into the ground, leaving about 1 metre length of the sheet pile above the ground level.

### 03. Installation of Second Sheet Pile



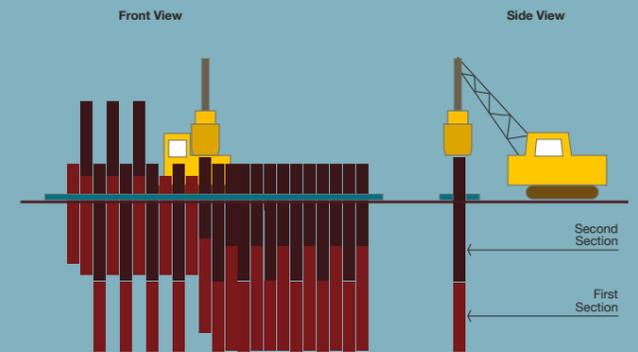
The piling rig drives the second sheet pile into the ground and the second sheet pile interlocks with the first sheet pile.

### 04. Repetition of Process



Process 2 and 3 repeats till the installation of sheet piles is completed within the length of the guide frame/guide beam.

### 05. Extension of Sheet Pile



If the first set of sheet piles installed are not long enough to reach the required depth in the ground, extension of sheet piles is required. This is done by welding the ends of a second sheet pile length to the one driven in earlier and driving the combined length into the ground.