Claims:

1. A semi-submersible offshore structure, comprising:

a deck box;

a submersible lower hull comprising a ring pontoon having an annular pontoon body with a top surface, a bottom surface, an outer circumferential wall, an inner circumferential wall, and a plurality of spaced-apart through holes extending from the bottom surface of the ring pontoon to the top surface of the ring pontoon;

a plurality of main columns extending upwardly from the pontoon body to the deck box for supporting the deck box above a water surface; and

a plurality of pencil columns, each of the pencil columns having an upper end and a lower end, with each of the pencil columns positioned between two main columns and extending upwardly from the respective spaced-apart through hole to the deck box; and

wherein each of the pencil columns having a water chamber provided within the pencil column for receiving water through the through hole and entrapping water within the pencil column for dampening pitch and wave motions of the semi-submersible during operation and a piston within and at the upper end of the pencil column for entrapping air within the pencil column for use as a damper to the water entering the pencil column.

2. The semi-submersible offshore structure according to claim 1, wherein each of the pencil columns further comprises a dampening means that includes the piston for dampening water that enters the pencil column.

3. The semi-submersible offshore structure according to claim 2, wherein the dampening means includes a second chamber provided within and at the upper end of the pencil column for entrapping air within the pencil column for use as a damper to the water entering the pencil column.

4. The semi-submersible offshore structure according to claim 2, wherein the water chamber extends through the entire length of the pencil column.

5. The semi-submersible offshore structure according to claim 4, further comprising:

means for introducing compressed air into the pencil columns for controlling flow of water within the pencil columns, wherein the said means is provided outside and proximate the upper end of the pencil column.

6. The semi-submersible offshore structure according to claim 1, wherein the plurality of pencil columns extend radially inwardly toward a center vertical axis of the ring pontoon to the deck box.

7. The semi-submersible offshore structure according to claim 1, wherein the plurality of main columns and the plurality of pencil columns having the same height.

8. The semi-submersible offshore structure according to claim 1, wherein the water chamber within the pencil column having an internal diameter of 4 to 6.5m.

9. The semi-submersible offshore structure according to claim 1, wherein the each of the plurality of pencil columns having an internal diameter of 5 to 7m.

10. The semi-submersible offshore structure according to claim 1, wherein each of the plurality of main columns having, over its entire length, a substantially trapezoidal or rectangular cross-section.

11. The semi-submersible offshore structure according to claim 1, wherein each of the plurality of pencil columns having, over its entire length, a substantially circular cross-section.

12. The semi-submersible offshore structure according to claim 1, wherein the ring pontoon having an outer diameter of 90 to 110 m.

13. The semi-submersible offshore structure according to claim 1, wherein the ring pontoon having an inner diameter of 65 to 85 m.

14. The semi-submersible offshore structure according to claim 1, wherein the ring pontoon has a circular or polygonal shape.

15. The semi-submersible offshore structure according to claim 1, wherein the semi-submersible has a draft of 34 to 40m.

16. The semi-submersible offshore structure according to claim 1, wherein the semi-submersible has pontoon depth of 6 to 10m.

17. The semi-submersible offshore structure according to claim 1, wherein the deck box having a circular or polygonal shape.

18. The semi-submersible offshore structure according to claim 1, wherein the semi-submersible offshore structure comprises four main columns and four pencil columns.