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SPATIAL DESIGN WITH CONSTRUCTION TOOLS

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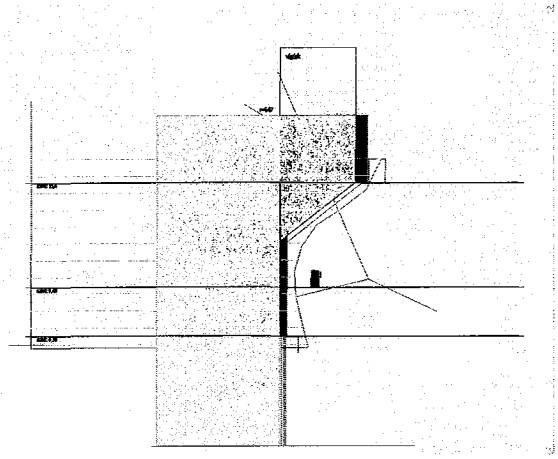
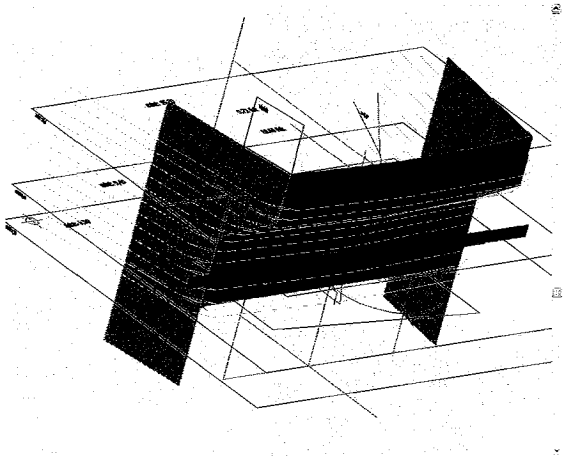
Abstract: *Uniquenesses and oddity of architectural constructions are often based on their individual geometrical shapes and forms. Several historical buildings are scored because of some new geometrical ideas, and in some cases the architects themselves were highly motivated by geometry. In some cases architects and builders were mathematicians or geometers as well. Nowadays even pure geometrical constructions are supported with digital tools: changing the Eucledian compasses and straight line ruler into a modern instrument, called software. Geometers and architects become users. The limitation of this new way of solving geometrical problems is, that geometry for engineering is often supported by discreet or approximate solutions. However this solution is highly approved, sometimes users need to think over planar geometrical constructions: with the help of a 3-dimensional modelling program, we should change the way of traditional construction even of geometrical primitives, like Platonic solids.*

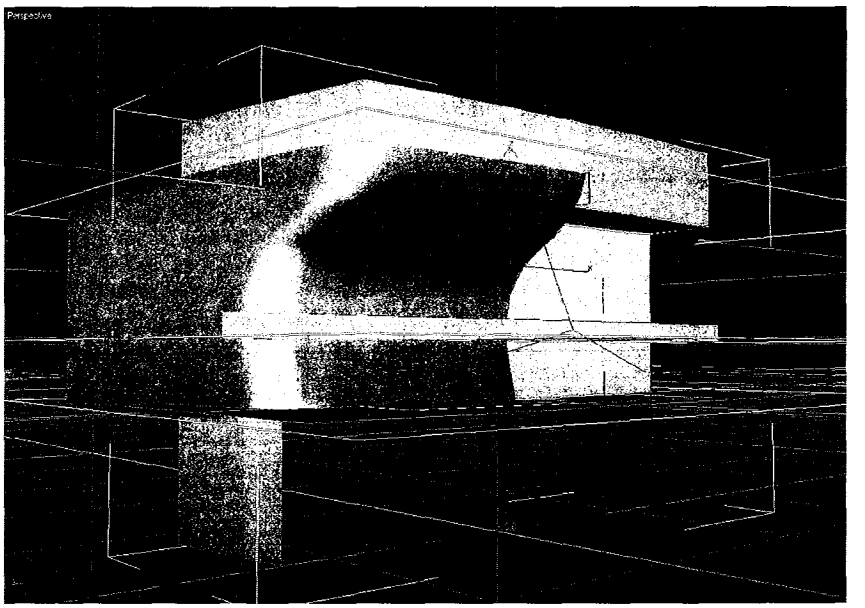
FREE FORMS AND ANALYTIC GEOMETRICAL SHAPES

There are almost no limits in high-tech industry to carry out any kind of form or shape. However in building industry, where products are not mass-products, each building, construction is a unique product, there is and economical limit of producing something extreme which can not be supported by computer numeric control machines well enough. The challenge in computer-based 3d modelling is, that we might simplify the character of a curve or surface geometrically, without hurting the intention of architect and serving the aim of original idea well enough. In the following example Zoboki &

Demeter Architects designed the main wall of an entrance lobby of a music hall. The shape of the wall was described as a freehand sketch, then it was traced with a 3d modelling software package. All of the details were described precisely, but the contractor needed a structure can be produced more efficiently.



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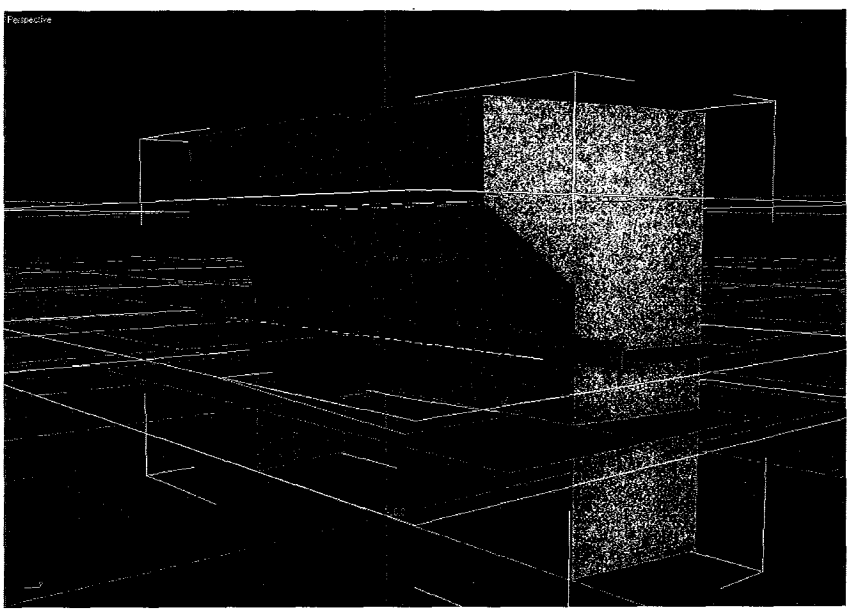
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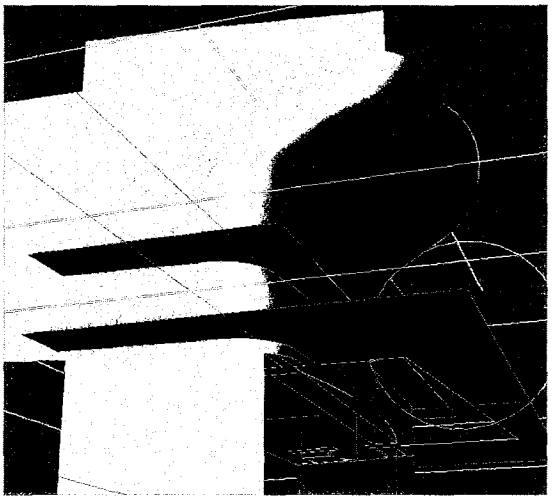

Full version of this article is available at
www.arch.bme.hu/szoboszlai/spatial_design.html

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