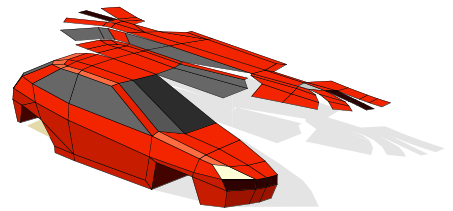# TouchCAD

For design and production

TouchCAD is based upon the concept of not only designing 3D-shapes, but also upon converting such shapes into something possible to fabricate physically. It does so by unfolding / unwrapping just about any shape.

3D modeling and unfolding

TouchCAD's 3D engine is based on 3D math curves. Shapes can easily be modified on the screen using modern push-pull methods, as well as numerically, in the Object Info palette. All control points are located on the objects, and are fully editable in 3D using dynamic cross sectioning seen from any view, to ensure maximal shape control. Models can be rendered and animated to visualize shapes. In-scale background images, separate for the Front, Top and Side views, can be imported to assist when modeling in 3D. Imported images can be adjusted to remove unwanted scale, rotation, proportional, and perspective errors.

Unfolding

Any 3D shape can be unfolded. Each panel has it's own set of unfolding properties, dynamically linked to the 3D model. Changes made in 3D can instantly be seen in the Unfold view, to allow efficient use of material. Unfolded panels can be moved, rotated and flipped in the Unfold view without loosing the dynamic link to the 3D shape, to generate ready to cut layouts using the built in nesting area. The unfolding features include many parametric features such as strip resolution, direction, individual overlaps for each panel and panel side, automatic panel and point numbering, alignment marks, stretch unfold calculations, automatic coordinate measurements, etc.

Unfolded images

High-resolution images can be applied to the 3D models and unfold them as images, to generate pre-painted unfolded image panels. Such images are produced in exact scale and resolution, and at high resolutions.

Results in manual or digital form

The output delivered from TouchCAD can be processed both manually by using the automatic coordinate features, or digitally by exporting files in formats like Adobe Illustrator and compatibles, DXF (including AAMA DXF), HPGL, VectorWorks (-Script), Sails Science Plotmaker, and in the most commonly used image formats such as JPEG, TIFF, TARGA, BMP, PICT. TouchCAD can generate presentation movies in QuickTime format.

Technical data

TouchCAD needs Mac (OSX 10.3–), or Windows (XP / Vista). 1 G RAM, 1 GHz processor or better. QuickTime and OpenGL installed. USB port. Tutorial movies are included.
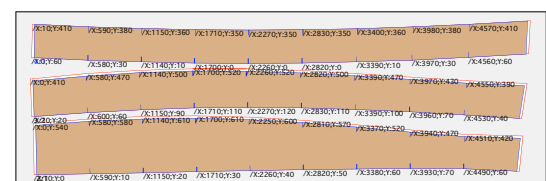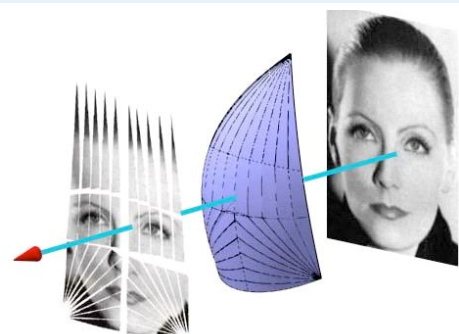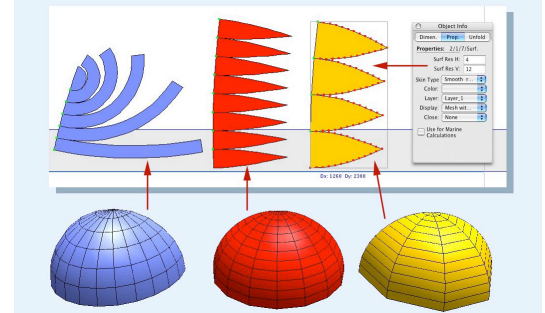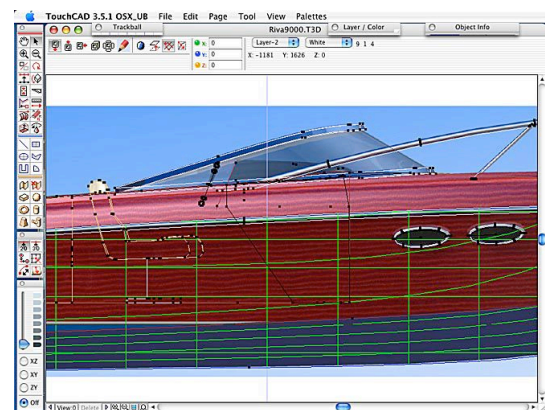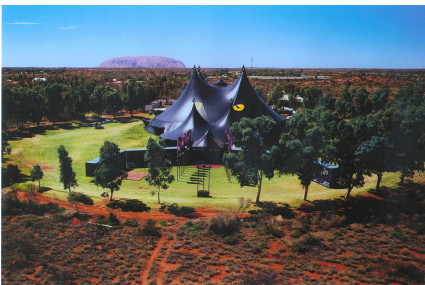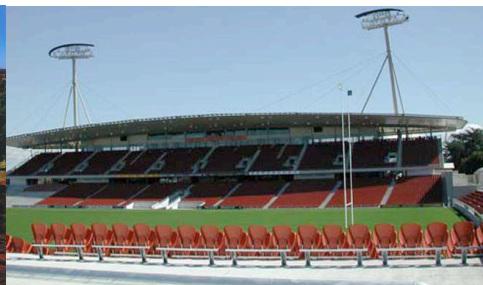

Sample projects

Inflated promotional blimps. Sky Signs, Phoenixville, USA. Six-meter high inflated bottle

Sails and graphics on sails. WB Sails, Helsinki, Finland.

Large event tents. Baytex Manufacturing, New Zealand. Example: A 57 x 57 x 24 meter tent used for touring with the Australian edition of the Cats musical.

Architectural shapes. Stadium roof made of fabrics. Baytex Manufacturing, New Zealand.

Art and Design. Monika Förster (design) / Gransegel / Lundström Design, Stockholm, Sweden. "Cloud", 5.3x4x2.3 meter inflated portable rest room.

*Theatre set design. Set design by Burkur Jonsson for the National Theatre of Iceland. Iceland.*

Reverse engineer 3D models by means of high resolution background images. Imported images can be corrected in scale, rotation, proportions, perspective, and be place them correctly relative to other images.
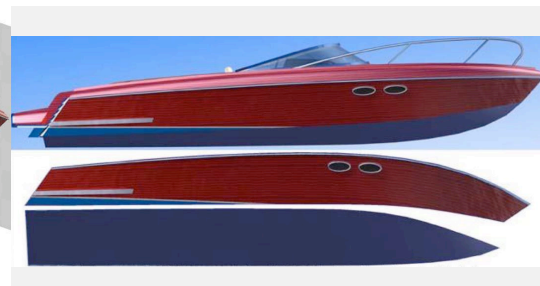
Scale models. Apply the background images to the 3D shapes and unfold them to generate realistically looking scale models, visualizations and prototypes.

Marine design. TouchCAD comes with built in marine design tools, such as dynamic cross-sectioning, etc. Any number of panels can be used for calculating key marine properties, such as displacement, center of buoyancy and gravity, wetted surface, weight and center of gravity calculations, etc.
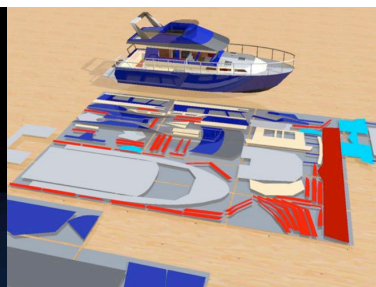
Nesting and production preparation. All unfolded panels are dynamically linked to the 3D model. Even very complex models and can be nested to maximize the use of material without loosing the dynamic link to the 3D model.

Sheet metal. TouchCAD comes with many build in tools for sheet metal objects such as cones, T-joints, etc. Such objects can be modified in any way, and it is also possible to generate free-form sheet metal objects and unfold them.