Blender Conference 2008
Amsterdam, the Netherlands

Other dimensions between virtual and real: the use of 3D modelling programs and virtual worlds for university education and for the design and realization of three-dimensional art and architecture.

Abstract
The development of sophisticated and "open source" 3D modelling software such as Blender is increasingly favouring the possibilities for creative expression and artistic and multimedia communication.

Blender is a crucial point for both its chances of direct expression and expansion of artistic creativity and as a vehicle for entering to other dimensions: in collaborative 3D virtual worlds as Second Life or Project Wonderland or in physical simulations as video games or movies.

The feature that makes it so interesting is that it covers utilities for different worlds such as art, architecture and the production of videos and video games.

The goal of my speech is to highlight the links between virtual life and real life in the design process: an interchange between worlds which opens the path for new interpretations of sculpture and architecture and new professional figures.

We are facing a wonderful expansion of artistic creativity; we can design everything in a virtual world and then we can try to use it for the constructing process in Real Life. Today an artist can really invent his own world.

Speaker
Giampiero Moioli

Hi! I am Giampiero Moioli, I am a sculptor and a professor of sculpture at the Brera Academy of Fine Arts in Milan; I work together with Stefania Albertini on “four hands sculptures” and 3D projects: urban projects, public art, interior projects and architectural design with Blender and many other tools.

We are artists, we work on our basic, three-dimensional idea and we begin from drawings and 3D models and we go on until the realization of this idea in the Real Life. An idea such as the bubble-making machine.

And we are working on with varied methods: shapes, real models, 3D virtual models, techniques and materials from metal to plastic.

At the moment, Blender is the most important tool because it is a link, a link between real and virtual worlds and among the virtual reality and numerous projects based on the third dimension that we have developed or we have been developing in the Web and on the Real Life. Blender is an application in connecting different professional worlds.

We are using Blender for different purposes:
1) virtual modelling and design of sculptures (from interior spaces and urban spaces to virtual reality)
2) animation
3) importing of shapes in three-dimensional virtual worlds
4) development of interactive three-dimensional worlds with the use of soft bodies, particle systems, physics and Blender (animations, games, interactive spaces).

We started with 3D studio Max which is installed on all computers of the design classroom at the Academy of Brera together with Autocad, Photoshop, Flash and other commercial software.

Two years ago we started to install Blender and encourage the use of Blender among students. Blender is the best solution for those who want to develop their own artistic language and to work without constraints because it is totally free for personal and commercial use.

There are some differences between Blender and 3D studio; I think that some Blender tools are more intuitive to use than those of 3D studio. An example is the modelling in sculpt mode: with this modelling mode you can create very complex organic forms. Another very interesting feature is its unwrapping system with various functions of Texture Paint.

Thanks to a huge worldwide community there are also a number of developing tools for Blender. A CAD application for Blender would be a very interesting thing for design (a few CAD tools already exist for Blender as Procad). Also it would be interesting to develop exporting formats for Cad Cam systems for the direct creation of models designed in Blender.

Blender becomes increasingly flexible as an important link among the various aspects of the world of art, architecture and communication. Autodesk instead tends to increasingly differentiate and
separate its products.
As a result, we must focus on making Blender more powerful.
Behind its development is the idea of freedom and creative and intellectual growth that is vital to
the future development of culture.

Our experience
We can identify the following steps in the development of our artistic work:
1) MODELING (Shape) and DESIGN (Project)
2) ANIMATION (Shape and Movement)
3) CREATIONS IN SECOND LIFE (Shape, Movement and Interactivity)
4) BACK TO BLENDER (The Physics, the Blender Game Engine, the Bullett physics engine)
5) PROJECT WONDERLAND and others

1) We started to use Blender professionally in 2004 (with Yafray) for some architectural projects:
2004 - “Torinoportasud”, a project for the Competition for the realization of the southern city door of
Torino. (Stefania Albertini and Giampiero Moioli with SeJong Yoo and Woongjong Yoo).
2005 – “Tre piazze per Sesto”, competition for the restructuring of the three squares Oldrini, Rondo
and Republic in Sesto San Giovanni (Working Group: Stefania Albertini, Matteo Invernizzi, Giampiero
Moioli, Gabrio Rossi, Patrizia Serra, Se Jong Yoo, Yoo Jong woong).
2005 – “Pratum Magnum” competition for the redevelopment of Piazza Trento Trieste in Monza.
(Working Group: Stefania Albertini, Matteo Invernizzi, Giampiero Moioli, Gabrio Rossi, Patrizia Serra,
Se Jong Yoo, Yoo Jong woong).
2006 project for Celle Ligure ; outside, inside.
2) Through Blender we are developing our sculpture in an increasingly interactive way.
We have begun to realize animations moving from modeling to a form of expression that is more
dynamic and we introduced motion (The bubble-making machine, animation).
3) The next step was the modelling of forms in Blender and exporting them in three-dimensional
virtual worlds (Second Life and Project Wonderland in the future) by adding further interactivity and
movement to our “Bubble-making machines” and “Fish tanks” in the Lifelog island into SL).
4 and 5) At the moment, our research is focusing on two possibilities for development: the first is to
go ahead with Blender interactive experiments using the particle systems, fluids, physics and game
engine Bullett. The second possibility for development is the use of Blender as a bridge to create a
personal three-dimensional world on line (Project Wonderland is interesting because it offers a 100%
Java and open source toolkit for creating collaborative 3D virtual worlds). It is also important that a
large company like IBM chose to import content from Blender to create its shapes in Project
Wonderland.
An online three-dimensional world modelled directly with Blender would be a dream.

Biography
Giampiero Moioli
He is a Milan-based sculptor, architect and professor of sculpture at the Brera Academy of Fine Arts
in Milan.
He works with Stefania Albertini -professor of sculpture at the same Academy- on “four hands
sculptures” and tridimensional projects since 1992.
He recently organized (with Mario Gerosa) the first conference on “The third dimension:
contemporary art, virtual worlds and social network” held at the Conference Room of the Museums
of Pavia.

Albertini e Moioli
The interest in the physical and tangible third dimension has been evolving from the relationship
between the sculpture and the architectural and urban space to the interactive virtual sculpture in
the virtual world.
Among the recent activities are: exhibitions at the Museum of the Castello Visconteo of Pavia, at
the Spaziotemporaneo Gallery in Milan, at the Baoqu Tang Modern Art Gallery in Hong Kong, at
the SIPA 2006 Seoul Arts Center / Hangaram Art Museum in Seoul.
Recently Albertini and Moioli placed three interactive sculptures in the Lifelog Island in Second Life
Bibliography:
Albertini and Moioli, Fidia, Lugano, 1994;
The bubble-making machine, the circumfolgore and other devices, Silvana, Milan, 2008.
www.albertiniemoioli.it
1) TORINO PORTASUD

Albertini e Molinelli
Torinoportasud project; 2004

Scale model

Albertini e Molinelli
Torinoportasud project; 2004
The project "Piazza per Bocca" (1989) with a bubble-making machine surrounding the bubble that plastic, cancelling the significant social scale and remanence with the removal of emphasis in a non-urban living. The project is an attempt to redefine the urban scale.
3) PRATUM MAGNUM

Albertini e Molli
Pratum Magnum project, 2005, developed for Piazza Trento e Trieste in Monza

In collaboration with Patrizia Serra, Sheng Yan, Mengping Yan, Matthew Kemper, Giada Baeza and Monica Lat
The structures of the Pratum Magnum project, with transparent structural units, transportable plastic pavilions and folding steps, are the principal elements of the project. Designed on a series of schemes, these represent an exciting hypothesis of social development, a way of bringing people together and exciting children and adults alike.

Albertini e Molcri
Pratum Magnum project, 2006, developed for Piazza Trento e Trieste in Monza
4) BUBBLE-MAKING MACHINES


Projects, modelled with Blender

Surveying the most recent bubble-making machines, conceived between 2006 and 2008, one
can see that the sculptures have been modeled in this decade toward a more geometrically
shaped and intuitively suggested by the everyday seeing and making, embracing practice of
modern computer-aided design, albeit translated into sculpture occupying physical space.


The sculptures contain soft metals, methacrylate and LED
5) THE BUBBLE-MAKING MACHINE, Animations

Animation with Blender  Duration: 64 seconds

6) SECOND LIFE INTERACTIVE SCULPTURES

Interactive sculptures modeled with Blender and imported in SL

Bubble-Making Machines and Fish tanks, 2008
Lifelog Island, Second Life