Architecture and paper structures – could paper-folding become a methodology in Architecture?

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Abstract
When we think of paper-folding, we usually think first of the name that is usually associated with it: origami. But in the field of architecture, origami is more than just imagining an animal or flower which is what this word usually brings to mind. In architecture, we extend the meaning to take in the real essence of the word – that of great structural and constructional loads. The basic unit of origami – the fold – allows us to start manipulating space and even to create space itself. Paper-folding, with its spatial modelling potential, is to three-dimensionality what drawing is to two-dimensionality. It is after all an ancient Japanese art which encapsulates the advantages of intuitive thinking and fast modelling, once the basic elements of folding are known.
Heino Engel (2001) in his book “Structural Systems”, describes intensive studies on types of structures which derive from this systematization. And the architect Ming Tang often uses structures in his projects which clearly originate in the concept of origami, and he correlates these structures with sustainable materials. The architect Michael Hansmeyer manages to incorporate all the beauty of the action of folding with the help of a computer, where the final result is a shape that approaches a real application at an architectural level.
Over time, there have been numerous people who have found a relationship between the harmony and proportions of paper-folding and their own studies and projects. What is missing is a single point where clear concepts on the possibilities of folding and the results of those who have experimented with it can be brought together. This cataloguing, which is being carried out in this Master’s dissertation, is intended to be a contribution to the design method in architecture, through which the architect may achieve spatial dexterity over a piece of paper.