

As ever, at this time of year, our thoughts turn to – water, and lots of it! The evolving climate in the UK, whatever it's cause, brings ever more spectacular and prolonged periods of rainfall, culminating in events such as Boscastle. But that's only one part of the picture. The demand for houses, and retail, or industrial development (usually just outside the older borders of the town) encroaches on land previously considered unsuitable for building on. That's why the town is where it is, and that's where the farmers

used to plant their crops!

A major part of any new development therefore, is where, and how, all of the excess wastewater, sewage, and surface water is going to go! A company that has provided a lot of the answers over the last twenty years is Micro Drainage of Newbury, developers of the well-known drainage design suite for the PC – WinDes.

WinDes is now the industry-standard drainage design suite in the UK, while WinDap is the first drainage area planning suite to incorporate full analysis and design of combined sewer overflows. Over 10,000 Micro Drainage software modules are currently in use. They are used by over 90% of the UK's top sewerage consultants as defined by the New Civil Engineers Consultants File, and all water utility companies.

DRAWNET

A new CAD drawing interface has been introduced by Micro Drainage of Newbury for its WinDes drainage design suite. DrawNet gives Civil Engineers the ability to design drainage systems by drawing them, rather than entering data into spreadsheets and then producing drawings.

"Standard CAD drawing packages are not adapted for the specific requirements of drainage design and analysis," says Micro

Drainage managing director Aidan Millerick. "Although MDCAD, our AutoCAD® interface, has been highly successful, it is only appropriate for offices where a full version of AutoCAD is used. We developed DrawNet to help engineers who are working with designs based on a variety of formats.

"In addition, the ability to draw designs directly into the plan of the site obviously helps to save time and money when compared with traditional data

entry methods," he adds. "Our goal with DrawNet is to liberate engineers from the labour-intensive world of spreadsheets, particularly for the purposes of creating initial

designs."

The new module is a complete graphical model build package that can exchange files with all leading CAD packages, including AutoCAD LT and PDS. With DrawNet, engineers can take files from the drawing office, enter the drainage design and return the file with the system fully optimised and analysed by WinDes.

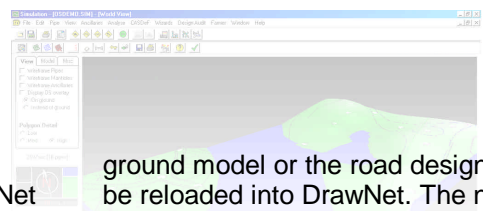
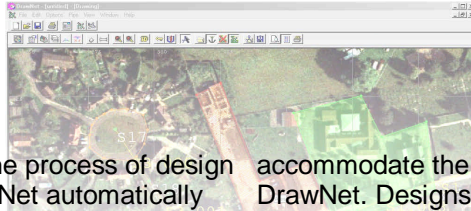
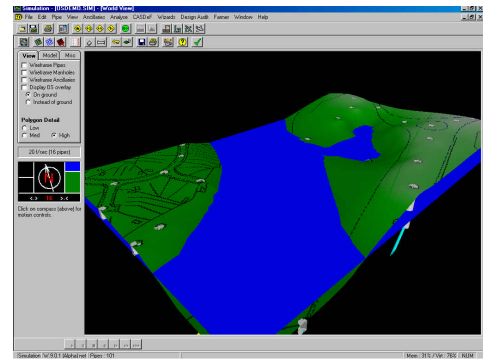
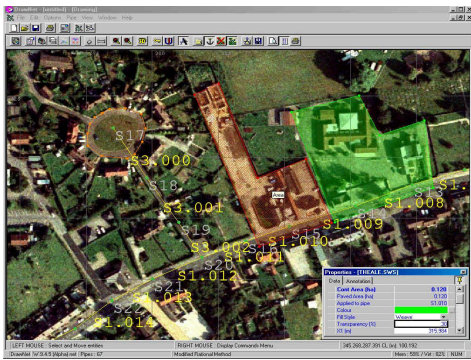
DrawNet is fully integrated with the Micro Drainage WinDes suite. It utilises the core modules of WinDes (Storm, Foul, Schedules and Longsection) to design pipes as they are drawn. Drawings in the .dxf and .dwg (AutoCAD) formats can be imported and exported, as well as LandXML files.

DrawNet can therefore be integrated into existing design practices without extensive re-training of staff or alteration to procedures.

"The integration with WinDes means that engineers have a powerful combination of traditional and graphical interfaces for the design of drainage networks," says Aidan Millerick. "The spreadsheets are still available for the fine detail and close

Water Drawn

Micro Drainage introduces DrawNet, a 3D modeling package for drainage design.



analysis. The process of design within DrawNet automatically populates them with the relevant data. Users can simply switch between the two formats to work with the data in the way that suits them best.”

SFA SUPPORT

Drawings can be produced in accordance with Sewers For Adoption specifications. In addition, for the first time, curved pipes can be specified, as well as a wide range of sections, including swales, ditches, culverts and more.

Snap controls ensure precise positioning of pipes, while pipes are numbered automatically, including branch lines. Areas, pipes and all other drawing elements can be colour-coded in line with individual preferences.

Multiple networks can be shown on the same drawing and clashes can be identified and resolved. Multiple impermeable areas can be defined for each node, each with its own paved area factor.

All of these processes and many others can be completed simply by clicking and dragging with the mouse. With the design complete, the fine detail of the system can be analysed through the WinDes spreadsheets, making any final adjustments that may be required to deliver a fully optimised design.

HYDRAULIC MODELLING

The WinDes Simulation module has been re-engineered to
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accommodate the requirements of DrawNet. Designs produced in DrawNet can be subject to the full analytical and modelling power of Simulation, testing for ultimate loads and flood risk. Within Simulation, online and offline controls can be incorporated.

FROM 2D TO 3D

WinDes Advanced Productivity Tools (APT) literally add another dimension to DrawNet. The 3D graphical modelling within APT can provide a powerful visual representation of the site and the design, complete with landscaping features and a fully triangulated terrain model from a site survey or spot levels.

Typically, DrawNet would be used to prepare a preliminary layout, with the final road layout imported at a later stage, from sources such as PWF or LandXML files. With APT, DrawNet will re-design the system to the true ground profile, re-optimising the drainage design automatically from end-to-end.

EDIT WITH EASE

CAD comes into its own as a productive resource when changes have to be made. Modifications to a design are easy within DrawNet, saving substantial amounts of time and money on any project.

New manholes can be added simply by pointing and clicking; the network is automatically re-numbered and re-optimised. Outfall invert levels can be specified and crossings and clashes are visible at a glance. Where the WinDes APT module is used, flow controls can be introduced for sites where discharge restrictions apply.

SINGLE DATA ENTRY

DrawNet also eliminates the need for double entry of data. Once the data has been transferred from the survey through the road design and drainage design packages, any amendments made to the

ground model or the road design can simply be reloaded into DrawNet. The new levels can be extracted and triangulated, and the network re-optimised, with a single click of a computer mouse.

The integration of DrawNet with the core WinDes modules and the optional Advanced Productivity Tools enables levels and topographical features to be captured directly from the survey and road design. This ensures full co-ordination with the other elements of the design and reduces the risk of error. When the design is complete, a range of flexible printing and plotting options is available, enabling drawings to be output in the manner required by the client or the approving authority.

TRAINING

Full training on graphical model build with DrawNet has been added to the Micro Drainage training portfolio. It forms part of Course 4, which also encompasses auditing the design for compliance with SFA5, the Interim Code of Practice on SUDS, Climate Change and exceedance. Full details can be found on the Micro Drainage Website, below.

Aidan Millerick believes that DrawNet will revolutionise life for engineers. “Many of our customers need to work with a variety of formats and to exchange files quickly and easily between them. DrawNet fulfils this role by enabling engineers to work with the best functions of the leading CAD packages in conjunction with the specialised drainage design CAD facilities of WinDes. It is a CAD package developed by Civil Engineers, for Civil Engineers, bringing a true visual dimension to the drainage design process.”

www.microdrainage.co.uk.