

USING THE COMPUTER CREATIVELY IN THE DESIGN PROCESS

UTILIZAREA CREATIVĂ A COMPUTERULUI ÎN PROCESUL DE DESIGN

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Abstract. *Computers are an indispensable part of our lives. And design makes no exception. Smart use of computers can drastically improve the quality of the design process. Are being brought to your attention here some smart ways of acquiring reference material from the web, some quick rendering techniques using the scanner, the graphic tablet and Adobe Photoshop. Also on the part of technical drawing we will demonstrate how to produce fast blueprints using Solid Works (isometric views, side views, section views, etc.). The rendition of photo realistic presentation graphics in 3d environments (Solid Works, Alias) and their advantages and the production of presentation collages using Adobe Photoshop and Adobe Illustrator will conclude this material.*

Key words: computer, creativity, illustration, blueprints

Rezumat. *Computerele au devenit parte integranta din viata de zi cu zi. Domeniul designului nu face exceptie. Folosirea ingenioasa a calculatorului poate imbunatati sensibil calitatea procesului de design. Sunt prezentate cateva modalitati rapide de documentare in mediul web si cateva tehnici de randare accelerata folosind scannerul, tableta grafica si Adobe Photoshop. Pe partea de proiect tehnic sunt demonstrate realizarea desenelor tehnice de executie in Solid Works (vederi ortogonale, axonometrii, sectiuni, rupturi, etc.). Producerea de imagini de prezentare fotorealiste in medii tridimensionale (Solid Works, Alias), cu avantajele acestora, precum si colarea imaginilor in planse de prezentare folosind Adobe Photoshop si Adobe Illustrator vor incheia acest material.*

Cuvinte cheie: computer, creativitate, ilustratie, desen tehnic

INTRODUCTION

Modern life is almost unimaginable without the use of information technologies (IT). Computers have taken over the repetitive tasks in our activities, as their abilities to manipulate numbers exceed greatly what a normal human can do. This takes a lot off our shoulders and allows humans to focus on what they do best. That is the very thing that differentiates them from beasts, their ability to create and innovate. This material will show you how the two sides mentioned above, the human with his creative power and the PC with its computing strength can work side by side and produce, as a team, far better results. The idea of “team” and “co-operation” has new values nowadays when the internet infrastructure makes communication and interaction so much easier and accessible worldwide.

MATERIAL AND METHOD

This material is intended as a showcase for the latest information technologies in the design process. This activity that was since its birth entirely analogical, is nowadays strongly influenced by the development of computer aided design. Whether design going digital is a good or bad thing is still a matter of debate. Pro digital design is the ease of the process, the cost reduction or the ability to improve safety and ergonomics of the final product. Those that enjoy analogical design consider the digital artificial and connected more to the machines than it is to humans. For this study were used Adobe Photoshop CS4 software mated with a Wacom Cintiq graphic tablet, Solid Works 2008, Alias Studio 2008 and Adobe Illustrator CS4.

RESULTS AND DISCUSSIONS

Key to any important operation is being well informed. Luckily IT and the internet have eased the access to most of the information that we need. The network is already huge and rapidly increasing. Although that means the chances of it containing what you need are increasing, on the downside, it also means that finding anything in that enormous pile is a lot more difficult. Therefore the first part of this material will describe a few fast and effective searching techniques, to be used on the web.

Most of us are familiar with search engines and use them on a regular basis. Also, without doubt, the most popular SE, Google is home page for many people. Finding something on the web using Google is already pretty easy, but there are a few tricks and tips that can help you save lots of time and also help you find the information that is most relevant.

First is important to know that Google ignores capital letters and punctuation, therefore using them is a waste of time. Also connection words like “and”, “or”, “to” are ignored by the search engine. The best way to make a search is to use only a few, but descriptive words. As an example, if you need to know how that weather will be in Iasi there is no need to type something like “How will the weather be in Iasi?”, instead of that “weather Iasi” will suffice.

A few operators are very useful and will help refine and improve the search (<http://www.google.com/support/websearch/bin/answer.py?answer=136861>). By inserting double quotes around a set of words (“ ”), you are telling Google to consider the exact words in that exact order without any change. Google already uses the order and the fact that the words are together as a very strong signal and will stray from it only for a good reason, so quotes are usually unnecessary. But this helps if you need to reduce your search to an exact order of words.

The operator (site:) helps you search only within a specific website. For example, the query [Iasi site:romania.ro] will return pages about Iasi but only from romania.ro. You can also specify a whole class of sites, for example [Iasi site:.ro] will return results only from a .ro domain and [Iasi site:.com] will return results only from .com sites.

Attaching a minus sign (-) immediately before a word indicates that you do not want pages that contain this word to appear in your results. The minus sign should appear immediately before the word and should be preceded with a space.

You can exclude as many words as you want by using the - sign in front of all of them, for example [Iasi - newspaper - restaurant].

The *, or wildcard, is a little-known attribute that can be very strong. If you include * inside a query, it will tell Google to try to and place any unknown term(s) instead of it and then find the best results. For example, the search [Copou*] will give you results about the boulevard, the park, the cinema, etc. Note that the * operator works only with whole words, not parts of words.

Tilde (~) is another very interesting feature of Google. Placed before any words in a query, it will search not only that word, but also all of its known synonyms. As an example, the search [~car] will also search for “automobile”, “vehicle”, etc.

Now that we have the necessary information for the design process, it is the time to get started with some ideation sketches. Sketching is largely still connected with analogical instruments: pen, paper, pastels, etc. However the latest developments in digital imaging blend the advantages of both traditional and modern drawing techniques.



Fig. 1. Landscape sketch rendered in Photoshop

One such method is to make a free hand quick sketch on a piece of paper, have it scanned, import it into Photoshop and then have it enhanced or even fully-colored with ease and precision. Even the most fanatic supporters of analog sketching can't deny the flexibility and the speed offered by digital painting software (fig. 1).

The possibility to undo any action in a digital drawing when needed is a great advantage. That and the ability to copy/paste image sections and to blend them seamlessly shows just how much faster this can be. If you add to that the fact that anything you have created can be changed in terms of color, contrast, size, position in any given moment the advantages become clear.

Another method, biased even more towards the digital side, is the use of a graphic tablet. The most advanced of these devices, like the Wacom Cintiq,

combine the advantages of an LCD monitor with the performance of a tablet with 1024 levels of pressure sensitivity. By using a digital pen directly on a screen that mimics the properties of canvas computer use is as natural as possible (<http://www.wacom.com/cintiq/>) (fig. 2). These fast ideation techniques are of great use in any visual creative area. Their applicability in landscape architecture is obvious.

Another point of interest in design is the interface with the engineering team. That was known to be problematic in the past, due mostly to the different training of the sides. Designers are basically artists and are less interested in a technical approach, while engineers are trained and used to see mostly the practical issues. Modern software can also help with this particular matter. SolidWorks CAD software, for instance can successfully be used by both designers and engineers. It was intended as a design developing platform that covers all the necessary requirements in this process.



Fig. 2. A Wacom Cintiq graphic tablet

As an example, a designer can sketch a new wheel on a piece of paper, scan the paper and have it modeled into 3D using SolidWorks and afterwards, within minutes, have the model represented into detailed technical drawings that the engineering team can easily use.

More than that, an artist with no technical or computer knowledge can sculpt an object that afterwards can be scanned in a 3D scanner, the result being a fast and accurate 3D SolidWorks model. Model that can be after declined into technical drawings in the same manner as the one mentioned before. This eases a lot communication between engineers, designers, landscape architects, etc.

But what if a complex object exists only in the imagination of a designer. Bringing it to reality is a costly process that can be from case to case even risky. Or what if there are several ideas that should be evaluated before deciding which the best and the one to be turned into reality. For these problems are of help the

new software packages for computer generated images and motion pictures. Programs like Autodesk Alias and Bunkspeed Hypershoot can produce results that are so close to reality that they almost eliminate the need for a prototype (fig. 3).



Fig. 3. Rendering of a bench in Alias

Finally, after we have gathered all of the necessary materials for a successful design presentation we need to collate them into coherent media. While motion pictures are a great way to show ideas, design presentations have remained focused on still images. These can capture “more than a thousands words” as we know and also give the viewer the necessary time to digest the concept without having to rewind. Great means for producing such presentations are Photoshop and Illustrator from Adobe that handle all there is to handle when it comes to imagery. The first one is focused on raster, while the second is dedicated to vector images. They come handy in any creative field, including landscape architecture.

CONCLUSIONS

Progress is, if not desirable by everyone, hard to avoid. Not even resistance to change can stop it. Things are the same in design. No matter how fond will some be to the traditional methods, the safer, more viable ways will take over. However we need to make sure that this automation is only limited to the repetitive tasks. Creativity remains a quality that only humans have, and they have to be those leading the machines in the design process, not vice-versa.

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