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**Release Notes**

# **IRRICAD Pro Version 14**

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# **Release Notes Pro V14**

# 1.1 IN PRO VERSION 14

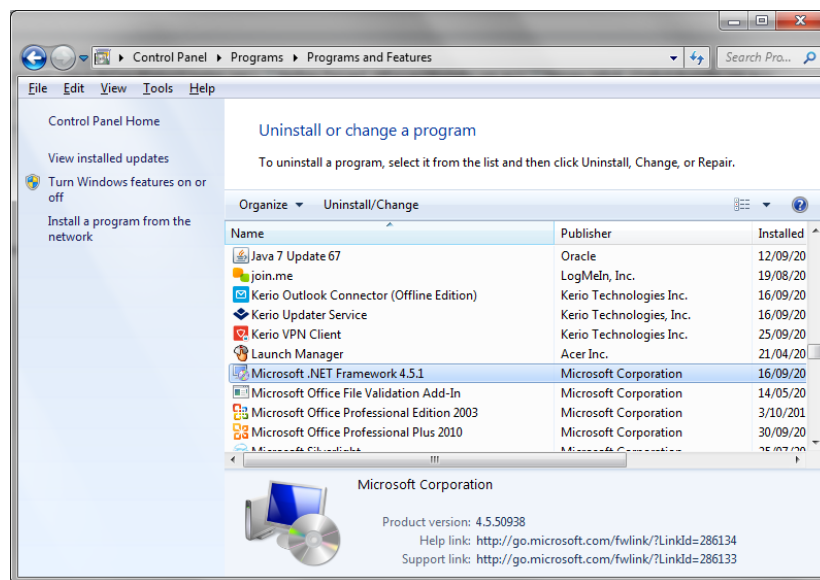
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## 1.1.1 IMPORT FROM GOOGLE EARTH

Import elevations and images direct from Google Earth from within IRRICAD. The image and data will be geo-located in the IRRICAD design.

For the Google Earth feature to work you will need:-

- Google Earth installed
- Microsoft .NET framework Version 4 installed. If you already have this installed you will see it in your Control Panel - Programs and Features:-

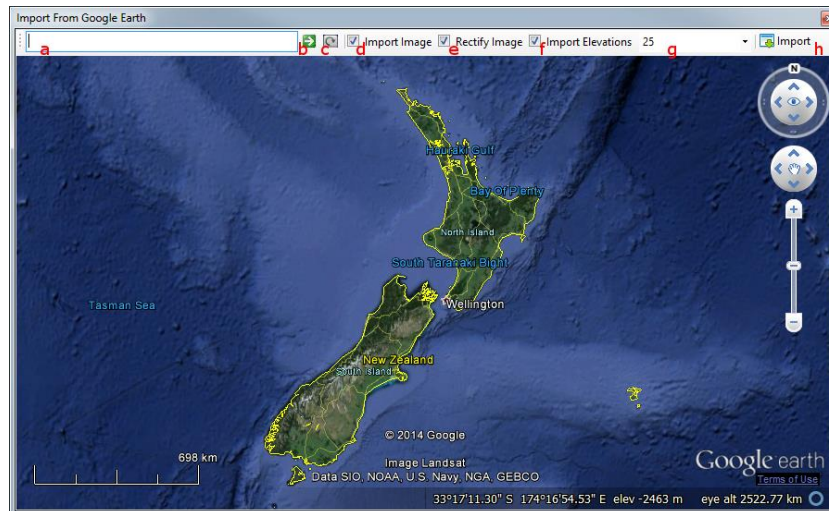


To update .NET go to <http://go.microsoft.com/fwlink/?LinkID=324519>

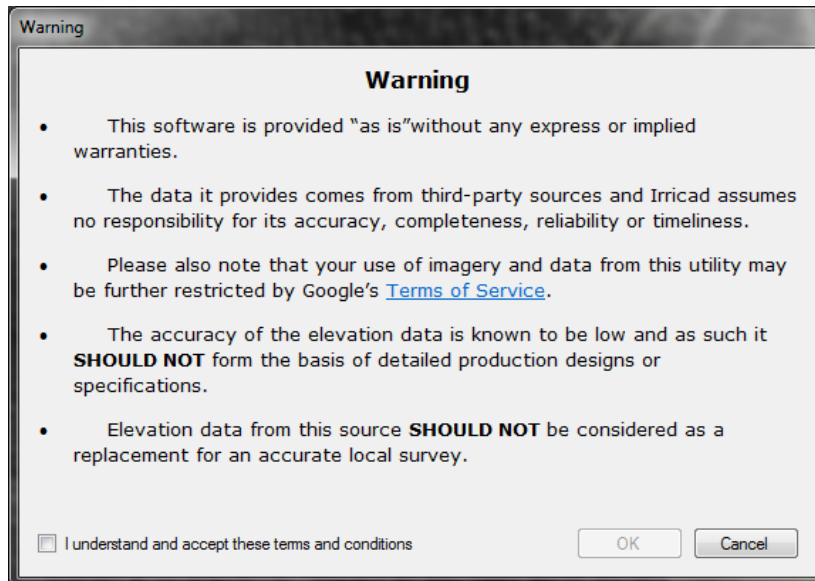


### 1.1.1.1 HOW TO IMPORT IMAGES AND ELEVATIONS FROM GOOGLE EARTH

1. From the *File* menu, select *Import from Google Earth....* The import utility will then start.

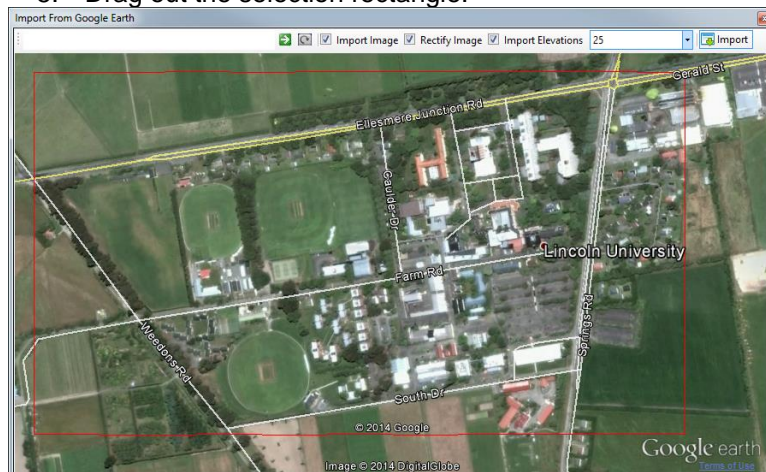


- a. Navigation – type general destination name here
  - b. Go to destination
  - c. Refresh
  - d. Check this box to import an image
  - e. Check this box to use a rectified image – to accurately convert an image from spherical coordinates (latitudes and longitudes) to planar coordinates (X and Y) the image must be re-shaped
  - f. Check this box to import elevation data
  - g. Specify the number of elevations to import – the number of divisions along the largest dimension
  - h. Import action button.
2. Navigate to your area of interest and specify your importation options; Import Image, Rectify Image, Import Elevations, Number of elevations.
  3. Click the **[Import]** button. A disclaimer message will appear for you to read and understand.



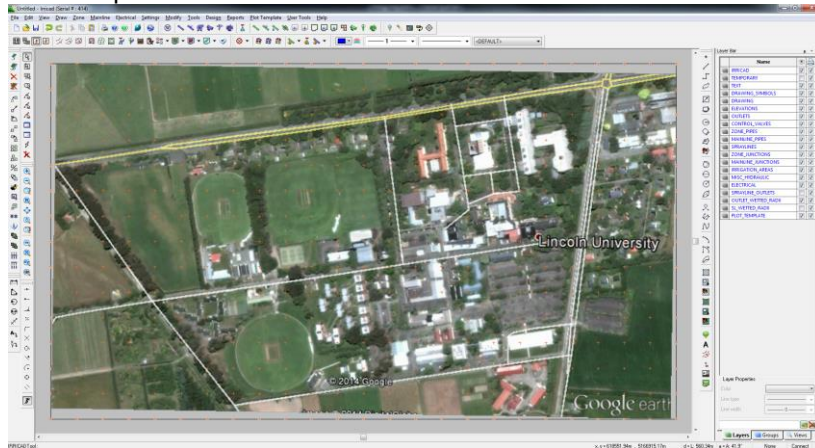
If survey data is available for the property use it instead of relying on the Google Earth elevations. Surveyed data will be much more accurate.

4. Now in selection mode, refine your area of interest by drawing a rectangle. Click the first corner.
5. Drag out the selection rectangle.



6. Click the second corner.

7. The utility will close and the specified information will be imported into IRRICAD.



If you have imported elevation data, you may now wish to calculate contours ([Tools|Calculate Contours](#)).

Notes:

*The image is rotated because it has been rectified - a rectangle defined by latitude and longitude is not rectangular in UTM. It needs to be rectified to be accurate, especially if you go back to Google Earth from IRRICAD. There is an option in the utility to turn off the rectification, but it has little to recommend it other than 'looking nicer'. An explanation of UTM is located in [Help|Help Topics](#) – User Manual – Entering Information into IRRICAD -> Entering a Scale Plan -> Importing a DXF, VCD, DWG, GCD, SHP, MIF, CSV or KML File -> GIS options - Section 2.4.1.1*

*Each spot height is determined at a latitude/longitude point, and is subsequently converted to UTM. As such, they are all spatially independent and don't require rectification. Note that they come from an interpolation in the Google Earth Plugin and will be subject to further interpolation/smoothing by IRRICAD, so they should not be used as the basis of any rigorous solutions.*

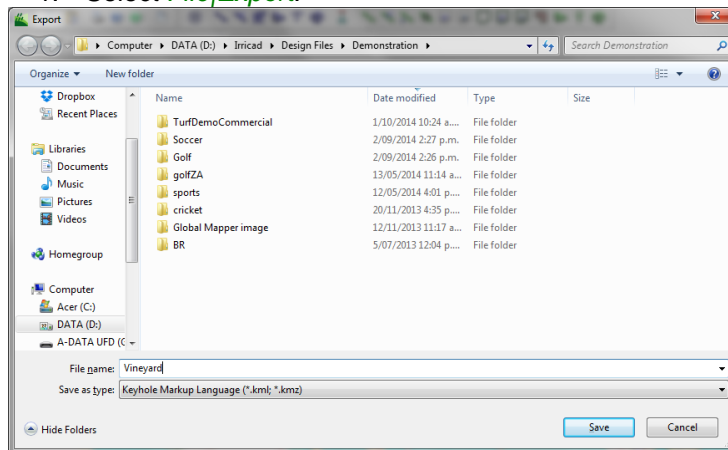
*Always double-check dimensions using known world lengths of existing objects, for example, fence lines. Satellite imagery may overlap photos and cause quoting or installation inaccuracies.*

## 1.1.2 EXPORT TO GOOGLE EARTH FILE FORMAT (KML)

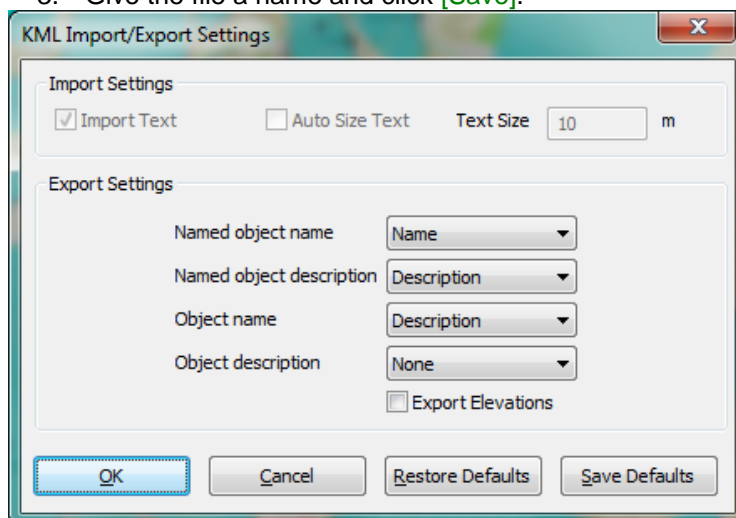
Export directly to Google Earth file format KML.

To export to KML/KMZ:-

1. Select **File|Export**.



2. In the “**Save as type**” field select the **Keyhole Markup Language (\*.kml, \*.kmz)** option.
3. Give the file a name and click **[Save]**.



4. In the **KML Import/Export Settings** select the required export settings and click **[OK]**. Import the file into Google Earth.

### 1.1.2.1 EXPORT SETTINGS

**Named object name:** Select the option to export the required data for items that have zone names (valves and mainline outlets), water supply names, etc. Select **Name** to label the items with its zone/water supply name, **Description** to label the items with its description, **Unique identifier** to label the items with its UID number, **Label Set 1** to label the items with its existing label from label set 1, **Label Set 2** to label the items with its existing label from label set 2, or **None** to export no information with the items.

This information will be available in Google Earth on the image and under “Places”. Expand the tree on the left-hand side to turn layers on or off and, under the appropriate layers, see the list of names.

**Named object description:** Select the option to export the descriptive information for items that have zone names (valves and mainline outlets), water supply names, etc. Select **Name** to label the items with its zone/water supply name, **Description** to label the items with its description, **Unique identifier** to label the items with its UID number, **Label Set 1** to label the items with its existing label from label set 1, **Label Set 2** to label the items with its existing label from label set 2, or **None** to export no information with the items.

This information will be available in Google Earth on the image when clicking on a named item and under “Places”. Expand the tree on the left-hand side to turn layers on or off and, under the appropriate layers, see the list of names and descriptions.





#### Object name:

Select the option to export the required data for hydraulic items that do not have names such as pipes, zone outlets and Misc. Hydraulic items. Select **Description** to label the items with its description, **Unique identifier** to label the items with its UID number, **Label Set 1** to label the items with its existing label from label set 1, **Label Set 2** to label the items with its existing label from label set 2, or **None** to export no information with the items. Note the **Name** option has no effect for this field.

This information will be available in Google Earth on the image and under "Places". Expand the tree on the left-hand side to turn layers on or off and, under the appropriate layers, see the list of names.

#### Object description:

Select the option to export the descriptive information for items that have do not have names such as pipes, zone outlets and Misc. Hydraulic items. **Description** to label the items with its description, **Unique identifier** to label the items with its UID number, **Label Set 1** to label the items with its existing label from label set 1, **Label Set 2** to label the items with its existing label from label set 2, or **None** to export no information with the items. Note the **Name** option has no effect for this field.

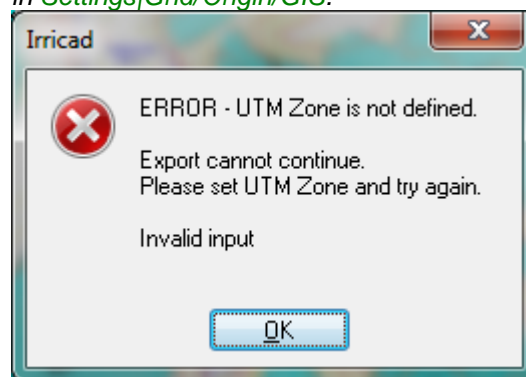
This information will be available in Google Earth on the image when clicking on a named item and under “Places”. Expand the tree on the left-hand side to turn layers on or off and, under the appropriate layers, see the list of names and descriptions.



**Export Elevations:** Enable this option to export the elevations with the design.

Notes:

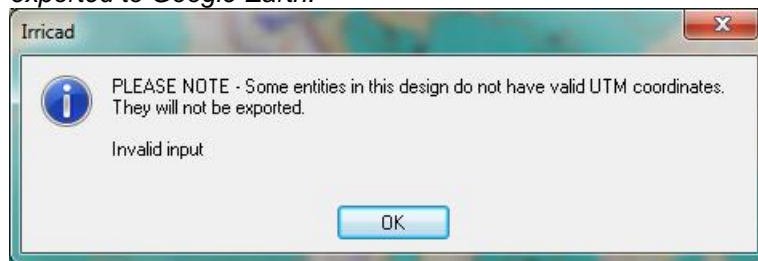
*The coordinates need to be in UTM and the UTM zone specified in [Settings|Grid/Origin/GIS](#).*



*The UTM zone grid can be enabled in Google Earth via View | Grid and the correct UTM zone determined. In*

*Settings|Grid/Origin/GIS select “North” for northern hemisphere and “South” for the southern hemisphere.*

*If the coordinates of any items are beyond the limits of UTM the following message will appear and those items will not be exported to Google Earth.*



### **1.1.3 VIEW IN GOOGLE EARTH**

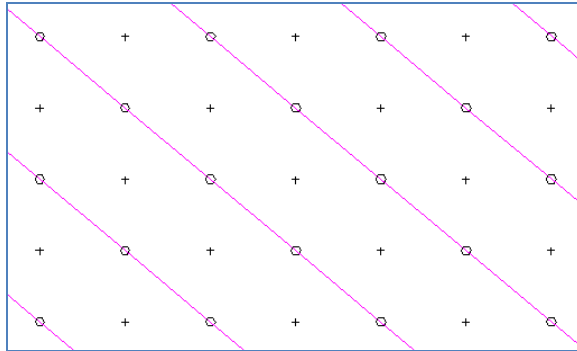
The [View|View in Google Earth](#) option is a one step process exporting the design, with the default [KML Import/Export Settings](#), directly into Google Earth. As with the [Export to KML](#) function the coordinates need to be in UTM and the UTM zone specified. See [Export to Google Earth File Format \(KML\)](#), [Section 7.1.2](#).

### **1.1.4 SPRINKLER PLACEMENT IN TREE BLOCKS**

For many tree crops or plantations the irrigation design starts with a grid of tree or plant positions. IRRICAD Version 14 has a new tool which uses a Tree Block to drive the placement of sprinklers, emitters, and lateral pipes.

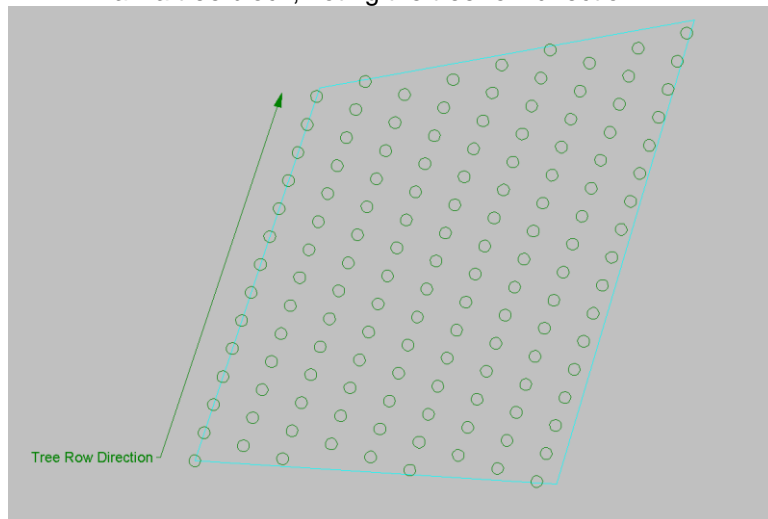
IRRICAD calculates sprinkler and row spacing based on the tree grid. This is very useful for offset patterns like the example below. The tree grid is 36' x 30' triangulated (11m x 9m triangulated). The resulting lateral spacing is 23.0466' (6.9656m) and the sprinkler spacing is 23.43075' (7.1063m) with an 18.412% (19.802%) offset. Previously a designer would have had to calculate these values. Now IRRICAD places sprinklers and lateral pipes automatically. The designer specifies sprinkler location by outlets every 'x' tree rows and every 'x' trees.



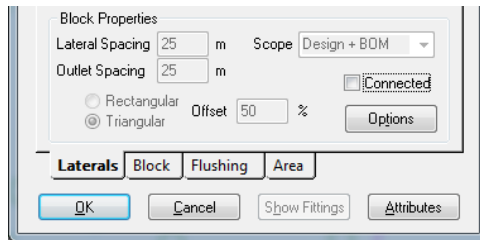


#### 1.1.4.1 HOW TO POSITION BLOCK OUTLETS USING TREES

1. Draw a tree block, noting the tree row direction.

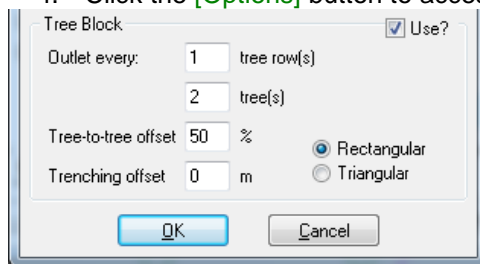


2. Select the tree block, then select *Zone|Spray Irrigation Block* (U).
3. With the block in 'Use Trees' mode, the spacing parameters are unavailable. These values will be calculated from the tree spacing.

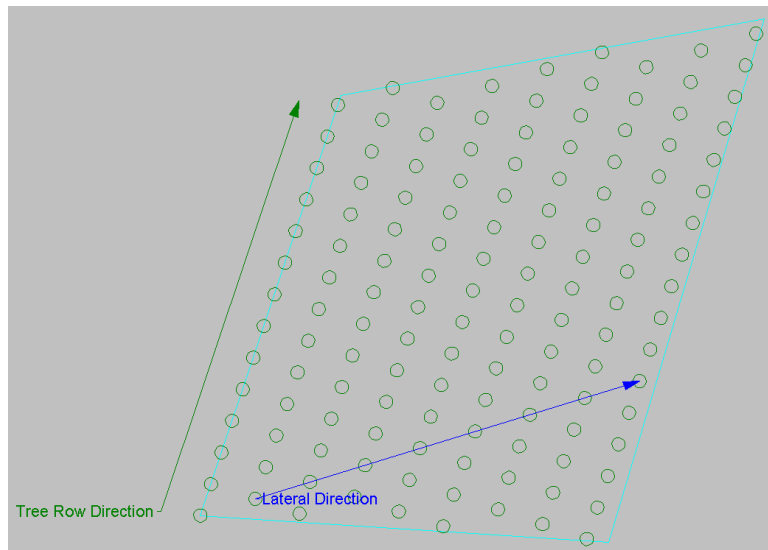


If your tree block is significantly irregular, an unconnected block may be the best option.

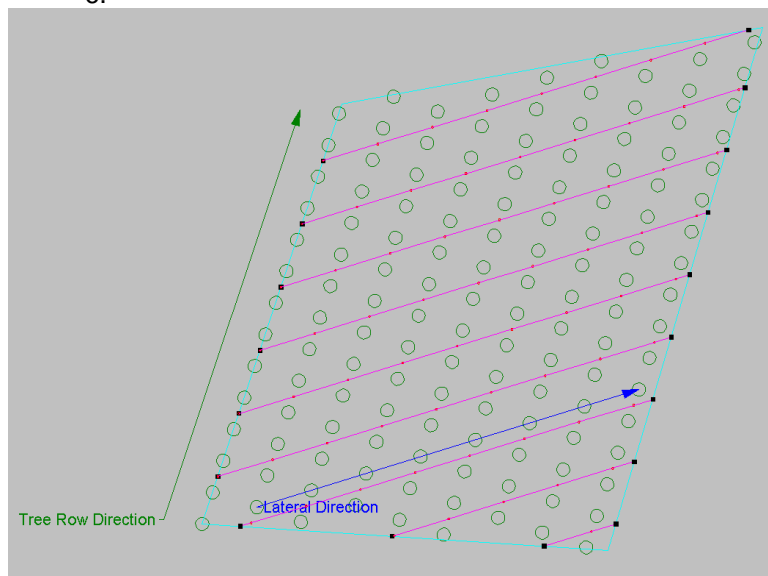
4. Click the **Options** button to access the 'Use Trees' settings.



5. Choose an outlet arrangement, with reference to the tree rows, and then click **OK**. Click **OK** on the main block dialog too.
6. You will then be prompted to specify the lateral direction. This should be parallel to a line of trees, though obviously it need not be parallel to the actual tree row direction. Use the trees as anchor points to specify the direction.



7. Next you will be prompted to specify the reference emitter position – click between rows at the approximate height of the required outlet. Once this is specified, IRRICAD will calculate the remaining outlet positions using the pattern entered in Step 6.



8. The lateral and outlet spacings for the block have now been calculated.

Block Properties

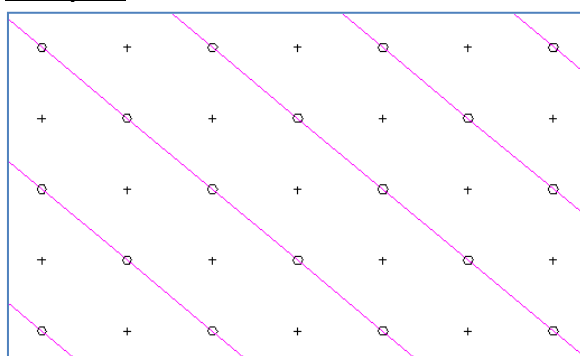
Lateral Spacing  m Scope

Outlet Spacing  m ☐ Connected

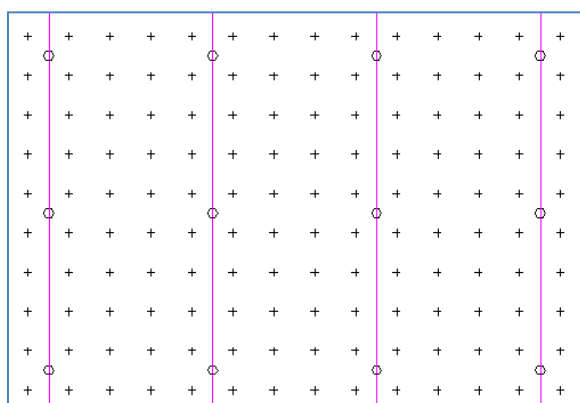
☐ Rectangular ☒ Triangular Offset  %

**Laterals** Block Flushing Area

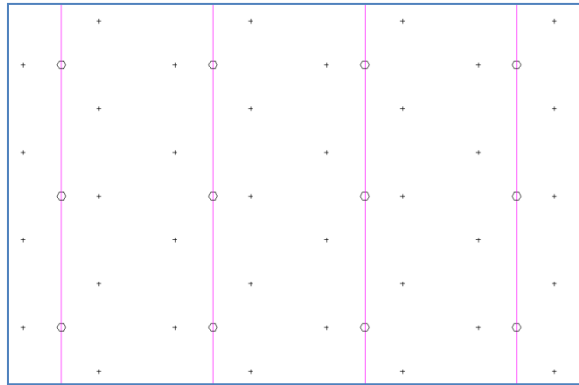
**Examples:**



*Typical almond tree layout – every row and tree - triangular with 50% offset*



*Typical banana plantation layout – every 4<sup>th</sup> row and tree – rectangular with 50% offset and a trenching offset*



*Typical African oil palm layout – every 2<sup>nd</sup> row and tree – triangular with 50% offset and a trenching offset*

Note: If a tree block has been created from a group of symbols (usually imported) the block may not be completely uniform. The sprinkler and lateral placement will work on these blocks unless the tree placement is very non-uniform.

#### **1.1.4.2 SPRAY IRRIGATION BLOCK - OPTIONS DIALOG:-**

The screenshot shows the 'Tree Block' options dialog box. It has a title bar 'Tree Block' and a 'Use?' checkbox which is checked. The dialog contains the following fields and options:

- 'Outlet every:' with a value of '4' and the unit 'tree row(s)'.
- A second field with a value of '4' and the unit 'tree(s)'.
- 'Tree-to-tree offset' with a value of '25' and the unit '%'. Below this are two radio buttons: 'Rectangular' (unchecked) and 'Triangular' (checked).
- 'Trenching offset' with a value of '1.25' and the unit 'm'.

At the bottom of the dialog are 'OK' and 'Cancel' buttons.

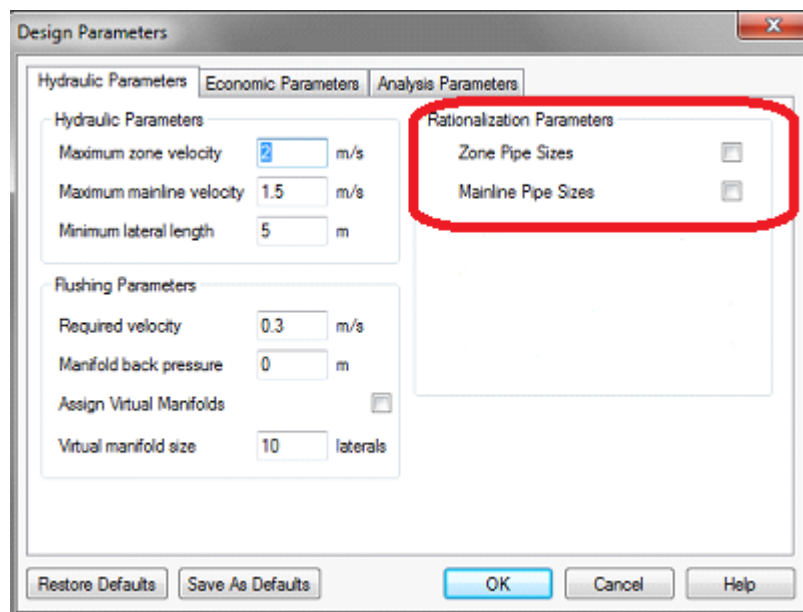
**Use:** This option is automatically enabled when converting a Tree Block entity to a Spray Irrigation Block. Uncheck if the tree block parameters are not to drive the placement of the sprinklers.

**Outlet every x tree row(s):** Specifies the regularity of the outlets in the tree rows.

- Outlet every x tree(s):** Specifies the regularity of the outlets within a row.
- Tree-to-tree offset:** The distance of the outlets between two trees. A 50% offset places the outlet half way between the trees.
- Trenching Offset:** The lateral position distance from the tree row.
- Rectangular:** Rectangular outlet configuration in the block relative to the trees and tree rows.
- Triangular:** Triangular outlet configuration in the block relative to the trees and tree rows.

### 1.1.5 LP DESIGN PIPE SIZING RATIONALIZATION

Improvements have been made to the pipe sizing rationalization of the LP Design process. New settings have been added to *Design|Design Parameters|Hydraulic Parameters – Rationalization Parameters* to toggle this function.



- Zone Pipe Sizes:** When enabled, sizes will be logically rearranged from large to small, in submains and zone pipes, to produce a more practical arrangement.

The rationalization process occurs after LP Design has selected pipe sizes and set the valve pressure. The resulting arrangement of pipe sizes is then re-analyzed based on the valve pressure already selected.

**Mainline Pipe Sizes:** When enabled sizes will be logically rearranged from large to small pipes to produce a more practical arrangement. The rationalization process occurs after LP Design has selected pipe sizes and set the water supply pressure (if not user-defined). The rationalized arrangement of pipe sizes is then re-analyzed based on the water supply pressure already selected.

### **1.1.6 SUPPORT FOR LARGE GIS COORDINATES**

When large coordinates exist in an imported plan the “**Internal Offset**” setting in *Settings|Grid/Origin/GIS* sets an internal origin based on the location of the imported plan. This setting ensures that at large coordinates the seed tools operate correctly, selecting of items is accurate, and accurate flows are reported in tapes.

The “**Scale**” sets the resolution based on the span of the items on the plan. If the span is great the scale will be greater than 1. If items a distance from the main plan are deleted running *Compress* and then *Repair* will adjust the “**Scale**” to 1.

Settings

Irrigation Items   Labels   Layers   Misc   Names   Mouse   Snap   Units  
 Client   Company   Design Details   Drawing   Grid/Origin   Irrigation - Design Specific

Grid Visibility  
☒ Display grid

Grid Spacing  
 X 10 m  
 Y 10 m

Grid Origin  
 X 0 m  
 Y 0 m

User Origin  
 X 0 m  
 Y 0 m  
☒ Enable user origin

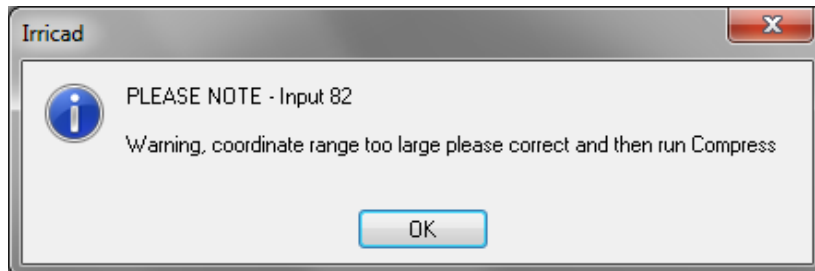
GIS Settings  
 Current UTM Zone 59   ☐ North   ☒ South   Conversion Utility

Internal Offset/Scale  
 X 315217  
 Y 677996   Scale 1

Restore Defaults   Save As Defaults   OK   Cancel   Help

When importing files via *File/Import* or *File/Import Contours* the below message will appear if the span of coordinates in the drawing is very large:-





In this case:-

1. Turn on all imported layers.
2. Zoom into the plan and using *Modify/Select/Window* draw a window around the plan.
3. Use *Modify/Invert Selection* to de-select the plan and select the far-off items.
4. Press the [Delete] key or use *Modify/Delete*.
5. Run *File/Compress*.

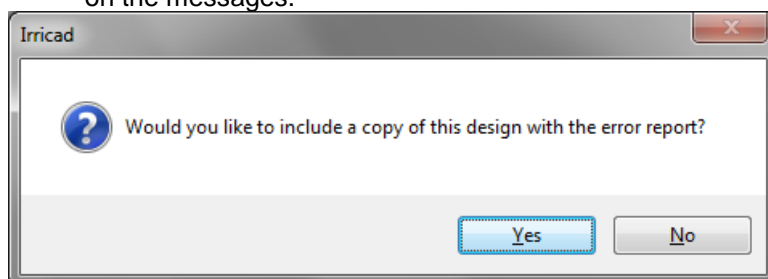
### 1.1.7 ERROR REPORTING AND RECOVERY OPTIONS

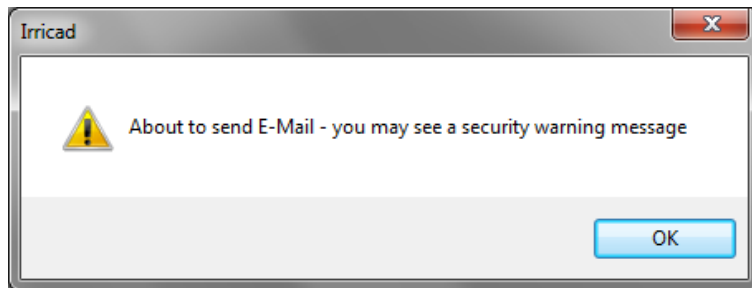
A new feature has been introduced in to IRRICAD Pro Version 14 to streamline information back to the developers regarding a problem design or error information.

#### 1.1.7.1 SEND PROBLEM REPORT

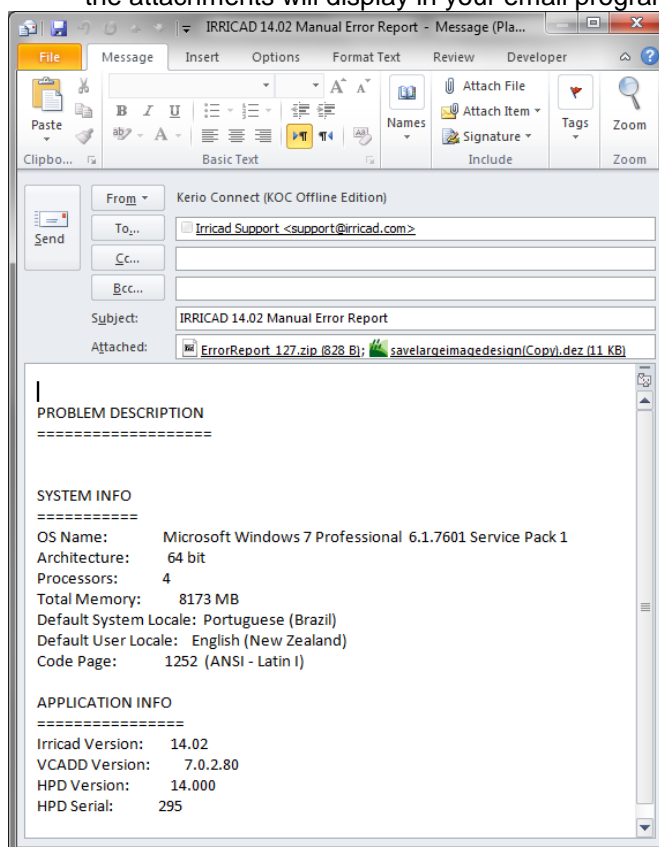
Having a problem with a design? Use *Help/Send Problem Report*, click [Yes] to include your design and your design will be sent to the IRRICAD developers with a log of the tasks you have been performing.

1. Select *Help/Send Problem Report* and click [Yes] and then [OK] on the messages.





2. The process may take some time as IRRICAD creates the reports required to be sent and is attaching the design (if you selected [Yes]) to the error message. The email message with the attachments will display in your email program.



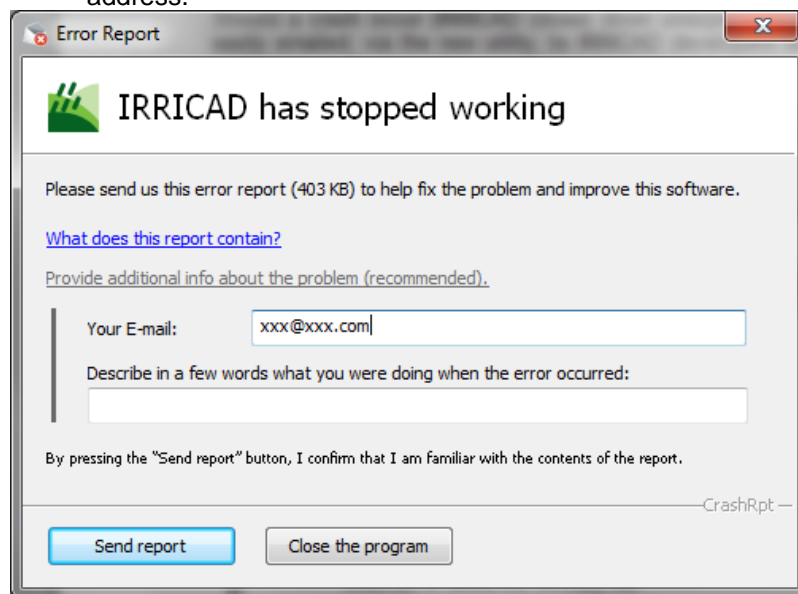
3. To the email add any information regarding the issue you are experiencing.
4. Click **[Send]** to complete sending the report to IRRICAD Software.

*Note: The design must be saved (i.e have a design name) before it can be sent using this method.*

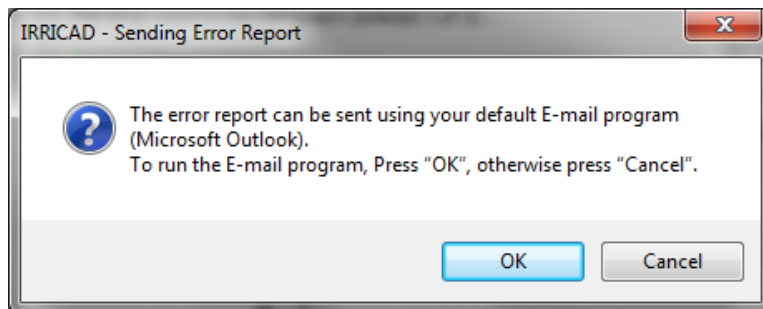
### 1.1.7.2 RECOVERY OPTIONS

Should a crash occur (IRRICAD closes down unexpectedly) an error report is prepared and this is easily emailed, via the new utility, to IRRICAD developers along with information about tasks you were performing at the time of the crash.

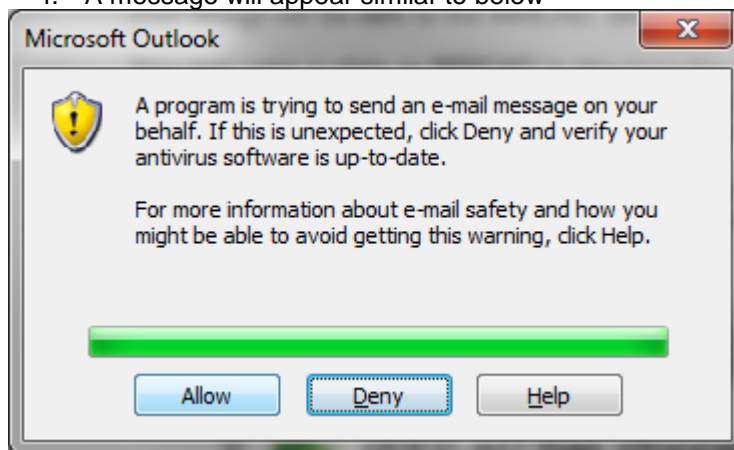
1. The first time an error crash report appears enter your email address.

The image shows a screenshot of an "Error Report" dialog box from IRRICAD. The title bar says "Error Report" with a close button. The main content area has the IRRICAD logo and the text "IRRICAD has stopped working". Below this, it says "Please send us this error report (403 KB) to help fix the problem and improve this software." There is a link "What does this report contain?". Then it says "Provide additional info about the problem (recommended).". There is a text input field for "Your E-mail:" with the value "xxx@xxx.com". Below that is a text area for "Describe in a few words what you were doing when the error occurred:". At the bottom, there is a confirmation statement: "By pressing the 'Send report' button, I confirm that I am familiar with the contents of the report." and two buttons: "Send report" and "Close the program". The text "CrashRpt" is visible in the bottom right corner of the dialog.

2. Each time a crash report appears select **[Yes]** to attach a copy of the design and enter information about what tasks you were performing when the crash happened. Then click **[Send Report]**.
3. A message will pop up regarding running your email program in order to send the report. Click **[OK]**.



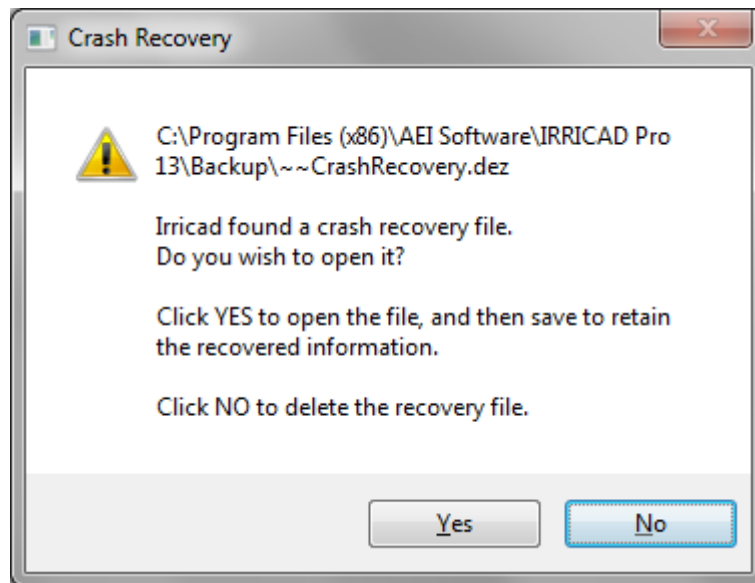
4. A message will appear similar to below



Click **[Allow]** to complete the process and send the crash report to IRRICAD Software.

Note: You can see the information IRRICAD is sending by clicking the "What does this report contain" link in Step 1 above. The email includes an *ErrorLog.txt*, a *Session.log*, a *crashdump.dmp*, and a *crashrpt.xml* file.

Upon re-starting IRRICAD a message similar to the one below will appear. Click **[Yes]** to reload the design prior to the crash, or **[No]** to delete the recovery file.



### 1.1.7.3 BACK UP FILES

The Autosave back up files are now saved in the DEZ compressed file format.

### 1.1.8 GLOBAL CHANGE ENABLED FOR ELECTRICAL FITTINGS

Electrical fittings items can now be globally added or removed by using *Change Type*.

To use *Change Type* on electrical junctions to globally add or change fittings:-

1. Use a *Modify/Select* tool to select the required electrical junctions and action *Modify/Change Type*.
2. Click on an electrical junction and click the *[Show Fittings]* button.
3. Add, change or remove fittings as required and click *[Hide Fittings]* and then *[OK]*.
4. In the Match / Change columns **Match** on "*Layer*", especially if zone or mainline junctions are also highlighted.

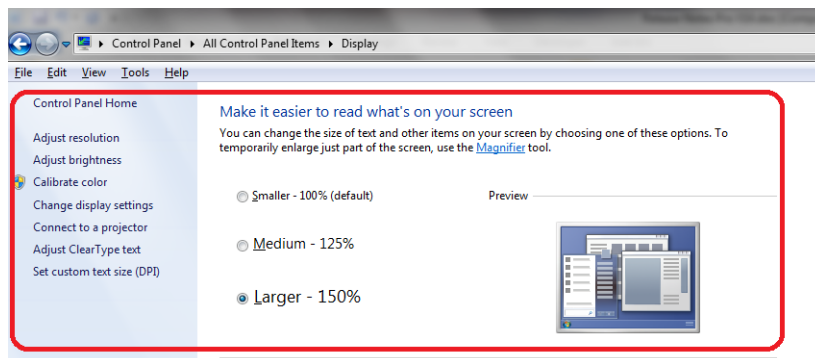
5. If only junctions that have the same fittings are to be changed enable **Match** on “All Fittings”.
6. Enable **Change** on “All Fittings” so that the changes made to the fittings will be made to all selected items that fit the **Match** criteria.
7. Click [OK].

### 1.1.9 SHIFT LABEL KEYWORD FOR VALVES AND OUTLETS

The #SHIFT# label keyword is now enabled for use on control valves and mainline outlets that are not part of an Irrigation Block entity. In [Settings/Labels](#) add the #SHIFT# key word to the “Control Valves” text box or the “Outlets” text box.

### 1.1.10 SUPPORT FOR HIGH RESOLUTION MONITORS

IRRICAD Version 14 now includes better support for high resolution monitors.



### 1.1.11 COORDINATES ENABLED IN FITTINGS ERRORS

Reporting of fittings errors has been improved to include the coordinates of problem junctions.

### **1.1.12 *AUTOCAD COMPATIBILITY***

AutoCAD 2013 format files are now imported directly into IRRICAD Version 14.

Some improvements have also been made to DXF elevation importation.