CLAIMS

1. An environmentally friendly island construction method, characterized in comprising the steps of:

(1) excavating seabed sediment in a dredging area by a grab or bucket dredger, then transporting the sediment by a dredging barge to a location beside a stockpiling barge, which is deployed at a border of a construction area and equipped with a grab rig, grabbing the sediment from the dredging barge by a grab bucket and dumping the sediment into an island construction area by the grab bucket, wherein a polluted sediment layer of the seabed sediment in the dredging area is excavated first, and the remainder of seabed sediment is non-polluted and is excavated after the polluted sediment layer is completely excavated;

(2) dividing the island construction area into a number of construction cells each with an area of 100,000 to 200,000 m^2, successively draining the construction cells by a vacuum concurrently with each cell being enclosed with small water barrier dikes and guiding water drained by the vacuum within the small dikes, thereby achieving simultaneous increased loading and water surcharge preloading of the construction cells, until sediment strength of each construction cell reaches a predetermined criterion level at the end of construction;

(3) purifying the wastewater within the dikes and discharging it to the sea after its water quality meets the requirements of a standard,

wherein the method further comprises, prior to step 1, geologically surveying the seabed sediment in the dredging area, which is a sea area near the island construction area, and measuring indicators of an extent of pollution of the seabed sediment, wherein the geological survey of the seabed sediment is accomplished by coring up to 15 meters beneath a

surface of the seabed sediment at sites in a square arrangement, which are spaced at intervals of 0.5 to 1 kilometer, using a drilling rig on a ship, and

wherein according to results of the geological survey of the seabed sediment, in step 1, the polluted sediment layer that is excavated first is a silt layer and is dumped into the island construction area, and after the polluted silt layer in the dredging area is completely excavated, the non-polluted remainder of the sediment is excavated and dumped onto the polluted sediment to a thickness not less than 2 meters as an overlying layer.

2. The environmentally friendly island construction method according to claim 1, characterized in that in step 1, the grab or bucket dredger is equipped with a grab bucket with a capacity of 1-28 m^3.

3. The environmentally friendly island construction method according to claim 1, characterized in that in step 1, the grab rig rotates and then dumps the sediment, or the grab rig dumps the sediment with the aid of a belt conveyor or a shaftless screw conveyor.

4. The environmentally friendly island construction method according to claim 1, characterized in that in step 2, the vacuum drainage comprises, for each of the construction cells, installing plastic drainage boards around the construction cell, arranging a vacuum pumping system on top of the plastic drainage boards, covering the construction cell with an airtight membrane and directing the wastewater drained by the vacuum within the small dikes.

5. The environmentally friendly island construction method according to claim 4, characterized in that the plastic drainage boards have a depth of 5-38 meters.

6. The environmentally friendly island construction method according to claim 1, characterized in that in step 2, the small dikes have a height of 0.5-4 meters.

7. The environmentally friendly island construction method according to claim 1, characterized in that the wastewater is purified using a photoelectrocatalytic technique for water treatment.