IRRICAD Pro

Powerful, but friendly

Aids creative design

Removes mundane chores

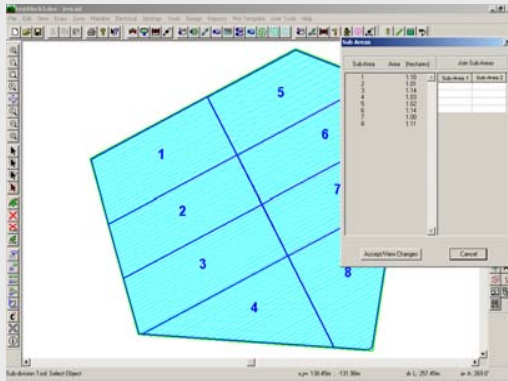**Targeted at professional designers working on large irrigation systems**

IRRICAD PRO provides...

- A fast, accurate and convenient tool to produce high quality designs
- A comprehensive costing facility that removes the tedium out of parts take-off
- Easy-to-prepare, high quality design drawings to your specifications
- Effortless compilation of design and costing reports
- A design and marketing tool that gives you an edge over your competitors
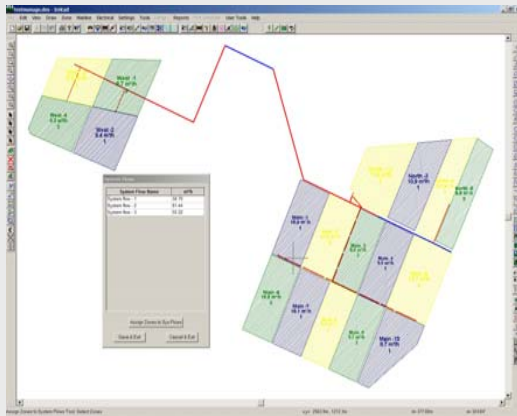- A rapid response mechanism to your clients changing needs

IRRICAD benefits….

- An Integrated systems approach that saves you time and money
- Rapid analysis of complex hydraulic systems that facilitates faster design changes
- A wide range of design options
- Quality presentations can be prepared with minimal effort
- Increased productivity and enhanced company image

IRRICAD Pro, the 'Premier Irrigation Design Software', is unique computer software for designing all types of pressurised irrigation systems.

Programmed by irrigation engineers for irrigation designers, IRRICAD Pro is continually being enhanced and improved, putting it at the forefront of irrigation design.

Easy input and subdivision of large blocks of irrigated areas

Graphical representation of the system operation

IRRICAD PRO SETS THE STANDARD ...

IRRICAD Pro can be used to provide irrigation design solutions for:

- **Agriculture**
- **Domestic, commercial turf and golf**
- **Rural water supply, stock water supply and solid set (including Frost Protection)**
- **Drip and microsprinkler systems**

IRRICAD PRO FEATURES include…

- **Purpose built interface screen for easy entry of site information and system componentry**
- **Automatic pipe sizing and analysis for looped and branching zone and mainline systems**
- **Automatic fittings selection and generation of Bill Of Materials**
- **Comprehensive reporting module for providing design and costing reports**
- **Flexible plotting facility for preparing design drawings**
- **Importation and exportation of image files and Autocad files, including elevations**
- **Graphical representation of the system operation**
- **Easy input and subdivision of large blocks of irrigated areas**
- **Convert drawing items to hydraulic items with ease**
- **Advanced method for calculation and using elevation data in hydraulic calculations**
- **Visual representation of errors in imported data**
- **Quick labelling feature and automatic legend generation**
- **Include valves, pumps and headwork components**
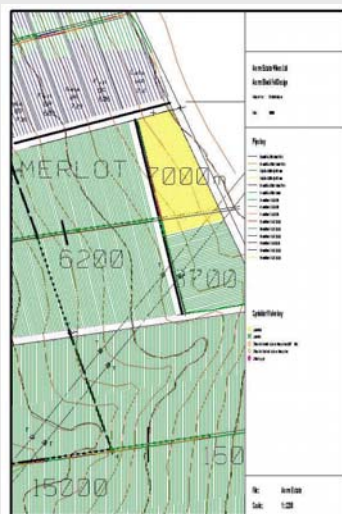- **Any combination of Metric or US units**

For further information, contact:

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Email: support@IRRICAD.com	Web site: www.IRRICAD.com

IRRICAD Pro

An example design and report

WHAT OUR USERS ARE SAYING…

- *"We have found IRRICAD to be an irreplaceable addition to our office. The benefits in time saving and presentation have been instrumental in us winning many tender contracts."* Ben Chapman, Chapman & Rivett Pty Ltd, Queensland.

- *"IRRICAD has given us a significant market edge over our competitors and, as a result, an increased market share in both irrigation and water supply design and consultancy."* Ian Howatson, Agriculture New Zealand.

- *"IRRICAD takes out the drudgery of compiling and totalling parts lists and components, and we feel that it has halved the time to produce a finished quotation."* Paul Graham, H_2O Irrigation, England.

- *"Using IRRICAD there's not nearly as many irritated customers because we can get plans out so much faster. It's a dynamic program, one that fits with any irrigation system."* Bill Johnson, United Pipe & Supply, Wenatchee, Washington.

- *"IRRICAD is great. Tell potential customers to call me anytime - I'll be glad to talk to them about the program."* Mike Carson, Harward Irrigation, Utah.

- *"We've been using IRRICAD for 10 years now, and tried the others too (which we have bought) and now operate 5 IRRICAD stations. Unless the others have vastly improved since we bought them there is nothing in the same league as IRRICAD if you're a contractor doing agriculture and turf type irrigation."* Clive Croxford, Total Eden, Busselton.

- *"Since we began using IRRICAD in 1996 it has enhanced our business by having the ability to produce functional and accurate designs in less time. The finished product is also appealing to the customer. IRRICAD reduced our design time by at least 80% with most jobs and as much as 90% on others, with many additional benefits. IRRICAD increases accuracy by being able to import data from our survey software, eliminating entry errors, and doing calculations almost instantly. There are many useful tools that make what was complicated very easy. IRRICAD has all the capabilities you would expect from a professional design program for irrigation."* Larry Crowe, Southern Ag & Turf, Tifton, GA.

FREQUENTLY ASKED QUESTIONS…

Can I analyse existing systems or only design new systems in IRRICAD Pro?
You can analyse any existing systems, design extensions to existing systems, and design totally new systems in IRRICAD Pro.

Can IRRICAD Pro select pipe sizes for the design?
Yes. You can size pipes based on the pressure required at sprinklers and valves, or you can size pipes based on a maximum velocity in the pipes. IRRICAD Pro always trades running costs against capital cost when selecting pipe sizes. You can change the economic criteria to effect pipe selection. You can select some pipe sizes manually and ask IRRICAD Pro to select the rest for you.

Can I use pumps in IRRICAD Pro?
Yes. There is a pump component group to the database. You can enter new pumps easily and use them in any design. Up to five pumps can be used in any one design.

Does IRRICAD Pro calculate the system duty for me?
Yes, IRRICAD Pro will calculate the system duty of each system flow (station). You can then use this information to select a pump for the system.

Can I analyse a system with a pump without having to place a pump in the design?
Yes. If you enter the pressure and head the pump is giving in to the water supply dialog, IRRICAD Pro will use these figures in its designs and/or analysis of the system.

Can I design gravity feed systems using IRRICAD Pro?
Yes. If you set a small pressure at the water supply, IRRICAD Pro will know not to calculate the head required, and will use this value as the starting pressure.

Can I design stock water systems using IRRICAD Pro? Can I also design a frost protection system using IRRICAD Pro?
Yes. IRRICAD Pro will design any pressurised system.

Can I design looped systems in IRRICAD Pro?
Yes. IRRICAD Pro will even size the pipes for you, if you wish, using the Velocity pipe sizing option.

Does IRRICAD Pro allow for multiple water source in a design?
Yes, you can specify up to ten different water sources for any given design.

Can I lay electrical wiring in a design?
Yes, you can input electrical items such as wires, controllers and other electrical items. These are included in the Bill of Materials reports.

IRRICAD Pro

FREQUENTLY ASKED QUESTIONS …..

If I import or draw contours, will IRRICAD Pro take these into account when doing the hydraulic design process and calculating the pipe lengths?
Yes. IRRICAD Pro interpolates between contours and/or spot heights and uses the results during pipe sizing and hydraulic analysis. Elevations are also used to calculate the pipe lengths.

Can I get IRRICAD Pro to select the fittings I need?
Yes. IRRICAD Pro can automatically select fittings from the database to solve connections. It is easy to make IRRICAD Pro select the type of fittings you specifically wish to use.

Can I enter new fittings and other items into the database?
Yes. You can easily enter new items, or you can download manufacturer-specific databases from our website and merge them with your current working database. IRRICAD Pro is supplied with a comprehensive database containing fittings, pipe, sprinkler and other components.

Can we customise the reports to our requirements?
Yes, IRRICAD Pro generates reports from templates. These templates can be customised to your personal requirements for both content and style.

How long does it take to learn IRRICAD Pro?
This can vary from individual to individual, depending on experience and background. There are support resources available, including a help menu, tutorials, help documents, FAQ's on our website, and training manuals. We are also available by email or phone to answer your questions. AEI Software prides itself on providing prompt and helpful support to its clients.

Do I need to buy a separate drawing package?
No, IRRICAD Pro comes complete as a standalone package with all the drawing features of a standard CAD package.

Do I need to buy upgrades?
Upgrades and patches appear periodically on our website www.IRRICAD.com. Contact your local distributor for upgrade pricing.

Contours graphically depicted with colours and 3D

HARDWARE REQUIREMENTS

The following hardware is recommended for IRRICAD Pro:

- **Computer:** Intel i5 or i7 or equivalent processor, minimum 4 GB Ram. 512 Mb Video and 250+ GB Hard disk

- **Operating System:** Windows XP Service Pack 3, Vista or Windows 7.

- **Scanner / Digitiser:** A scanner can be used to produce image files for importing into IRRICAD Pro. A digitiser with a Wintab32 driver is required to digitise from scale plans.

- **Printers:** IRRICAD Pro can print plans and reports on any Windows compatible printer or plotter.

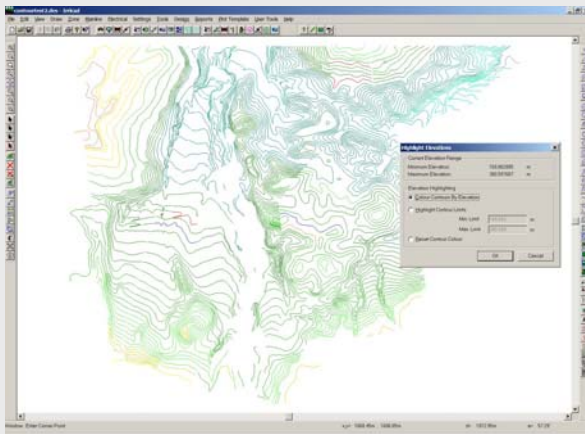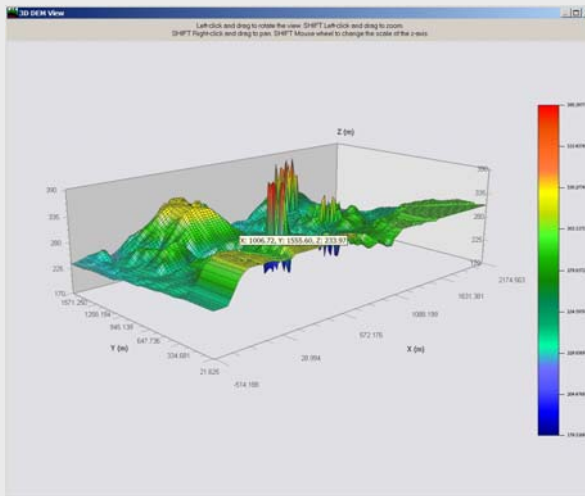**Please contact us if you have any questions regarding IRRICAD Pro hardware requirements.**

PROCUREMENT OPTIONS

Contact your Distributor for local pricing. Discounts are available for multiple copy licences.

Free priority support is provided for 12 months from date of purchase.

DELIVERY AND PAYMENT

To order, simply email, fax or telephone AEI Software with your requirements or contact your local distributor.

IRRICAD Pro is delivered upon receipt of payment. Payment can be made by bank draft, credit card (MasterCard, Visa), or automatic transfer to our account.

Should the package be returned in perfect condition within 60 days of the dispatch date, the license fee less a restocking fee and freight will be refunded.

For further information, contact:

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IRRICAD Pro

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Graphical Pressure and Flow Display
Graphically view which outlets/emitters are outside the specified pressure range or flow range for a zone. This will help you to quickly identify potential problems and reduce the time required to troubleshoot design warnings.

Creating Contours from Spot Heights
IRRICAD can now create contours from spot heights helping you to visualize the topography of a property and add value to material presented to clients.
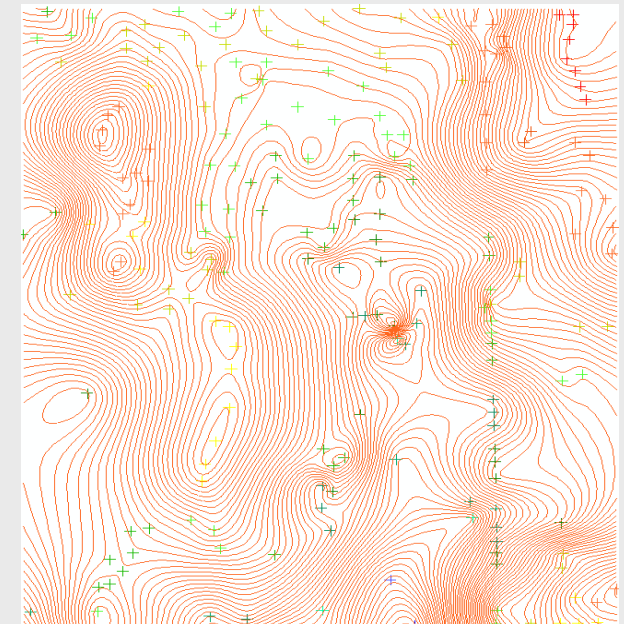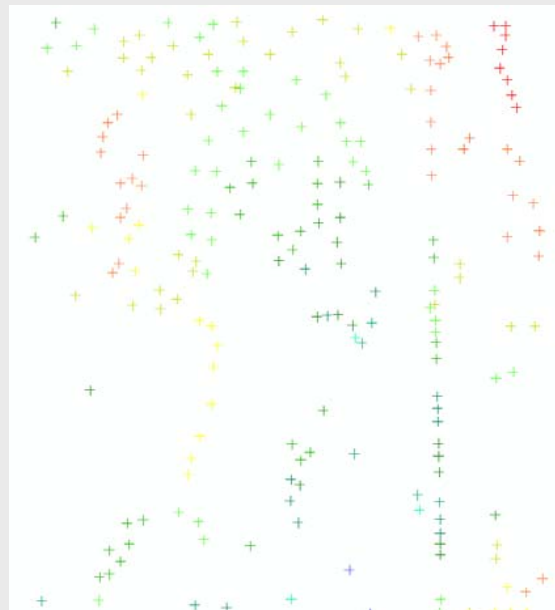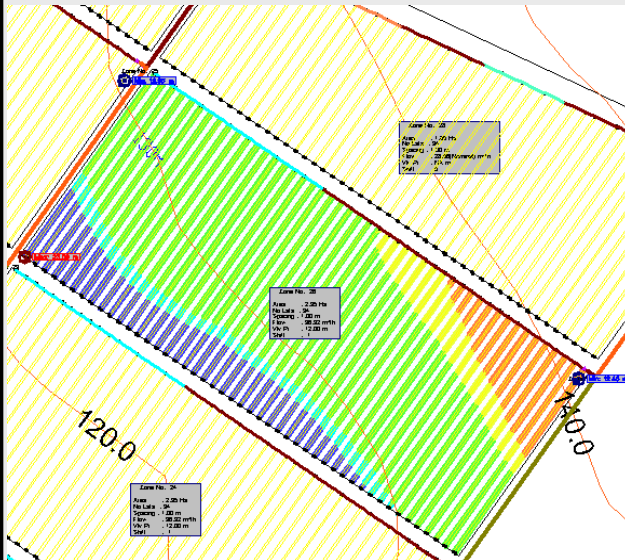
Pipe Reduction Symbols
Automatically place pipe reduction symbols on the plan to clearly show installers the location, and direction, of pipe size changes. Faster and more accurate installations will result.

RECENT MAJOR ENHANCEMENTS TO IRRICAD

Show Allowable Submain Position
A Submain placement guide takes the work out of deciding on the placement of submains in hilly terrain. This tool may also be helpful when deciding how to subdivide larger blocks.
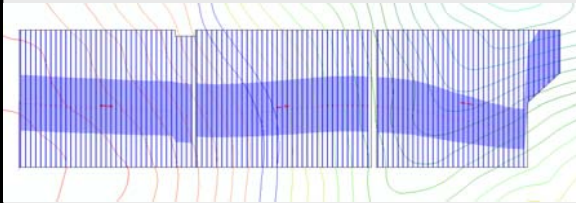
Flushing Calculations and Reporting
Flushing calculations for tapes has been added to Pro Version 12. After design a Flushing report can be viewed.

Zone Name : Area no. 1				Valve Description : Nelson 5450 Electronic Water Time				
Zone Irrigation Flow :		12.02 (m3/h)		Zone Head (D/S) :	24.00 (m)			
Tapes								
From		To		Inlet	Irrigation	Required Flush	Flushing	Manifold
X	Y	X	Y	Pressure	flow	Inlet Pressure	flow	Number
(m)	(m)	(m)	(m)	(m)	(m3/h)	(m)	(m3/h)	
3.6	96.6	1.8	2.7	23.69	0.25	14.91	0.43	1
6.6	96.6	4.8	2.7	23.70	0.25	14.94	0.43	1
0.6	96.5	-1.2	2.7	23.68	0.25	14.91	0.43	1
-14.4	96.2	-16.2	2.8	23.69	0.25	14.90	0.43	1
-11.4	96.3	-13.2	2.8	23.69	0.25	14.90	0.43	1
-8.4	96.3	-10.2	2.8	23.68	0.25	14.90	0.43	1
-2.4	96.4	-4.2	2.8	23.68	0.25	14.91	0.43	1
-5.4	96.4	-7.2	2.8	23.68	0.25	14.90	0.43	1
-17.4	96.1	-19.2	2.8	23.69	0.25	14.90	0.43	1
Manifold Irrigation Flow =		2.26	(m3/h)		Manifold Flush Flow =		3.89	(m3/h)
30.6	97.1	28.8	2.6	23.86	0.25	14.98	0.44	2
33.6	97.2	31.8	2.5	23.87	0.25	14.98	0.44	2
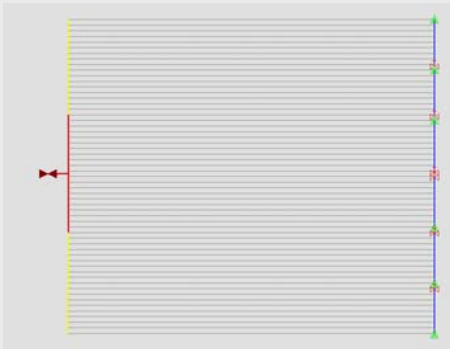
Additional Language Support
IRRICAD is now in available in French and Spanish. Reports and templates for the language versions are provided with the V12 installation. The language can be changed after installation.

Automatic Flushing Manifolds
Flushing manifolds can now be created automatically for *Block Entities*. These manifolds may be used for fittings selection and generating Bills of Materials.

IRRICAD will automatically create the flushing manifold to your specification simply by filling in a few fields!

BOMs for Staged Development and Existing Systems
In previous versions the only way to produce a BOM/Costing report for staged development, or allow for existing equipment, was to create copies of a design and then delete the appropriate equipment as required.
Version 9.5 introduces the concept of *Scope.* This flag can be set for all hydraulic items, both individually and globally, and allows items to be designated as *BOM Only*, *Design Only* or *Design + BOM.* This feature allows you to:-

- Design, Analyse and cost extensions to existing systems.
- Easily produce costings and BOM for staged developments
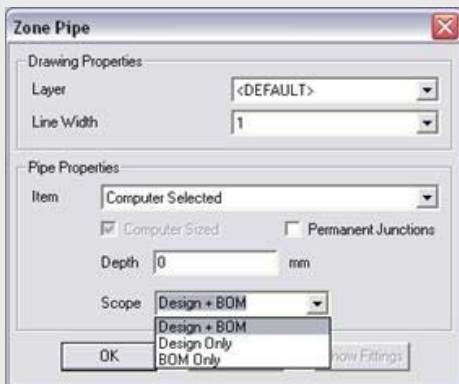
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Faster access to Snap Settings

A Snap Panel has been added to the Status Bar. This panel shows the currently selected default snap mode and allows quick access to the Snap and Grid settings.
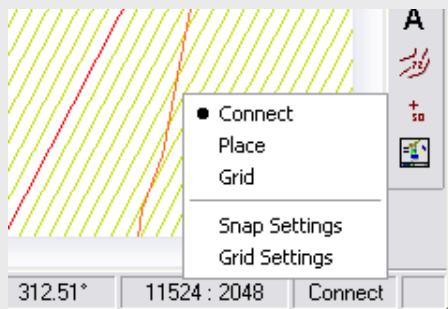
Selection Filter Panel

The selection filter is a very useful tool but everyone who uses it will have at some time forgotten that it was on and wondered why they were unable to select anything. The new *Selection Filter Panel* helps to alleviate this problem by showing the status of the selection filter - a red panel indicates that the filter is active. The filter settings can also be accessed, and filter state toggled, from the panel.
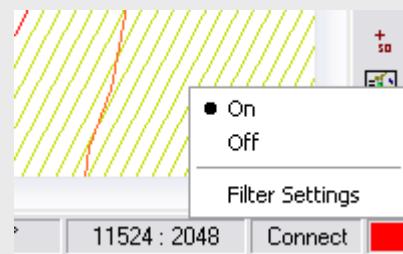
Hydraulic Gradeline

The *Hydraulic Gradeline* tool can be used for laterals, Zone Pipes and Mainline pipes. The ground elevation, pipe pressure, maximum allowable pipe pressure can be shown for any or all system flows.
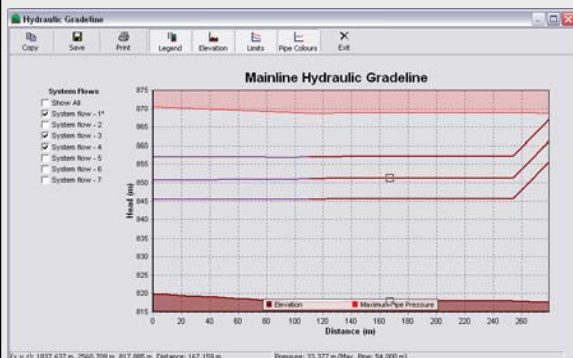
Importation of GPS/GIS/CSV data

Drawing and elevation data from CSV and ESRI SHP files can now be directly imported into IRRICAD.
Elevation data is entered via *File|Import Contours* while *File|Import* is used for normal drawing information.

RECENT MAJOR ENHANCEMENTS TO IRRICAD

Spray Irrigation Block

Drawing Properties
- Layer: IRRIGATION_AREAS
- Colour: ⦿ [green] ○ By Layer
- Line Type: 0 (SOLID)
- Line Width: 2

Pipe Properties
- Pipe: Computer Selected
- Depth: 0 mm ☑ Computer Sized

- Sprinkler: Wingfield Orbitor Anti-Ant 3/8"

Nozzle Properties
- Nozzle: BLUE 360.0
- Pressure: 15 m   Radius: 2.5074 m
- Flow: 2.06814 lpm   Arc: 360 °

- Riser: No Component Selected

Block Properties
- Lateral Spacing: 2.5074 m   Scope: Design + BOM
- Outlet Spacing: 2.5074 m   ☐ Connected
- ⦿ Rectangular   ○ Triangular   Offset: 0 %   Options

Laterals | Block | Flushing | Area

OK | Cancel | Attributes

Unconnected Spray Block Entity
It is now possible to specify that a sprayline block entity is 'unconnected' – that is create a block entity consisting of individual pipes and outlets rather than spraylines.

Hydraulic Item Creation
All hydraulic and electrical items can now be created from relevant drawing items. By simply highlighting a drawing item you can turn it into an Area, Outlet, Pipe, Control Valve, Pump, Irrigation Block, Light, Controller, Wire, Misc. Electrical, Misc. Hydraulic, Sprayline or Tape.

Valve Symbol Colours
Multi-colored symbols may be selected for Valves etc. If a symbol is specified with the "Use symbol colour(s)", in the database editor, then the symbol will be displayed using the colors contained in the symbol definition.

New Copy Tools
Mirror Copy and *Offset Copy* have been introduced and all *Copy* tools are now enabled for use with hydraulic objects.

New Modification Tools
Trim and *Extend* are now available to trim back to an existing item or to extend to an existing item.

Draw Order
Z-Order tools, *Move to Front* and *Move to Back* will allow specification of which order items are drawn. Helpful when placing images on top of plot layouts.

Exporting Reports to Excel
Report templates can now be made that save directly to a file. These files may be opened by Excel.

New Selection Methods
The way the selection tools operate is now switchable. Two modes are available: the standard Irricad mode and a new 'Windows Style' single selection method.
Clicking and dragging in the *Select Object* now operates as a *Window Select*.
Selecting Block entities can sometimes be difficult. Holding down the <ALT> key while clicking on any item that is part of the required block (e.g. one of the laterals) now selects the block entity.
A selection aid has also been added to help you select a particular item when a number of items are in close proximity. Time saving and easy!

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Merge Designs
Yes it is finally back! IRRICAD designs may now be merged together using the *Merge...* option in the *File* menu. This function merges all drawing and hydraulic objects, as well as fittings selection, Management and Design information.

Hatch and Fill Editing
The colour and the layer of an existing *Fill* entity may now be changed.
Hatch editing has also been enabled, allowing all properties of a hatch to be changed.

Layer Manager Redesigned with Layer Groups and Views
The new floating layer manager allows easy access to the layers to adjust visibility, determine which layers contain items and specify if a layer is printable. Layer Groups are used to save combinations of layer visibility that can then be retrieved in a single action. Views operate in a similar way and save a zoom state for later easy retrieval.

Document Summary Info
Design details are now copied to the design file properties summary information section, allowing specific designs to be more readily identified in Windows Explorer.

Zone No. 28

Area   : 4.58 acres
No Lats : 94
Spacing : 3.28 m
Flow   : 126.23 US gpm
Vlv Pr   : 16.40 psi
Shift   : 1
Sauvignon Blanc
MS VT on 101-14
Planted 2004
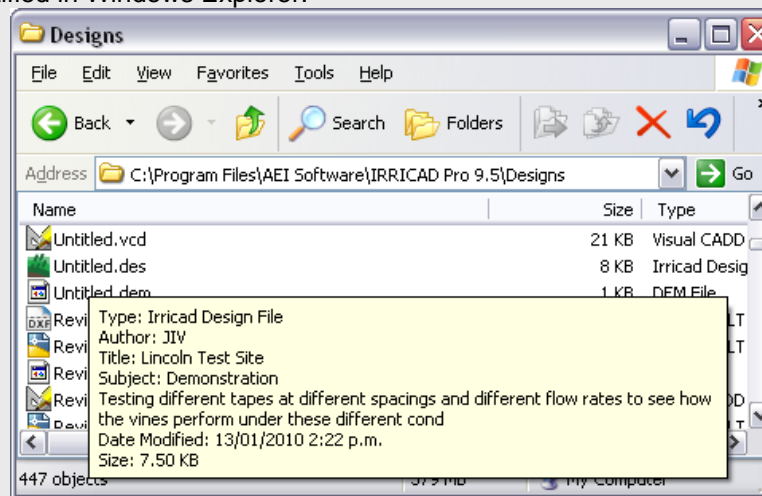
RECENT MAJOR ENHANCEMENTS TO IRRICAD

User Attributes and User Keywords

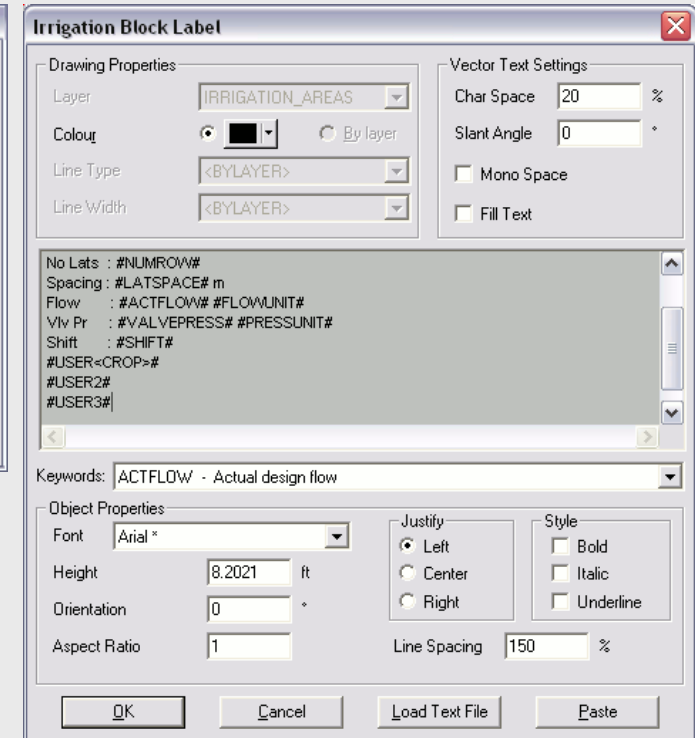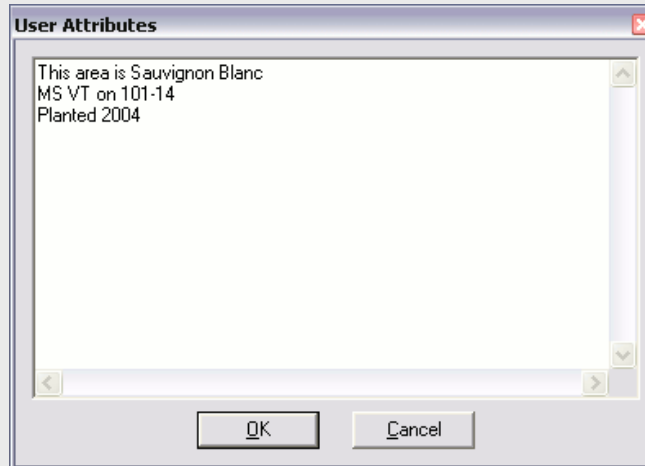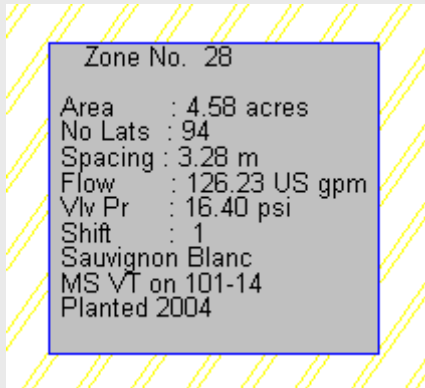A 'User Attributes' field has been added to control hydraulic and electrical items. It allows the user to attach any textual information, to these items, that can be subsequently displayed in labels and reports. Add the appropriate keywords to the label settings for Irrigation blocks:

User Attributes

This area is Sauvignon Blanc
MS VT on 101-14
Planted 2004

OK   Cancel

Irrigation Block Label

Drawing Properties

Layer   IRRIGATION_AREAS

Colour   ● ▇ ▾   ○ By layer

Line Type   <BYLAYER>

Line Width   <BYLAYER>

Vector Text Settings

Char Space   20   %

Slant Angle 0   °

□ Mono Space

□ Fill Text

No Lats : #NUMROW#
Spacing : #LATSPACE# m
Flow   : #ACTFLOW# #FLOWUNIT#
Vlv Pr   : #VALVEPRESS# #PRESSUNIT#
Shift   : #SHIFT#
#USER<CROP>#
#USER2#
#USER3#

Keywords: ACTFLOW - Actual design flow

Object Properties

Font   Arial *

Height 8.2021   ft

Orientation 0   °

Aspect Ratio 1

Justify
● Left
○ Center
○ Right

Style
□ Bold
□ Italic
□ Underline

Line Spacing 150   %

OK   Cancel   Load Text File   Paste

Improved Autocad Handling

Importing up to Autocad 2012 files with improved handling of layouts and Xrefs.

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RECENT MAJOR ENHANCEMENTS TO IRRICAD

Label Changes

New Keywords

More comprehensive hydraulic labeling has been enabled with the introduction of several new label keywords. New labels include maximum and minimum Pressures, Flows , Headlosses and Velocities, Flow per Area, Number of Emitters, Group Spacing, Laterals per Group, Row Spacing, Outlet spacing, Outlet description, and Outlet label.

Label

When updating labels, IRRICAD now retains the position you moved the label to if it has been moved.

Keyword Combo

A keyword dropdown box has also been added to the *Label* text dialog. This displays and briefly describes the label keywords, and allows them to be easily inserted.
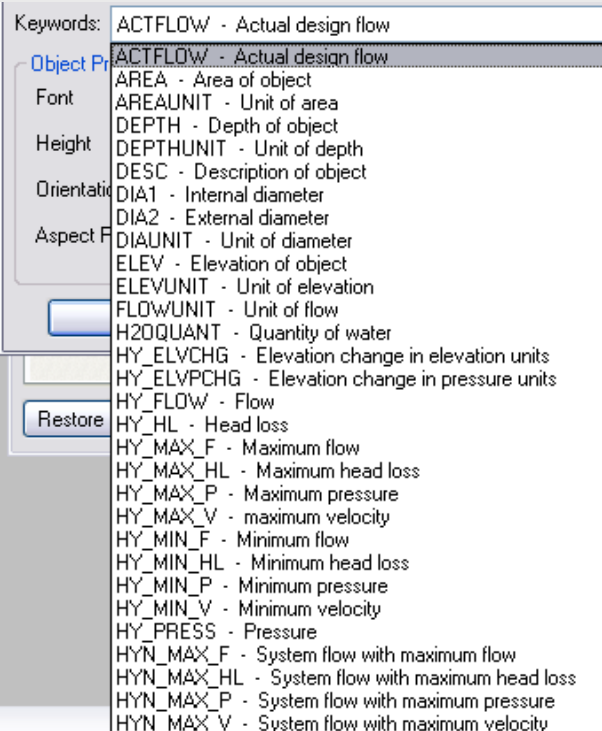
New Toolbars

Toolbars can now be modified and re-arranged, with better icons and big buttons for laptop screens.

Multiple Water Supply Systems

Designs with multiple but separate water supplies can now be fully analyzed (and *LP Design* used where appropriate) directly. It is no longer necessary to 'join' the separate systems with notional pipes.

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