Monika SROKA-BIZOŃ, Piotr POLINCEUSZ
Silesian University of Technology
Geometry and Engineering Graphics Centre
Krzywoustego Street No 7, 44-100 Gliwice, Poland
phone/fax: +48 32 237 26 58
e-mail: monika.sroka-bizon@polsl.pl
piotr.polinceusz@polsl.pl

TENSEGRITY STRUCTURES - WORK OF ARTIST, DESIGNER, OR SCIENTIST?

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All structures, properly understood, from the solar system to the atom, are tensegrity structures. Universe is omnitensional integrity.
R. B. Fuller.

Tensegrity's structures have been in development for 69 years, since the construction of the first structure of this type by Kenneth Snelson in 1948, attracting the interest of constructors, architects and scientists in many fields of science. The spatial structure of Kenneth Snelson, are made of rods and tendons, in which mutual stabilization of the stretched and compressed elements delight in lightness. They make an impression like as structures floating in the air, which do not interact with force of gravity. But the power of interaction "towers"of K. Snelson is not only related to the artistic aspect of the works. [2] Their expression influences on constructors and scientists, who analyze and Studying the structure of Tensegrity. Richard Buckminster Fuller, charismatic professor at Black Mountain College (North Carolina, USA), he inspired a student Kenneth Snelson, with lecture about "Geometric Models", to undertake research on spatial structures that resulted in the construction of the first structure of the Tensegrity Reading the work of authorship by David Georges Emmerich, devoted to the Tensegrity systems, inspired to undertake research of Tensegrity structures Rene Motro. [3] Anthony Pugh, Hugh Kenner, Robert Burkhardt and many other architects, engineers and researchers are under the influence force of Tensegrity expression.

The Tensegrity structures are interesting not only because of the history of their origin and the impact on the imagination of artists and researchers. For architects conducting research in the field of geometrical shaping of architectural objects, the geometrical aspects of shaping the structures are extremely interesting. Searching for answers to the question: how geometrically and spatially shape the structure meets the definition Tensigrity according to which the Tensigrity is island in a ocean of stretching, by Richarda B. Fullera, was inspired to starting a research on tensegrity structures [1]

The paper presents the extracted based on the research literature:

- proposed nomenclature related to structural elements,
- systems for classification of Tensegrity structures,
- examples of architectural objects in which Tensegrity structures occur.

Fig 1. Kurlipa Bridge, Brisbane Queensland, Australia, 2009; designed by Ove Arup & Partners. Źródło: https://en.wikipedia.org/wiki/Kurilpa_Bridge

References:

[1] Fuller R. B.: Tensegrity, Portfolio and Art. News Annual, No.4, 1961, page 112-127; http://www.rwgrayprojects.com/rbfnotes/fpapers/tensegrity/tenseg01.html

[2] Jauregui V. G.: Tensegrity Structures and their Application to Architecture, School of Architecture, Queen's University, Belfast, September 2004; page. 81

[3] Motro R.: Tensegrity: Structural Systems for the Future", Butterworth - Heinemann, 2003