Complex Selection in AutoCAD Made Easy: The Filter Command

Scott Wilcox

Morrison Hershfield

AUTODESK. UNIVERSITY

About the speaker

Scott is Senior CAD Designer at Morrison Hershfield in Edmonton, Alberta, Canada. Scott has more than 25 years experience using AutoCAD, and has been using Civil 3D for 12 years. A former AutoCAD instructor, Scott cares about learning and community. Scott has recently completed 8 years on the Board of Directors, 4 years as Vice President, at Autodesk User Group International (AUGI).

swilcox@morrisonhershfield.com

scottwilcox709@gmail.com

What makes CAD valuable?

Learning Objectives

- Review object selection methods in AutoCAD, such as Fence and QSelect
- Learn how to build both simple and complex object selection filters by filtering multiple existing object properties
- Learn how to build a complex selection filter using Boolean tools (and, or, not, xor)
- Learn how to save a named filter and reuse it

Objective 1

- Review object selection methods in AutoCAD, such as Fence and QSelect

Mouse Selection

- Pick
- Window
- Crossing
- Window Polygon
- Crossing Polygon
- Fence
- Lasso
- Fastsel

Keyboard selection

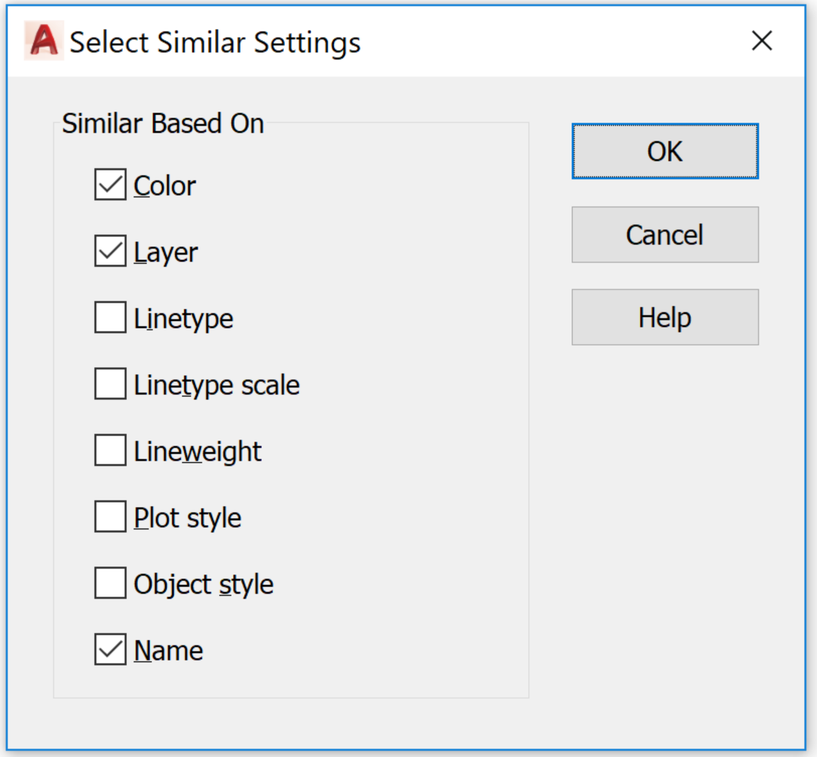
- All
- Previous
- Last
- [SHIFT]
- Remove
- Add
- Group

These are all great for small selections.

Whenever possible, let AutoCAD help build your selection sets.

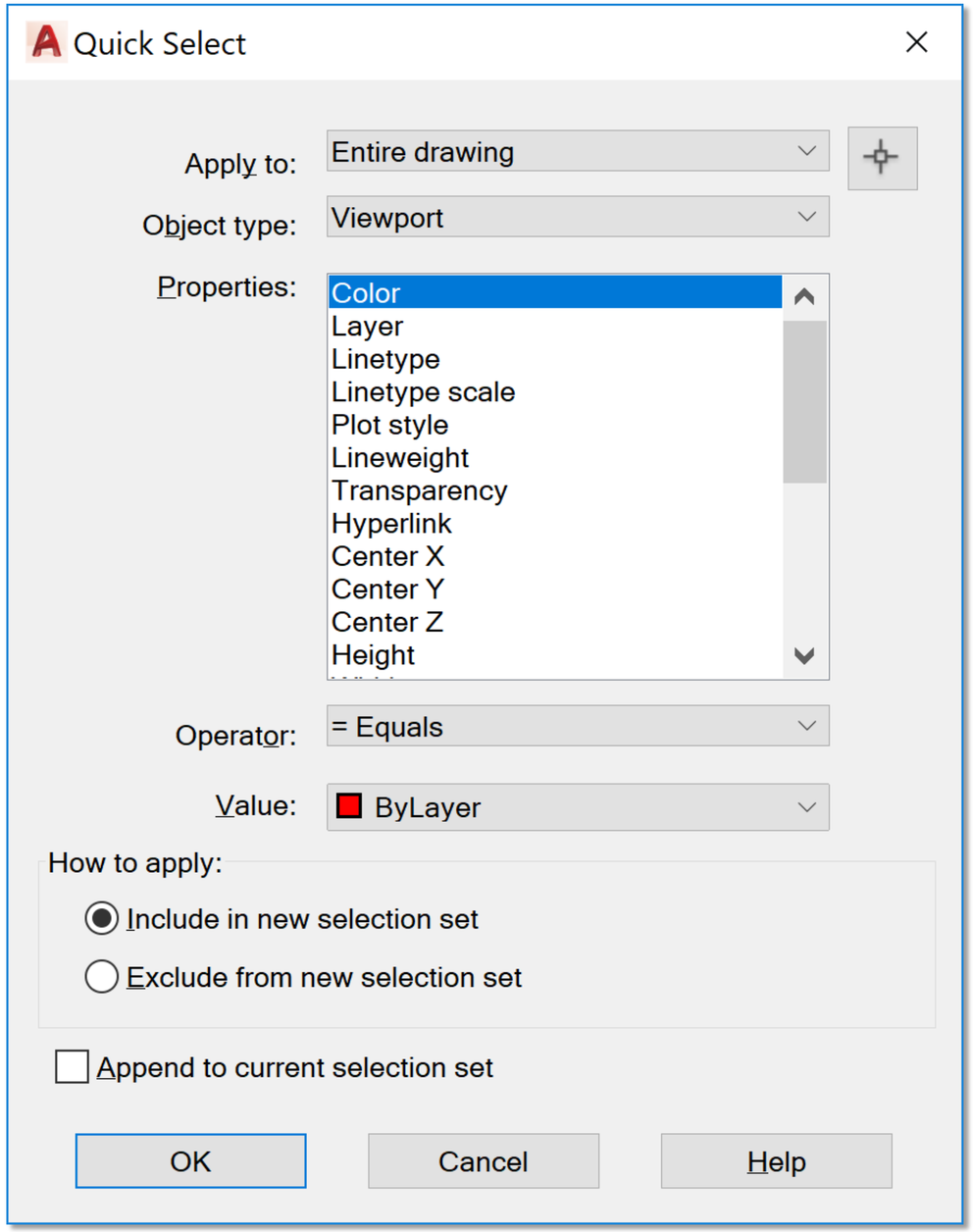
Select Similar

- On Pop-up Menu, after an object is selected
- Match object type and properties
- Select Similar Settings



Quick Select

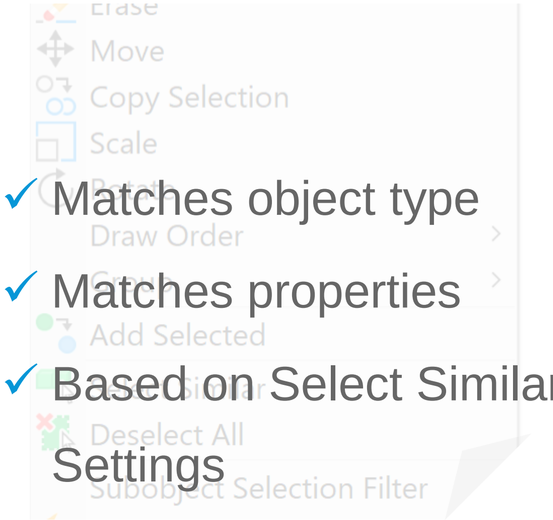
- On Properties Palette
- Object type
- One property
- Logical operator
- Set a value
- New/Exclude/Append
- Apply to entire dwg or selection



Objective 2

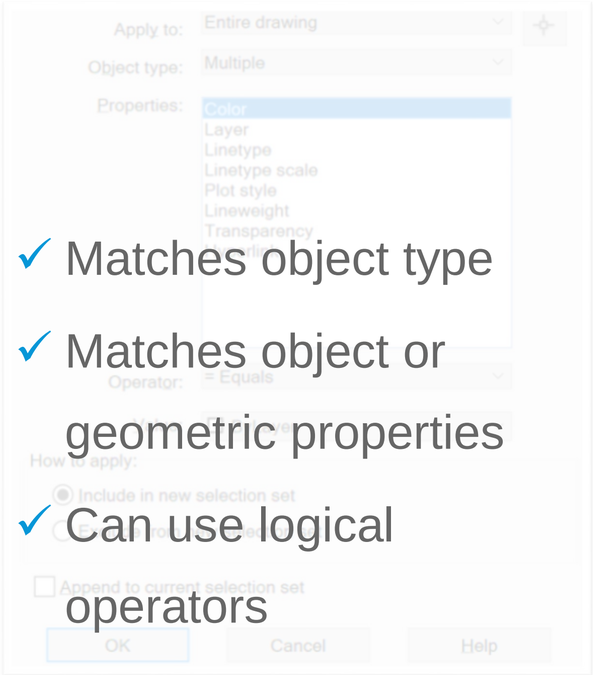
- ✓ Review object selection methods in AutoCAD, such as Fence and QSelect
- ❑ Learn how to build both simple and complex object selection filters by filtering multiple existing object properties

Select Similar



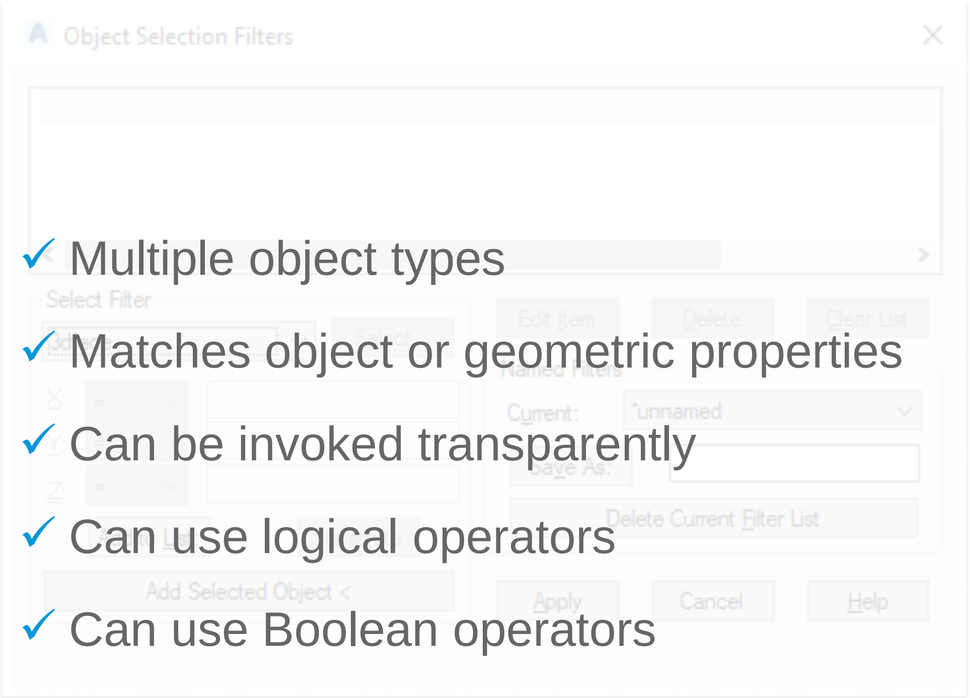
- ✓ Matches object type
- ✓ Matches properties
- ✓ Based on Select Similar Settings
- x Limited to ONE object type
- x No geometric properties

Quick Select



- ✓ Matches object type
- ✓ Matches object or geometric properties
- ✓ Can use logical operators
- x Limited to ONE object type per selection
- x Limited customization
- x No saving

Filter

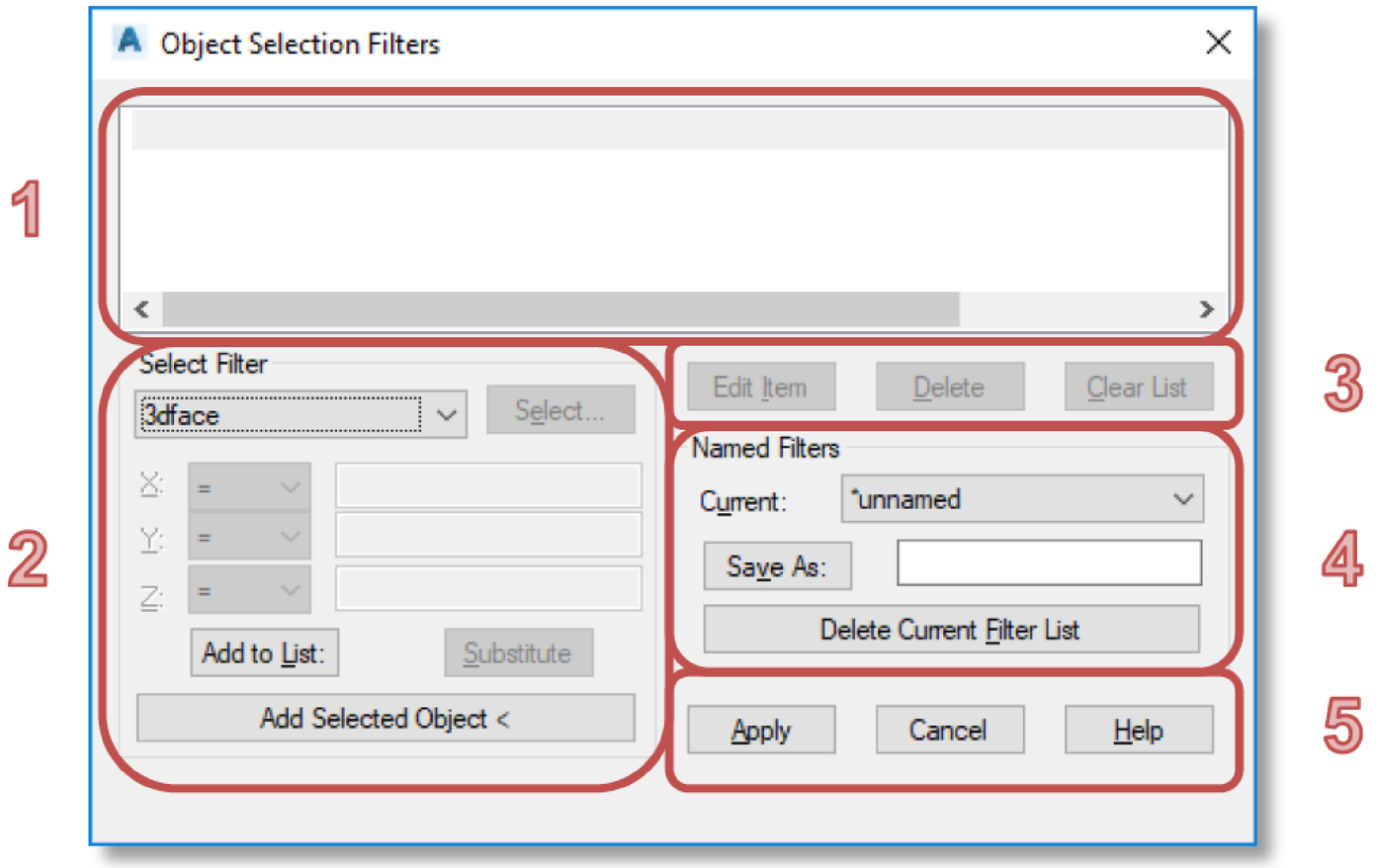


- ✓ Multiple object types
- ✓ Matches object or geometric properties
- ✓ Can be invoked transparently
- ✓ Can use logical operators
- ✓ Can use Boolean operators
- ✓ Extensive customization
- ✓ Can save and re-use in same or other drawings

Filter Dialog

Parts of the Object Selection Filters Dialog

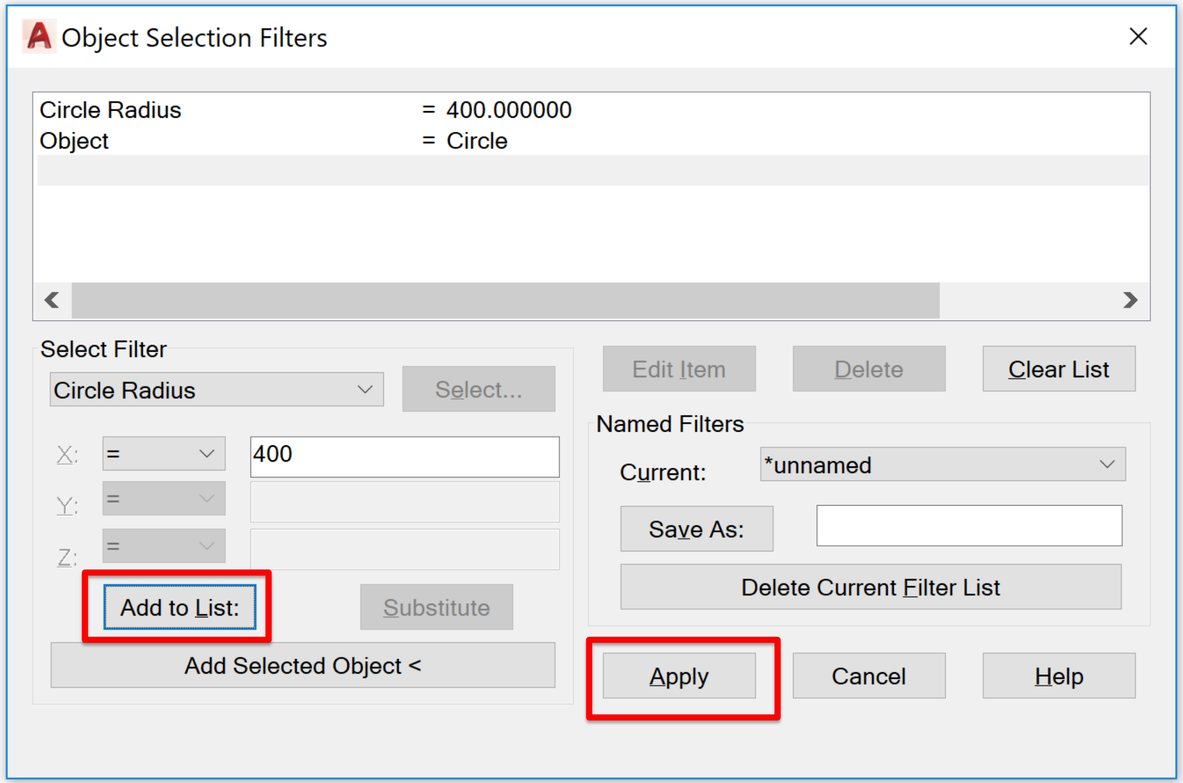
1. Filter properties window
2. Select filter options
3. Edit item, Delete, Clear List buttons
4. Named filters
5. Apply, Cancel, Help buttons

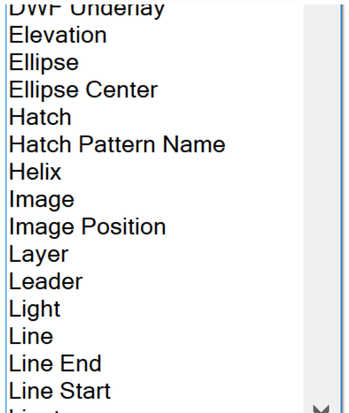


Parts of the FILTER Dialog Box

Build a Simple Selection

1. Launch FILTER
2. Select Filter:
3. Choose property
4. Set a value
5. Add to List
6. Click Apply

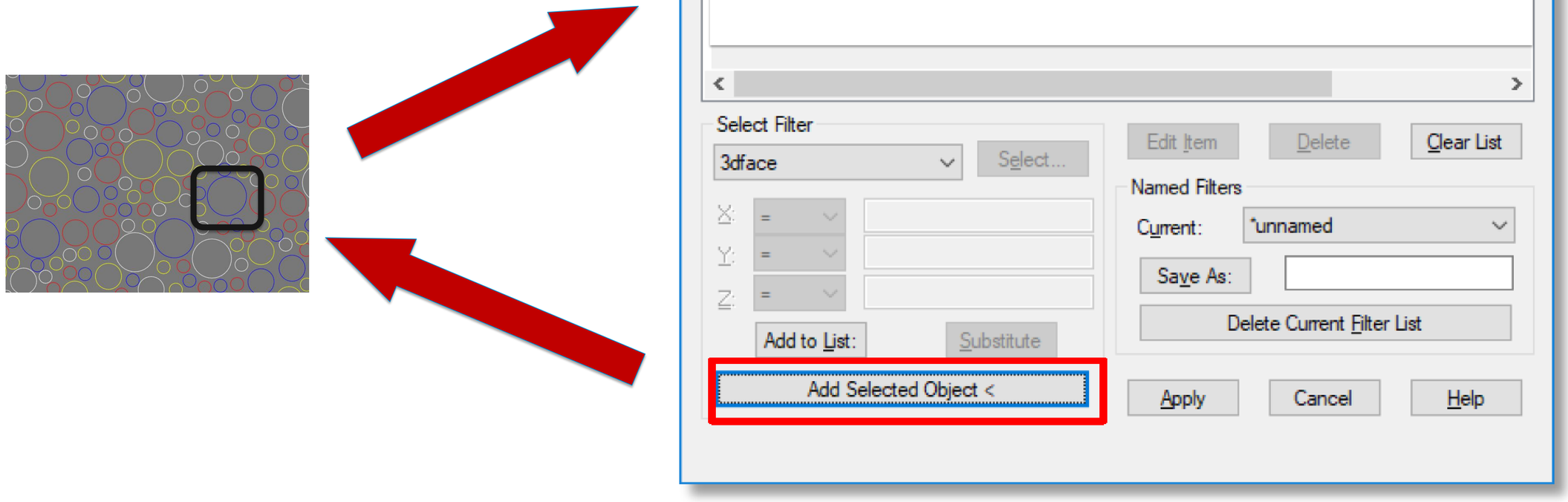




Objective 2 Demo

Simple selection

Add Selected Object



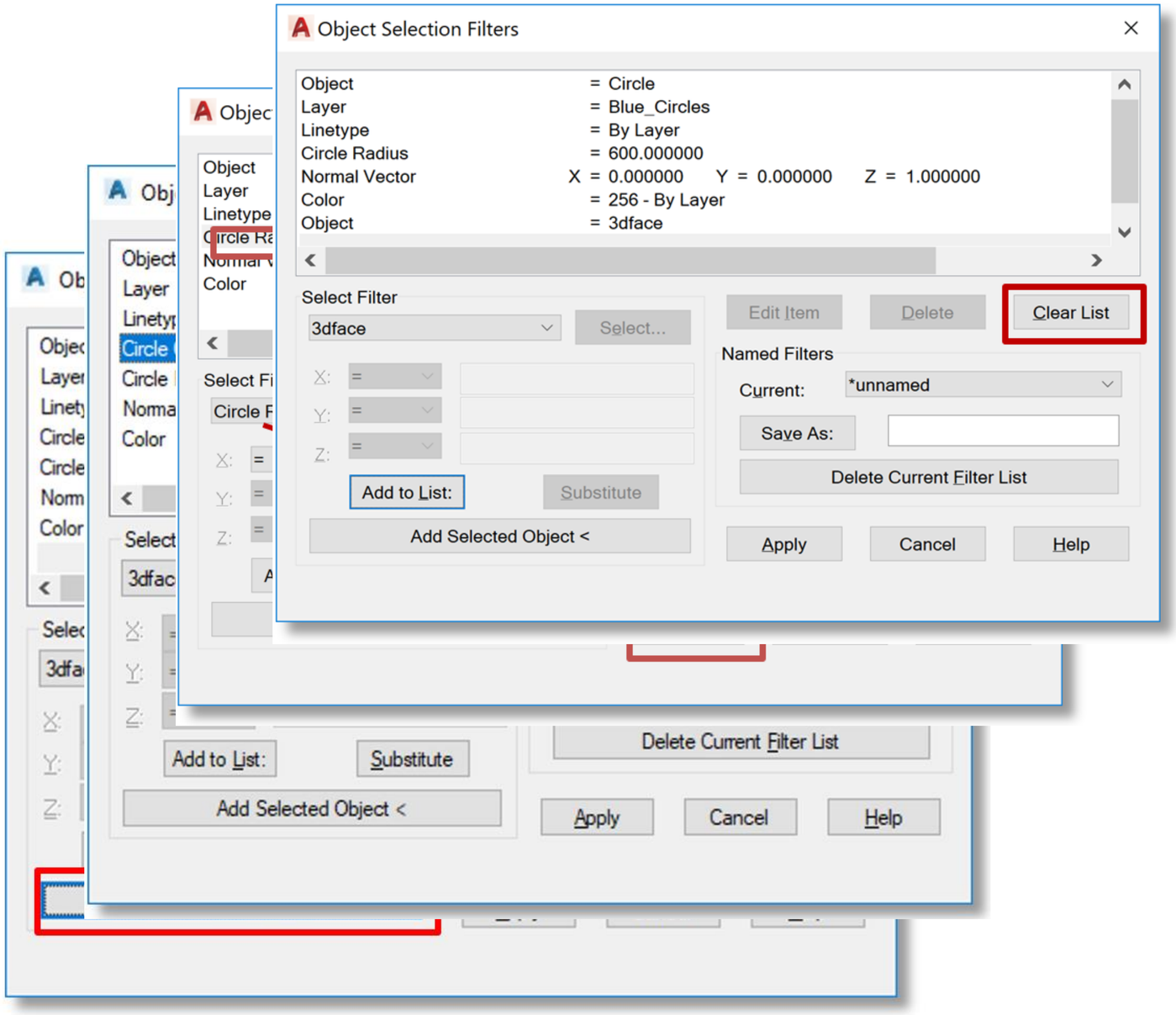
Adding a selected object to the filter list

Objective 2 Demo

- Add Selected Object
- Complex selection

Filter Tools

Clear List



Objective 3

- ✓ Review object selection methods in AutoCAD, such as Fence and QSelect
- ✓ Learn how to build both simple and complex object selection filters by filtering multiple existing object properties
- ❑ Learn how to build a complex selection filter using Boolean tools (and, or, not, xor)

Logical Operators

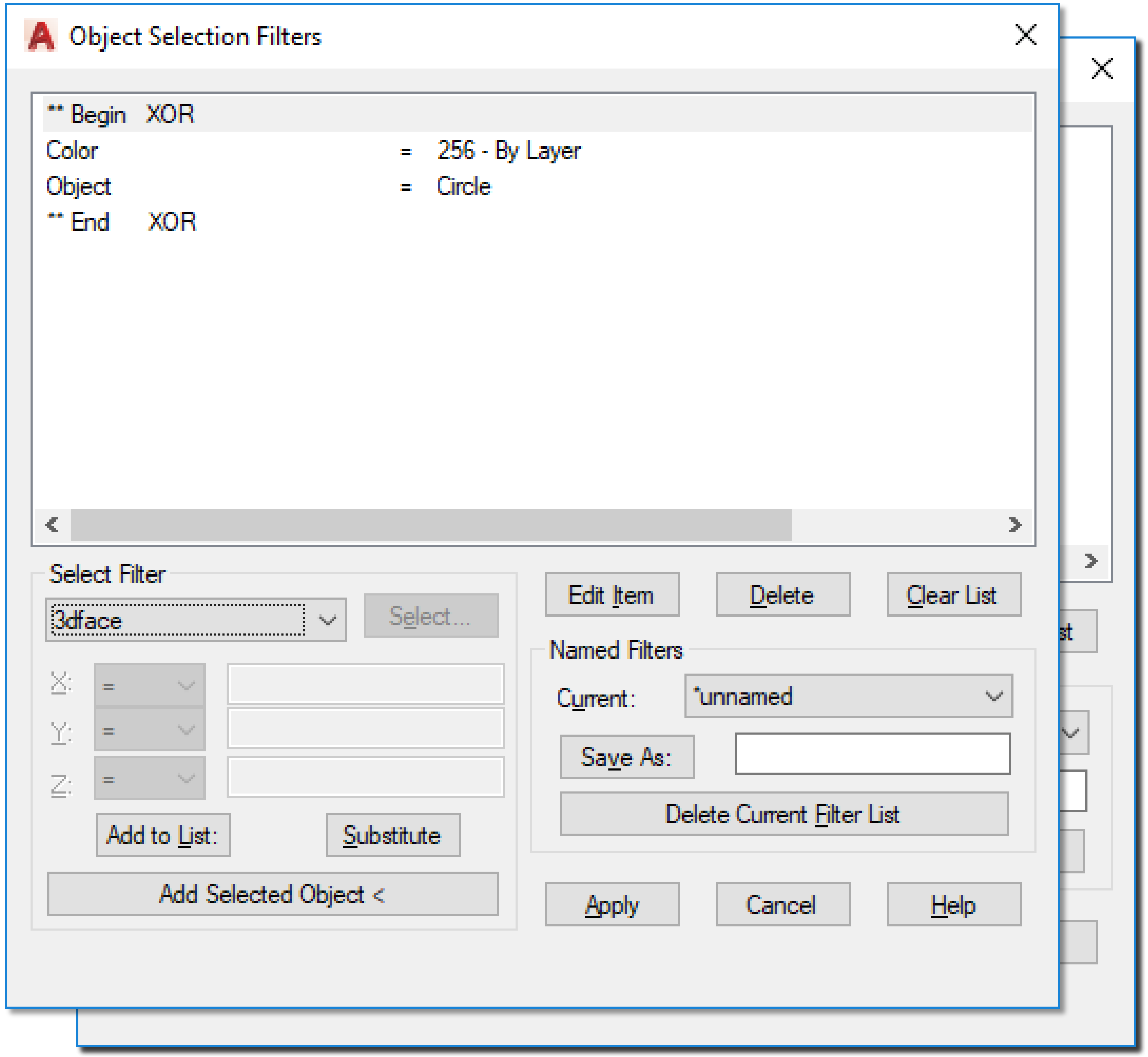
Starting operator	Ending operator
**Begin AND	**End AND
**Begin OR	**End OR
**Begin NOT	**End NOT
**Begin XOR	**End XOR

Logical Operator Begin and End markers

Operator	# of Operands	Objects Selected
AND	one or more	All Object that meet **every** criteria
OR	one or more	All objects that meet **any** criteria
NOT	one	All Objects **not** meeting the criteria
XOR	two	All objects meeting on or the other criteria, but **not both**

Logical Operator Description Table

XOR



** Begin XOR

Any number of items

** End XOR

The selection meets EITHER criteria, but not both

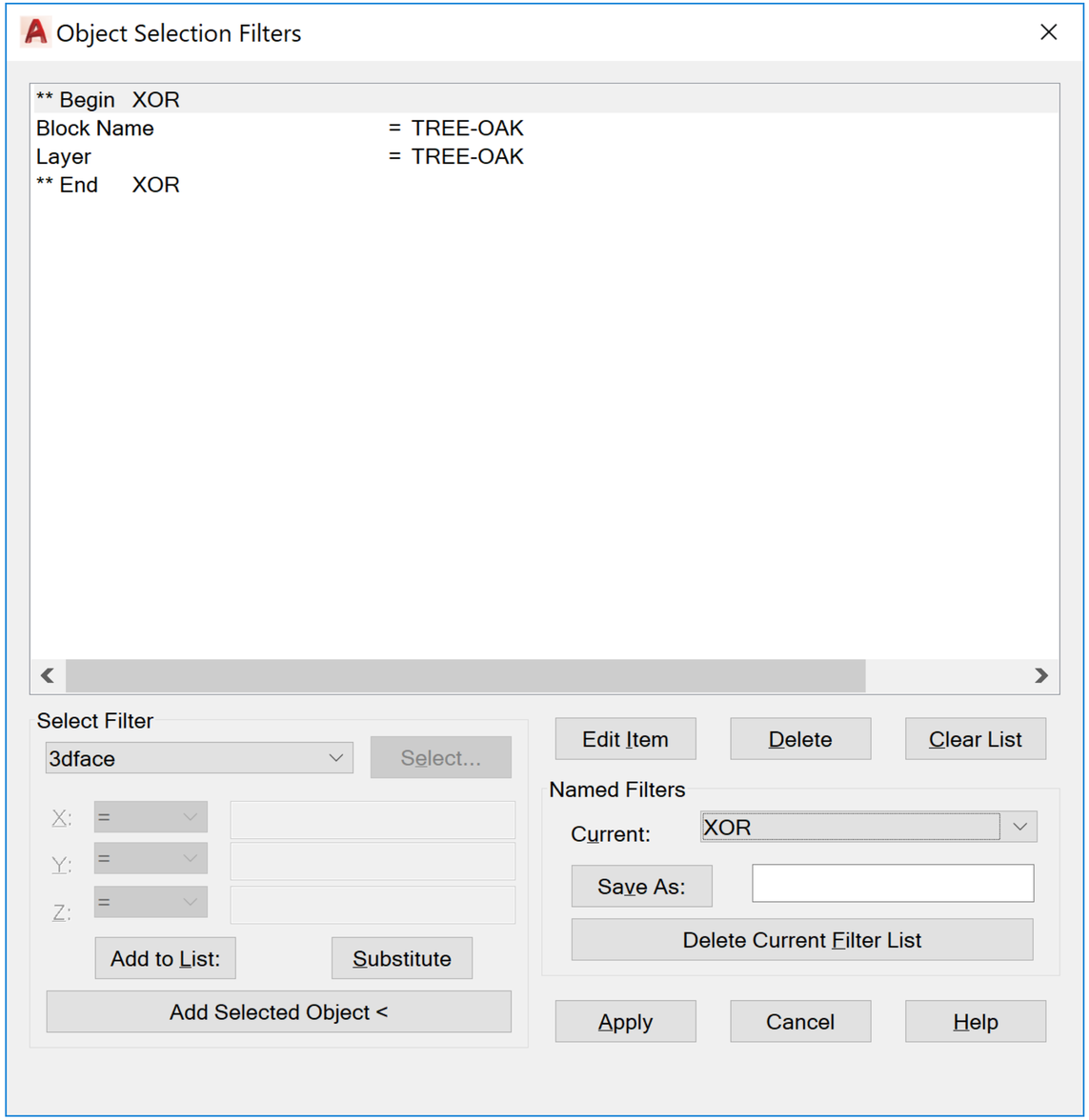
Booleans in Filter

- OR: There is unrest in the forest..

  filter all the oak and maple trees
- NOT: Let go the line

  find all lines that are not linetype BYLAYER
- XOR: Out of order

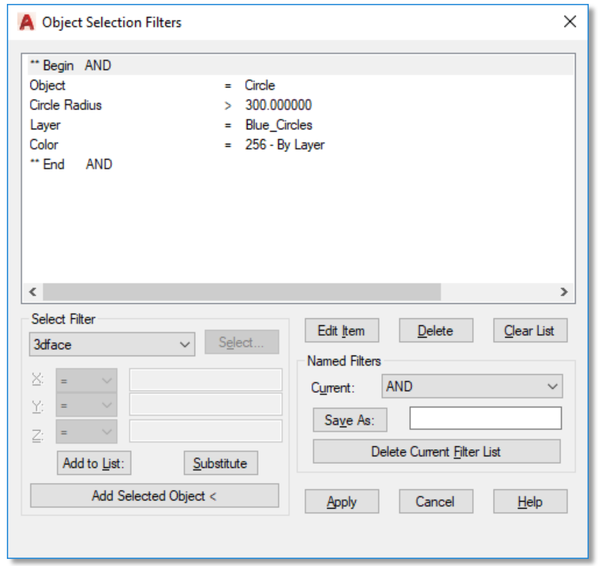
  find which oak trees are on the wrong layer



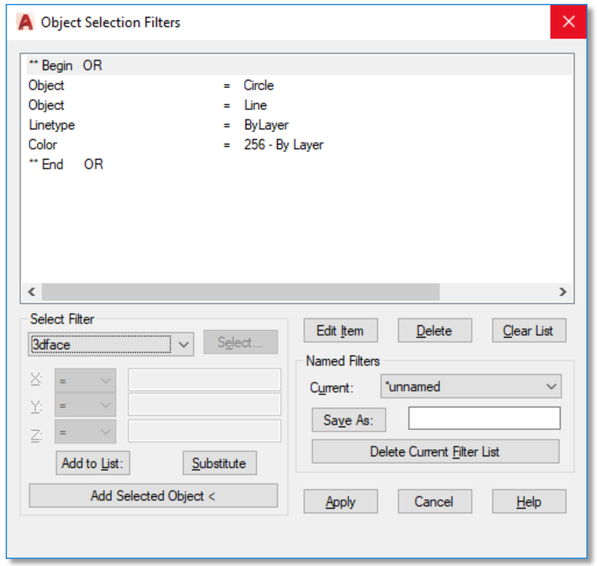
AND

** Begin AND
Any number of items
**End AND

The items must meet EVERY criteria



OR



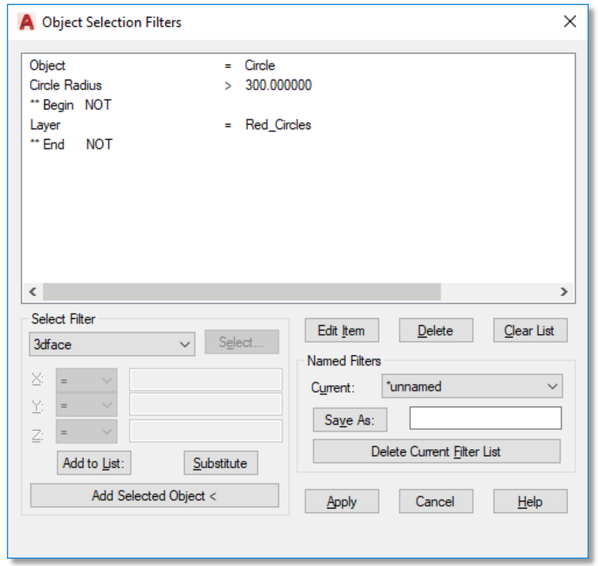
** Begin OR
Any number of items
**End OR

The items must meet ANY criteria

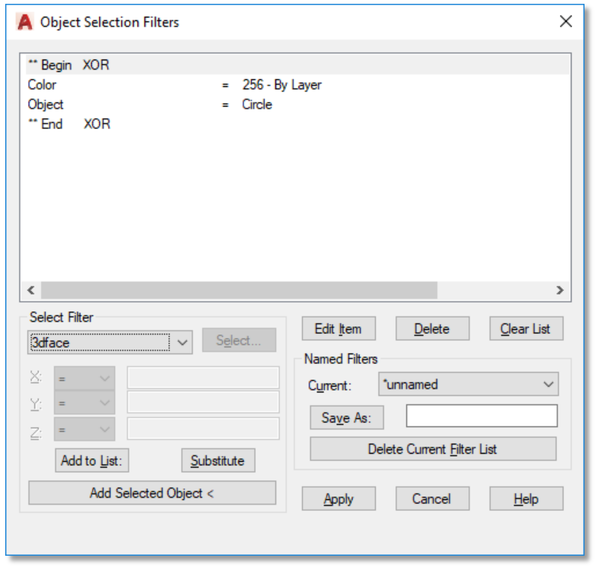
NOT

** Begin NOT
Only one item
**End NOT

The selection will EXCLUDE items that meet criteria



XOR



** Begin XOR
Operand A
Operand B
**End XOR

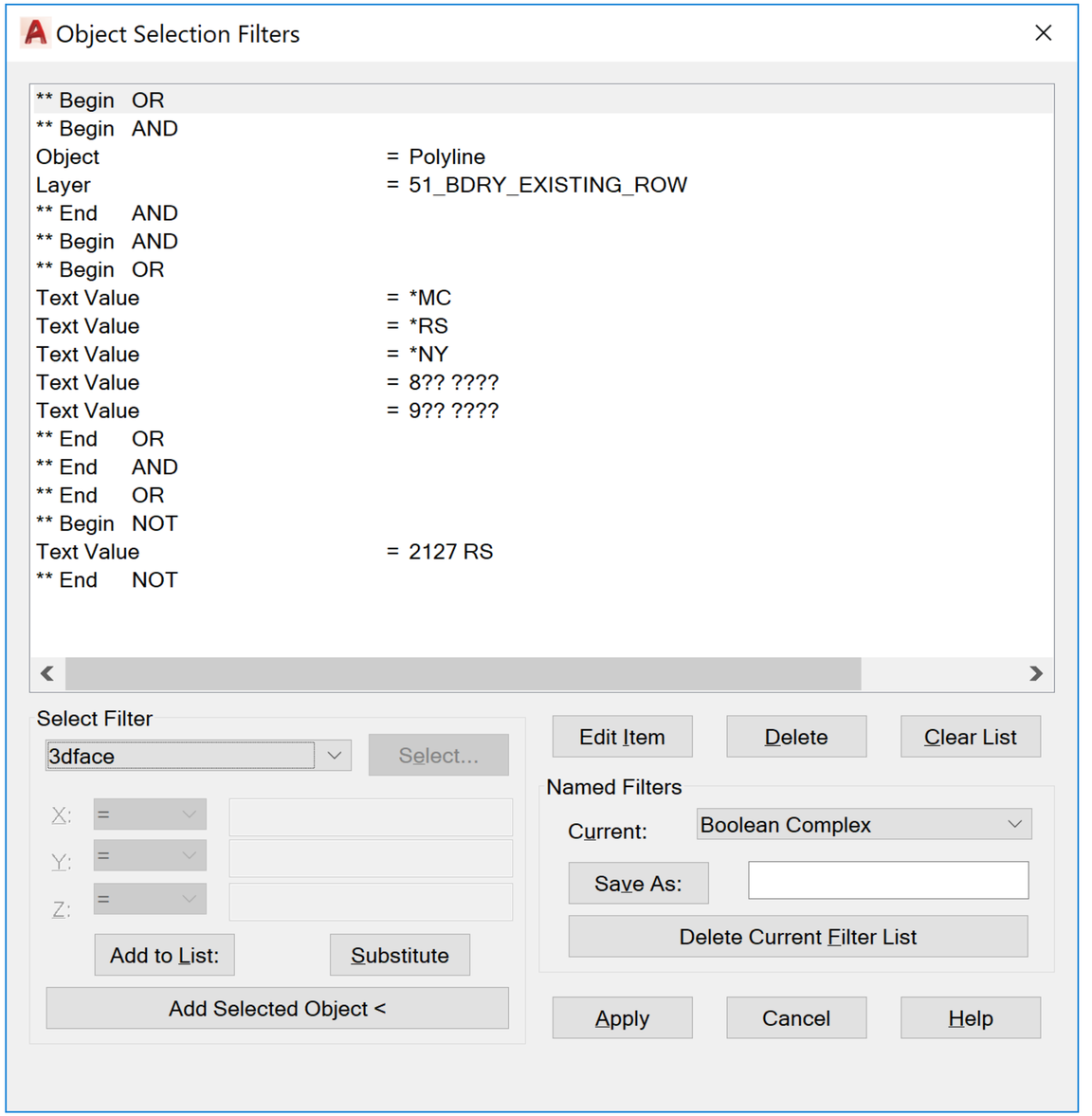
Everything that either criteria meet, but not both

Putting it all together

In a parcel mapping drawing, we need to find the following:

- All legal lines on layer 51_BDRY_EXISTING_ROW
- *Some* Legal plan numbers
  - All plans ending in RS, MC & NY,

    (but not plan 2127 RS)
  - All legal plan numbers starting with the digit 8
  - All legal plan numbers starting with the digit 9



Objective 4

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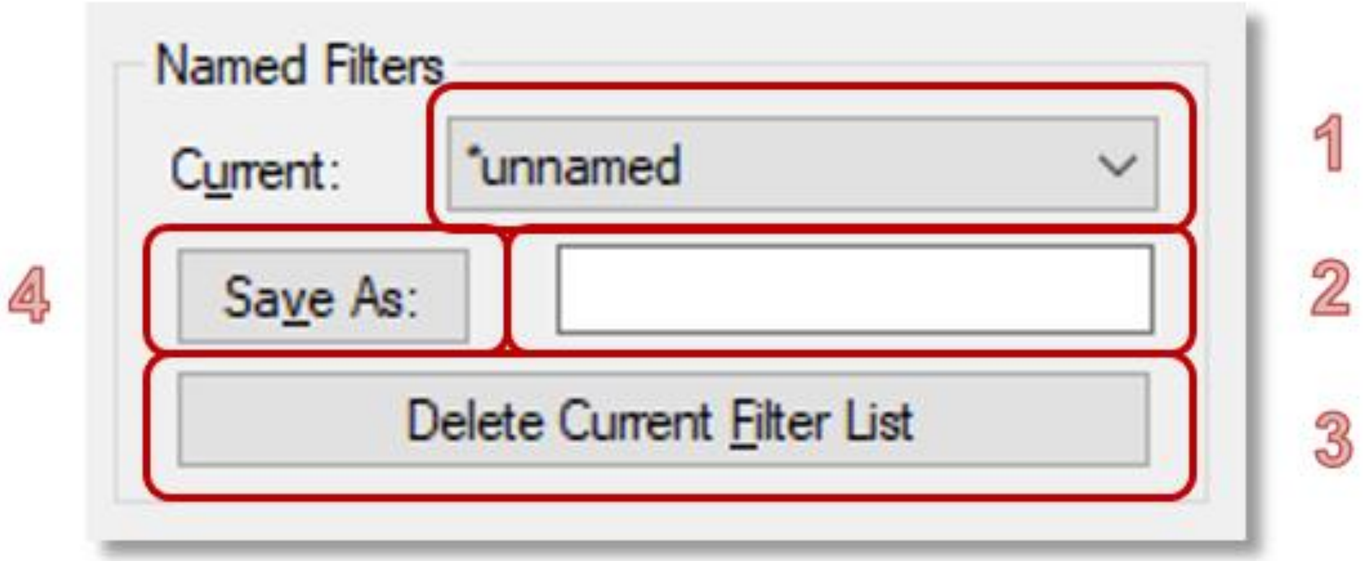
Named Filters

Parts of the Named Filters Dialog

1. Current Named Filter drop-down list
2. Filter Name Edit box
3. Delete current filter list button
4. Save As: button



Named Filters area of the Filter Dialog

Fast filter file facts

- Filters are saved externally in a file called filter.nfl
- (typically here: C:\Users\<LOGINNAME>\AppData\Roaming\Autodesk\<product version>\enu\Support\filter.nfl)
- Use (findfile “filter.nfl”) to locate it!
- It doesn’t have to be local! Network location for shared use!
- AutoCAD will load the first filter.nfl it finds
- For custom location, be sure to place the filter.nfl location to the top of support file search path
- Do not try to edit (corrupts easily)

We did it!

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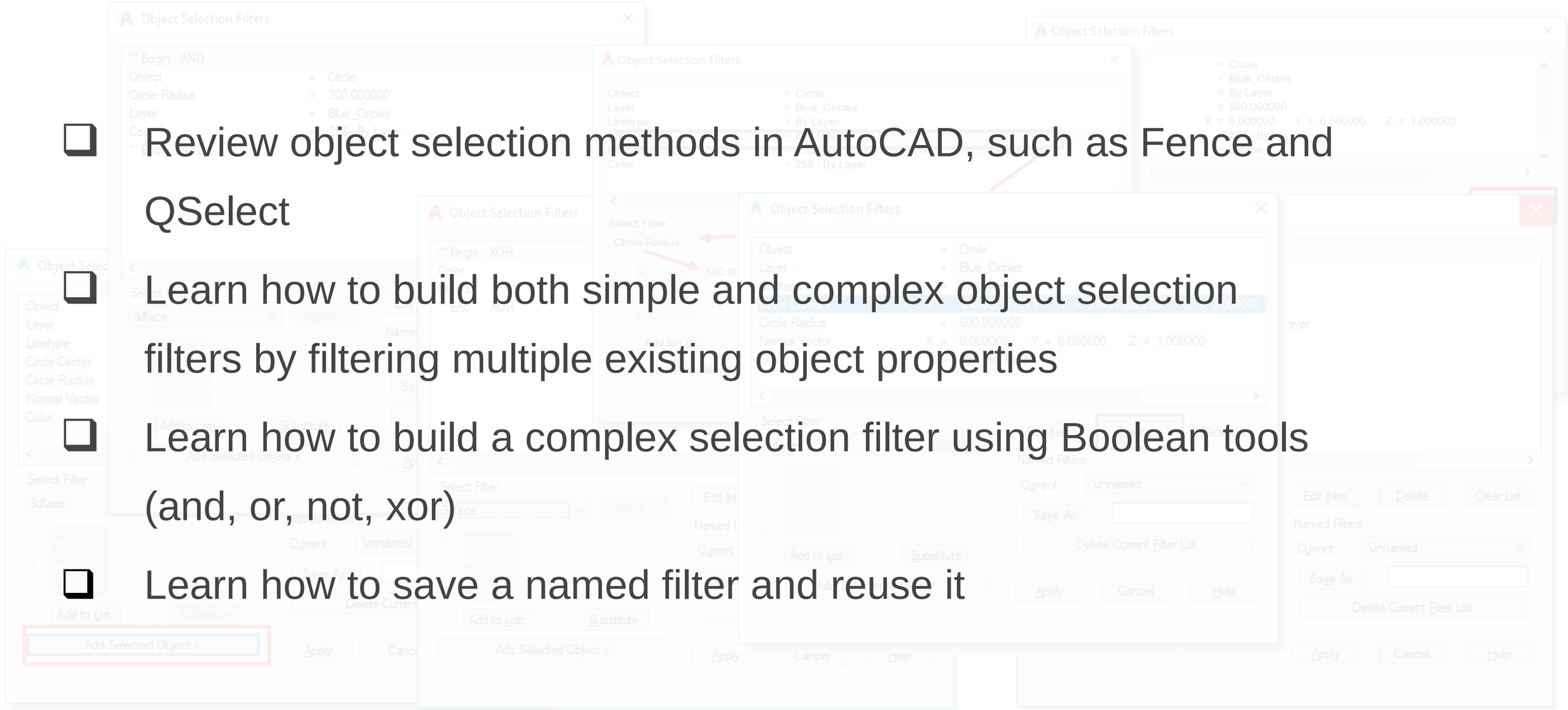

Thank you for your time!

Don’t forget to complete your class survey!

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swilcox@morrisonhershfield.com

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