The world’s first diagrid hyperboloid structure was Shukhov tower in Polbino by Russian architect and engineer Vladimir Shukhov in 1896 where it said to be the origin of “diagonal” structures although diagrid technology may not have been a primarily building related concept to begin with, the ideas and structural expression seen in a diagrid can be found in early aviation technology.

The diagrid system are the evolution of braced tube structures. The perimeter configuration preserve the maximum bending resistance and rigidity, with respect to the braced tube, the mega-diagonal members are diffusely spread over the façade which give rise to closely spaced diagonal elements and allowing for the complete elimination of the conventional vertical columns which result to the diagonal members act both as inclined columns and as bracing elements thus carry gravity loads and lateral forces. Due to the triangulated configuration of the diagrid, mainly internal axial forces arise in the members, thus minimizing shear racking effects.

a.