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Topological relations concerning geometrical entities and mathematical theories such as graph theory, symmetry groups, crystallography and others, can be related to structural forms widely appearing in nature. People have followed these natural prototypes since the very beginning of their conscious structural activity. We can perceive these forms in numerous traditional structural solutions. However, advanced methods in mathematics, allow us to go far beyond simple imitation of natural prototypes and design much more sophisticated objects. Partitioning of the space with modular elements allows shaping practical structural forms. Various types of polyhedra can be used for such tessellations. In order to increase practical effectiveness, graphs as topological models of polyhedra are adopted. Thus, many very interesting results, well known in mathematics, but regarded far from building structures can be applied. Some recent examples corroborate this observation. (Received December 29, 2007)