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White Paper

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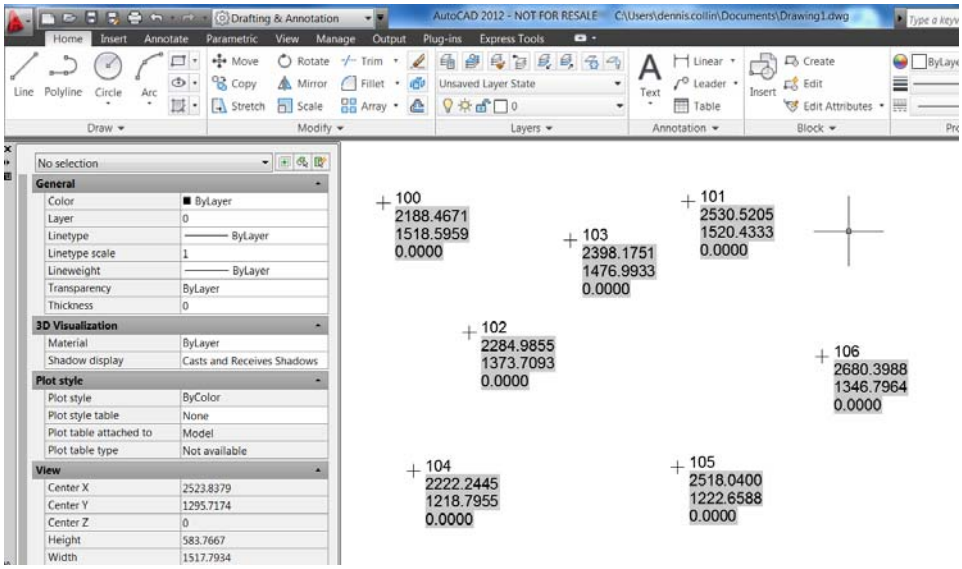
Semi-automatic Scheduling of Blocks within AutoCAD

All AutoCAD Users

With the advent of BIM and Vertical AutoCAD products coming in about 15 years ago, it has encouraged users to look into said products to gain greater efficiency in their drawings and ultimately working. But did you know that sometimes almost as much productivity gains can be obtained by maximising your knowledge of plain, basic AutoCAD?

Yes, I'm sure many readers can make blocks efficiently, use the Design Centre and Tool Palettes efficiently and employ a good drawing template etc. but it's often around there that their knowledge ends. For instance I often come across this question posed by my AutoCAD Surveying, Engineering and Architectural training delegates; "Can a block automatically display its Eastings, Northings and Height, within AutoCAD"?. The answer was often a 'No' in the past, unless you were a technical Wiz in LISP or Visual Basic. But since the advent of fields and attributes in AutoCAD 2006 and later versions, this has now become possible for even a fairly 'average' user who might have no such knowledge in the arcane art of programming languages.



Now possible without having to "Lisp"!!

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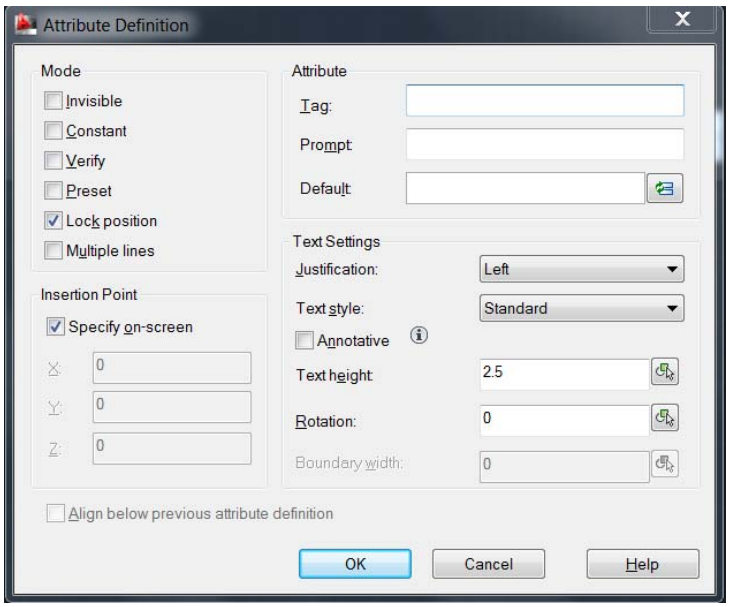
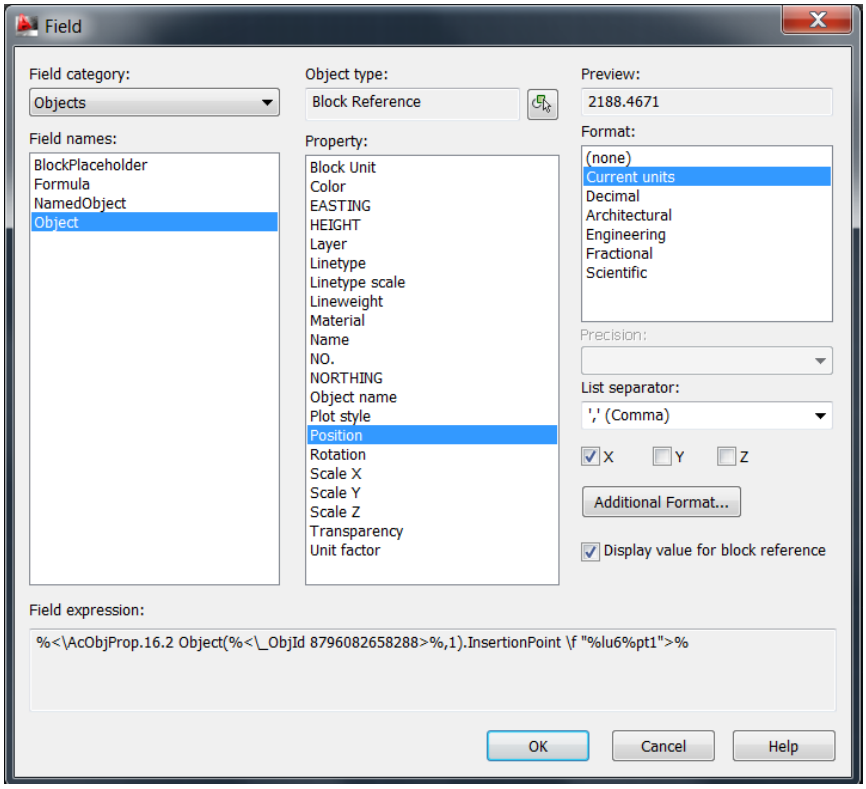
The Block creation process is simple enough; make yourself a cross, or another marker type object (set to annotative if you have AutoCAD 2008 or later). Then, once this block is created make a set of attributes for Number, Eastings, Northings and Height. These 3 attributes will be made into fields using the appropriate field button, rather than the manual default option.



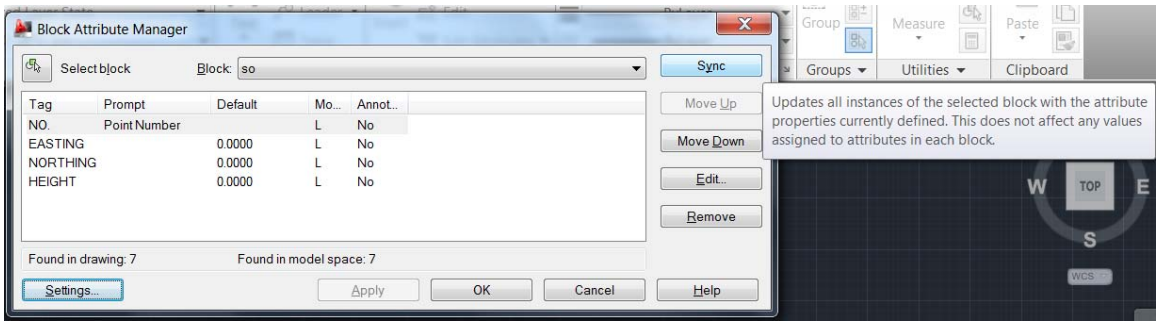
The enhanced "Attdef" dialogue, with the field button displayed on the right.

Upon clicking the field button, you are presented with a number of field options. Choose "Objects", then "Object" (not named object as you might expect) from the filter list, and then in the centre click the "Pick Object" button clicking on the defined block. Once this is done, you can choose Position as the field and then "filter" out the undesired displays. I.e. Eastings shows X, Northings shows Y and Height, Z. Each of these attributes can be formatted and suffixed etc. so that the data is presented as desired. **NB.** It is very important that you ticked the "DISPLAY VALUE FOR BLOCK REFERENCE" otherwise you may find the Attributed fields don't synchronise properly!!!



The field dialogue box.

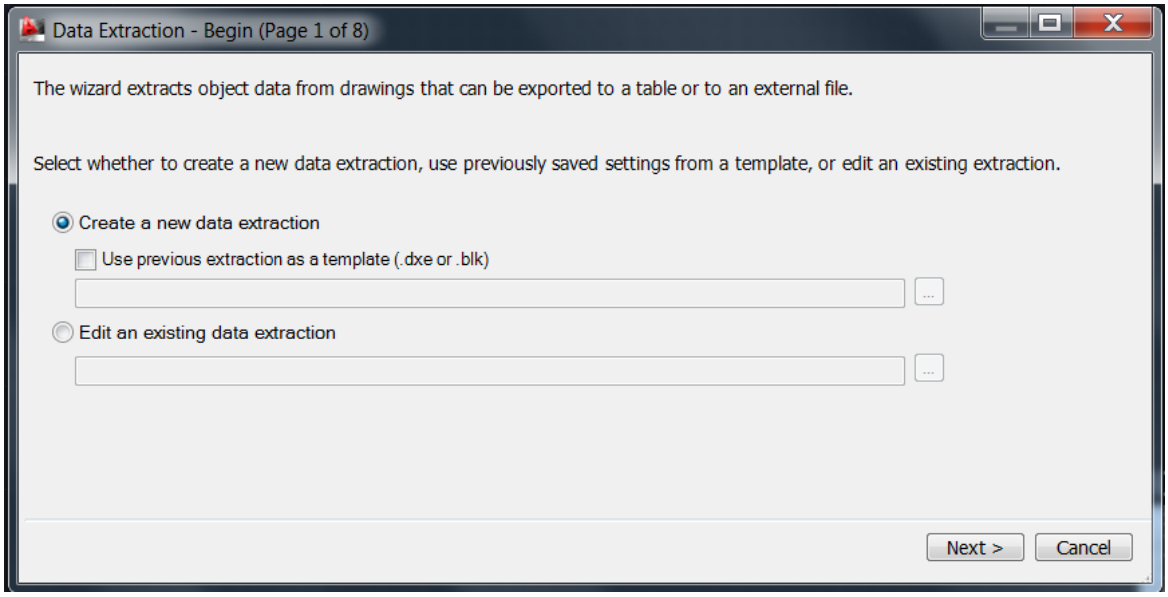
Once the 3 ordinate fields have been set within the block, create the completed symbol as normal, ensuring that your insertion point is at the insertion point of the Block cross, and that your attributes are selected in editable order. Insert or copy the block around your screen, and perform a REGEN command or save the drawing. The coordinates should update reflecting their position. It is important to remember that Regen or saving the drawing will always refresh the screen. If you are plagued by users who insist on using EXPLODE then make the Block "unexplodable". This will then guarantee scheduling your setting out points, survey stations, and boundary markers becomes a straightforward and reliable process.



BATTMAN Dialogue box

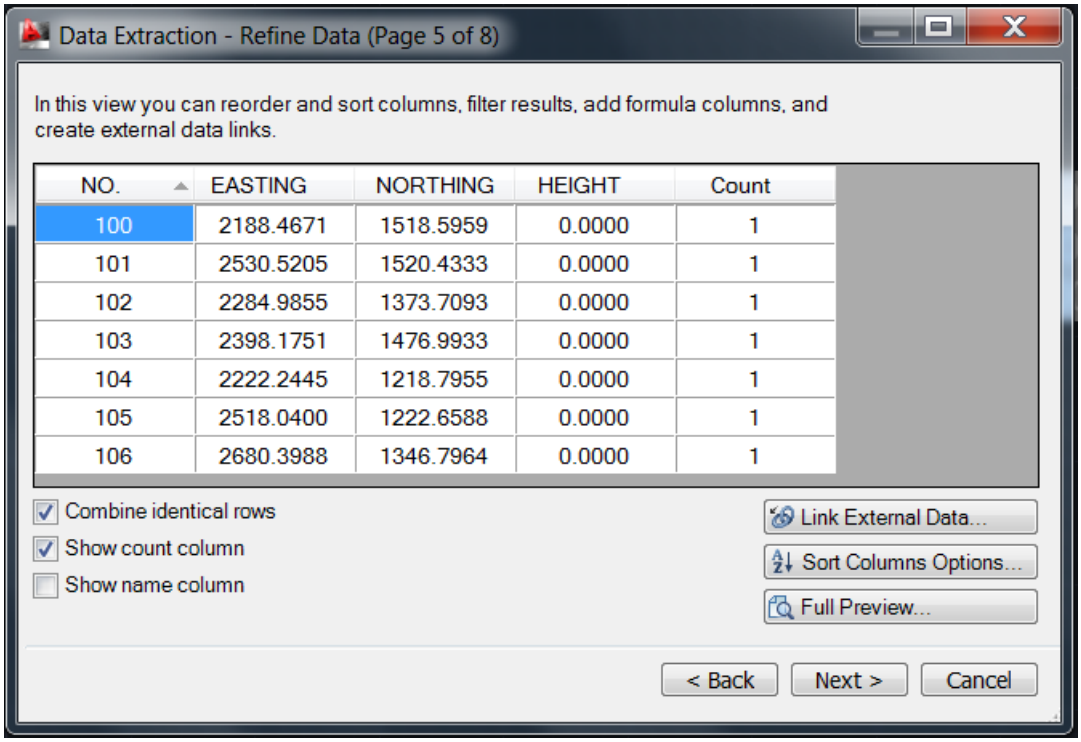
A few problems can arise if you don't select the attribute definitions in an editable order (Ie. First pick the Point Number attribute, then the Easting, then the Northing, and finally the Height.) This happens often when you

select the components within a Block with a Window or Crossing selection. If you do this AutoCAD tends to 'guess' the order of the attributes and the data in the schedule table can appear out of sequence, although the drawing itself will print and display as desired. To sort data synchronisation issues, run the command 'BATTMAN' or Block Attribute Manager which will do many tasks including reordering attribute data within a block without exploding it! You can also do global edits to block attributes as well as ensure the attributed block accepts any additional attribute data if it gets added.



The first stage of this process will require a saving of the drawing, and for the user to savea data extraction query file (DXE).

To schedule your drawing use the command EATTEXT. This command will fire up a 'Wizard' and give you a variety of options to schedule; either from your current drawing or indeed a range of drawings from a specified folder. This data can then is extracted to either an AutoCAD table or to a Microsoft Excel spread sheet or both! Using AutoCAD 2009 or newer you can merge in an existing Excel Spread sheet to append supplementary data, even if the data isn't present in the drawing. The thing to remember in getting this to work is ensuring you have a common field to bridge the data coming from your drawing and the additional data coming in from Excel.



Data extraction preview and some selection filters and criteria have been applied.

These topics mentioned tend to be included on many of my bespoke or Intermediate AutoCAD courses, and this paper isn't intended to be a replacement for a complete training course however, hopefully it serves as a good reminder of what can be achieve in good old AutoCAD. It must be said at this time of writing; AutoCAD LT (2012) does not yet possess the EATTEXT command, although it can do many of the other functions including BATTMAN and permits you to create fields within attributed blocks. No doubt, as AutoCAD continues to evolve into the 21st Century these older features previously only available in the full package will begin to appear in its junior product. In the past few releases LT has recently acquired so many other features like clipping of external reference files and raster image support so it's going to come eventually but for now to realise all the tips in this paper you will need to use the full AutoCAD product. It's in these harsh economic times that we need to work our CAD software to its limits to maximise your investment and keep the time and rework costs of drawings and schedules to a minimum. Hopefully the elements covered here are of interest and of use, thanks for reading ☺