CLAIMS

1. An access module for a modular access structure, said access module comprising:

a longitudinally and vertically extending first frame having a longitudinally extending upper chord and a longitudinally extending lower chord;

a longitudinally and vertically extending second frame having a longitudinally extending upper chord and a longitudinally extending lower chord, said second frame laterally opposing said first frame;

a deformable lower support structure laterally extending between said first and second frames, said lower support structure including a deck spanning a longitudinal length of said access module; and

a deformable upper support structure laterally extending between said first and second frames, said upper support structure being spaced above said deck to define an access passage extending along a length of said access module between said deck, said upper support structure and said first and second frames;

wherein said access module is configurable by deformation of said lower and upper support structures between an extended configuration in which said first and second frames are spaced apart a first distance and said deck is generally horizontal and a collapsed configuration in which a distance between said first and second frames is less than said first distance;

further wherein said access module is adapted to be fastened end to end to a second access module to form a modular access structure with an access passage extending along a length of the modular access structure, each of said lower chords being adapted to be fastened end to end to a corresponding lower chord of the second access module to form a single load bearing elongate lower chord assembly.

2. The access module of claim 1 wherein:

said lower support structure comprises a plurality of longitudinally spaced and laterally extending articulated floor beams;

opposing ends of each said floor beam are pivotally attached to said first frame and said second frame respectively;

each said floor beam comprises a first beam segment and a second beam segment pivotally attached to said first beam segment;

wherein said deck is mounted on said floor beams;

further wherein, for each said floor beam:

when said access module is in said extended configuration, said first and second beam segments extend substantially collinearly; and

when said access module is in said collapsed configuration, said first and second beam segments are mutually angularly inclined.

3. The access module of claim 2 wherein:

said upper support structure comprises a plurality of longitudinally spaced and laterally extending lateral struts;

opposing ends of each said lateral strut are pivotally attached to said first frame and said second frame respectively;

each said lateral strut comprises a first strut segment and a second strut segment pivotally attached to said first strut segment;

further wherein, for each said lateral strut:

when said access module is in said extended configuration, said first and second strut segments extend substantially collinearly; and

when said access module is in said collapsed configuration, said first and second strut segments are mutually angularly inclined.

4. The access module of any one of claims 1 to 3, further comprising a plurality of connectors, each of said connectors being adapted to fasten one of said chords of one of said frames end to end to a corresponding chord of a corresponding frame of a second access module.

5. The access module of claim 4, wherein said upper and lower chords of each of said first and second frames each comprises a hollow structural section and each said connector comprises a spigot mounted in the hollow of the respective said chord.

6. The access module of claim 5, wherein each said spigot is displaceable between a protruding configuration in which said spigot protrudes from an end of the respective said chord and a retracted configuration in which said spigot is retained wholly within said chord.

7. The access module of either one of claims 2 and 3, wherein said deck comprises a first deck section mounted on said first beam segment of each said floor beam and a second deck section mounted on said second beam segment of each of said floor beams;

wherein, when said access module is in said extended configuration, said first and second deck sections substantially abut.

8. The access module of claim 3, wherein each said lateral strut is configured to be fixed when said access module is in said extended configuration by way of a strut locking pin extending laterally through said first and second strut segments;

further wherein each said floor beam is configured to be fixed when said access module is in said extended configuration by way of a beam locking pin extending laterally through said first and second beam segments.

9. The access module of either one of claims 3 and 8, wherein each of said first and second frames further comprises:

a plurality of laterally projecting upper stubs mounted to or adjacent said upper chord and a plurality of laterally projecting lower stubs mounted to or adjacent said lower chord, each said upper stub of said first frame opposing a corresponding upper stub of said second frame and each said lower stub of said first frame opposing a corresponding lower stub of said second frame;

further wherein:

each of said lateral struts is pivotally attached to corresponding upper stubs of said first and second frames; and

each of said floor beams is pivotally attached to corresponding lower stubs of said first and second frames.

10. The access module of claim 9, wherein when said access module is in the collapsed configuration, corresponding upper stubs of said first and second frames engage and corresponding lower stubs of said first and second frames engage; and

said corresponding upper stubs and said corresponding lower stubs are configured to lock when engaged to lock said access module in said collapsed configuration.

11. The access module of any one of claims 1 to 10, wherein said first and second frames each further comprise a pair of corner blocks mounted towards opposing longitudinal ends of said upper chord, said corner blocks being configured to be engaged by twist-locks for lifting said access module.

12. The access module of claim 11, wherein said access module is sized, and said corner blocks located, such that a plurality of said access modules may be interconnected side to side to form an access module assembly with each of said access modules in the collapsed configuration such that the outer most corner blocks of the access module assembly are spaced to at least substantially match the spacing of corner blocks of an ISO standard cargo container.

13. A modular access structure comprising a plurality of the access modules of any one of claims 1 to 12 fastened end to end.

14. The modular access structure of claim 13 wherein said modular access structure is a modular bridge structure or modular overhead protection structure.

15. A method of forming a modular access structure, said method comprising:

a) aligning a first access module according to any one of claims 1 to 12 end to end with a second access module according to any one of claims 1 to 12, said first and second access modules being in said extended configuration; and

b) fastening said first and second access modules end to end to form a modular access assembly, including fastening each of said lower chords of said first access module end to end with a corresponding lower chord of said second access module.