

EZ-Plant - Getting Started / Operational Tips Long Form Manual

Note: Some of the informational help tips shown below can also be found, and explained in detail, in the EZ-plant Help File, EZ-Plant.chm.

The following document serves as an overview of operational procedures for the primary EZ-Plant Software commands. Section A, the **EZ-Plant Software Operations Guide** gives a brief overview of basic software usage while Section B, **EZ-Plant Software Operational Details** goes into much greater depth in describing how to best use all of the EZ-Plant Software features. **Use the Quick Start Short Form Document procedures when trying out our Demo.** Subsequent Sections provide additional information on related topics to benefit the user.

When creating a landscape plan in AutoCAD or BricsCAD we call our planting plan design process “**On-Line Design**”, because users design as they draft with no need for mark-ups or redlined drawings unless users want to operate in that manner. As the design proceeds, users will typically use the **EZ-Plant Icons (or Toolbar)** commands and proceed operating in a left to right direction. The placement of the cursor over the Toolbar Icons, will display highlighted text that describes each command.

After **EZ-Plant Software** has been installed on each computer, displayed will be **Icons (Toolbars)** and a **Pull-down Menu** to operate the program. Users can use either of the operations. The following description illustrates typical use for **EZ-Plant** operation using the **Toolbars**.

In August 2009, EZ-Plant was developed to operate with BricsCAD, a virtual clone of AutoCAD. The relationship or partnership is with Bricsys NV, and EZ-Plant has developed EZ-Plant to be compatible with both cad programs. The two cad programs have interoperability with each other as well. We have found there are some very minor differences when using commands between the two programs and we have attempted to identify some of those differences in the description below. If you see AutoCAD describing a command below, it should be understood and also implies the same for BricsCAD program. In either program, we feel you will easily adapt for each use for operating EZ-Plant Software. It is very important for all users to be familiar with this document to successfully use EZ-Plant Software.

A. EZ-PLANT SOFTWARE OPERATIONS GUIDE

1. First, make a hardcopy or an electronic file copy of the “**PROJECT SYMBOLS WORKSHEET**” which is used to maintain a reference of plants and EZ-Plant Key Names. This assures that you use a different plant symbol for each of the plant species. Go to the **C: EZ-Plant\Worksheet** directory and open the file. Print several blank copies or save an electronic file to your project directory (more information regarding the Project Symbols Worksheet is described below in greater detail).
2. Insert a **Plant Schedule** onto drawing Cad file used for planting plan. We recommend that initially the Plansch4 be inserted which has no columns for costs. There are 7 different Plant Schedule templates of which to choose. Please look at them to note their differences. Our **Hide/ Show Columns** Command affords users the option to either Show or Hide the Remarks², the Mature Height/Spread and/or the Units/Multiple Costs columns while using the various Plant Schedule Templates. There are also Plant Schedule Extensions for each of the schedule templates to quickly accommodate any amount of plants used for a design.

3. Insert **Plant Symbols** into the Legend into the Plant Schedule. On your planting plan, place a closed Polyline (pl) in the areas that will represent a groundcover/flower or mulch area so these areas can be correctly labeled using the Insert Label command, enter the hatches into the outlined polylined (pl) outlined areas separately in standard AutoCAD/Bricscad format. The program will not correctly label the individual pl areas unless the selected hatches are placed in the polylined areas separately and linked by **MKLINK** described below just as the standard plant symbols operate.
4. Begin to **Insert Plants** into the Plant Schedule. Note that procedures 3 and 4 can be completed in either order. There is a SEARCH BOX to expedite the Search for plants by our EZ-Plant Key Name. Users should open and minimize/maximize the Excel spreadsheet, scroll or hit "*Control f*" to quickly find a plant in the spread sheet. Then INSERT PLANT or type PIN, and in the SEARCH BOX, Highlight the word *Search*, then type in the EZ-Plant Key name that will be placed into the planting plan. Then click on the small box to the right of the **SEARCH BOX** with the < shown, then click OK. The plant will be ready to be placed into the preformatted plant schedule at the endpoint of the rows.
5. Insert **Plant Symbols** onto the drawing to represent selected plants. Use the **copy or Insert Symbol** command to place multiple plants of the same size and species. Note that you get queried for plant size as you insert them and users have control over what size the plant symbol can be graphically shown in the project.
6. Labeling the plant symbols on the plan view landscape plan can be initiated once the **Make Link** or **MKINK Command** is completed and plants are linked with a symbol. Label them whenever you like using the **Insert Label** Command. In the Plant Schedule, the symbol in the Legend should be adjacent to the plant to correlate with the symbol for each different plant group. To represent groundcover or flowers, place a closed polyline around the legend box directly adjacent to the plant in the plant schedule or better yet use the **Add: Pick Points** shown in the Hatch dialog box to place the selected hatch style directly into the Legend box in the Planting Schedule. For Bricscad, chose "Pick Point in Boundaries", select a point to define boundary or hatch area in the Legend, click Enter, then OK, and the hatch is quickly placed into the schedule. For your records, you may want to note the hatch style, center spacing, etc. at the bottom of the Project Symbols Worksheet. This is especially helpful if there are two or more different hatch styles, Mulches and groundcover types. **Important!! Always** place the hatch or plant symbols in the Planting Schedule Legend on the **EZ_LEGENDS** layer **After** using the **MKLINK** command linking the plants to the plant symbols, and the plants on your planting plan should be on any other layer but **EZ_LEGEND**. This will ensure that the area or plant symbols shown in the plant schedule is not tabulated into your quantities. The plants and groundcovers on the landscape plan should be placed on any layer but on the **EZ_ LEGENDS layer** because the program will not correctly tally the plant quantities. This is a new command in EZ-Plant 7.0 and above.
7. **Make Link (MKLINK):** Links Plant Symbols to the plant information in the Planting Schedule. This is what makes the software "intelligent" by giving it the capability to automatically count or quantify plants, mulches and groundcovers. The quantity is displayed in the QTY column in the Planting Schedule. The MKLINK command is used to quantify all plants, including groundcover areas too. Once the plants are linked, they can be labeled using the Insert Label command.
8. **UPLINK or Update the Link:** After the plant symbols are linked to the plants, Update or quantify the plants, including groundcovers, on the planting plan by utilizing the **UPLINK** command. The blank plant quantities change to the amount of plant symbols shown on your planting plan automatically once linked. If there is an edit to the landscape plans and you have added or erased plant symbols after you have quantified the plants, just click on the UPLINK and the plant totals will automatically be updated. If a groundcover area is edited, simply click **UPLINK** and the total and the label will change to the appropriate plant count and to the amount of plants needed for each area enough to cover the amount of plants for each or the total areas. If 105 plants are needed for an area and plants are sold in flats of 50, EZ-Plant will always tally the higher amount of flats needed for the area (in this case 3 Flats), but the automated labeling will label 2 flats plus 5 plants needed for the area. This ensures that landscapers have sufficient flats to cover the amount of plants needed for a project.

9. **Label Plants:** Once the plants, plant symbols and/or groundcovers are linked using the **MKLINK** command, the total quantity of plant symbols or groundcover hatch identified with the selected **EZ-Plant Key Name** will automatically be labeled once the **Label Plants command** is used. Just click on the center of each plant symbol or select the groundcover hatch and drag the cursor and a leader line from each plant will be displayed. There will be an option to place the additionally appearing leader line on another plant or segment of hatch. You will also have the option to choose the text Height (H)/Style (S) and SHow (SH) in the command prompts. This gives users options to change the Text style, Text Height and decide whether or not to show the plant sizes in the Labeling Text. After the selections of font height and plant sizes are made, another option to label the plants, either Above, Below or Split (S), (Above (A) and Below (B) the Leader Line will be displayed. Simply type the first letter, A, B or S, and the labels will be positioned Above, Below or Split on the Leader Line. To apply a single label to a grouping of the same plants, a leader line will be displayed from the **first plant** chosen and the quantity displayed will be the amount of selected plant symbols. After the Individual ground cover areas can be labeled separately as long as these are outlined and hatched separately as described above in No. 3. Notice that EZ-plant will display however many plants you select either singularly or by window. The plants will be tallied and labeled either by single plants or by amount of flats there are. The labels will cleverly reflect both conditions depending on how the plants are sold. Also notice if there are changes on the plan and by clicking **UPLINK** the plant quantities shown in the labeling will also be quickly updated by the click of a command. (See Help file for a more detailed explanation) To apply a single label to a grouping of the same plants, a leader line will be displayed from the **first plant** chosen and the quantity displayed will be the amount of selected plant symbols. Individual ground cover areas can be labeled separately as long as these are outlined and hatched separately as described above.

10. **Connect Plants:** This is a command that connects the center points of each of the individually selected plant symbols. After choosing the **Connect Plants** command, the line will originate from the center of the first plant selected. Just click near the center of each subsequent plant symbol and the connecting line will appear. You can use the AutoCAD *snap command* to quickly snap to the midpoints, nodes, intersections etc. It's best to click on the outside of the plant symbol that is chosen first and the line will go directly into the center when the appropriate snaps are set.

11. To calculate the total cost for all plants in the planting plan, use the **Item Total** command, select or window all the plants to be totaled in the planting schedule. The program multiplies each plant's unit cost by the plant quantities and the plant totals for each row appears after the unit cost. If the plants or areas of groundcovers are edited, use **Item Total** again to re-tabulate the quantities.

12. Use the **Total Cost** command to see the entire estimated project cost (including installation) of all the plants in the **Command Line**, after your project specific Installation Factor has been entered. Just click the command and window or select all the plants in the schedule that are intended to be tallied. In Bricscad, choose the "Select all Entities" located within the dialog box that appears when the entire plant schedule needs tallied for total installation cost.

13. **Hide/ Show Columns** Command. In our release in Feb 2012, we have included new plant schedules and plant schedule extensions that accommodate users that want to show certain or lesser information on their planting schedules. In conjunction with these new plant schedules, go to our **Hide/ Show Columns** command and there are options to either **Hide** or **Show** the last three columns (**Remarks, Height and Spread, and/or Unit and Total Costs.**) Simply follow the instructions in the command line and type the first letter, H- Hide, S-Show, R-Remarks, H-Height and Spread or T- Total and either Hide or Show the information of choice.

B. EZ-PLANT SOFTWARE OPERATIONAL DETAILS

EZ-Plant Software contains three primary databases. They are:

- A. Preformatted (header only) **Plant Schedules** and their related **Extensions**. The Schedules accommodate up to 22 extensions for Schedules 1 & 2 and up to 10 plant species with the Plant Schedules 3, 4, 5 & 6. Use the extensions to quickly expand the Schedule if additional species are used in a project.
- B. **Database of Plants, Perennials & Mulches**.
- C. **Plant Symbols Database**.

The Plant, schedules and Symbols databases can be easily edited to include your own symbols, plants, plant costs and sizes. In fact, we encourage users to do this. These databases are explained in greater detail in the EZ-Plant Help File under EZ-Plant Components and EZ-Plant Functions. With EZ-Plant Version 6.4 and up, it is faster and easier to add and/or edit plants and symbols in the databases. The database files are found wherever you placed the "Docs" folder during installation.

1. To begin preparing a typical plan, first print (or save into your electronic file project) a blank "**Project Symbols Worksheet**". The function of the Project Symbols Worksheet is to maintain a record of the plants used for the project design so that only one Plant Symbol is used for each of the different plant species. This is the best way to use the program.

An annotated copy of the Project Symbols Worksheet should be stored in the permanent job file folder to document the EZ-Plant Key Names that are tied to each planting symbol. You may also file and store the project specific completed Project Symbols Worksheets electronically per your preference.

The Excel Spreadsheet Database may be used for scrolling lists of plants, costs and the **EZ-Plant Key Name** that must be used to insert the plants from the EZ-Plant database into the Plant schedule. If you purchased the EZ-Perennial program too you **MUST** install the EZ-Perennials program into the **exact file** that you installed the EZ-PLANT program. (In EZ-Plant Version 9.0, perennials are included in the program where as in prior versions the perennials was a separate file.) Then you will also be able to insert these perennials into the plan by using the radio insert button option in the insert command in the plant database. The option appears in the insert command pop-up window at the bottom of the Insert box. The **Key Names** are abbreviated code keys based on the Latin genus and species, and cultivar names for the plant database and the Perennials database. The Excel Spreadsheet is the same as the EZ-Plant plant database except the spread sheet shows the native plants listed in color and a Legend at the top of the sheet assigned for each nursery with convenient regional and native plant or plant origin data listed. The Excel sheet lists the plants alphabetically for each separate nursery which can easily be identified in the abbreviations in the nursery column. We also show a Drought Tolerant Legend. These plants are identified by an X (Imperial) or ** or X (metric) as displayed in the Native Origin Column.

If there are new plants to add into your database located where you first installed EZ-Plant, then you should remember to copy any new information into this Excel Spreadsheet as well. See the Editing and **Adding New Plants, Mulches into the Databases download** on the web site at **Software Information** for directions on how to place new information into the EZ-Plant databases.

2. Insert a blank **Plant Schedule** onto your CAD Landscape Planting Plan by clicking on the **Insert Schedule Icon**.

We recommend that the **Plansch4** schedule be used because this schedule does not have a **Cost Total** column. The **Plansch3** schedule does contain a column for the unit costs and total plant costs. The costs will still appear for the designer on screen for either schedule, but in the **Plansch3** schedule the final costs are more easily viewed and identified because of the header. **Plansch1 & 2** does not have a Legend column to place next to the plant. To use these schedules users still need to place a plant symbol next to the plant but the schedules allow for smaller symbols and condensed planting schedule rows and remember to place these symbols on the EZ_LEGEND Layer so they will not quantify.

Plansch 5 & 6 provides user options do show lesser information to their clients. By using the **Hide/ Show Columns** Command users can hide the **Remarks2, Mature Height/Spread,** and/or the **Cost** and **Unit Cost** columns from their clients. The information can still be used and seen by the designers but these options are available so this information can be not seen by the clients if necessary. The plant schedules may be laser printed at any time so the costs may be saved and tallied and then deleted (Hidden) by using the **Hide/ Show Columns** command. Users should type H for Hide or S for Show and then type R for Remarks or H for Height to hide or T to hide or show the Total or columns as an option. The various Plant Schedule options accommodate whichever final information that users select.

The **Plant Schedule Extensions** (i.e., **Plansch1(2), Ext1(2,3,5,22), Plansch3(4,5,6), Ext1(2,3,10)**) were developed to easily add on 1, 2, 3, 5, 10 or 22 rows respectively (or any combination of these), to the bottom of each Plant Schedule when more than 10 plants are needed for a project. These **EXTENSIONS** are attached by inserting the extensions on to the lower inside endpoint of the bottom left side of the schedule adding on 1, 2, 3, 5, 10 or 22 extra rows to align both schedule and schedule extension. The extraneous line between the schedule and the extension should be deleted after the schedules are exploded. The schedules can be inserted at the scale of your preference into the AutoCAD File. Type “S” or SC for scale if the schedule needs enlarged more than what is visible during the insertion process. The program has been designed to either accept the default scale or type “S” or “SC” or enter the scale you want. You may also type “R” for rotation angle if your schedule is not set to a 0 degree horizontal angle. If you list the schedule rotation angle and it is not 0, you can copy and paste the listed angle into the command line when prompted.

Plansch3Tot, the Plant Schedule Extension found in the **Insert Schedule** database, may be used to attach to the bottom of the **Plansch3**, at the inside bottom left endpoint. The function for this is to provide a tabulation or summary box for the final tabulations and costs if users want to provide their client with a total print summary the option is available. For example, the Service Adjustment, Taxes, and Subtotals columns may be adjusted per your needs using the **Edit Attribute** command. After the **Plansch3Tot** extension is added to the end of the **Plansch4**, the user will be prompted for 8 different commands. They are: *Total Unique Keys*, Type in the amount of different plant species there are including groundcovers, *Total Quantity of plants*, type in the total plant quantities, *Service Adjustment*, Type in any service fee adjustment or factor, *Subtotal Label*, Give a name to the subtotal, *Subtotal*, type in the subtotal cost, *Sales tax*, Enter Country, County or state name for tax, *Total Price*, add in all the total costs plus installation factors and taxes, and *Totals Label*, You may label the customer, clients name, project number or abbreviation. This schedule is flexible and should be edited or changed as it suits your needs.

Versions of EZ-Plant after 5.2 automatically remember the size or scale of the planting schedule that was entered and now automatically places the plants in at the same scale as the schedule, unless you want to change it. The scale used for your plant schedule must be exactly the same scale and rotation angle as the plants when inserted into the schedule.

Plansch4Mlch was created to tally mulch quantities. In the **Insert Plant** command, there is a radio toggle command at the bottom of the **Insert Table** that conveniently provides you with several different mulch types. The Plansch4 Extensions are there to add more rows if necessary. The quantities are tallied by using **MKLINK or Make Link** to hatches representing mulch types, just as the groundcover command works. Experiment and feel free to add your own mulch types as you need. The same hatches that are to be used for the groundcovers may also be used as a mulch layer. However, we recommend that you make the two hatches different or add two different hatches to the area because the EZ-labeling recognizes only the last layer that has been linked by **MKLINK**. The area in cubic feet of mulch will be tabulated for you automatically. Verify in the “Size” column the depth of mulch. If you use “Edit Attribute” command and edit the depth and use **UPLINK or Update Link** again the quantity will recalculate the mulch volume.

3. Placing Plants/Symbols into the Plant Schedule:

- a. Insert a **PLANT** from the plant database into the first blank row of the plant schedule by attaching the plant onto the upper left endpoint of each row. You will be able to see a rectangular box around each plant when inserted. Review the **EZ-PLANT FUNCTIONS** within the Help File for more details. When inserting plants into the schedule, use the scroll bar on the right side of the box to scroll to the plant. There is a **SEARCH BOX** to expedite the Search for plants by our EZ-Plant Key Name. Users can open and minimize/maximize the Excel spreadsheet, scroll or hit "*Control f*" to quickly find a plant in the Excel spreadsheet. Then **INSERT PLANT** or type PIN, and in the **SEARCH BOX**, Highlight the word *Search*, then type in the EZ-Plant Key name that will be placed into the planting plan. Then click on the small box to the right of the **SEARCH BOX** with the < shown, then click OK. The plant will be ready to be placed into the preformatted plant schedule at the endpoint of the rows.
- b. Using the **INSERT SYMBOL** toolbar, insert a plant symbol into the **LEGEND** column of the Plant schedule. The plant used in the schedule should be directly adjacent to and in the same row as the plant symbol that represents that particular species and size.
- c. When inserting plants into the schedule, use the upper left end point of each row for each Key name. Click on the **Object Snap** or **OSNAP** toggle on your screen and the insert box window will quickly grab the convenient end point and enter the plant. When inserting plants into the Planting Schedule, you are prompted for an insertion point. After picking the insertion end point, place the plant directly into the schedule row. You will see the highlighted plant during the insertion and placement. When entering plants or symbols into the Plant Schedule, users can quickly repeat the insertion by simply clicking the enter command again.
- d. After the plant is inserted, click on the **EZ-Plant Key Name Search** or scroll quickly to those plants that you want to insert. You may want to print the entire plant database so you have a paper copy in front of you while working. In the Excel spreadsheet, the nurseries and plants are in alphabetical order by Botanical Name from each nursery and the plant regions and nursery locations are listed in the EZ-Plant database as well but only in the Nursery column.
- e. When entering symbols and prompted for insertion point, click on the area where you want to place that plant symbol. Rather than inserting multiple copies of each individual plant symbol, use the **copy (co)** command once the plant symbol has been inserted and copy the desired symbol throughout the project as you complete the design.
- f. After entering the plant symbols and the plants into the Plant Schedule, quickly link each plant to its associated symbol by rotating and making links back and forth among all the entered plants and their symbols. Proceed down the plant schedule clicking **Enter** back and forth after each link has been made for the entire length of the Plant Schedule. Be sure to change the layer of the symbols in the planning schedule to the **EZ_LEGEND** layer after the **MKLINK** command has been used linking the plants to the plant symbols. Enter the diameter of your choice of the plants (in feet or meters) and the plant will be automatically inserted at that size. The owner prefers to review the spreadsheet during planting design procedures and review approximate plant spread widths, Key Name Identification and plant conditions. He also prefers to place most plants into a planting Plan scheme usually at about 75% of the ultimate spread appearing in the database, but this is at the user's discretion.
- g. Enter all plants and plant symbols into the Plant Schedule for the entire plant palette. After linking the plants with the plant symbols, you should place all the plants and groundcover hatches on the **EZ_LEGENDS** layer. This will ensure that the plant quantities shown in the schedule will not be included into the final planting plan quantity.

NOTE: Users may want to number the plants in alphabetical order or list them by trees or shrubs depending on the need. On the Project Symbols Worksheet, the plants can be entered one by one into the plant schedule alphabetically which makes it convenient for the landscape contractor when ordering plants.

4. **Make Link:** After all the plants and plant symbols have been placed into the Plant Schedule, the plant symbols in the legend need to be linked to the plants. Use the **MkLink** command to connect respective plants with their symbols by clicking on each item when prompted. This can be done quickly from the first row to the last row by picking the text (Key) of each plant then the symbol of each row alternating back and forth.

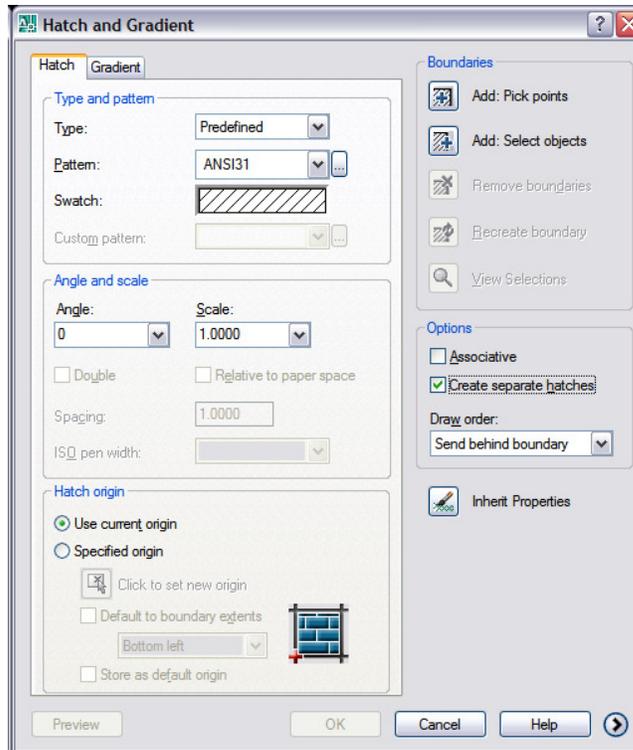
A. Groundcover Tabulating Function Tips

- i. To include groundcovers on the project, either place a closed **polyline** around the Legend box in the Plant Schedule or use the *ADD: PICK POINTS* in AutoCAD or *PICK POINTS IN BOUNDARIES* function in Bricscad from the dialogue box and pick a point inside the Legend Box to place the hatch representing groundcovers flowers or mulch. The AutoCAD shortcut BH may be used to place a hatch pattern directly adjacent to the Plant Key to easily associate the hatch to represent the preferred groundcover. Ground cover areas are quantified and totaled in the same way as individual trees, plants and shrubs are by using the **MKLINK** and **UPLINK** commands. Simply follow the Operational directions in the command line as the program is used.
- ii. Groundcover areas to be shown on the landscape drawing are created using a closed polyline drawn as the outside edge around the intended groundcover area. This hatch groundcover area on your plan **MUST** be the same as the hatched area within the plant Legend however the hatching and the plants in the Legend **MUST** be on the EZ_LEGENDS layer **after** using MKLINK so they will not be tabulated into the final quantity.

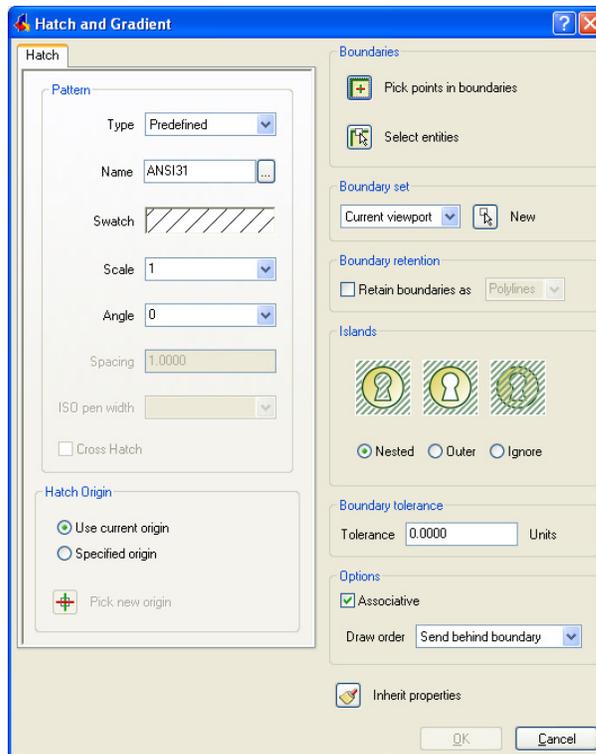
Be sure to note in the condition column if the plants are sold in flats or cases. If it says 50/flat in the database note that the correlating price is for flats only. Therefore, when quantifying the total amount of groundcover plants the total represents the total amount of Flats. If you have inserted a groundcover into the planting schedule use MKLINK to link the plant to the groundcover hatch chosen. After the plants have been linked, use UPLINK command to quantify the totals. After you have used MKLINK, you will notice the word **ERROR** in the QTY column. This is used to alert users that your next task should be editing the spacing of the Groundcover which is shown as the **## characters** in the REMARKS 2 column. Change these **##** to whichever plant centers you want to place the groundcovers in inches (or metric). In ZWCAD and Bricscad, make sure to go to the word Remarks2 and highlight this word to edit the areas. Use the *EDIT ATTRIBUTE* (ddatte) command and change the center spacing in inches. You will then need to use the UPLINK command again to re- quantify the groundcovers, mulches or flowers in the hatch areas.

You are now ready for labeling the plants. If users edit or erase the amount of hatch area after the quantity has been tabulated once, the quantities can be quickly re-tabulated by using UPLINK again. Users can simply Edit the On Center spacing distance too and re-select UPLINK to recalculate the total plants if the spacing centers need to change. This is a great time saving tool if revisions need to be made to groundcover and/or planting areas. If there are changes to make of the quantities after you have labeled each plant, simply use the LABEL command again to quickly re-label the plant quantities that appear in the labels. The quantities and the labeling will be quickly updated of the amount of plants used if the areas are changed and each of the segmented groundcover areas will be automatically changed by using **UPLINK** again.

Note: AutoCAD 2006 and higher allow you to create separate hatches in one operation if you check 'Create Separate Hatches' in the hatch dialog box screen shot as shown below. Older versions will have to be hatched separately by the user.



Typical screen shot of AutoCAD Hatch and Gradient command.



Typical screen shot for BricsCAD Hatch and Gradient command.

- iii. If different types of groundcover or flowers are used in a project, you may want to make different layers for each of the species and label these polyline layers for each of the species of groundcover, (ie. Use “**Plym**” for the layer name when using Vinca Minor meaning “polyline for vinca minor”). Then “**isolate**” or **freeze** the layer and turn on the EZ-Plant and plant schedule layers to view the text contained in the planting schedule. If you freeze polyline layers when performing tabulations, remember to thaw each layer and type “**REGENALL**” or **LOA** to bring back the frozen work.
- iv. Turn the layers back on if frozen. Note: **LOA** (AutoCAD shortcut command) may be used to display all layers. You may also use the Insert label command for the hatch by selecting the hatch and the quantity which will automatically be labeled after **MKLINK** has been completed.
- v. Use **OSNAP** to click and grip to each end point. By typing “**bh**” in AutoCAD, the hatch database choices appear. We recommend that you use different hatch patterns for different groundcover or flowerbed types. Type “**he**” for hatch edit if the hatch pattern needs revised. (Note: We suggest that you have a cad technician assist in setting up shortcut keys (or Hot Keys) if these do not function. Some of the AutoCAD Shortcuts (hot keys) are: pl - Polyline, a - Arch, s - Set, l - line, cl - close, C - circle.) Note: not all hot keys work in Bricscad as they do in AutoCAD (like HE - Hatchedit).
- vi. A polyline circle representing that there is mulch but no groundcovers within that mulch may be used for circular areas around trees. Then the hatched area for the mulched tree circle should not be hatched as ground cover and therefore will not be tallied in to the final quantity. Similarly, mulch quantities may be tallied in the same manner.

We recommend that you call the plant layer a similar name as the **EZ- Plant Key Name** of whatever plant is used, to be easily identifiable. To correctly place the right amount of ground cover plants in the Plant Schedule, just select the **Uplink** command and the planting areas and groundcover command quantities will be re-tabulated. If you add more groundcovers after the project has been completed, you will have to include the previously tabulated groundcovers with the newly added groundcovers to make the final plant total correct. Again, simply use the **UPLINK** command to update the quantities.

If you are using several kinds of groundcovers, use the bottom of the **Project Symbols Worksheet** to document the layer types, hatch pattern, scale of hatch, hatch angle, on center coverage spacing (In inches) for each groundcover used to help with organization.

If you are not getting correct groundcover areas when using the command, you may need to change the settings by going to the EZ-Plant Pull Down menu. Pick **Set Drawing Units** and see the **HELP** File for exact instructions. This command specifies the EZ-Plant drawing units to correctly tally the plants. In order to correctly compute areas and volumes, EZ-Plant must know if your base drawing units are inches or feet. EZ-Plant makes the following assumptions:

CAD Drawing Units	Base Units	Groundcover Spacing and Mulch Thickness
Architectural	inches	inches
Decimal	feet	inches
Engineering	inches	inches
Fractional	inches	inches
Scientific	feet	inches
Metric (MEASUREMENT = 1)	meters	centimeters

If this assumption is incorrect, or if you have changed drawing units, this command should set things straight. The command dialog is as follows:

Command: _SETGC
Specify EZ-Plant drawing units [Inches/Feet/Meters] <Feet>:

Occasionally a polylined area will not tabulate or will label as 0 plants. When this occurs, it is typically because a segment of the polyline has been overlapped by a segment of the same polyline and therefore will not compute properly. Simply zoom in closely to check out the polyline and fix the overlapped areas.

5. **CHLINK or Change Link** enables you to change or modify the link to a new plant symbol, hatch or groundcover. This also works well if you want to tabulate plants in flats rather than singularly, and then re-label the plants using our **Label Plants** Command.
6. **UPLINK:** The **UPDATE LINK** command quantifies the totals of all plants, including groundcovers as explained above, and automatically changes the quantity of plants to however many plants are shown on the landscape drawing. If you edit, erase or add plants, make sure you always use uplink to re-tabulate the plant quantities and **Total Cost** to multiply the new unit costs by the new plant quantities. Use the **Total Cost** for the new plant installation adjustments.

- a. **Labeling, Editing, Find and Replace:** If you want to change the label of the text calling out the plants on the landscape drawing from one key name to another in several locations, use the AutoCAD **“Find and Replace”** command. Type **“Find”**, then at the command line when prompted, type in the incorrect text, then type in the replacement text into the appropriate command box. AutoCAD then automatically changes all the text.

Note: If the Excel database spreadsheet is open and there is a need to quickly search for a plant, click **“Control F”** to complete a search for the plant.

- b. **Cost Installation Factors:** Before performing a final landscape cost estimate, call your contractor to obtain a plant cost installation factor in the area where the project is taking place. This will benefit the designer in preparing accurate costs estimates. Many contractors on the east coast use between 2.0 and 3.0 installation factor to determine their price to install. Some contractors use a higher installation factor when there are many small plants and/or hand plantings. The installation factor may be higher if the project is located in a particularly affluent area. Each landscape project may be different, so please ask your installer. *(The installation factor is typed into the Command Line after using the EZ-Cost command.)*
- c. **Plant Schedule Rotational Insertion Tips:** Occasionally, the plant schedule is positioned in your drawing at an unusual angle and you do not want to change the UCS of the file to insert the plants into the schedule. An efficient way to insert the plants into the angled schedule is to type **“LI”** or **List** the plant schedule. The command line produces several items describing varying characteristics including a rotation angle. Simply copy the rotation angle of the schedule and paste this angle into the command line when prompted during the insertion process.
- d. **Adding New Plants, Mulches, Flowers or Perennials into the Databases:** We created a new document called **Editing and Adding new plants into the database Help** document located in the **Software information section of our website. Please download this document and follow it closely.** To add new plants etc. into the database, simply go to where you installed EZ-Plant. Typically it should be located in C:\EZ-PLANT\Docs and then open the Excel files called **Plants, Perennials or Mulch Excel files**, (whichever you are editing.) Just add the new plants in as you would in Excel and **save your work**. To save typing time, open or copy into a blank cell a similar plant that what you want to add and edit it as needed. You will need to be familiar with Excel operations to competently add new plants. Be

sure to edit all the information for each plant including pricing, sizes, conditions, remarks etc. Your EZ-Plant database has been developed to be easily edited in Excel for flexibility for our users. After saving your changes, the new plants, mulches, perennials, etc. will be in your database and they can be readily placed into the Plant Schedule.

7. **Offset Plants:** The **Offset Plants** command allows users to evenly space many plant symbols along a line, polyline or arc in seconds. To experiment, type PL (Polyline) and draw a long polyline. If you type A, during the command, an Arc may be drawn also.

Click **Offset Plants** and a **Select First Plant Symbol** is shown in the command line. Select a Plant symbol that has already been linked by **MKLINK**. (Be sure you are NOT using a Plant Symbol that was placed on the EZ_LEGENDS layer or the computation will not work.). The prompt will then say **Select additional Plant Symbol (or Enter when done)**. This means that you have an option to place linked plants alternately spaced at a specified distance along this line. Then the command line says **Select start of Centerline for On-Center spacing**. Simply select the line or polyline that you have drawn. The symbols will be spaced from the top or left to right, along the line at whatever chosen spacing (in feet) you have chosen. Use UPLINK again to quantify the total plants shown on the plan.

8. **Hide/ Show Columns** Command. In our release in Feb 2012, we have included new plant schedules and plant schedule extensions that accommodate users that want to show certain or lesser information on their planting schedules. In conjunction with these new plant schedules, go to our HIDE/SHOW command and there are options to either Hide or Show the last three columns (**Remarks, Height and Spread, and/ or Unit and Total Costs.**) Simply follow the instructions in the command line and type the first letter, H- Hide, S- Show, R-Remarks, H-Height and Spread or T- Total and either Hide or Show the information of choice.

C. CREATING ENLARGEMENT VIEWPORTS USING PAPERSPACE AND MODELSPACE

1. In AutoCAD, the developer has found that there are enormous advantages for preparing planting plan documents using EZ-Plant Software when using paper space and model space, especially if external references (xref's) are used. If you are not familiar with these concepts, we suggest you view the *AutoCAD* Help file.
2. Graphically, to enhance sheet readability, it is often necessary to create scaled enlarged Viewports of certain landscaped areas of the project where there is limited visibility within the main site landscape plan. Certain plant symbols, if shown at a 2-4' diameter on a 40 or 50 scale plan can be very difficult to read for a contractor or owner. You can very quickly and effectively create close-up viewed enlargements, after your model space landscape plan is completed. The paper space view, which is often times the drawing used for plotting, contains a title block, a survey base sheet, a landscape working drawing, a site plan, and sometimes a grading or utility plan x-referenced into the drawing.
3. After the working landscape site plan is completed and the final planting schedule is complete, save the final plan and go into the paper space mode to see what the final plot will resemble. (We recommend that you leave sufficient room around the plan view, so an enlarged final planting schedule may be viewed and seen with the final Landscape plan). Create a new layer called **Vport**, (or a layer of your choice) and make it a **No Plot** layer. Then type **MV** in the command line and with your cursor, drag a window from left to right creating a boxed Viewport in which the model space drawing of the landscape plan view will appear. Drag and stretch the box to the size that suits your visual needs. By picking on the window box and left clicking, the box can be easily resized. *Note: The developer recommends using this method to show an enlarged plant schedule because the plant schedule, plants and plant symbols all need to be on the same working drawing (planting plan) for the quantifying commands to function correctly. This way if there are edits to the planting totals, the plants, once quantified on the working file, will automatically be viewed and updated in the paper space viewport also.*

4. After typing **MV** place the viewport box in the paper space view, with your cursor, click and highlight the Window Box. Then Click on the model space tab along the bottom of the screen, and adjust the scale within the window by clicking on the pull down scale box shown on your toolbar. Choose the appropriate scale from the scale pull-down of your choice.

5. With the new **Label Plants** command, the plants must be labeled in the model space or working drawing. Whatever dwg file that the plant schedule, plants, and project symbols are on must be on the same drawing. *The OWNER suggests that you create two layers of text, one large and one small. You can quickly label each plant twice using the EZ-Label command and freeze the different layers in the viewport. This way the text layers can be turned on to first label the plants in the working landscape plan view file on a separate text layer. Then on the plot drawing paper space view, display the text most suited for the enlarged scaled drawing. The enlargements of the plants sometimes become cluttered and the enlargement is easier to see plant symbols and smaller text. You may not want to label small areas at all on the plan view and merely note “see enlargements for detail”. Then label the plants using the appropriate layer and scale in the paper space viewport and plot file. This makes things easier regarding different font sizes.*

6. Phases of planting areas can be created in EZ-Plant by creating differing plant layers and placing varying phase of construction on these layers. Users will then be able to freeze and thaw the plant symbols by layers, even if the plant symbols are the same in different phases. The plant quantities will not change once the plant layers are frozen.

D. REGION AND NURSERY LEGEND

In the plant database, there are two columns for denoting where the plants are located or grown identified as “R” Region and “N” Nursery. Under Region, the Hardiness Zone Ranges are identified for every plant in accordance to USDA. Please verify plants if you are unsure of hardiness for the area in which they will be planted. Remember that the zone ranges vary for each plant depending on climate, weather and even elevation. As of Jan 2012, there is an updated USDA Hardiness Zone Map available. Ask your local nursery personnel if you have questions on plant hardiness in your area. The list below is an example only and the Excel spreadsheet in the current version supersedes this list shown.

LEGEND / KEY			
A	Angelica Nursery Maryland	M-NC	Monrovia, Nur., N. Carolina
CC	Calusa Creek Nur. Fla.	M-OH	Monrovia Nur., Ohio
K	Klyn Nursery, Ohio	M-OR	Monrovia Nur., Oregon
LC	Lake County Nur. Ohio	MOO	Moon Nur., Pennsylvania
MA-T	Magnolia Nur. Texas	P	Princeton Nur., NJ/PA.
M-C	Monrovia Nur. California	Z	Zone 10 Nursery Miami, Fl.
M-G	Monrovia Nur. Georgia	V	Varies
M-NC	Monrovia North Carolina		
NUR. =	Nursery Location		

We have updated most of the plants located in our Original EZ-Plant database to 2007, 2008, 2009, and have nurseries with 2011 prices. In the Excel Plant Spreadsheet, use the legend Key Abbreviations shown in the database columns to identify the actual nursery locations where the plants are sold. The prices in the database are directly from the Nursery catalogs, but of course are subject to change. We recommend that you verify all pricing

at your local nursery. The new Key abbreviations (EZ-Plant Key Names) were also placed in the database in 2007, 2009 and 2011.

If there is no nursery Key Names shown, then the plant was not listed in any of the corresponding nurseries that we used. We opted to keep these plants in the database and let the user decide if they want to use these plants. We strongly encourage the users to edit the database and utilize actual nursery plant sizes and prices of your locale and choice. If you find plant information that is not listed in our database (like plant spread), please inform us.

For the **Sustainable Site Initiative**, we have conveniently listed **Native Plant Species** in our Excel Spreadsheet of Plant Materials. See our color and abbreviation coded Native Plants that are listed by region. We list the Xeriscape Plants, Fire Resistant Plants, Deer Resistant Plants, and Invasive Species and Plants that attract birds as well in a legend shown on the Excel spreadsheet which corresponds to the information displayed in the Native Origin column.

E. Insert Hyperlinks

When you order the EZ-Plant Software 5.27 and up, you will receive a complete Excel spreadsheet that has the same plant materials that are contained within your EZ-Plant Plant database. The differences are that the Excel database is segregated into Nurseries and the plants are listed by the nurseries that sell these plants and were shown within their catalogs within the last few years. The plant database within software, typically installed at C:\EZ-Plant, contains a complete alphabetical list of plants but does not list them by nurseries.

The owner likes to use the Excel database like a reference tool and places the Excel database on his desktop for easy access and minimizes and maximizes the spreadsheet as needed. The **fantastic operational functions** and reasons to use your spreadsheet in this manner is because the Excel spreadsheet can function as an **informational link base sheet** where you can create **HYPERLINKS** to various web sites, plant data, plant photographs, notes etc. You can link to Nursery spreadsheets so that when the Excel text cell link is created using the **HYPERLINK** command, the powerful potential of these operations is staggering.

E1. Creating Hyperlinks in Excel

Within any of the separate cells within your Excel database you can very easily create a hyperlink or link to very useful data. To create a hyperlink to a cell, right click on the text inside the cell (for example, right-click on the EZ-Plant Key Name **ABC** (*Abelia Chinensis*, *Chinese Abelia*)), Click **HYPERLINK**, and an Insert Hyperlink command box will appear. You can "Browse for file" and go to the file where you placed your plant photograph or plant data. You will need to click the pull down "*files of type*" and select all files in order to see the jpegs and bmp files. You will see the text within the cell change color (blue or purple) indicating the cell is now linked after simply clicking 'OK'. If you then single click on the highlighted linked text, you will see the data appear that you linked to.

If users want to link to a webpage loaded with data to text you can do this very easily. Visit a web site and the Hyperlink remembers a site that you have recently visited. Click **HYPERLINK**, make sure "**EXISTING FILE**" OR "**WEB PAGE**" is chosen, go to "*Browsed pages*" and select your recently visited web address in the screen and pick OK. Users can also type in the exact web address too. Users will see the text become highlighted for the new web site link. Save all changes and you are set.

Plant photos of practically any plant may be found on the internet by using www.google.com. Go to IMAGES and type in the plant name that you are searching. Right click on the photo and '**SAVE PICTURE AS**' and scroll to a folder where you want your photo's saved. **CAUTION!!!** SOME web photo's are **subject to copyright** and can be used by permission only or not at all, so please honor the copyright.

It appears that most jpgs, bmps, and gif photographs open up with the following programs so you will need to have certain viewing programs installed to properly view the photos. *Bmps* can be viewed in **Microsoft Paint**. *Jpgs*

open with **Adobe Photoshop Album Starter Edition** and *gif* files will open in **Microsoft Internet Explorer** or whatever web browser is set on your computer. There are other programs and ways to view pictures in addition to the ones mentioned above, so please experiment.

E.2 Creating Text Boxes in Excel

Within Excel, small text boxes can be placed within each cell so that text information can be easily added to your database for labeling information. For example, users may want to place a note on a plant saying it is only available as a 2" caliper at a particular Nursery. Go to the cell and right click, select "*Insert Comment*" Type in the text that you want to appear. Change font size and type by going to "*FORMAT COMMENT*." To hide, click "*HIDE COMMENT*", and to show, click "*SHOW COMMENT*". A small colored triangular tag will appear in the cell corner indicating that a note for the plant is included.

E.3 Links

Several websites that could be valuable links include:

- Any of the Nursery websites contained within the database;
- www.plantfinder.com;
- Any horticultural databases and web sites;
- University plant data links;
- Plant photographic web sites;
- Plant data software

Please inform us if you have found valuable links that you like. In 2010, we have conveniently joined forces and linked to Calusa Creek Nurseries Inc and Kurt Bluemel Inc. to provide you with a direct link to their plant catalog. You should contact them and get a password and acceptance so a Hyperlink can be created between you and them and verification of their plant availability. Calusa Creek has a blog and native and Xeriscape plants listed and Kurt Bluemel has fantastic photos of their ornamental grasses, plants and groundcovers. In 2011 we added "All American Native Plants" from Prairie Nursery of Wisconsin. They distribute all over the United States. We added Native Wildflowers, Forbs, Grasses, Sedges, Bulrushes and Rushes into our program with the exact size and condition that Prairie Nursery sells their plants. We are working directly with Mr. Neil Diboll, who is recognized internationally as an expert in ecological and natural landscapes and his input is sure to add value to the EZ-Plant program in the immediate future. These plants and are becoming abundantly more critical plant types necessary to incorporate into the sustainable landscape.

In 2013, we added identification and Legends of plants that are Fire Resistant, Drought Tolerant or Water Wise plants. We identified plants that are moderately or Salt tolerant, Deer Resistant Plants, and Invasive Species and Plants that attract birds as well in a legend shown on the Excel spreadsheet which corresponds to the information displayed in the Native Origin column. We want to enhance our goal of provided users important plant cultural information and sustainability.

F. CONCLUSION:

We trust that you have found this guide of operating and start-up tips to be useful.

Please read the **Help File** for further explanation and experiment with the program to enhance familiarity. The above description explains the basic concept of the program and provides ample information to successfully operate the program.

Thank you for choosing EZ-Plant Software. It is a decision that will hopefully benefit you for years to come. Please feel free to contact us with any questions or suggested improvements.

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