CLAIMS:

1. A floating structure, comprising:

a floating platform disposed at a water surface;

a mooring system configured for mooring one side of the floating platform to a sea floor, to thereby permit rotation of the floating structure and to provide a desired orientation down-wind with respect to an anchor point; and

a damping system arranged at said one side of the floating platform and configured for absorbing wave energy and stresses imparted by motion of waves in order to stabilize a horizontal position of the floating structure during a storm,

wherein the mooring system includes an anchor resting on the sea floor, an anchor-connecting element configured for providing connection of the floating platform to the anchor; and a shock absorbance buoy configured to assist in carrying the weight of the anchor-connecting element and to absorb the wave shock associated with the impact of incoming waves.

2. The floating structure of claim 1, wherein the floating platform includes:

a deck disposed above the water surface and having a desired payload for industrial activity and urban life;

a floating base disposed under the water surface, and configured for holding the deck; and

strut elements extending from the floating base and configured for supporting the deck under the water surface.

3. The floating structure of claim 2, wherein the floating base includes a plurality of buoyancy units connected to the deck via the strut elements and includes a pontoon configured to displace enough water in order to create a buoying force substantially in excess of the weight of the buoyancy unit.

4. The floating structure of claim 3, wherein a number and a concentration of the buoyancy units is such that an entire volume of the buoyancy units is well below the area of wave action.

5. The floating structure of claim 2, wherein the strut elements have a suitable length to provide sufficient clearance over the water surface to meet a requirement that waves with a height of less than about 10 meters do not reach the deck.

6. The floating structure of claim 1, wherein the mooring system includes a single-point anchoring system including an anchor resting on the sea floor, and anchor-connecting element configured for providing direct connection of the floating platform to the anchor.

7. The floating structure of claim 1, wherein the anchor-connecting element is connected to the shock absorbance buoy and extends downwardly therefrom to the sea floor, where the anchor-connecting element is secured thereto at a lower end thereof by using the anchor resting on the sea floor at the anchor point.

8. The floating structure of claim 7, wherein the shock absorbance buoy is connected to opposite ends of said one side of the semi-submersible platform, thereby to provide a desired orientation down-wind with respect to the anchor point.

9. The floating structure of claim 1, wherein the damping system includes a set of floating bodies configured to float up and down independently along with the waves on the water surface and at a depth where wave action is most prevalent.

10. The floating structure of claim 9, wherein the set of floating bodies are arranged in rows that are parallel to said one side of the floating structure and are perpendicular to a direction of the incoming waves, the rows extending apart from said one side along the direction of the incoming waves.

11. A floating structure, comprising:

a floating platform disposed at a water surface;

a mooring system configured for mooring one side of the floating platform to a sea floor, to thereby permit rotation of the floating structure and to provide a desired orientation down-wind with respect to an anchor point; and

a damping system arranged at said onc side of the floating platform and configured for absorbing wave energy and stresses imparted by motion of waves in order to stabilize a horizontal position of the floating stnicture during a storm.

wherein the damping system includes a set of floating bodies configured to float up and down independently along with the waves on the water surface and at a depth where wave action is most prevalent;

wherein the set of floating bodies are arranged in rows that are parallel to said one side of the floating structure and are perpendicular to a direction of the

incoming waves, the rows extending apart from said one side along the direction of the incoming waves; and

wherein each of the rows includes a plurality of floating bodies.

12. The floating structure of claim 11, wherein, in each of the rows, the floating bodies are shifted with respect to the floating bodies of the neighboring rows to provide shielding of said one side from direct impact of the incoming waves.

13. A floating structure, comprising:

a floating platform disposed at a water surface;

a mooring system configured for mooring one side of the floating platform to a sea floor, to thereby permit rotation of the floating structure and to provide a desired orientation down-wind with respect to an anchor point; and

a damping system arranged at said one side of the floating platform and configured for absorbing wave energy and stresses imparted by motion of waves in order to stabilize a horizontal position of the floating structure during a storm,

wherein the damping system includes a set of floating bodies configured to float up and down independently along with the waves on the water surface and at a depth where wave action is most prevalent;

wherein the damping system includes levers associated with the set of floating bodies and a rotary shaft arranged on the semi-submersible platform, wherein the set of floating bodies are connected to the rotary shaft by using the levers, each of the levers has a suitable shape to be connected to the corresponding floating body at one end of the lever and to the rotary shaft at another end thereof, thereby to provide pivotal motion along an axis of the rotary shaft.

14. The floating structure of claim 13, wherein each of the floating bodies have a cylindrical shape with a size in the cross-section area of the cylinder in the range of 1 meter to 50 meters and a length of the cylinders in the range of 1 meter to 100 meters.

15. The floating structure of claim 13, wherein a weight of each of the floating bodies is in a range of 100 kg and 1000 tons.

16. The floating structure of claim 11, wherein a number the floating bodies in each of the rows is governed by the length of the side, while a number of the rows extending from said one side of the floating structure is governed by the length of the incoming waves.

17. The floating structure of claim 13, wherein at least one floating body of the set of floating bodies is located on a crest of incoming waves and at least one another floating body of the set of floating bodies is located on troughs of the incoming waves.

18. The floating structure of claim 16, wherein the number of the rows is in the range of 1 to 6.