

## Digital Design and Anamorphosis – Perception based Architecture

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At the core of GRAFT's architectural design process is the perceptual horizon of spatio-temporal or scenographic experience. Design methods focusing on this have been decisively influenced by the further development of digital design tools in #3D modeling. Animated spatio-temporal techniques of "computer aided" or #digital design enable the dynamic understanding of architecture as a temporal sequence in space. To this end, GRAFT conducts #research and development in cooperation with the Charité Berlin, in order to better understand and empirically evaluate stress-inducing factors in the perception of scenography in space in particular.

In retrospect, it seems no coincidence that the founding of GRAFT in 1998 in Los Angeles coincides with the early phase of two design tools that have since radically evolved: On the one hand, the increasingly intuitive "parametric design" for identifying and modifying relevant design parameters in form-finding. On the other hand, the technology that is completely taken for granted in the Hollywood environment of using "story boards" to depict the space-time experience as a scenic sequence and to represent it in "real time" by means of increasingly professional simulatable "reality".

The fusion of two- and three-dimensional representations in one and the same design tool, and the possibility to be able to "put oneself into" spaces and to "wander" in them by moving the virtual eye, makes the experience of the built space in the temporal continuum as a dynamic phenomenon and perceptual product of the recipient since then the starting point of the search for a new design methodology at GRAFT. The invention of "anamorphic diagrams in space" thereby leads to form that can only be deciphered through movement in time.

An early example of such an architectural concept by GRAFT is the flagship store of the skater shoe brand DC Shoes in New York from 2003. The legendary jump of the professional skater Danny Way was, as is common in acrobatic analysis, broken down into a series of still images and these were finally translated inverted into a sequence of wall slices from which the dynamic silhouettes of the skater in the jump are cut out. Only via the detour of the dynamic spatial figure of the jumping in time can the derivation of the physically experienced figure of the architectural space be understood.

The design for the dental practice KU64 in Berlin follows a similar path. Only through anamorphic projection of images in the virtual 3D model could exact specifications be made for the application of graphics in the spatial figure. Viewers only gradually discover images through their own movement in space, which leads to points of rest or redirection in a mnemonic space. The technique of projecting two-dimensional images in three-dimensional space liberates the image from its autonomy as an image and turns it into a tool for deciphering the three-dimensional spatial sequence.

The core idea of the exhibition concept "Unbuilding Walls" for the German Pavilion at the Architecture Biennale in Venice 2018 also uses this phenomenon. Here, the image of a two-dimensional black spatial boundary or "wall" of about 3.5m in height, blocking the way, dissolves only by entering and moving in space. By slightly changing the angle of view, wall fragments distributed in the room become recognizable, which only from the point of view when entering the room optically complete to a two-dimensional "picture" of wall. The spatial metaphor of a virtual two-dimensional spatial boundary, whose perception can be changed by changing the physical point of view, thereby becoming accessible and thus "experienceable" is both the source and the goal of the concept: the decisive factor in this 3D narrative was that the sensation or interpretation of the archetype "wall" can disappear when one leaves one's own "point of view", i.e. point of view as well as attitude.