Claims

1. A caisson box structure comprising:

a concrete base;

a plurality of concrete walls extending from adjacent the periphery of the concrete base to terminate at a free end for defining an opening to a compartment defined by the plurality of concrete walls and the concrete base, the compartment being shaped and dimensioned for receiving at least one insulative storage vessel therein;

at least one attachment structure formed with at least one of the plurality of concrete walls wherefrom weight of the plurality of concrete walls, the concrete base and the at least one insulative storage vessel can be supported for enabling mobility and transport of the caisson box structure, and

a cage structure adapted for being received in the compartment and shaped and dimensioned for receiving the at least one insulative storage vessel, the cage structure for interposing the plurality of concrete walls and the at least one insulative storage vessel when received in the compartment to thereby substantially isolate movement of the at least one insulative storage vessel in the compartment when the caisson box structure is being transported,

wherein the cage structure has an external frame for substantially shape matching the compartment and at least one internal frame for shape matching and accommodating the at least one insulative storage vessel, and a plurality of braces which extends between the external frame and the at least one internal frame to isolate movement of the at least one internal frame, the external frame and the at least one internal frame being formed from a plurality of metallic channels.

2. The caisson box structure as in claim 1, each of the concrete base and the plurality of concrete walls are prefabricated from reinforced concrete.

3. The caisson box structure as in claim 2, the reinforced concrete further being high strength concrete being adapted and shaped and dimensioned for forming a substantially blast and penetration resistant structure.

4. The caisson box structure as in claim 2, the reinforced concrete being reinforced with at least one of steel rebars, synthetic fibers and natural fibers.

5. The caisson box structure as in claim 1, the at least one attachment structure comprising at least one exposed rebar being adapted with one of a loop shape and a hook shape.

6. The caisson box structure as in claim 1, the at least one attachment structure being one of at least one recess and at least one hole formed in at least one of the plurality of concrete walls.

7. The caisson box structure as in claim 1, each of the concrete base and the plurality of concrete walls being substantially planar.

8. The caisson box structure as in claim 1, the at least one insulative storage vessel being at least one cryogenic storage dewar having one of less than 3000 litres and substantially 210 litres in storage capacity.

9. The caisson box structure as in claim 1, each of the concrete base and the plurality of concrete walls having a thickness of between 50mm and 500mm,

wherein each of the plurality of concrete walls having a height of between 1 meter to 3 meters and a width of between 0.3 meter and 5 meters.

10. A caisson box structure comprising:

a concrete base defining four edges;

four concrete walls extending from adjacent the four edges of the concrete base to terminate at a free end for defining an opening to a compartment defined by the four concrete walls and the concrete base, the compartment being shaped and dimensioned for receiving at least one insulative storage vessel therein;

a cage structure adapted for being received in the compartment and shaped and dimension for receiving the at least one insulative storage vessel, the cage structure for interposing the plurality of concrete walls and the at least one insulative storage vessel

when received in the compartment to thereby substantially isolate movement of the at least one insulative storage vessel in the compartment when the caisson box structure is being transported; and

at least one attachment structure formed with at least one of the plurality of concrete walls wherefrom weight of the plurality of concrete walls, the concrete base and the at least one insulative storage vessel can be supported for enabling mobility and transport of the caisson box structure,

wherein each of the concrete base and the plurality of concrete walls is formed from high strength concrete being adapted and shaped and dimensioned for forming a substantially blast and penetration resistant structure, and

wherein the cage structure has an external frame for substantially shape matching the compartment and at least one internal frame for shape matching and accommodating the at least one insulative storage vessel, and a plurality of braces which extends between the external frame and the at least one internal frame to isolate movement of the at least one internal frame, the external frame and the at least one internal frame being formed from a plurality of metallic channels.

11. The caisson box structure as in claim 10, the high strength concrete being reinforced with at least one of steel rebars, synthetic fibers and natural fibers with each of the concrete base and the plurality of concrete walls having a thickness of between 50mm and 500mm,

wherein each of the plurality of concrete walls having a height of between 1 meter to 3 meters and a width of between 0.3 meter to 5 meters.