Retaining Wall

This invention relates to a retaining wall and to a method of constructing the same.

A retaining wall is a structure that holds back soil or rock from a building, structure or area. Retaining walls prevent down-slope movement or erosion and provide support for vertical or near-vertical grade changes. Cofferdams and bulkheads, structures that hold back water, are also considered retaining walls.

One type of conventional retaining wall is formed of sheet piling. Sheet pile walls are made out of steel, vinyl, fibreglass, reinforced concrete or plastic sheet piles driven into the ground. Sheet pile walls are typically constructed by driving steel sheets into the ground to permit excavation or filling on one side of the wall. They are considered to be most economical where retention of higher earth pressures of soft soils is required. However, sheet piles can be costly and less adaptable to difficult driving conditions, particularly where boulders or irregular rock surfaces occur in the ground.

To cater for difficult driving conditions, sheet piles are often designed for improved drivability rather than to suit the structural requirements of the retaining wall to be formed. This therefore results in a use of sheet piles which is inefficient and not cost effective.

~~According to the invention, there is provided a retaining wall for retaining matter~~ on a side thereof comprising: a plurality of upwardly projecting primary sheet piles spaced apart from each other and having ~~first~~ structural properties comprising at least one of weight, size, strength and depth to be installed in a supporting body; and one or more intermediate panels of material arranged so as to span the gap between a pair of primary sheet piles and to retain at least a portion of the retained matter, wherein the one or more intermediate panels ~~have second structural properties different from the first structural properties.~~

According to an aspect of the invention, there is provided a retaining wall for retaining matter on a side thereof comprising: a plurality of upwardly projecting primary structural members spaced apart from each other and having first structural properties comprising at least one of weight, size, strength and depth to be installed in the supporting body; and one or more intermediate panels of material arranged so as to span horizontally the gap between a pair of the primary structural members and thus to retain matter between the primary structural members, wherein the primary structural members are sheet piles, and wherein the one or more intermediate panels project downwardly into the supporting body and have second structural properties different from the first structural properties, such that the primary structural members are adapted to provide substantially all of the structural restraint to bending and shear in the retaining wall.

According to another aspect of the invention, there is provided a method of constructing a retaining wall for retaining matter on a side thereof, wherein the method comprises the steps of: arranging a plurality of primary structural members so that the primary structural members are spaced apart from each other and project downwardly into a supporting body, the primary structural members having first structural properties comprising at least one of weight, size, strength and depth to be installed in the supporting body; and arranging one or more intermediate panels so as to project downwardly into the supporting body and span horizontally the gap between a pair of the primary structural members and thus retain matter between the primary structural members; and wherein the primary structural members are sheet piles, and wherein the one or more intermediate panels have second structural properties different from the first structural properties, such that the primary structural members are adapted to provide substantially all of the structural restraint to bending and shear in the retaining wall.