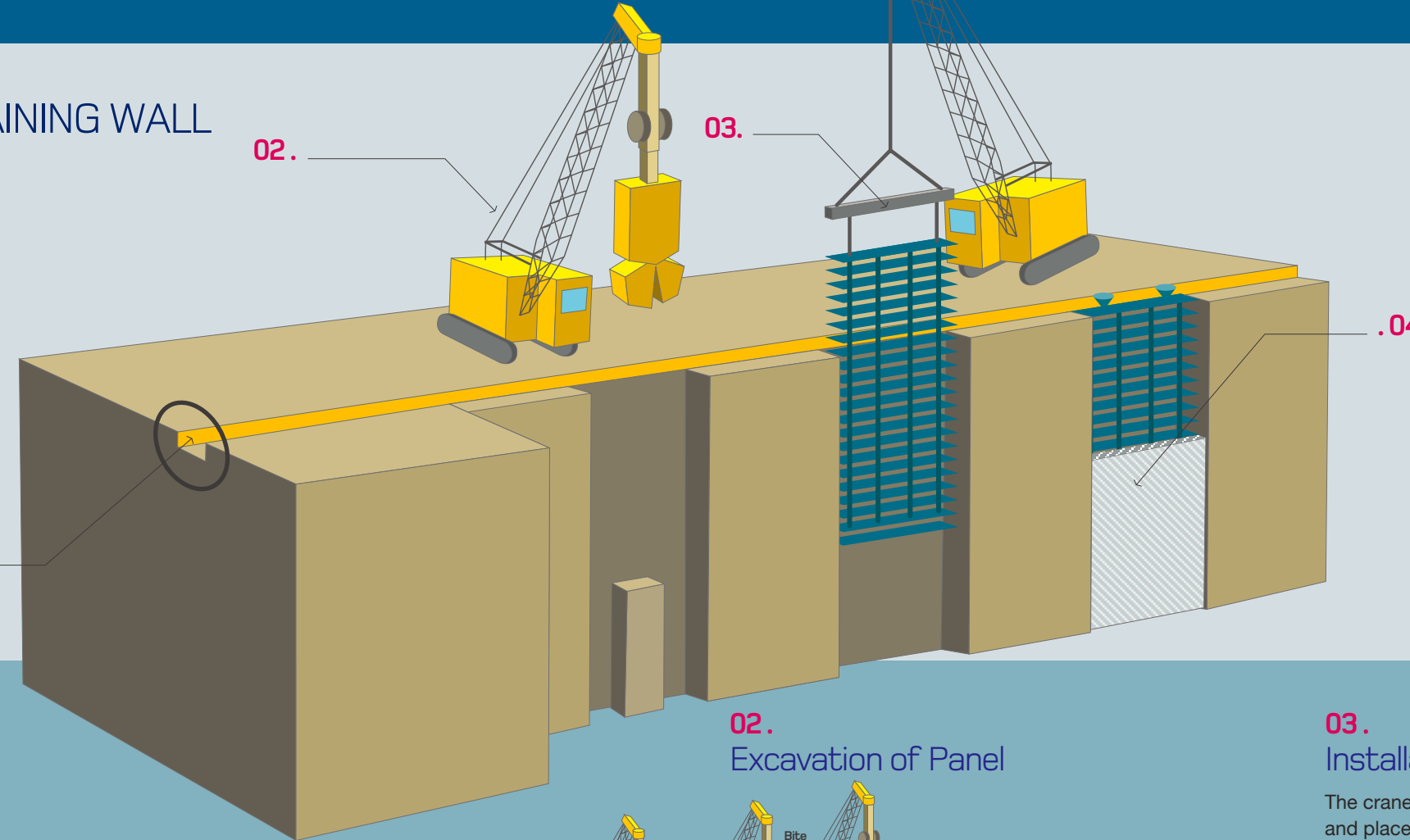




INSTALLATION OF RETAINING WALL - DIAPHRAGM WALL

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



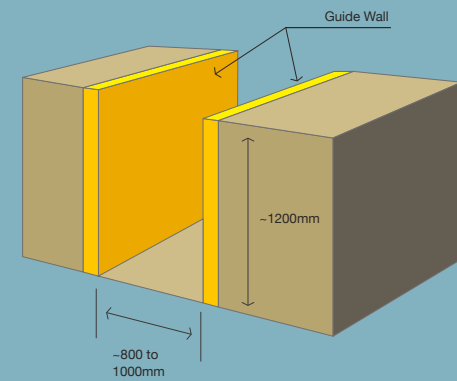
Safety Measures

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

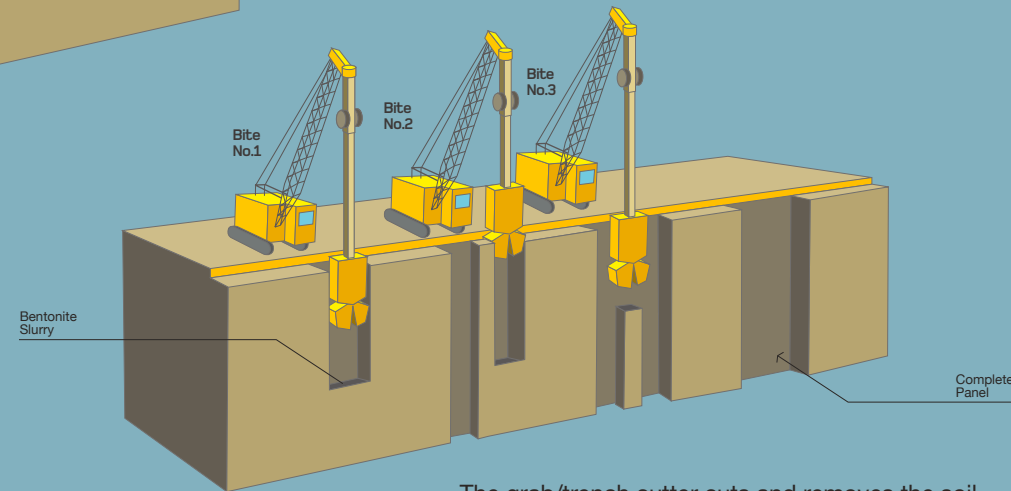
Noise is generated when the grab/trench cutter excavates the soil as well as during the panel concreting process. As it is vital that concrete is poured continuously into the panel till the whole panel is completely and homogeneously filled with the concrete, it is inevitable that work runs into the night when the panel is concreted so as not to affect its structural integrity.

01. Construction of Guide Wall



A guide wall is constructed to set out the position of the diaphragm wall.

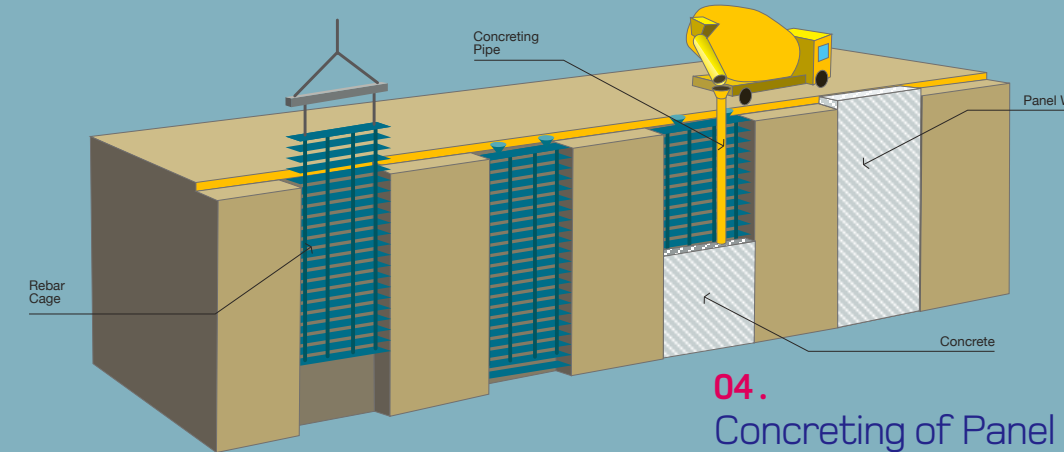
02. Excavation of Panel



The grab/trench cutter cuts and removes the soil to form the panel. The excavation is stabilised by filling it with bentonite slurry to support the wall of the excavation.

03. Installation of Rebar Cage

The crane lifts up the reinforcement-bar cage and places it within the panel.



04. Concreting of Panel

Concrete is poured into the panel to form the panel wall.

05. Repetition of Process

Process 2 - 4 repeats for the remaining soil in between the panels till the entire length of the diaphragm wall construction is completed.

