UF IFAS Extension UNIVERSITY of FLORIDA

ENH1265

Landscape Design Software: Evaluation and Recommendations for Homeowners[1]

Gail Hansen, Smith Watkins, and Sydney Park Brown[2]

HOMEOWNERS WHO WANT to improve their landscapes often consider purchasing design software to create the design themselves and save money. The first design decision is selecting a program from dozens that are available, each with different levels of cost and difficulty. To help do-it-yourself (DIY) individuals find the right program, seven popular DIY programs were tested and rated for quality of features and ease-of-use. A professional landscape design software program was also reviewed to establish a standard for comparison. Selection criteria included cost, compatibility with Windows-based or Apple-based operating systems (OS), and reviews from consumer websites. Landscape designs were created with each software program and rated on six functions: software, base map setup, database extensiveness, design tools, drawing tools, and project output. The study assumed users possessed a fundamental level of computer literacy and skills and the ability to use a keyboard, mouse, and tool bar menu.

Functions of Landscape Design Software

The most important consideration for software selection is the various functions included in the program. Functions are actions the user can initiate by clicking on icons or symbols in the program to produce a graphic landscape plan. For example, a "draw" function would enable a user to draw lines to create a patio, or the "insert" function may have pre-designed patio images in a picture library to select and insert (or drag-and-drop) by clicking an image. Pre-drawn symbols are a key feature that allows a user without drawing skills to create a readable plan. The primary difference between programs is the number and ease-of-use of the functions and the graphic quality. For beginners, the most useful software programs typically include a library of graphic symbols for plants, such as trees, shrubs, and groundcovers, and hardscape symbols such as decks, pools, and patios The program should also allow the user to

- draw a house footprint and property lines;
- draw hardscape components such as patios and decks;
- drag-and-drop plant and hardscape symbols into the landscape plan;
- copy, size, and move symbols;
- label the symbols on the plan; and
- save and print the plan.

An optional component is the ability to import personal pictures or site survey images. Homeowners may also want landscape enhancement components for a better graphic display, including growth simulators, 3D views, virtual walkthroughs, panoramic views, and a plant schedule list. Table 1 lists the functions and the features and capabilities associated with each function.

Important Program Terms

In describing the various software programs, several terms are used that may not be familiar to first-time users. These commonly used terms are explained below. The terms are used in Table 1 and throughout this factsheet.

- *3D view:* tool for visualizing the plan in height, width, and depth
- *Base map design:* tool for drawing existing site features on the plan (e.g., house, driveway, etc.)
- *Database extensiveness:* amount of objects in the program that can be inserted into the drawing plan, such as plants, hardscape materials, lighting, and images

1. This document is ENH1265, one of a series of the Environmental Horticulture Department, UF/IFAS Extension. Original publication date October 2015. Visit the EDIS website at http://edis.ifas.ufl.edu.

2. Gail Hansen, associate professor; Smith Watkins, graduate student; Sydney Park Brown, associate professor emerita; Environmental Horticulture Department; UF/IFAS Extension, Gainesville, FL 32611.

- *Design theme examples:* the number of different landscape themes that can be viewed for inspirational purposes
- *Drag-and-drop function:* tool for moving a symbol on the plan by clicking on it and dragging it to a location
- *Drawing tools:* drawing aides, such as lines, polylines, squares, and circles for drawing components on the plan
- *Exportability:* ability to send the landscape plan files to another computer
- *Hardscape symbol library:* drawings or images of materials used in the landscape to build structures such as decks, walkways, pools, and patios
- *Plant database:* list (and photos) of common plants that are available within geographic areas
- *Plant growth simulator:* tool for changing plant dimensions to show their future size
- *Plant symbol library:* pre-drawn graphic symbols of plants that can be moved around the plan
- *Plant schedule:* a list of all the plants used in the plan that is automatically generated from the plan and available to print
- *Raster image function:* tool for inserting, viewing, and tracing over a jpeg image such as a property survey

After consulting several consumer rating websites and considering recommendations from garden design and gardening periodicals, researchers selected seven programs. Two price categories were considered, 1) $200 or less (considered a reasonable cost for the limited use of the program), and 2) free programs. Programs above $200 were not considered because there is little return on investment and hiring a professional would be more cost effective. The reviewed programs included:

1. Punch! Home and Landscape Design Studio, Encore Software
2. Realtime Landscape PLUS, Idea Spectrum
3. HGTV Home and Landscape Platinum Suite, Nova Development
4. SmartDraw, SmartDraw LLC (Free for 7 days)
5. BHG (Better Homes and Gardens) Plan a Garden, Meredith Corporation (Free)
6. ShowOff, ShowOff.Com (Free)
7. Garden Planner 3, Artifact Interactive (Free for 21 days)

Developing the Rating Criteria

DynaSCAPE (Coyote Software Corporation) is a high-end professional program that was used as a guide for creating a list of the functions, features, and capabilities for rating the DIY programs. The quality of features in different functions were rated from a high score of four (4) for full functionality to a low score of zero (0) if the function was not included. The ease-of-use of the features in different functions was rated from a high score of four (4) if it was easy to use to a low score of zero (0) if it was not available. The programs were ranked from high (most functional) to low (least functional) based on the combined scores of quality and ease-of-use. Based on final scores, the program rated best for homeowners was Punch! Home and Landscape Design Studio. Various consumer websites generally rank the programs from high to low as follows: Realtime Landscape PLUS, Punch! Home and Landscape PLUS, HGTV Platinum, Better Homes and Gardens, and Smart Draw.

Overall Quality and Ease-of-Use Rankings

The purpose of this study was to evaluate and rank various landscape design software programs suitable for do-it-yourselfers. Table 2 shows the final ranking when the overall ratings of quality and ease-of-use are combined. The DynaSCAPE program, which was used to develop the list of functions and features to rate the other programs, is included in the final overall ranking but not recommended for homeowners because of complexity and cost of the program (>$2,000).

Program Descriptions

DynaSCAPE

DynaSCAPE is a CAD (Computer Aided Design) program for educational and professional use. The program was used as a standard to judge the functionality and ease-of-use of the non-professional programs. As expected, the program had a high quality rating (3.4) because it contains most of the functions desired in a program. However, DynaSCAPE rated low (2.8) in ease-of-use because of the complexity and steep learning curve.

Software Installation, Base Map Setup, Database, and Design Tools

DynaSCAPE is loaded using a DVD included in the purchase. An additional "Help" DVD to assist the user, and a manual that clearly explains each function is included. This program is Windows-based and is not available for Apple's OS. The user can draw a base map or use the *raster image function* to insert a jpeg image and trace property and building lines from a property survey. Symbol libraries

in the database include tree, shrub, and perennial plant symbols in bird's eye (plan) view and elevation (front) view. There are also libraries for site features such as water features, furniture, vehicles, and garden structures.

Drawing Tools and Project Output

Elements such as a house, deck, pool, and patio are drawn on the plan using drawing tools that create lines and shapes. Drawing tools include lines, polylines, geometric forms, and hatch symbols that resemble paving patterns and natural materials. Plants, furniture, lighting symbols, and other landscape elements can be added to the plan using drag-and-drop from a symbol library. Edit tools used to create the design include move, copy, rotate, mirror image, and other functions that allow manipulation of lines and forms. A layering technique allows the user to create layers (similar to stacking sheets of paper) for each feature including the building, irrigation, lighting, and plant material that can viewed separately or "layered" for a composite image. Figure 1 shows a completed landscape plan. There are several options for image and paper size when printing, and DynaSCAPE can convert files to PDF and share files with other CAD programs.

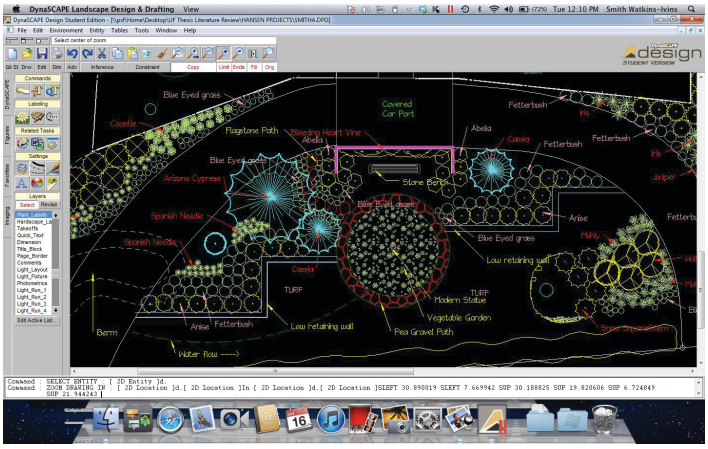

FIGURE 1. Screenshot of DynaSCAPE landscape plan. (Credit: Smith Watkins)

Punch! Home and Landscape Design Studio

Punch software is a landscape design program that also allows a user to create home plans including the floor, electrical, plumbing, roof, deck, and landscape. Punch had a 3.3 quality rating and 3.4 ease-of-use rating. The primary ease-of-use problem is controlling the pan and zoom functions on both the 2D and 3D view. A quality problem is the lack of names associated with the plant pictures in the large plant database.

Software Installation, Base Map Setup, Database, and Design Tools

Punch is installed using a DVD on Windows-based OS only; it is not compatible with Apple's OS. The Quick Start introduction, as well as the "Help" tool bar contain written and video tutorials. A technical support toll free phone number is included. Users can select sample house plans from the Quick Start pop-up menu or draw their house footprint. Punch also contains an extensive template library of decks, pools, and patios with options for house trim and paint colors to customize the look of the house. Plant images can be imported in BMP, JPEG, PNG, or TIFF file, and the new plant is added to the plant library. The symbols can be viewed in both 2D and 3D, which is helpful to visualize the landscape. The plant symbol library also contains over 4,000 real life images of plants and a plant search feature, including regional plant groupings, which the user can drag-and-drop into the 2D view. Figure 2 illustrates the use of a Southwestern plant grouping that includes grasses, sunflowers, and sage with a river rock border around them.

FIGURE 2. Screenshot of Punch! 3D view plant groupings. (Credit: Smith Watkins)

Drawing Tools and Project Output

Design work is first completed in 2D view (Figure 3) and can then be viewed simultaneously in 2D and 3D. Only material finishes such as paint color can be added onto the 3D view. The drawback of the 2D view is that seeing the entire plan requires several clicks on the tool bar to resize it. A user can easily add objects, materials, and plants with the drag-and-drop function. The user can also create some features, like a simple raised deck, but creating walkways or steps is more difficult. The "Plant Growth Projection" feature shows the growth of the landscape up to 20 years (which may vary for different regions). Punch also contains a "Global Lighting Position" that can set the sun position using date, time and location parameters. When the landscape plan is complete, a user can select "Render Final Quality" on the 3D view, which adds sunlight and shading to the plan. A plan can be exported to various file formats, including DXF, DWG, BMP, JPEG, PNG or TIFF.

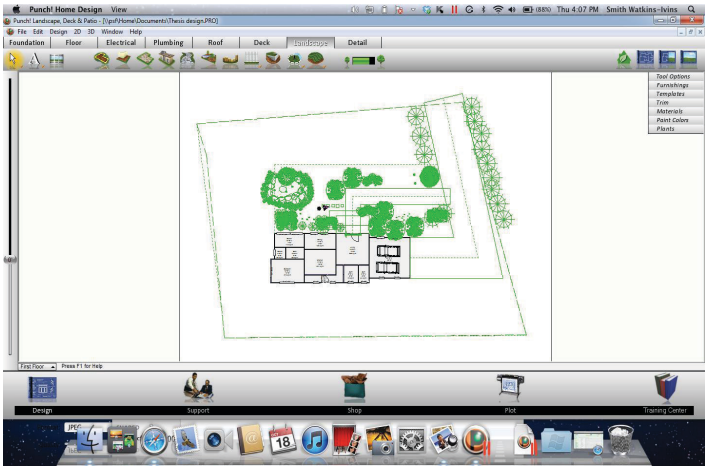

FIGURE 3. Screenshot of Punch! 2D view. (Credit: Smith Watkins)

Garden Planner 3

Garden Planner 3 is a web-based landscape design program that only creates traditional plan view layouts of plants and landscape features similar to SmartDraw and Plan a Garden. Garden Planner 3 rated 3.1 in quality and 3.5 in ease-of-use. Plant symbols are also limited but contain an assortment of colors, textures and shapes. The main drawback is linking a plant form to a plant species, which can be time consuming.

Software Installation, Base Map Setup, Database, and Design Tools

Garden Planner 3 can be downloaded on Windows or Apple OS but requires Adobe Air (a free software program available from Adobe.com) to be installed on the computer before Garden Planner is installed. There is also a free 15 day trial period. A help manual with a brief outline of how to use the software is available. A website is available for assistance; however, the user must submit an email form with the question. A house footprint can be created using four objects—a square, rectangle, octagon, and circle—but there is no option to add windows and doors. A moderate plant database includes trees, shrubs, flowers, and 10 types of groundcovers. The plant symbols are named by form, size, and flower type rather than species (e.g., "shrub sparse flowers," and "shrub spiked flowers"). A user can select from 10 to15 different paving materials and a variety of hardscape materials, such as paths, pools, ponds, and fences, which can be customized by selecting style, line, color, and size. When choosing plant symbols, the user can see and change color, shading, transparency, and size. The only view is a top-down 2D view, but it has a nice aesthetic quality (Figure 4).

Drawing Tools and Project Output

There are five landscape design examples to review before getting started. In the drawing area, the user has the option to show or hide grid lines as well as measurements on the x and y axis for accuracy while drawing. The default unit setting is metric but can be changed to feet and inches.

Garden Planner 3 has an easy drag-and-drop capability with a properties window that allows the user to size, rotate, and change the color of the symbol. The plant icons are 2D symbols that have unique forms and colors. Some tree symbols such as "flowering tree transparent" offer an exceptional image quality that can create dimension and a layering effect in the design. A "Plant and Object" list is automatically generated from the design plan. Similar materials such as trees, shrubs, buildings, walls, and fences are grouped together on a list that includes numbers, sizes, and an image. A user can add notes to each material, and the list can be printed or saved as a text or csv file. Options for exporting include JPEG or PNG.

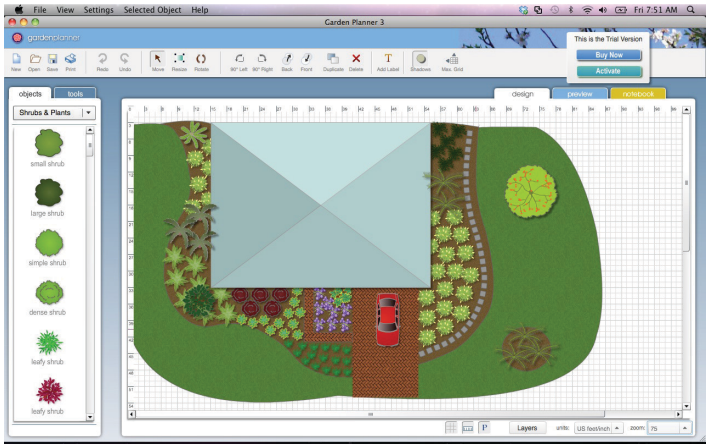

FIGURE 4. Screenshot of a landscape design plan for Garden Planner. (Credit: Smith Watkins)

SmartDraw

SmartDraw is a drawing and communication software program that is typically used for charts, graphs, and presentations and can also be used to draw landscape plans. SmartDraw produced a visually pleasing landscape plan that scored 2.9 in quality, but it is more suited for conceptual design and not for scaled, accurate landscape plans. SmartDraw scored a 3.3 in ease-of-use primarily because the menu and tab components are easy to locate and use; however, there was no "undo" function. If the user has a need for the other functions in this software, this would be a good option for one-time use in creating a landscape plan.

Software Installation, Base Map Setup, Database, and Design Tools

SmartDraw offers a seven day free trial option to test the program, which is easy to download in Windows. Although there is no Wizard, pop-up help bubbles appear when the user hovers over each tool. Bubbles include a definition of the tool and user instructions. The program has a support function to link you to SmartDraw's website. Smart Draw can create a dimensioned house by clicking the Smart Panel tab and dragging lines into the design window; however, the process is time consuming since the user must click the line several times and then edit and connect the lines together. SmartDraw does not have design theme examples,

though it does contain several deck, pool, and patio symbols to drag-and-drop and then resize by rotating or changing the dimensions of the symbol. The color of the lines and fill and the transparency of the symbols are easy to change. The plant database is limited; the symbol library contains 55 tree symbols as well as 13 plant group symbols. These symbols are forms and types of plants; they are not specific plant species. To create more symbols, a workaround would be to change the size or color of the symbols. Any user that is familiar with PowerPoint's toolset can easily adapt to SmartDraw's design tools.

Drawing Tools and Project Output

The drag-and-drop function is easy-to-use with selected symbols. The symbol library can be accessed through a word search feature or by drilling down into the category folders. Light and dark gradient variations can be added to each object, as well as texture and hatch patterns (Figure 5). Although SmartDraw does not have the ability to view a plan in 3D, dimension can be created in a 2D file by using the "bring to front" or "send to back" tool to move an object. SmartDraw does not offer material options, so the user must be creative in using hatch patterns and color to identify different materials. A plan is easy to save and print; however, on the free trial version, the printed copy has a watermark on it. To share the plan with others, a user must use an added step and link to Smartshare on SmartDraw's website. This option is difficult to find, and there is no other option to electronically export the plan into another format. Smart Draw does not have a plant schedule function, so plants must be manually counted and put in a spreadsheet.

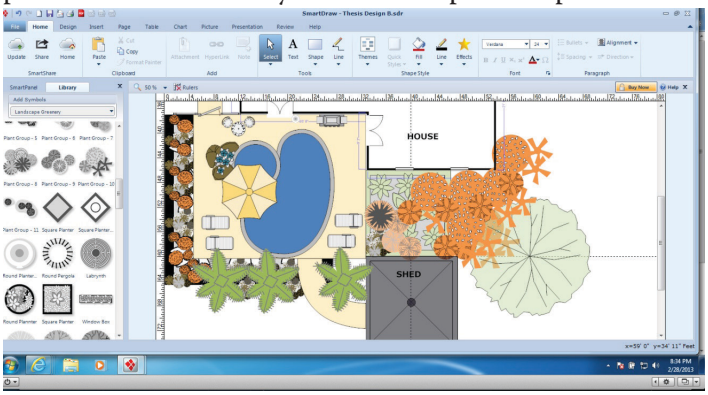

FIGURE 5. Screenshot of Smart Draw using plant color and transparency. (Credit: Smith Watkins)

HGTV Home and Landscape Platinum Suite

Home and Landscape Platinum Suite is a landscape design program offered by Home and Garden Television (HGTV). HGTV's website is extensive and presents many gardening ideas, photos, and how-to suggestions for gardening and landscape designs. This program accompanies the website and offers users a well-rounded suite of landscape projects and information. HGTV rated second in quality with a 3.3 primarily because the Tutor help tool and call desk are beneficial in learning what features are available and how to find and use them. However, HGTV was rated second lowest in ease-of-use with a 2.8 because the drag-and-drop function is a multi-step process rather than the single step process offered by the other programs.

Software Installation, Base Map Setup, Database, and Design Tools

HGTV is installed with a DVD using step-by-step video instructions found on HGTV's website. A help tool called Tutor can be clicked on to visually show the steps to use various functions. HGTV must be installed on a Windows-based computer and is not compatible on Apple's OS.
The house builder wizard is an easy tool that will create the shape, square footage, theme, number of floors, and roof style of a house. The user can also add doors, a roof, railings, and steps. HGTV's plant library is extensive, with over a thousand plant species including atypical landscape plants such as vegetables, fruits, cacti or succulents, palms, and orchids. The categories contain a range of 11 to 61 varieties that display their unique 3D image as well as their correct "on center" planting when placing the plant on the 2D landscape view. Information on selected plants includes standard growing requirements plus landscape usage such as container, indoor, or privacy, and care instructions. Text labels can be added to any of the components to identify what is on the plan.

Drawing Tools and Project Output

The plant fill function is a great tool for creating bed lines around the house (Figure 6). The fill lines can be straight, curved, stretched, mirrored, rotated, and duplicated. Fill materials also include soil, gravel, concrete, bark, water, and sand. The drag-and-drop function for plant symbols includes an extra step, clicking on "finish" each time, which makes it cumbersome to use. There are no drawing assistance tools such as theme examples, groupings, color, growth simulator, or lighting simulation. Designs can be viewed in both 2D and 3D views, including a 2D Designer's Plan that provides the colors and textures of a 3D view but in a flat 2D format. HGTV will automatically create a project estimate report that summarizes the quantity, unit and size, and cost of all materials used on the site. The list can be created for all the landscape materials that are inputted into the plan such as plants, soil, mulch, walkways, patios, and decks. Each time an element is changed on the plan, the report will automatically reflect that change. This report can be saved and imported into Excel.

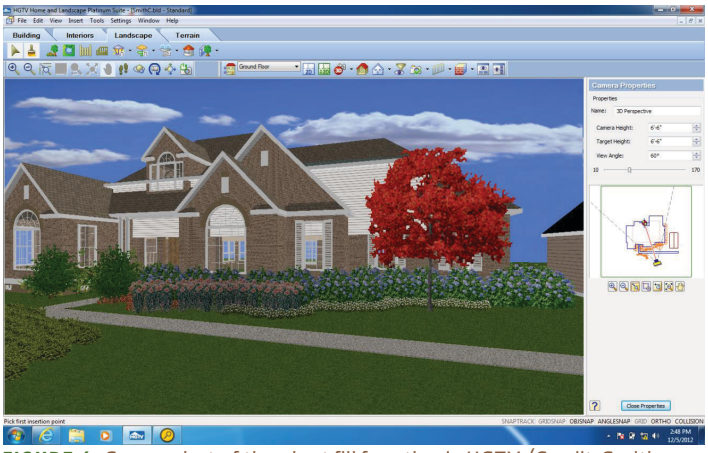

FIGURE 6. Screenshot of the plant fill function in HGTV. (Credit: Smith Watkins)

ShowOff

ShowOff is a web-based, home and garden design program. ShowOff's options include viewing "award winning" home designs by professionals, creating and receiving quotes for DIY projects, and creating landscape plans. ShowOff scored a 2.7 in quality. While the program can assist the user in conceptual landscape design with the use of plant images, it is more focused on connecting users to contractors. ShowOff scored a 3.1 in ease-of-use. The website was fairly easy to navigate on the first try, and the functions were easy to maneuver.

Software Installation, Base Map Setup, Database, and Design Tools

ShowOff is a free software program that is easily downloaded from the ShowOff website for both Windows and Apple OS. To start a project, the user must register and answer several project related questions. One input box is your email address, which is shared with other local home and garden websites. ShowOff offers members the ability to participate in forum discussions where they can learn how other users resolved problems. ShowOff comes with two options to create a landscape: either import a personal photo of the house and yard or choose one of the house templates (Figure 7); there is no option to draw a house footprint. ShowOff provides 4 to 5 landscape templates to choose from as well as 10 to 15 house templates. ShowOff does not offer deck, pool, or patio features for the landscape. It does however offer several fountains, outdoor living spaces, and lighting which can be added to an imported landscape photo. Each object added must be manually sized to fit in the space. When the user imports a photo of the home and landscape (Figure 8), they have the ability to add 3D plant photos to their plan. ShowOff offers approximately 115 plant choices, identified by name and image, grouped together in categories. Once the image is selected, the user can manipulate the size and drop it into the plan.

FIGURE 7. Screenshot with landscape template and added plant material from ShowOff plant database. (Credit: Smith Watkins)

FIGURE 8. Screenshot with imported landscape photo and added plant material from ShowOff plant database. (Credit: Smith Watkins)

Drawing Tools and Project Output

The plant bed areas can be manipulated in the template using the Create Surface function. This function uses a masking tool to simulate turf, mulch, or pavers. Other helpful drawing tools are copying, shadowing, flipping, moving to back, as well as undo. The program provides a status of where the user is in creating their landscape project with three easy to follow steps; start your project,

choose project type, and save/share project. The user can click on any of the steps if he or she needs to move back and forth in his or her project. If the plant image was resized too much during the design process, the image became fuzzy. ShowOff does not include a plant schedule. The landscape plan can be emailed and placed on social media websites using ShowOff's webserver. There is not a function to export the project as a different file type such as JPEG or PNG.

Better Home and Garden Plan-a-Garden

Plan-a-Garden is a web-based, landscape design program. The program offers the homeowner tools for building a simple garden, along with many other garden topics and tips on the website homepage. Plan-a-Garden scored a 2.7 in quality. This program carries a minimal amount of components to build a landscape plan and is geared more towards a plant person who knows their plants and simply wants to create a layout. Plan-a-Garden scored a 2.9 in ease-of-use. The drag-and-drop feature keeps the program workable, but it is the most limited program in terms of editing and drawing tools.

Software Installation, Base Map Setup, Database, and Design Tools

The program can be accessed from the Better Homes and Gardens' website by typing "Plan a Garden" in the search box. Within the program, there was no training or support documentation. There were, however, support links on the Better Home and Gardens' website. These links primarily answered questions regarding plant placement and design. Plan-a-Garden does not have the ability to import an image into the landscape plan, and the user cannot draw a house footprint. There are a limited amount of structures, such as ponds, pools, deck, outdoor furniture, and fencing, that can be dragged and dropped into the plan. Plan-a-Garden does not have an extensive database of plants, which is separated into categories such as annuals, trees, shrubs and containers. However, each category has enough range of color and texture to give the plant materials contrast. Some hardscape images are offered in the symbol library, including a gazebo, arbor, trellis, gate, fountain, and pond.

Drawing Tools and Project Output

To create the design, the user reconfigures the shape of the garden boundaries and then drags-and-drops hardscape and plant materials into the garden shape. The user cannot draw property and easement lines or utilities, so the design area should include only the areas that will be planted. Plan-a-Garden lets the user build a garden with simple garden shapes, such as rectangle, circle, and oval (Figure 9). The shapes can be easily resized and reshaped. Although the delete function sometimes did not work with different symbols, it was available. The undo tool gives the program a workaround for correcting mistakes. Plan-a-Garden does have the ability to color and shade different hardscape and plant materials and plans can be printed and shared via email.

FIGURE 9. Screenshot of a Plan-a-Garden design program using simple shapes. (Credit: Smith Watkins)

Realtime Landscape PLUS

Realtime Landscape PLUS is a design program for landscapes only. Realtime Landscape PLUS ranked lowest in quality with a 2.4 primarily because it is difficult to add important features to the house such as entranceways, driveways, porches, and decks. PLUS had an average ease-of-use rating of 3.2 because certain functions like plant fill don't always work well.

Software Installation, Base Map Setup, Database, and Design Tools

Software is installed with a DVD and includes an activation code and instruction manual. The program does not have the help pop-ups or tool definitions that many other programs have. When a user accesses help through the tutorials, the website pops-up with a manual. This software is not compatible with Apple OS. The base map can be created in 2D or 3D. The plan view includes gridlines to assist in drawing the building footprint (Figure 10); however, the 3D image is more realistic and color selections show better. The plant database contains over 4,000 plants, and each plant has attributes associated with it, such as the scientific name, planting zones, mature age, and height of the plant. A landscape wizard function helps users create features, such as lot size, house style, and fence. The program contains many features, including homes, decks, pools, patios, outdoor kitchens, fireplaces, playgrounds, arbors and trellises, lighting, and fences. These features are actual images or drawings that users can customize by changing their size, finish, and style.

Drawing Tools and Project Output

Landscape drawing tools include plant symbols, paths, edging, borders, and plant fill. A drag-and-drop function to place selected plants on the plan is difficult to use. The time consuming process requires several clicks and the

symbols are often difficult to distinguish. Creating bed lines and accurate bed sizes around the house and filling planted areas (Figure 11) is fairly simple; however, the zoom and pan tools are extremely difficult to control. Creating hardscape components with multiple finishes is also difficult, requiring several steps. Future plant growth is easily shown by sliding a time control forward to adjust plant growth over time. Realtime has a plant schedule called Project Material List, which can be viewed, exported, and printed. The list can contain all materials, their unit price, and cost totals, but prices need to be entered in order to receive an accurate cost.

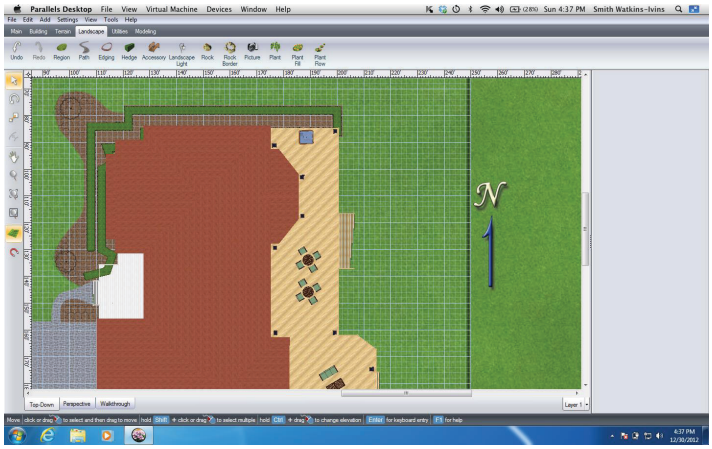

FIGURE 10. Top-down grid view in Realtime Landscape PLUS. (Credit: Smith Watkins)

FIGURE 11. Screenshot of plant fill function in Realtime Landscape PLUS. (Credit: Smith Watkins)

Summary

Table 3 is a summary of the 13 most important functions and features to look for in a landscape design program. Although most of the programs contain these features, their usability varied. Ratings are the average combined scores for quality and ease-of-use. Potential users should look for programs that score 4's and 3's in the functions and features that they believe would be most helpful. For example, if design theme examples are not needed, the user would not be concerned about that feature not being available in the program (all programs with a "0" for design themes do not include any).

Table 1. Desired functions with associated features and capabilities

FUNCTIONS	FEATURES AND CAPABILITIES
Software Ease of installing and operating software	Cost, loading process, system compatibility, navigation, tools, Training, and support documentation
Base Map Setup Tools for creating the base map	Importing images, importing hardscape templates, drawing property, easement, and utility lines, topography lines
Database Extensiveness Number of different templates and symbol libraries in the database	Templates, 2D and 3D images, plant symbol library, landscape features library, materials library, lighting library, photo images
Design Tools Tools needed to create design	Symbols for plants, house, deck, pool, patio, outdoor kitchen, furniture, cars, lighting, hardscape materials, and fences
Drawing Tools Tool for drawing a planting plan on the base map	Drag-and-drop feature, copy, size, delete, move symbols, tools to draw lines, shapes, and hatch patterns, plant growth simulator, lighting simulator
Project Output Graphic quality of the landscape plan on screen and on paper	Drawing's aesthetic appeal and readability, ease of printing, plant schedule, exporting and sharing files, graphic quality

Table 2. Overall Quality and Ease-of-Use rankings

QUALITY RANKING		EASE-OF-USE RANKING		QUALITY + EASE OF USE RANKING	
SCORE	PROGRAM	SCORE	PROGRAM	TOTAL SCORE	PROGRAM
3.4	DynaSCAPE	3.5	Garden Planner 3	6.7	Punch!
3.3	HGTV	3.4	Punch!	6.6	Garden Planner 3 (free)
3.3	Punch!	3.3	Smart Draw	6.2	Smart Draw
3.1	Garden Planner 3	3.2	Realtime Landscape PLUS	6.2	DynaSCAPE (test standard)
2.9	Smart Draw	3.1	ShowOff	6.1	HGTV Platinum
2.7	Plan-a-Garden	2.9	Plan-a-Garden	5.8	ShowOff (free)
2.7	ShowOff	2.8	HGTV	5.6	BHG Plan-a-Garden (free)
2.4	Realtime Landscape PLUS	2.8	DynaSCAPE	5.6	Realtime Landscape PLUS

Table 3. Important functions and features included in each program with the average combined scores for quality and ease-of-use

FUNCTIONS & FEATURES	DYNA-SCAPE	PUNCH	REALTIME PLUS	HGTV	SMARTDRAW	BHG PLAN	SHOW OFF	GARDEN PLANNER 3
Set-up software	4	4	4	4	4	4	3	4
Training/support	4	4	2	4	2	0	0	3
Design themes	0	3.5	0	0	0	0	2.5	3.5
Plant symbols	4	4	4	4	2	3	3	3.5
Hardscape symbols	2.5	2.5	4	2.5	1.5	2.5	2.5	3.5
Drawing tools	3.5	3	4	2	2.5	0	3	3.5
Import image	2	4	3.5	2	4	0	4	4
Base map design	3.5	4	3	3.5	3	1	0	3
Drag-and-drop	3.5	4	2.5	3.5	4	2.5	2	3.5
Growth simulator	0	4	0	0	0	0	0	0
3D view	0	2.5	4	4	0	0	0	0
Plant database	0	4	4	4	3	2	3	3
Plant schedule	3.5	0	4	3.5	0	0	0	4
Exportability	3.5	4	4	3.5	0	0	0	4