CAD User Piranesi

Seasons in the Rising Sun

Shinichi Fujita, chief of the Computer Aided Design and Architectural and Engineering Services Center within SEKISUI HOUSE Ltd, Japan, describes how Piranesi is used within his practice to design and sell their houses

Japan is a land of remarkable contrasts. The country is divided between flat arable areas that have to be used for agriculture, industry and habitation, and very hilly, forested areas that are very picturesque but suited to none of these uses.

Consequently the large population has to cram everything into the former, whilst still attempting to retain its intrinsic love of harmony, beauty and tranquillity. The major cities and towns appear to be brash and cluttered hotbeds of industry, with little apparent attempt at regional planning and with individual buildings set higgledy-piggledy amongst the busy streets (even the electricity supplies are brought in at lamppost height). Yet where space, history and money allow, you will find some of the most beautiful and restful developments that you will ever see.

Japanese architects are lucky in that they can draw on a wealth of traditional art to present their designs, marrying the ancient and the new. Interestingly, the most useful tool that they have found to give modern architecture more of an 'Oriental' feel is of British origin - Piranesi! Shinichi Fujita of Sekisui House explains how they use the software.

SEKISUI HOUSE

Sekisui House has built and sold 1,708,689 prefabricated houses in Japan since the company was formed in 1960. It is based in Osaka Japan, has 15,145 employees and 250 sales offices, and in the fiscal year ending January 2005 its revenues were equivalent to US$ 12 billion.

At Sekisui House we strive to create homes and environments that are more than just comfortable places to live. Our approach is to focus on the many and varied needs of our customers, understanding and satisfying these needs in depth. Accordingly, we offer a great deal of flexibility. Each customer can choose not only the house layout, but details such as doors, surface finishes, and landscaping. To help users visualise designs and choose the best options for their needs, our sales staff need high quality presentational tools. We have developed these tools in the form of an in-house Computer Aided Design System called HyperRIPS.

HYPERRIPS AND PIRANESI

HyperRIPS is a comprehensive presentation system used company-wide to produce 3D models, perspective drawings, and presentation boards. To create the final colour perspective drawings, one option was to outsource the work but this proved to be too slow and too expensive. So instead we created the drawings ourselves, using plans that were annotated with a colour marker, and CAD-generated monochrome perspective drawings. However, these methods were not entirely satisfactory.

When we came across Piranesi, we were attracted to its hand-drafted look, intuitive easy-to-use operation, and speed. We decided to incorporate Piranesi into our HyperRIPS system. The process is as follows:


(Fig 1.)


(Fig 2.)


(Fig 3.)


(Fig 4.)

1. Export the 3D model from our CAD system as a DXF file
2. Open the DXF file in the Vedute renderer (supplied with Piranesi) and create an initial perspective drawing
3. Repaint the drawing using Piranesi.
4. Assemble the finished drawing(s) into a presentation board using layout tools within HyperRIPS.

We were able to streamline the workflow so that it worked smoothly and seamlessly for our sales staff, and we took care to preserve intelligence about materials used in the model when exporting to DXF, so that Piranesi's material locking worked well in the perspective painting environment.

HyperRIPS is used by 4,000 sales persons working at 800 branch offices and showrooms throughout Japan, and we decided to create for them a library of ready-to-use Piranesi styles. This proved to be a wise choice, which not only made Piranesi easier to use, but also enabled us to create Piranesi styles that exactly match standard parts and materials ranges which are available from Sekisui House. Other Piranesi styles contained useful basic effects such as shadows, or adding people into the scene.

ENHANCING THE VIEW

To progress from a first simple perspective rendering to a finished drawing, we start by painting walls, exterior walls, and the background. At this stage our drawing still looks flat like a 2D image **(Fig 1.)**

Adding shadows to the walls silhouettes the house and creates more of a 3D feel to the image. Tree cutouts liven up the scene, starting to remove the computer graphics-like feel, and giving it a more natural atmosphere.

Shadows added to the trees can be cast upon the wall face of the house, harmonising the tree cutouts and the house. Adding shrubs on the lower side and tall trees on the upper side strengthens the sense of near, middle, and far distance in the scene. This increased awareness of sense of geometrical depth helps customers relate to the house design. **(Fig 2.)**

RENDERING VARIATIONS

A feature of Piranesi that we particularly like is that it is surprisingly easy to experiment and create different images from the same initial perspective view - much easier than rendering with a usual computer graphics application.

Customers who are going to buy a house need to be shown the architecture of the house, but at a deeper level it is helpful if they can visualise themselves living in the house. So we use Piranesi to illustrate various "life scenes" that the customer might imagine after obtaining a house, including showing how the house will look at different times of the year - in Spring, when the Cherry Blossom appears **(Fig 3.)**, and even at Christmas! **(Fig 4.)**

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Piranesi is developed by Informatix Software, based in Cambridge, England. More information on Piranesi and contact details may be found at their website ***www.informatix.co.uk*** ***info@informatix.co.uk***