Application of Graphic Aided Design in Garden Environment Design under Computer Internet Technology

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Abstract. With the development of computer technology, all walks of life have begun to combine computer technology for industry development, including the garden industry. The garden industry mainly uses computer-aided technology to design garden. We can use computer technology to find out the shortcomings and loopholes in the original garden design plan. At present, computer technology is mainly implemented through various software. At present, computer technology is mainly implemented through various software. However, the teaching of many softwares is still relatively single and rigid. In order to strengthen the flexibility of garden design, we should strengthen the authenticity and flexibility of software teaching. In this way, we can make better use of software technology to improve the quality of garden design.

Keywords: Garden Environment Design, Computer Aided Technology, Computer Software

1. Introduction

With the development of society, urban garden design and greening are also evolving and developing more rapidly. At present, computer technology has been basically popularized in the garden industry, and it has made a huge contribution to the development of the garden industry. In order to strengthen the development of the garden industry, we should start from the root. We must attach importance to students who are studying landscape architecture. This not only strengthens the development of the landscape industry, but also increases the employment rate of students majoring in landscape architecture [1].

2. The development of computer aided design software in garden planning
With the increasing development and popularity of high-performance personal computers and computer graphics input and output devices (plotters, scanners, digital cameras), computer-aided design (CAD) has penetrated into various industries, and advanced and efficient CAD technology has improved the design. The efficiency and quality have reduced engineering costs. One of the most important aspects of CAD is computer graphics software for auxiliary drawing [2]. The advantages of using computer drawing are obvious, such as fast drawing speed and high quality drawing. More importantly, design is an increasingly perfect process. Compared with manual drawing, because the computer can store drawings on the hard disk, Therefore, it provides great convenience for design modification and improves the efficiency of drawing. These advantages have made computer graphics technology rapidly popularized in various industries, and manual drawing tools such as drawing tablets and set squares have gradually withdrawn from the stage.

Computer-aided garden design developed countries have entered a very mature stage in the mid to late 1980s. At this stage in our country, the use of computer software as a drawing tool to draw garden drawings is generally done on the AUTOCAD platform developed by AUTODESK, and is completed with other building modules (such as Tianzheng Construction, etc.) and auxiliary software (such as PHOTOSHOP, 3DMAX, etc.) Production of garden plans, planting plans, and renderings. LANDCADD, developed by AUTODESK, an internationally famous professional software for gardens, currently has 10 functional modules: data acquisition and processing module, square grid module, overlay analysis module, vertical design module, native dialect engineering module, scheme design Modules, planting design modules, sprinkler irrigation design modules, detailed structure modules, and cost estimation modules are powerful and can basically meet the needs of garden planning [3].

Domestic garden design software includes Tianyuan Tusheng, Saiting Garden Planning CAD and so on. Setin Garden Planning CAD is a garden design software developed on the AUTOCADR14 platform. It includes road design, garden design, three-dimensional, earthwork and other modules. It can complete road design, drawing of street trees, drawing of various trees and shrubs, and garden architecture. Drawing, earthwork calculation, etc. At the same time, it also has a powerful library, which provides various service facility symbols, engineering facility symbols, various plane trees, architectural sketches, site sketches, scales, compasses, etc., which reduces the heavy drawing work of garden designers. As a garden designer and user, I hope to see the effect of the greening design, but the flowers and trees planted in the construction are small in size, and you can't see the scene of the trees and flowers during the period of vigorous growth. At present, a program combination software used to simulate plant growth has been invented. Through LACAD (Landscape Design Computer Aided Device), this device can simulate plant growth and display the effects of the garden environment.

3. Investigation and analysis of application status of computer aided design technology

The survey results show that the commonly used computer-aided design software in the garden industry mainly includes CAD, PS, 3DMAX and Sketch Up. Table 1 shows the various stages of garden design and common software applications [4].

Table 1. Landscape design stages and common software applications
4. Draw garden planning plan, effect drawing process

At present, the most widely used AUTOCAD2000, PHOTOSHOP6. 0, 3DMAX4. 0 draw garden planning plan, the main process of renderings is as follows:

4.1. Collection of pictures

AUTOCAD2000, PHOTOSHOP6. 0 and 3DMAX4. 0 all need a lot of pictures of plants, garden sketches, sculptures, water bodies, etc. in garden design. The picture generally requires a resolution of 1024×768 or more to get a clearer picture. Part of the pictures of various plants, sketches, and sculptures are captured by digital cameras; some are obtained by scanning in with a scanner; the other part is obtained by collecting materials on various types of optical discs [5]. Through these input devices, the pictures are stored on the hard disk of the computer for selection when making pictures. It is better to compress the pictures when storing, which can increase the running speed of the computer.

4.2. The production drawing of the garden plan is shown in Figure 1 (AUTOCAD drawing)

![Figure 1. The system of garden plan](image)

Step 1: For garden engineering design with drawings, you can use a scanner or digital camera to input the existing drawings into the computer, and then use the drawing tool to trace in AUTOCAD. The specific technique is as follows: Use the mouse to click and hold the "Insert Block" button on the AUTOCAD toolbar, select the "Insert Image" button, and select the project base map scanned in by the scanner or digital camera in the pop-up image dialog box [6].

Step2: Select various drawing tools on the toolbar to draw along the input base map.
Step 3: the correction of the proportion. Since the input base map is input according to a certain proportion, after the base map is drawn, the proportion should be corrected to the actual size. The details are as follows: select all the finished base maps, select the scale button on the editing toolbar, and enter the scale factor in the command bar according to the scale to enlarge the drawing to the actual size.

For those without a base map, they can be drawn according to actual size with drawing tools in AUTOCAD.

According to the garden design ideas, draw various garden illustrations. Use the “press into block” command to make various garden legends into blocks in advance, and then insert them when drawing, saving a lot of time. The frame is also drawn using the same technique.

AUTOCAD has a powerful marking function, which can automatically complete dimension marking. When labeling, select the labeling toolbar on the toolbar.

After all the graphics are drawn, set the scale of the drawing, connect the output device, and print the drawing. Output devices generally include printers and plotters [7].

2) Drawing of garden plan rendering

Step 1: Load the base map drawn in AUTOCAD into PHOTOSHOP: Add a file printer in AUTOCAD, and then select the newly added file printer in the printer settings for the drawing that needs to be printed, and print the drawing into .EPS file format and save it.

Step 2: Drawing the garden plan rendering, open the drawing .EPS file in PHOTOSHOP, convert it to RGB mode, then add trees, open a tree image, use the circular selection tool to hold down the Shift button and select the canopy in the upper part, click the move tool on the tool, and drag the selected circular area to the bottom image [8]. Select the tree image you just dragged in, and select the Free Transform command in the Edit menu to adjust it to a suitable size; after pressing the ALT key, drag the tree you just inserted to copy. For example, to draw a lawn, select the area to be used as the lawn, set the foreground color to green, and select the fill command in the edit menu to fill the selected area with green; after selecting the add noise command under the noise command in the filter menu, you can get Lawn effect.

3) Production of 3D renderings

Step 1: Load the AUTOCAD base map into 3D MAX, open 3D MAX, select the creation of trees, or use some other supporting software to create trees2, select the import command under the file menu, and select in AUTOCAD in the pop-up dialog box Draw the base map and import it into the 3D MAX interface.

Step 2: According to the imported graphics, use various modeling tools of 3D MAX to complete the creation of the lawn, flower pond, garden road and other models required in the diagram.

Step 3: Assignment of materials. After the model is built, materials need to be assigned to the model so that it has the same texture as the real object. Production of group light map: In PHOTOSHOP, the tree pictures that need to be used as materials are used to make group light map. Assign material: Run 3D MAX and select the cube created as a tree, press the M key to open the material editor. Click the long
With the development and popularization of computer technology, computing technology has gradually begun to be applied in other industries, and it has achieved excellent success. If the gardening industry wants to develop better, the computer-aided technology must be applied. Of course, it can be seen that the garden industry has indeed developed better with the assistance of computer technology in the current research. We need to use computer technology more proficient and apply it in garden design more reasonably.

button on the left of the bitmap map under the Maps column, and select the colored group light map in the pop-up dialog box; then click the long button next to the opaque map button, and the black and white map in the pop-up dialog box will be edited. The material is given to this cube, which completes the creation of a tree. This technology can be used in the creation of trees, but also in the production of railings and other items. But it has a big shortcoming and cannot be used for 3D animation. When you need to make 3D animation, you must use 3DMAX modeling tools such as Treestorm and other software [9,10].

Step 4: Rendering, select the view to be rendered in 3DMAX, click the render scene button on the toolbar to make the necessary settings and then render, save the image in TGA file format, which is convenient for post-processing in PHOTOSHOP.

Step 5: Post-processing: The finished graphics in 3DMAX need to be post-processed in PHOTOSHOP. The processing content mainly includes: the addition of background; the addition of characters, cars, etc.; the addition of some trees and fountains; the modification of graphic brightness, contrast, and color.

5. Conclusion

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