CLAIMS:

1. A system for handling and storage of ISO or intermodal containers, the system comprising:

a structure having a plurality of storage cells therein, each of the storage cells being configured to store at least one ISO or intermodal container therein, a first number of the plurality of storage cells being located at a different vertical position within the structure to a second number of the plurality of storage cells,

a void area extending vertically through or alongside the structure,

a third number of the plurality of storage cells, the third number of the plurality of storage cells comprising at least some of the first number of the plurality of storage cells and at least some of the second number of the plurality of storage cells, and each of the cells of the third number of the plurality of storage cells:

being adjacent the void area, and

having a container access opening communicating with the void area; and

a container crane mounted relative to the structure and comprising:

an elongate carrier located in the void area, a longitudinal dimension of the carrier defining a first axis,

a hoist assembly mounted to the structure at an upper end of the void area, the hoist assembly connected to the carrier for adjusting a vertical position of the carrier relative to the structure,

first and second container engagement assemblies releasably engaged with respective opposite longitudinal ends of the carrier, each of the container engagement assemblies comprising latching formations for engagement with openings in corner castings of an ISO or intermodal container, the container engagement assemblies being disengageable from the carrier for lateral movement away from the carrier, out of the void area, and into a target cell of the third number of the plurality of storage cells via the respective access opening,

wherein, upon movement of the container engagement assemblies into the target cell, the container engagement assemblies engage and are vertically supported by a portion of the structure associated with the target cell,

wherein the structure comprises a plurality of horizontally spaced apart vertical members and a plurality of lateral members interconnecting the vertical members, each of the cells comprising a pair of parallel, spaced apart horizontal members at its upper end,

wherein said portion of the structure associated with the target cell comprises the pair of horizontal members of the target cell,

wherein the carrier comprises a pair of horizontal members having a cross sectional shape complementary to that of the horizontal members of the cells, and wherein, when engaged with the carrier, the container engagement assemblies engage and are vertically supported by the pair of horizontal members of the carrier.

2. The system of claim 1, wherein the container engagement assemblies are self-propelled.

3. The system of claim 2, wherein power supply cables for powering the container engagement assemblies extend from the carrier, wherein the power supply cables extend from an upper region of the structure, through the void area to a central region of the carrier, and outwardly from the central region of the carrier to the container engagement assemblies.

~~4. The system of claim 3, wherein the power supply cables extend from an upper region of the structure, through the void area to a central region of the carrier, and outwardly from the central region of the carrier to the container engagement assemblies.~~

~~5. The system of claim 4, comprising a cable drum mounted to the carrier, the power supply cables being collected in the cable drum during elevation of the carrier~~

~~relative to the structure and being fed out from the cable drum during lowering of the carrier relative to the structure.~~

~~6~~4. The system of ~~any one of claims 3 to 5~~claim 3, comprising a cable extension and retraction assembly for feeding the power supply cables to and retracting the power supply cables from the container engagement assemblies as the container engagement assemblies move relative to the carrier.

~~7. The system of any one of the preceding claims, wherein the structure comprises a plurality of horizontally spaced apart vertical members and a plurality of lateral members interconnecting the vertical members, each of the cells comprising a pair of parallel, spaced apart horizontal members at its upper end.~~

~~8. The system of claim 7, wherein said portion of the structure associated with the target cell comprises the pair of horizontal members of the target cell.~~

~~9. The system of claim 8, wherein the carrier comprises a pair of horizontal members having a cross sectional shape complementary to that of the horizontal members of the cells, and wherein, when engaged with the carrier, the container engagement assemblies engage and are vertically supported by the pair of horizontal members of the carrier.~~

~~10~~5. The system of ~~claim 9~~any one of the preceding claims, wherein the horizontal members of the carrier are perpendicular to said first axis.

~~11~~6. The system of ~~claim 9 or claim 10~~any one of the preceding claims, wherein each of the container engagement assemblies comprises a roller assembly, comprising one or more ~~roller(s~~roller, the horizontal members of the carrier defining a first track engageable by the one or more roller~~(s)~~ of the roller assembly and the horizontal members of the cells defining a second track engageable by the one or more roller~~(s)~~ of the roller assembly, wherein, when the container engagement assemblies transition

between the carrier and the target cell, the roller assemblies transition between engagement with the first track and engagement with the second track.

~~12~~7. The system of any one of the preceding claims, comprising at least one bearing member extending from the target cell, outwardly into the associated void area, the carrier comprising a selectively extendable and retractable bearing element, the bearing element, when in an extended configuration, being engageable with the bearing member to support the carrier at a vertical position in which the container engagement assemblies are aligned with the portion of the structure associated with the target cell.

~~13~~8. The system of any one of the preceding claims, wherein the structure comprises a vertical third track engageable by the carrier, engagement between the carrier and the third track guiding the carrier, and thereby the first and second container engagement assemblies, during adjustment of the vertical position of the carrier relative to the structure.

~~14~~9. The system of claim ~~13~~8, wherein the carrier comprises selectively extendable and retractable guide members, the guide members, when in an extended configuration, engaging the third track.

~~15~~10. The system of any one of the preceding claims, wherein each of the cells, at its lower end, comprises at least four container bearing zones on which a container is placed for storage in the target cell, and wherein a vertical distance between each of the bearing zones and the portion of the structure associated with the target cell is adjustable to facilitate maintaining a constant distance between a top of a container stored in the target cell and the portion of the structure associated with the cell regardless of the height dimension of the container.

~~16. The system of claim 15, comprising a locating projection extending from each said bearing zone for engaging an opening in a corresponding corner casting of a container stored in the cell.~~

~~17. The system of claim 15 or claim 16, wherein a vertical distance between each of the bearing zones and the portion of the structure associated with the target cell is adjustable to facilitate maintaining a constant distance between a top of a container stored in the target cell and the portion of the structure associated with the cell regardless of the height dimension of the container.~~

~~18~~11. The system of claim ~~17~~10, wherein a bearing module of adjustable height is associated with each of the bearing zones.

~~19. The system of claim 18, wherein each of the bearing modules comprises a plurality of stackable articulated blocks.~~

~~20. The system of claim 19, wherein the articulated blocks are stackable in a plurality of different stacking configurations, each stacking configuration being associated with a different height of the bearing module.~~

~~21. The system of claim 20, comprising actuatable mechanical linkages interconnecting the articulated blocks to facilitate reconfiguring the articulated blocks in each of the stacking configurations.~~

~~22. The system of any one of the preceding claims, wherein the hoist assembly is moveable horizontally with respect to the structure.~~

~~23. The system of claim 22, wherein the hoist assembly may be self-propelled to facilitate its horizontal movement relative to the structure in a direction parallel to the first axis.~~

~~24. The system of claim 23, wherein the hoist assembly is locked against movement relative to the structure unless the carrier is interlocked with the hoist assembly.~~

~~25~~12. The system of any one of the preceding claims, wherein said openings in corner castings of a container are top openings in upper corner castings of the container and the latching formations comprise twistlocks.

~~26. The system of any one of the preceding claims, wherein the latching formations comprise twistlocks.~~

~~27~~13. The system of any one of the preceding claims, wherein the latching formations are extendable and retractable in a vertical direction between an extended configuration and a retracted configuration, and wherein the latching formations are engageable with the openings in corner castings of a container when in the extended configuration, and when in the retracted configuration, and when moving therebetween, such that the container is moveable vertically by the extension or retraction of the latching formations.

~~28. The system of claim 27, wherein the latching formations are engageable with the openings in corner castings of a container when in the extended configuration, and when in the retracted configuration, and when moving therebetween, such that the container is moveable vertically by the extension or retraction of the latching formations.~~

~~29~~14. The system of claim ~~27 or 28~~13, wherein the latching formations are displaced vertically by less than a predetermined displacement when moving between the extended configuration and the retracted configuration, the predetermined displacement being less than ~~around 12 inches (approximately 300mm), or less than around 8 inches (approximately~~ 200mm~~) or less than around 6 inches (approximately 150mm), or less than around 4 inches (approximately 100mm)~~.

~~30~~15. The system of ~~any one of claims 27 to 29~~claim 13 or claim 14, wherein the container engagement assemblies comprise camming mechanisms for moving the latching formations between the extended and retracted configurations.

~~31~~16. The system of any one of the preceding claims, comprising a container carrier bay at a lower end of the or each said void area, wherein the container carrier bay is oriented parallel to the first axis such that a longitudinal axis of a container carried on a container carrier in the bay is parallel to the first axis, and wherein the crane is configured for lowering to the bay to: unload a container from a said container carrier in the bay and move the container into one of the cells; or deliver a container from one of the cells to a said container carrier in the bay.

~~32. The system of claim 31, wherein the container carrier bay is oriented parallel to the first axis, such that a longitudinal axis of a container carried on a container carrier in the bay is parallel to the first axis.~~

~~33. The system of claim 31 or claim 32, wherein the crane is configured for lowering to the bay to: unload a container from a container carrier in the bay and move the container into one of the cells; or deliver a container from one of the cells to a container carrier in the bay.~~

~~34. A system according to any one of the preceding claims, wherein a distance between the first and second container engagement assemblies, measured parallel to the first axis, is adjustable.~~