

Dr. Revit's Ultimate Diet and Exercise Guide to Keeping Your Revit Models Ripped

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ABOUT THE SPEAKER

Matt Wunch

-  AUTODESK® EXPERT ELITE
- 3 years part-time Autodesk Technical Support
- 25 years in the AEC industry
- AUGI Board of Directors
- Owner of [SkyViz.io](https://www.skyviz.io) (Drone & 3D modeling consulting)
- FAA Part 107 certified pilot

directly



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LEARNING OBJECTIVES

OBJECTIVE 1

Discover what not to do to reduce Revit model's health

OBJECTIVE 2

Learn tips to improve a Revit model's performance

OBJECTIVE 3

Develop a plan to empower teams to maintain Revit model health

OBJECTIVE 4

Learn how to integrate Dynamo (and other tools) for keeping Revit models lean

DEFINITIONS

fatigue *noun*

fa·tigue | \ fə- 'tēg

- extreme sluggishness resulting from poor modeling practices; poor performance issues

obesity *noun*

obe·si·ty | \ ō- 'bē-sə-tē

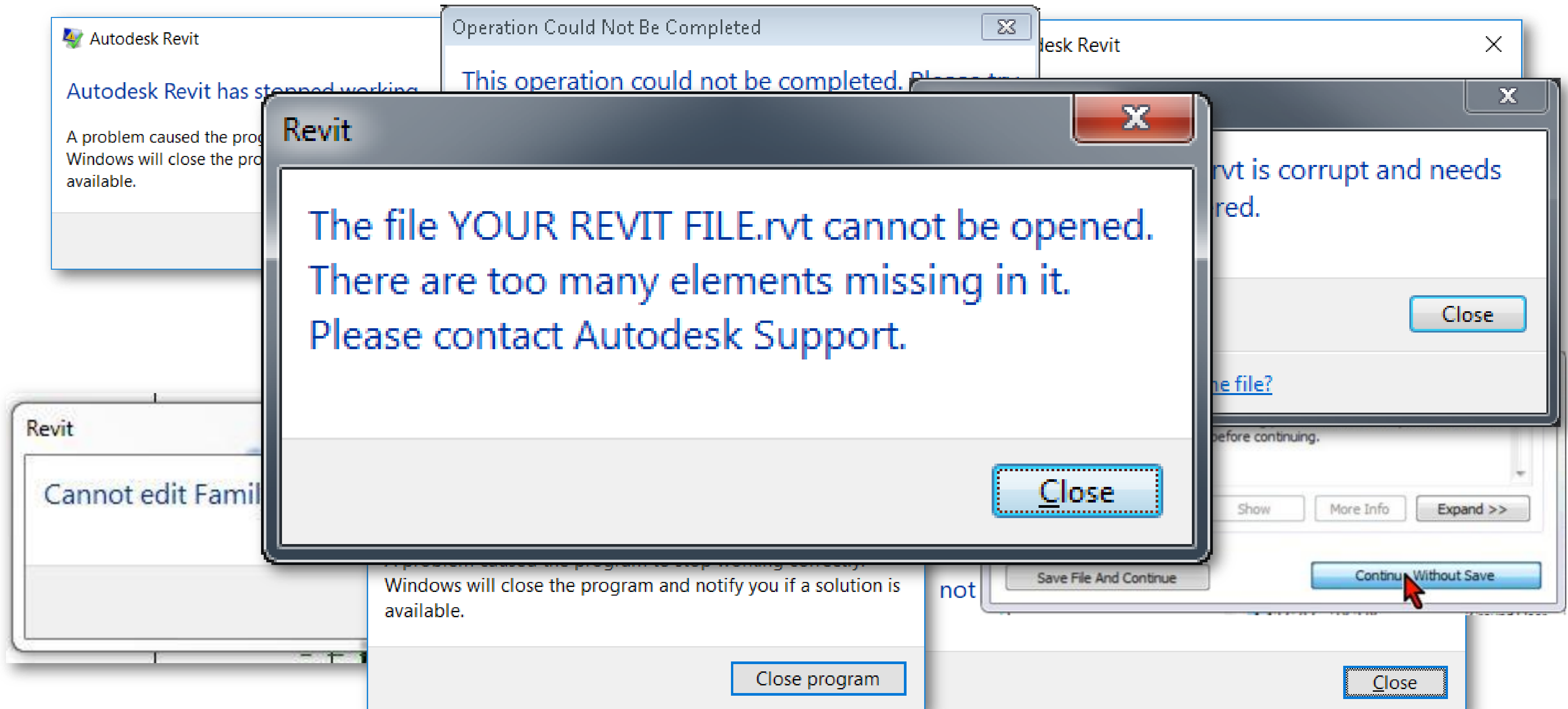
- a condition characterized by the excessive accumulation of ‘stuff’ in the project model

irritable bim syndrome (ibs) *noun*

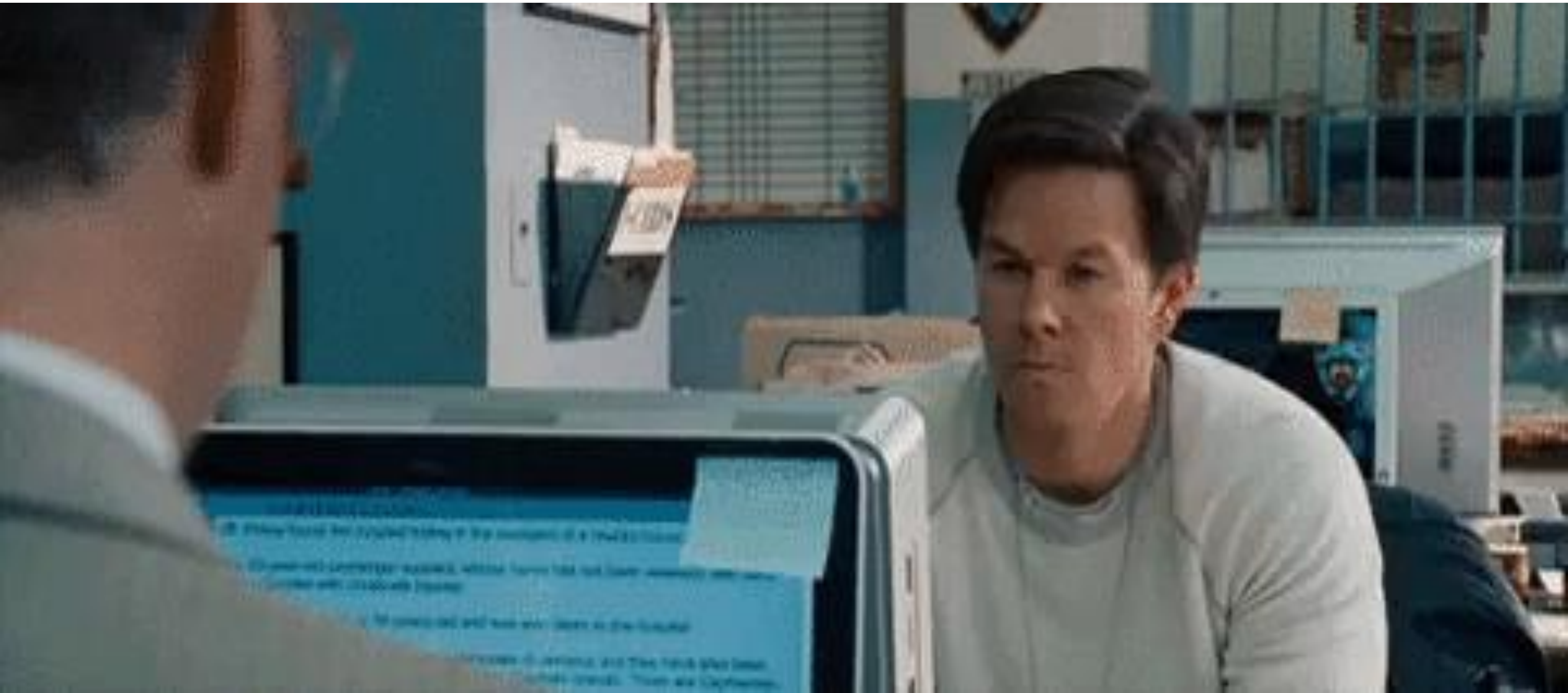
ir·ri·ta·ble / 'irədəb(ə)l/ mod·el / 'mädl/ syn·drome | / 'sin ,drōm/

- Increased levels of fatigue and obesity results in a common disorder that affects users working on these models. Signs and symptoms include cringing, twiddling thumbs, frustration, profanities, stress and constipation
- an inability to provide accurate and timely output resulting in blame shifting

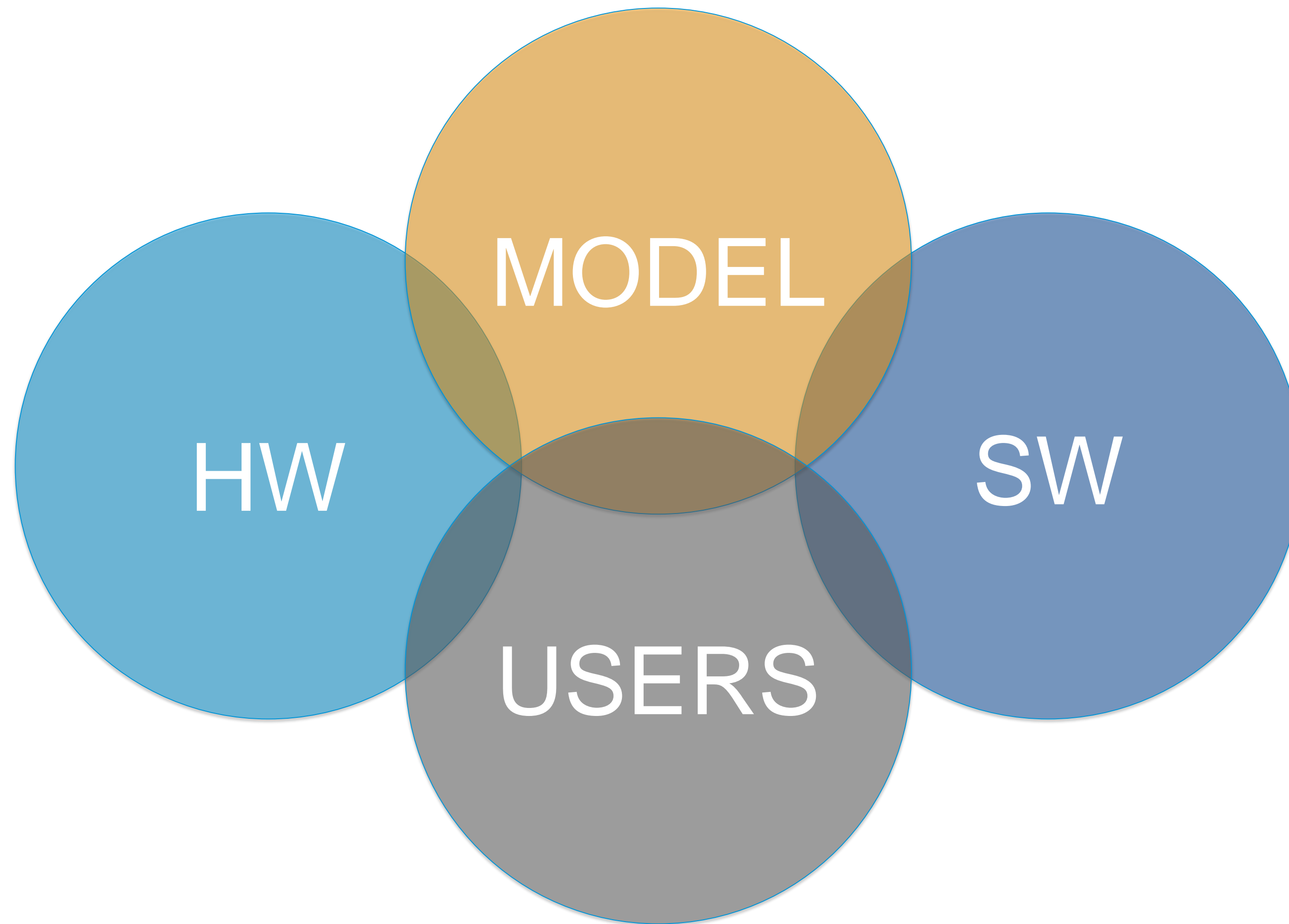
SYMPTOMS OF AN UNHEALTHY MODEL



SYMPTOMS OF AN UNHEALTHY MODEL



HOLISTIC APPROACH TO MODEL FITNESS



FOUR MAJOR AREAS OF CONCERN

OPEN

Model discomfort

PRINT
EXPORT

Printing and/or exporting
irritability

SAVE
SYNC

Issues related to saving
and/or synchronizing

USE

Everyday regular use
issues; non-discipline
specific

SIGNS OF POOR MODEL HEALTH

LETHARGIC, BLOATED

Model is slow to open, print, save, etc. but eventually performs the operation successfully.

WARNINGS

Model may be slow to open, print, save, etc.
Warnings appear during or after the operation. The operation may or may not complete successfully.

CRASH

Upon opening, printing, saving or general modeling, a crash occurs. The crash is accompanied by the option to save a recovery model or submit a CER.
Work may or may not be lost.

FAILURE

Complete crash of Revit. Often best recognized by Revit's ability to instantly vaporize. The ability to save a model is not possible. A CER is not generated. Total loss of Revit, previous work, and crash report.

OPENING

SLOW

DIAGNOSE

- Network speed
- Install updates (OS, Revit graphics card)
- Unload links
- Close worksets

WARNINGS

DIAGNOSE

- READ the warnings / export HTML report
- Don't just click OK or CANCEL
- Fix warnings

CRASH

DIAGNOSE

- All models, model-specific, user-specific
- Install updates (OS, Revit graphics card)
- Open with AUDIT
- Open with closed worksets
- Disable add-ins

FAILURE

DIAGNOSE

- All models, model-specific, user-specific
- Install updates (OS, Revit graphics card)
- Open with AUDIT
- Open with closed worksets
- Disable add-ins
- "Missing Elements"

PRINTING / EXPORTING

SLOW

DIAGNOSE

- All models, model-specific, user-specific
- View or sheet-specific
- Turn off family categories
- Change Printer

WARNINGS

DIAGNOSE

- All models, model-specific, user-specific
- View or sheet-specific
- Abnormally large PDF size
- 0KB file size

CRASH

DIAGNOSE

- All models, model-specific, user-specific
- Install updates (OS, Revit graphics card, printer drivers)
- View or sheet-specific
- Printer-specific
- Check the journal for clues
- 0KB file size

FAILURE

DIAGNOSE

- All models, model-specific, user-specific
- Install updates (OS, Revit graphics card, printer drivers)
- Check the journal for clues

SAVING / SYNCING

SLOW

DIAGNOSE

- Network speed
- Install updates (OS & Revit)
- Unload links
- Close worksets
- All models
- User-specific
- Simultaneous Syncing

WARNINGS

DIAGNOSE

- READ the warnings
- Don't just click OK or CANCEL
- Fix warnings
- All models
- User-specific

CRASH

DIAGNOSE

- All models or user-specific
- Install updates (OS & Revit)
- All models
- User-specific
- Disable add-ins

FAILURE

DIAGNOSE

- "Missing Elements"
- All models or user-specific
- Install updates (OS & Revit)
- All models
- User-specific
- Disable add-ins

REGULAR USE

SLOW

DIAGNOSE

- All models
- User-specific
- MEP connectors
- Duplicate items
- Analytical model
- Overly complex geometry
- Unload links/worksets

WARNINGS

DIAGNOSE

- All models
- User-specific
- Review and correct warnings
- Command specific vs random
- Can it be replicated
- Jittery/jagged linework

CRASH

DIAGNOSE

- Install updates (OS, Revit graphics card)
- All models
- User-specific
- Check the journal for clues
- Command specific vs random
- Can it be replicated

FAILURE

DIAGNOSE

- Install updates (OS, Revit graphics card)
- All models
- User-specific
- Check the journal for clues
- Command specific vs random
- Can it be replicated

OPENING (SLOW)

DIAGNOSIS

- File Size
- Number of links and link file sizes
- Opening all worksets
- Starting View has complex geometry or 3D view
- Out of shape Revit file

RECOMMENDED THERAPIES

- Reduce the file size / break up model into smaller models
- Create a simple Starting View
- Close all sheets and views except a simple Starting View.
- Reduce the number of linked models / CAD, purge models
- Open worksets selectively
- Use a drafting view for startup view
- Too many IMPORT line patterns, styles, exploded DWGs, etc. Model cleanse or detox (purge, review/correct warnings)

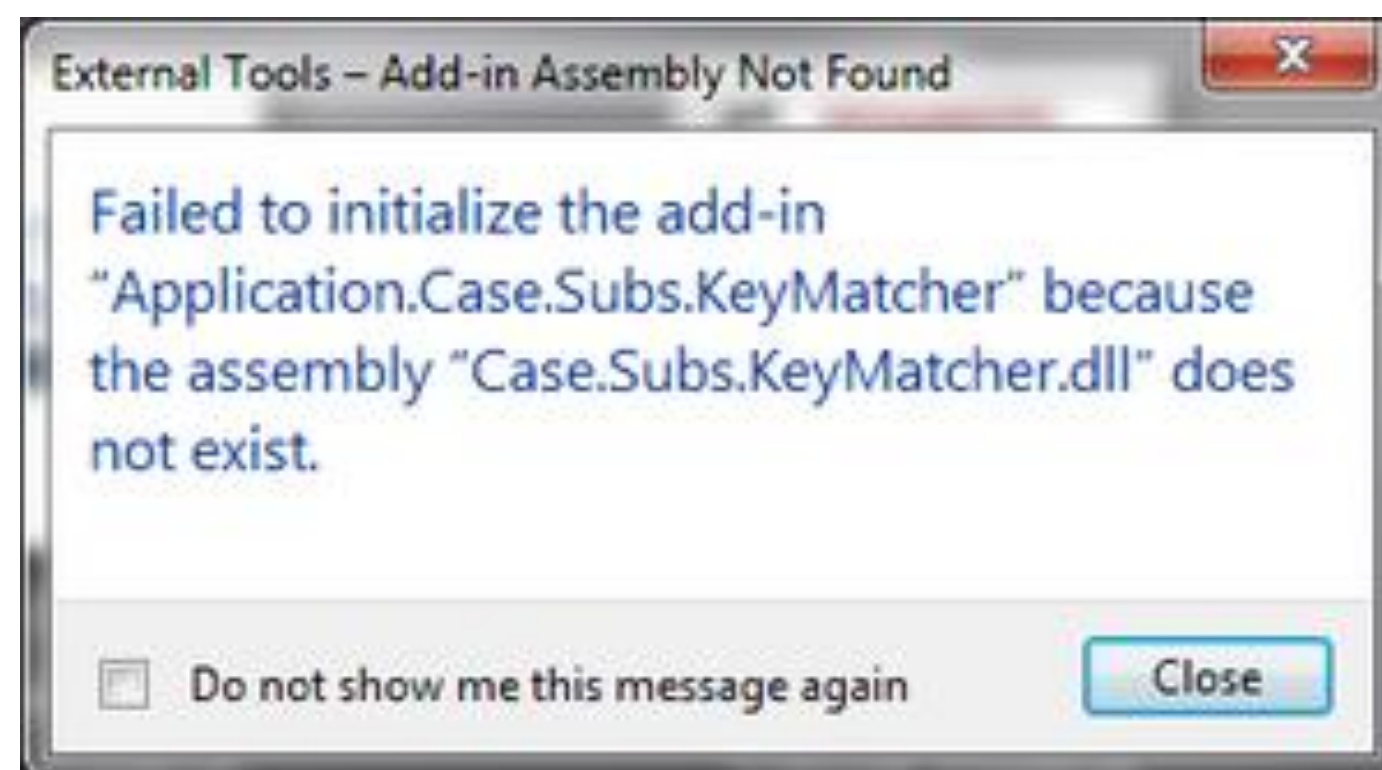
OPENING (WARNINGS)

DIAGNOSIS

- Cannot obtain permission to edit the element...
- Opening the central model produces warnings
- Add-in missing or corrupt

RECOMMENDED THERAPIES

- Clear the cache
- Create a new local model
- Create a local model
- Temporarily disable add-ins
- Reload add-ins one at a time



OPENING (CRASH)

DIAGNOSIS

- Crash during open
- Add-ins crashing model
- Linked files crashing model



The drawing file was recovered.

Errors were found and fixed in the drawing. Invalid data might have been changed or deleted, and some previously erased objects might have been restored.

Errors found: 5250
Errors fixed: 5250
Objects erased: 0

Review the information above and inspect the drawing before saving it.

RECOMMENDED THERAPIES

- Clear the cache
- Open using AUDIT
- Outdated graphics card drivers / unsupported card
- Disconnect from network
- Close all worksets, open one workset
- Increase backup count
- Temporarily disable all add-ins / missing eSchema
- Temporarily move all linked files to a new location
- Audit and purge CAD files (don't forget purge REGAPPS)

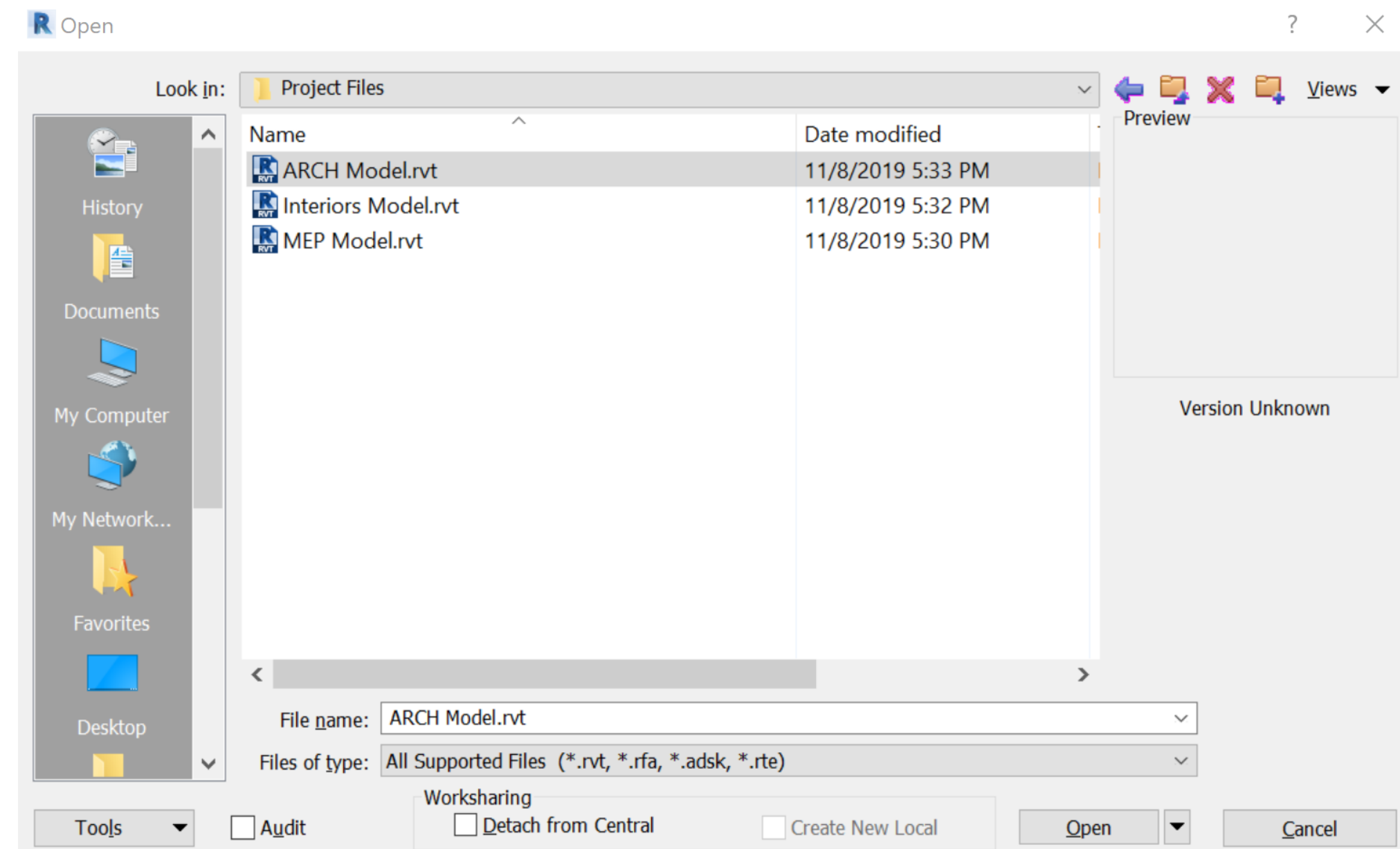
```
Deleting registered application "AECB_OSNAP_MEP".  
Deleting registered application "AUDIT_I_190311113913-0".  
Deleting registered application "AeccLand130".  
19554 registered applications deleted.
```

 Type a command

OPENING (FAILURE)

DIAGNOSIS

- Opening using AUDIT results in Missing Elements
- Revit vaporizes during open process
- Version unknown / no thumbnail preview



RECOMMENDED THERAPIES

- Open without using AUDIT / check for corrupt families
- Open using AUDIT, close all worksets except one
- Temporarily move all linked files
- Corrupt model / restore from backup
- Truncated file. Use 7zip to check / restore from backup
- Increase backup count

PRINTING / EXPORTING (SLOW)

DIAGNOSIS

- All sheets / views slow to print / export
- Specific sheets / views slow to print / export

- Out of shape Revit file

RECOMMENDED THERAPIES

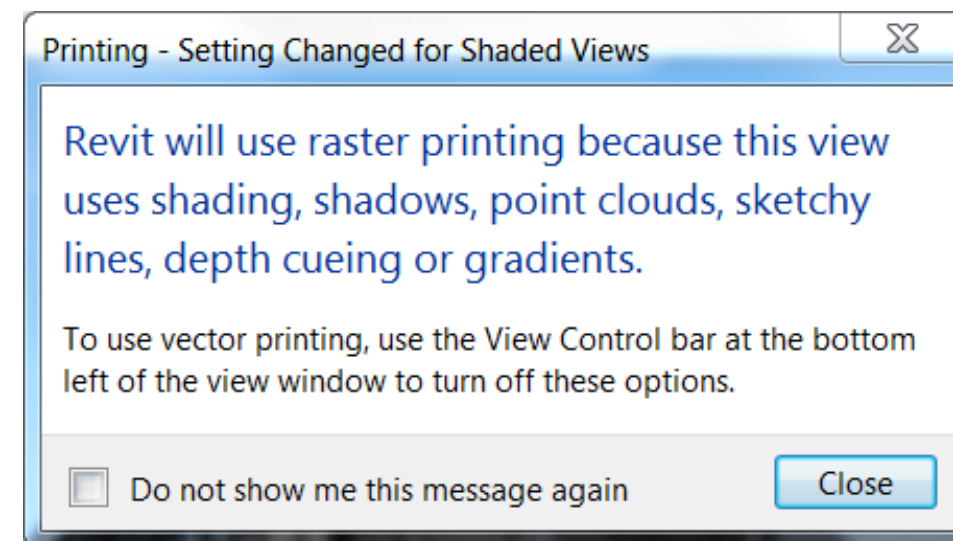
- Reduce file size / linked file sizes
- Limit number of open worksets
- Unload unnecessary links
- Overly complex geometry displayed in plan view / DWGs
- Simplify families
- Limit excessive / complex fill patterns
- Commit to better modeling habits
- Update printer drivers / select another one
- Raster vs Vector
- Custom crop regions, especially with curved segments
- Purge, Purge, PURGE
- Cleanse views of ghost CAD imports, links, IMPORT line patterns, SecretInternal arrowheads

PRINTING / EXPORTING (WARNINGS)

DIAGNOSIS

- Enlarged PDF sizes

- Revit uses raster printing



- Video driver error occurred

RECOMMENDED THERAPIES

- Review PDF / printer settings, check resolution
- CAD imports and links: Turn off / Unload / Remove / DELETE
- Unload coordination (NWC) model(s)
- CAD imports and links: Turn off/ Unload / Remove / DELETE
- Outdated graphics card drivers / unsupported card

PRINTING / EXPORTING (CRASH)

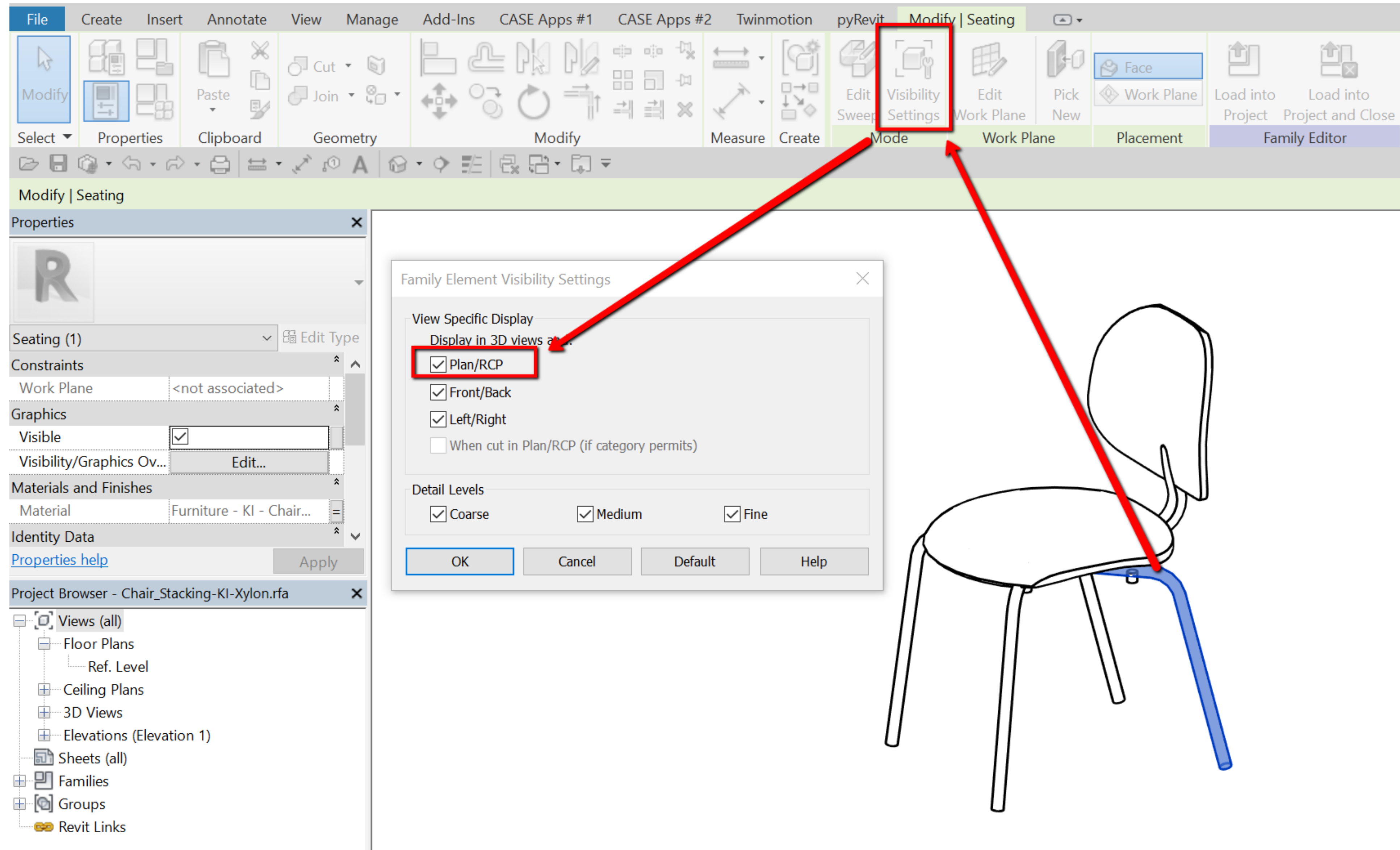
DIAGNOSIS

- Crash or 0KB exports
- Revit hangs

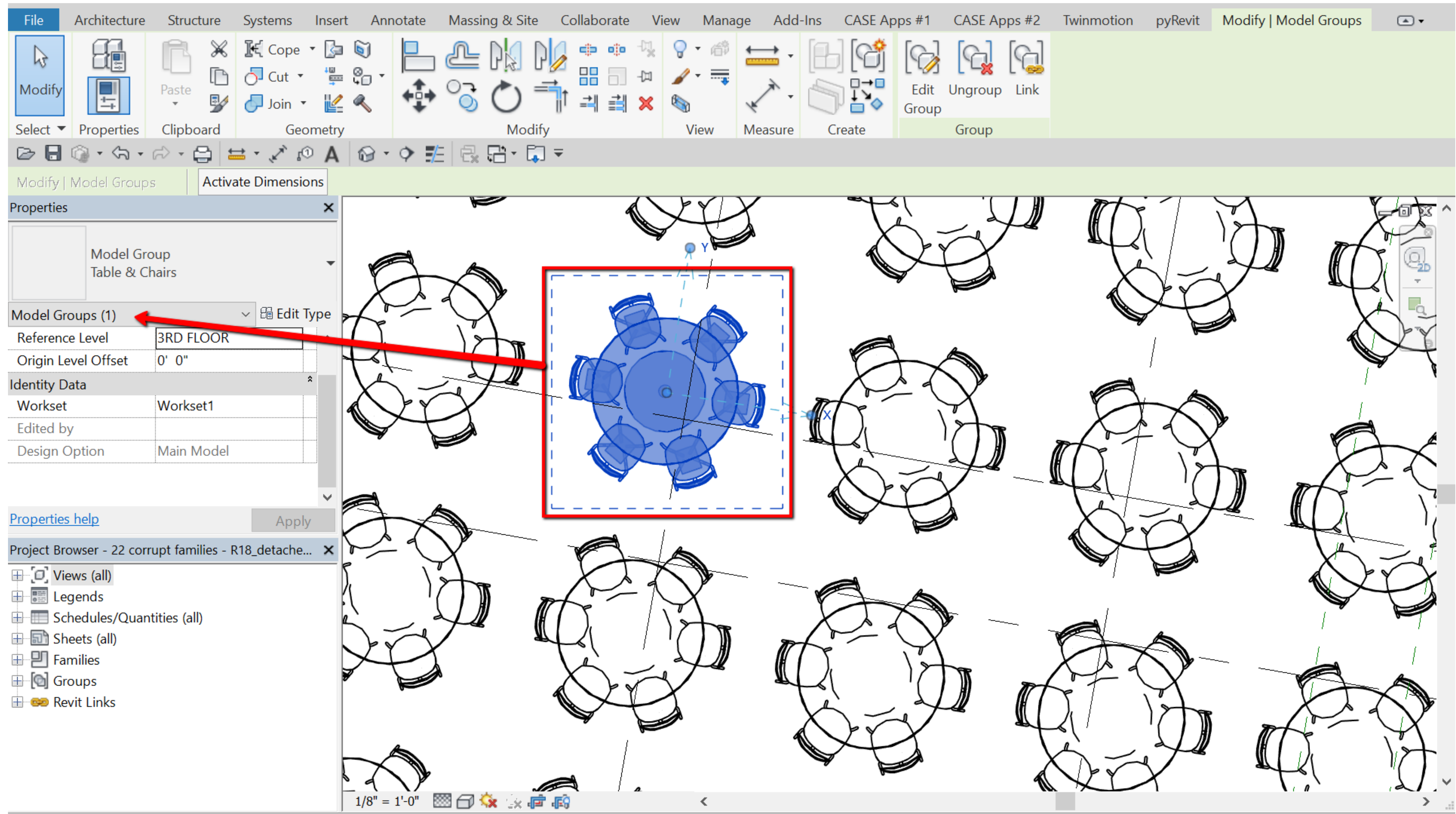
RECOMMENDED THERAPIES

- Install latest Revit updates
- CAD imports and links: Turn off/ Unload / Remove / DELETE
- Update printer drivers and review printer settings
- Try another printer
- Poorly modeled families
- Raster / Vector
- Remove links in model pointing to other BIM 360 projects
- Highly detailed wall sweeps / very acute angles

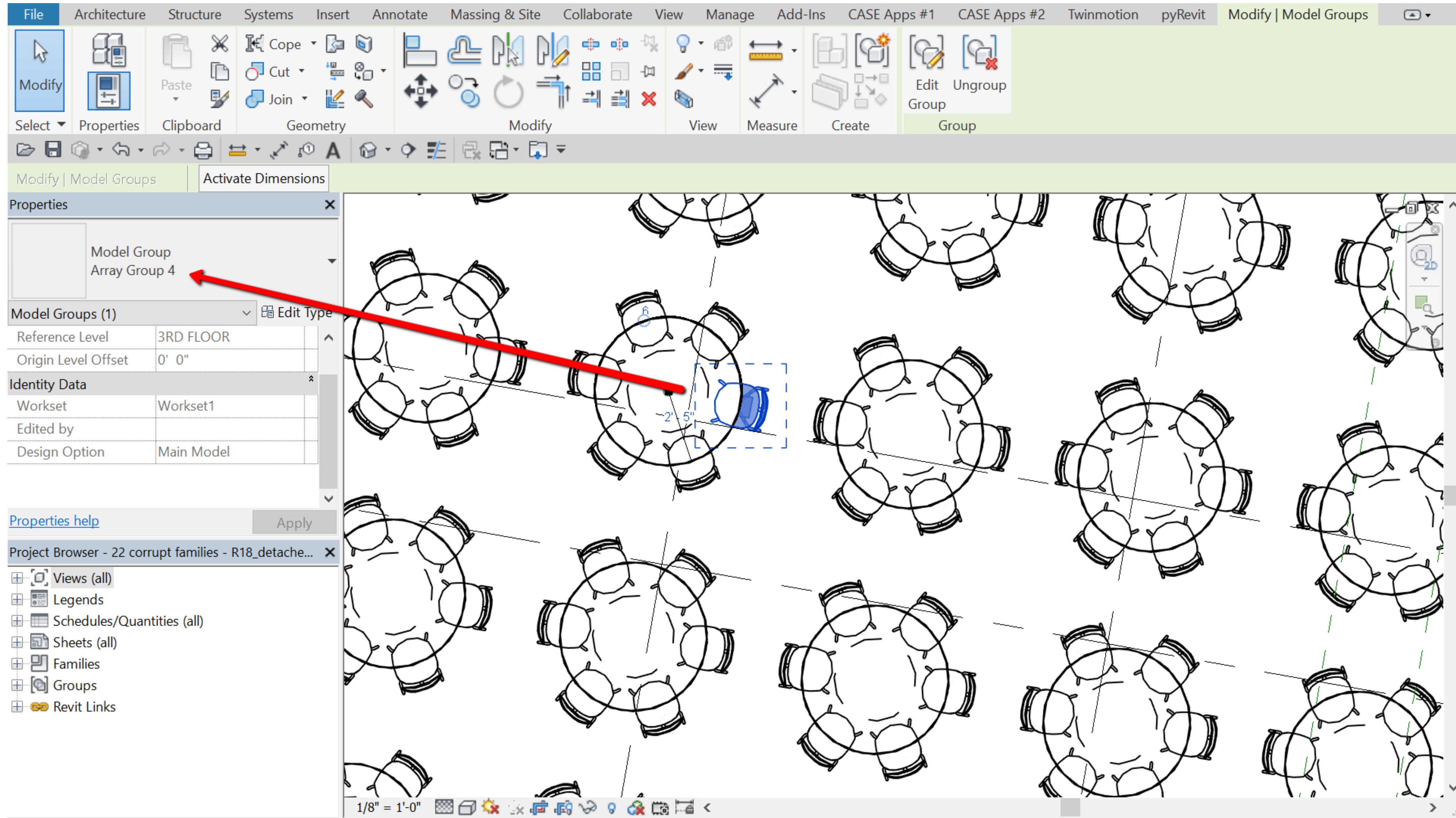
FAMILY BEST PRACTICES



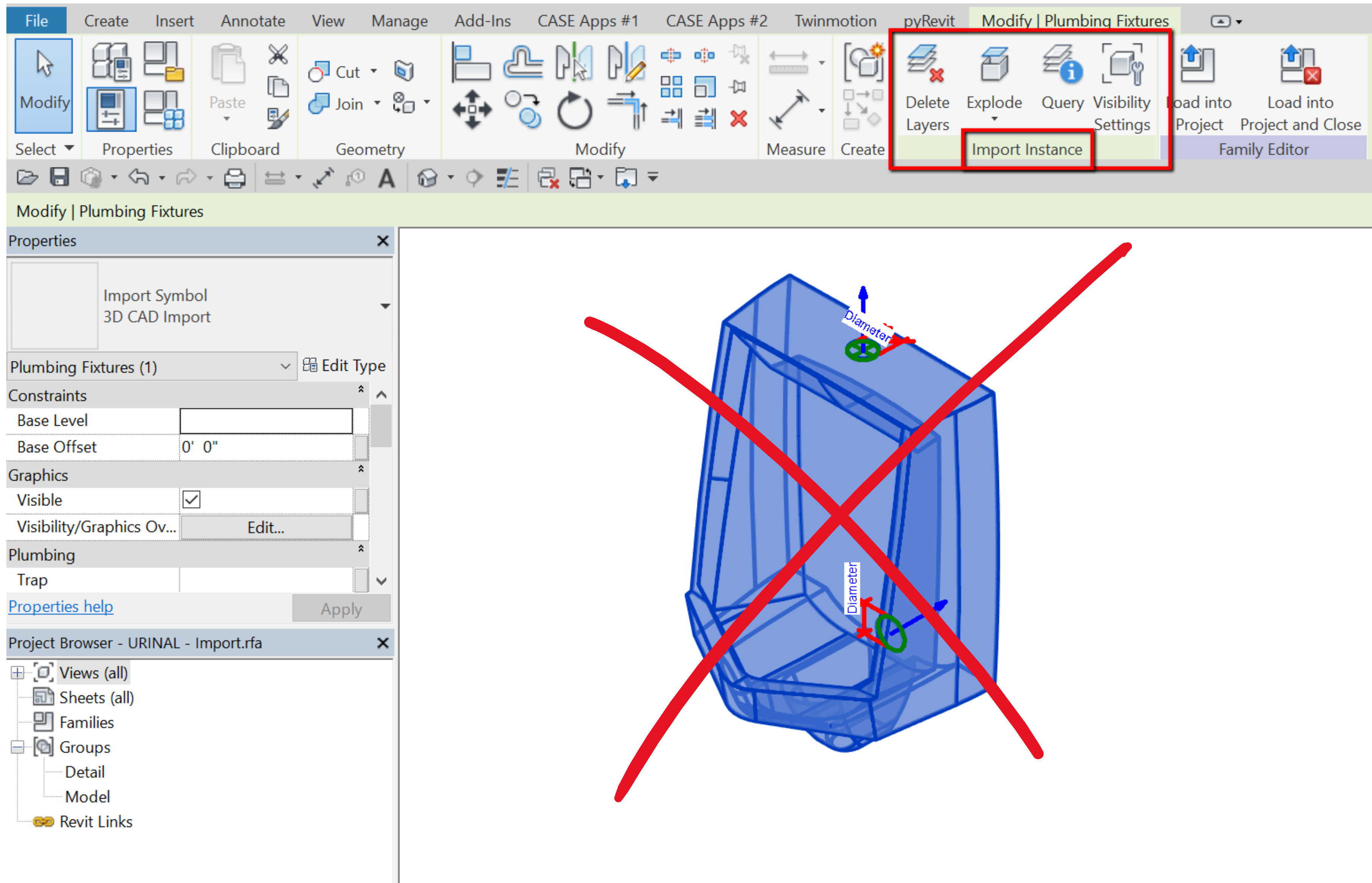
FAMILY BEST PRACTICES



FAMILY BEST PRACTICES



IMPORTED 3D DWGS



PRINTING / EXPORTING (FAILURE)

DIAGNOSIS

- Revit vaporizes

RECOMMENDED THERAPIES

- Install latest Revit updates
- Try another printer
- Update printer drivers and review printer settings
- Check the journal for clues

SAVING / SYNCING (SLOW)

DIAGNOSIS

- Inconsistent / slow network connection
- Underperforming hardware
- Multiple users syncing at the same time, especially on BIM 360
- Links or nested links not available on BIM 360
- Current View has complex geometry or 3D view
- Multiple views / sheets open
- Obese model
- Un-hygienic Revit file
- Corrupted model, annotation, view overrides
- Large gap between syncs

RECOMMENDED THERAPIES

- Upgrade hardware
- Review Revit settings (Worksharing frequency)
- Do not save / sync over WIFI or VPN
- Inconsistent network connection
- Use an IM to communicate start / end of syncs
- Host links on BIM 360 and not link models from local sources
- Close all sheets and views; switch to a simple view
- Reduce file size
- Perform a model cleanse / detox
- Increase frequency of syncing
- Reload latest prior to syncing
- Audit model, compact

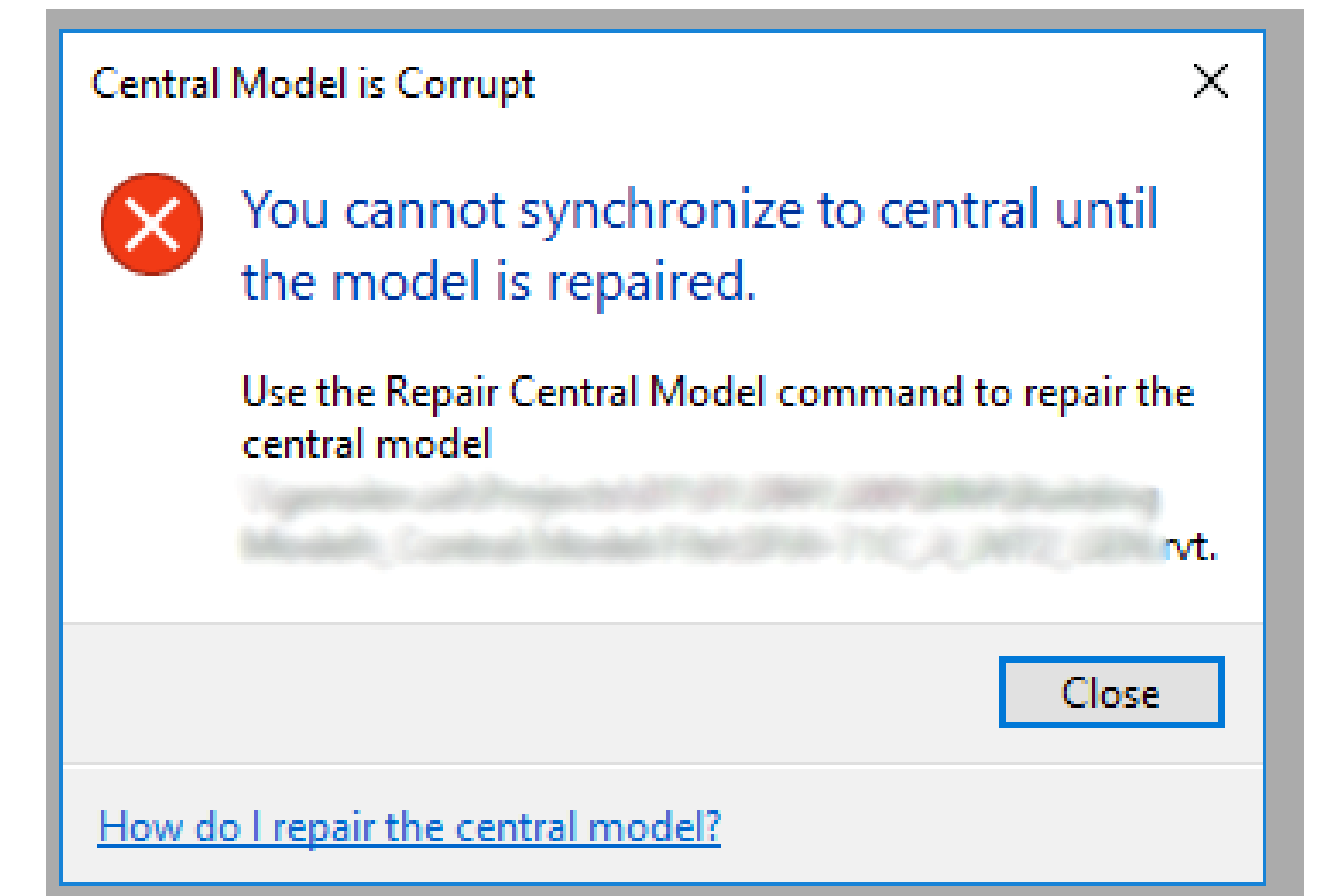
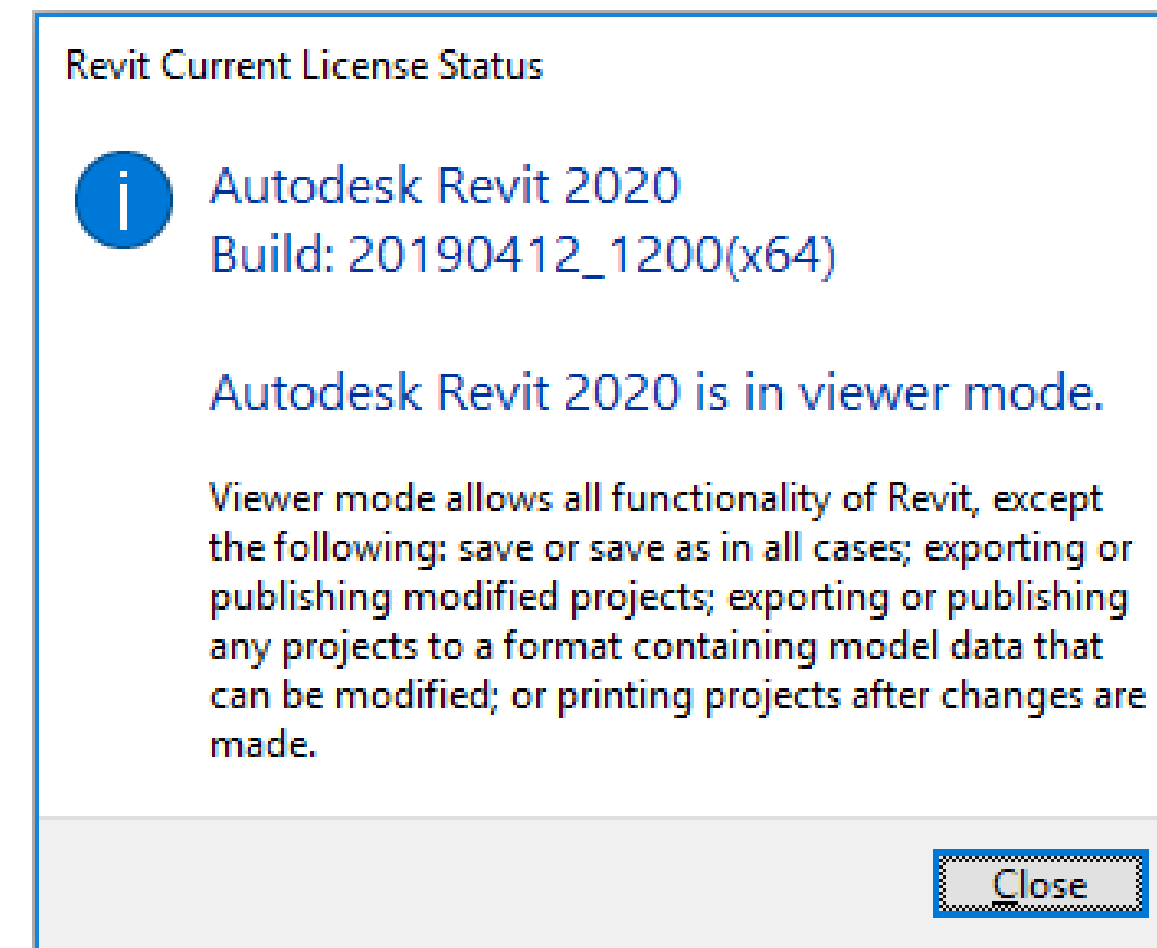
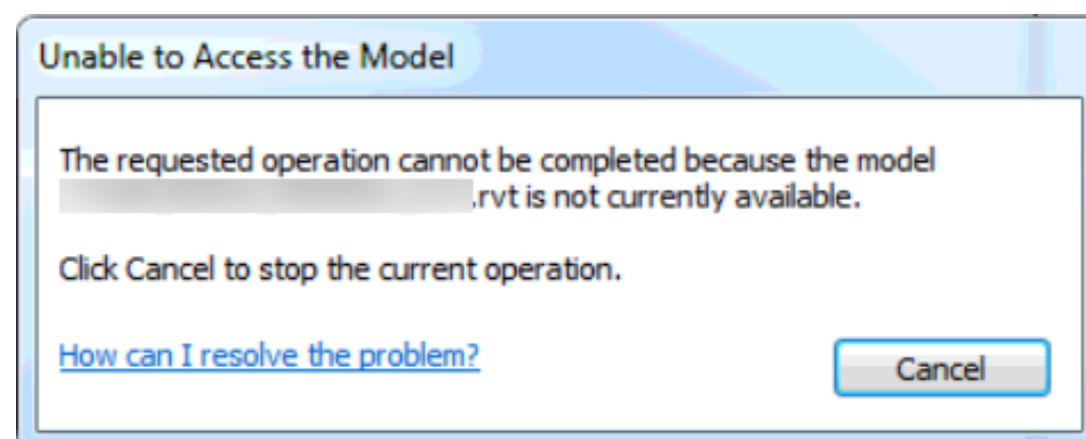
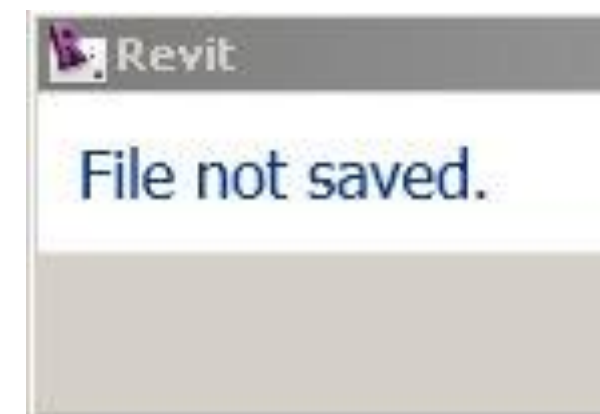
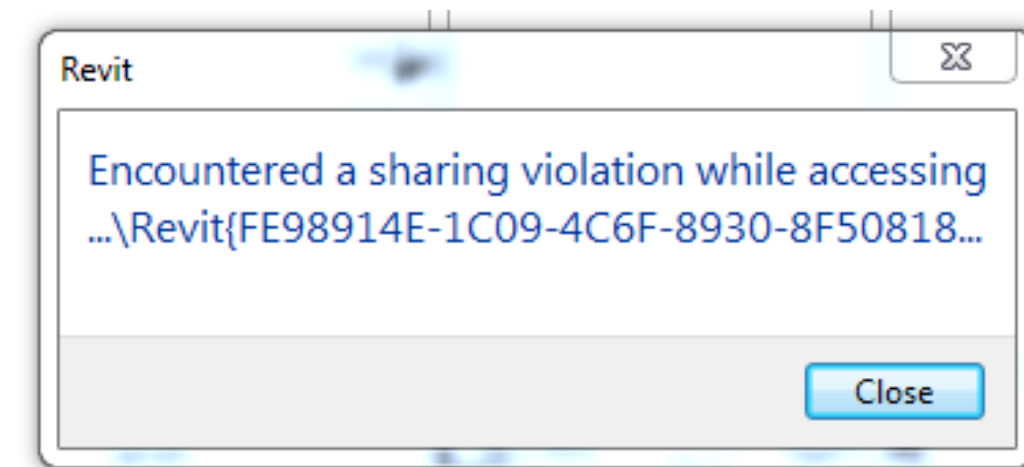
SAVING / SYNCING (WARNINGS)

DIAGNOSIS

- File not saved
- Revit is in viewer mode
- Model is not currently available
- You cannot synchronize until...
- Central model has been copied or moved...
- Encountered a sharing violation...

RECOMMENDED THERAPIES

- Clear %TEMP% folder, empty Recycle Bin
- Install latest Revit updates
- Read the warnings
- Repair model
- Detach from central, save as new central, create new locals
- Set up antivirus exclusions



SAVING / SYNCING (CRASH)

DIAGNOSIS

- Revit has stopped working
- A required resource was unavailable
- Corrupt / missing add-in

RECOMMENDED THERAPIES

- Install latest Revit, OS updates
- Clear %TEMP% folder, empty Recycle Bin
- Temporarily disable add-ins, reinstall Site Designer
- Increase RAM
- ElumTools installed?
- Temporarily unload all add-ins
- Reload one at a time to test

SAVING / SYNCING (FAILURE)

DIAGNOSIS

- Inability to save / sync

RECOMMENDED THERAPIES

- Install latest Revit updates
- Clear %TEMP% folder, empty Recycle Bin
- Check for corrupt family; overwrite
- Check journal for clues

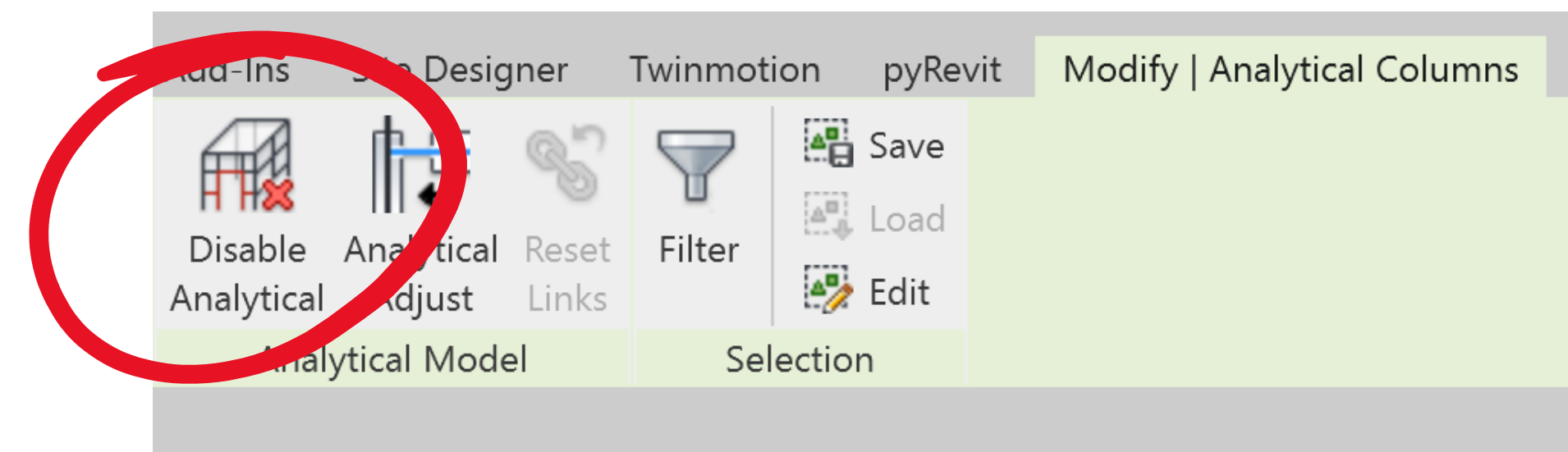
REGULAR USE (SLOW)

DIAGNOSIS

- Obese models
- No. of links and link sizes
- Slow to model MEP system
- Structural analytical model

RECOMMENDED THERAPIES

- Break apart model
- Perform full model cleanse
- Reduce number of loaded links
- Poorly built families; check for incorrect connector flows
- Analytical model – If you're not using it, disable it



MEP

Are connectors linked?
Flow directions?

Modify | Connector Element Activate Dimensions

Properties

Multiple Families Selected

Connector Element (2) Edit Type

Dimensions

Radius	0' 1"
--------	-------

Mechanical

K Coefficient	0.000000
Flow Factor	0.000000
Flow Configuration	Calculated
Flow Direction	In
Loss Method	Not Defined
Allow Slope Adjustments	<input type="checkbox"/>
System Classification	Hydronic Supply

Mechanical - Flow

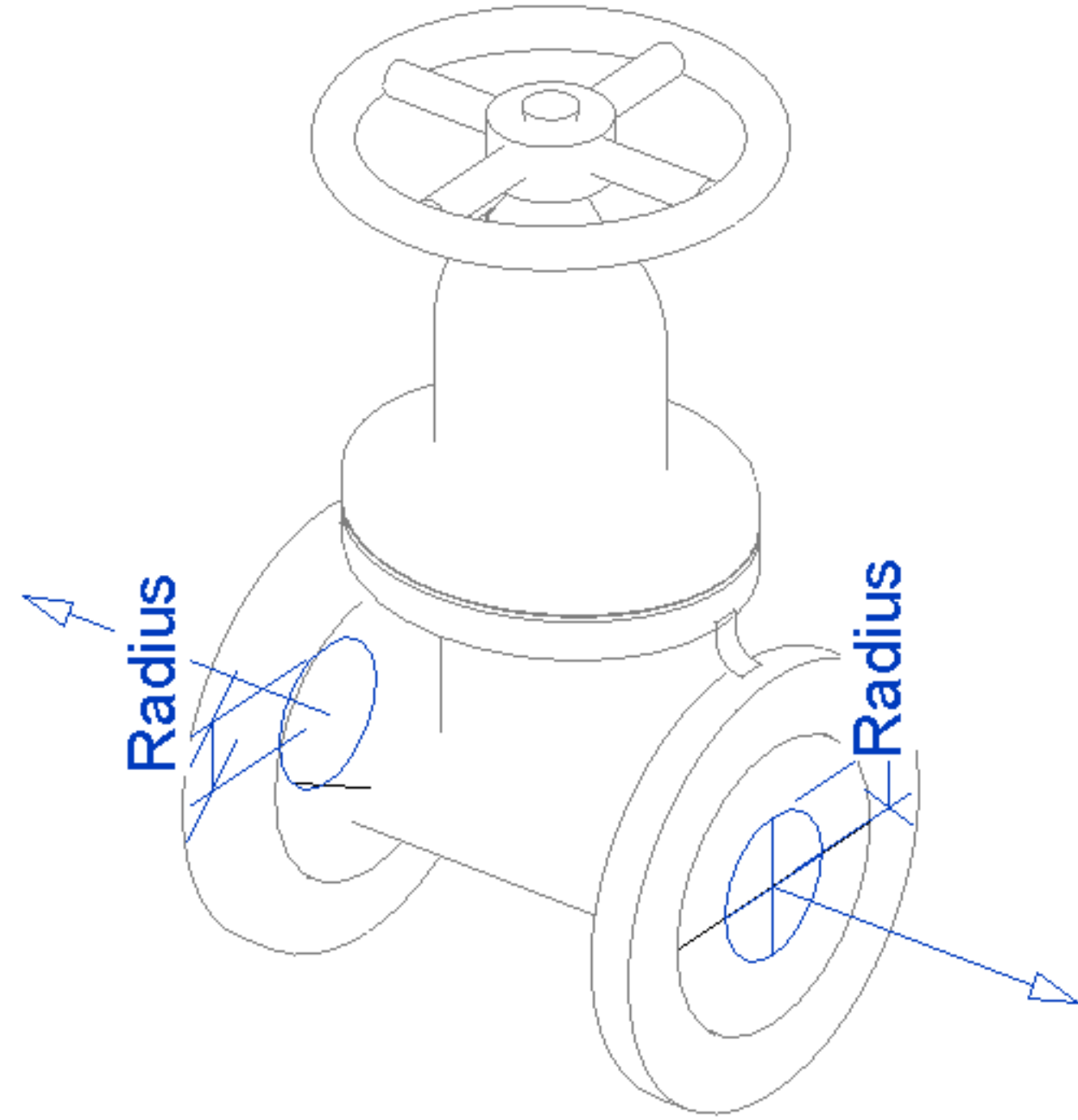
Flow	0.000 GPM
Pressure Drop	0.000 psi

[Properties help](#) Apply

Project Browser - Gate Valve - Resilient Wedge - Hand Wheel...

- Views (all)
- Sheets (all)
- Families
- Groups
- Revit Links

1/8" = 1'-0"



MEP

Poorly designed families / connectors – Conflicting flow directions

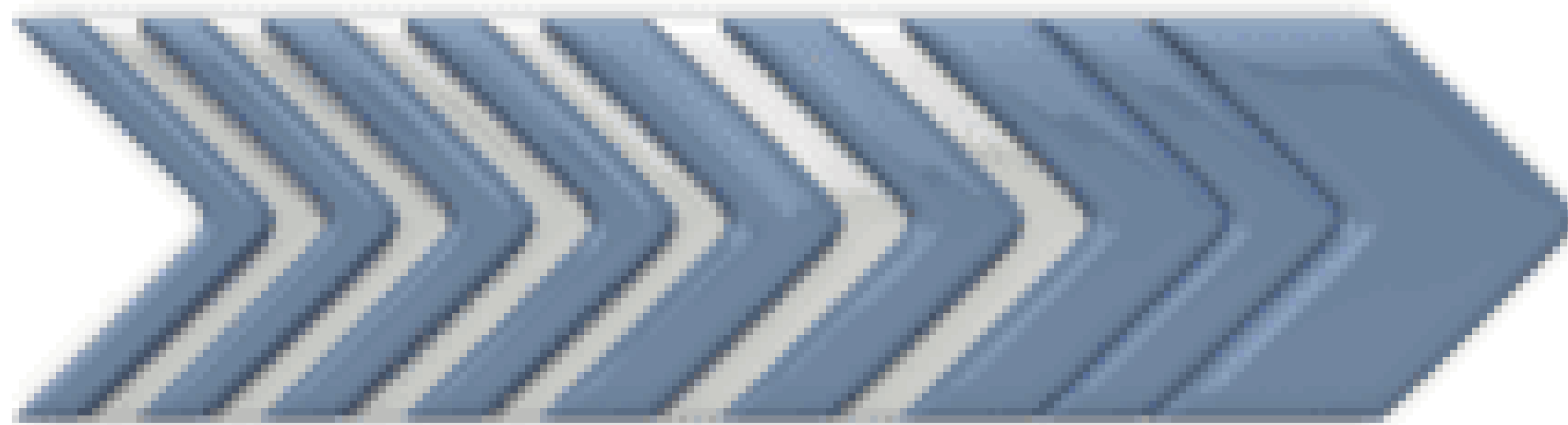


MEP

Correct your MEP connectors

“Perfecting the System for Revit” ~ David Butts

<https://www.autodesk.com/autodesk-university/class/Perfecting-System-Revit-2017>



REGULAR USE (WARNINGS)

DIAGNOSIS

- Cannot edit family
- Overlapping room separation lines & walls
- Overlapping floors
- Duplicate instances
- Slightly off axis



RECOMMENDED THERAPIES

- Reload & overwrite the family to remove corruption
- Identify other possible corrupt families
- Delete the family – worst case scenario
- Remove duplicates / overlaps
- Remove duplicates / overlaps
- Remove duplicates / overlaps
- Correct off axis lines (if possible)

REGULAR USE (WARNINGS)

Autodesk Revit 2019

Warnings

- ☐ Highlighted walls are attached to, but miss, the highlighted targets.
- ☐ Room Tag is outside of its Room. Enable Leader or move Room Tag within its Room.
- ☐ Multiple Rooms are in the same enclosed region. The correct area and perimeter will be assigned to one Room and the others will display "Redundant Room." You should separate the regions, delete the extra Rooms, or move them into different regions.
- ☐ Highlighted inserts overlap with other inserts or completely miss their hosts.
- ☐ Design Option "Main Model" cannot reference Design Option "Cores : Option 1_Issued 19/06/25".
- ☐ Line is slightly off axis and may cause inaccuracies.
- ☐ Room separation line is slightly off axis and may cause inaccuracies.
- ☐ Line in Sketch is slightly off axis and may cause inaccuracies.
- ☐ Element will be detached from its associated plane
- ☐ Highlighted room separation lines overlap. One of them may be ignored when

Show

More Info

Delete Checked...

To highlight an element in the graphics window, select it in this tree.

Most standard view commands work without exiting this dialog.

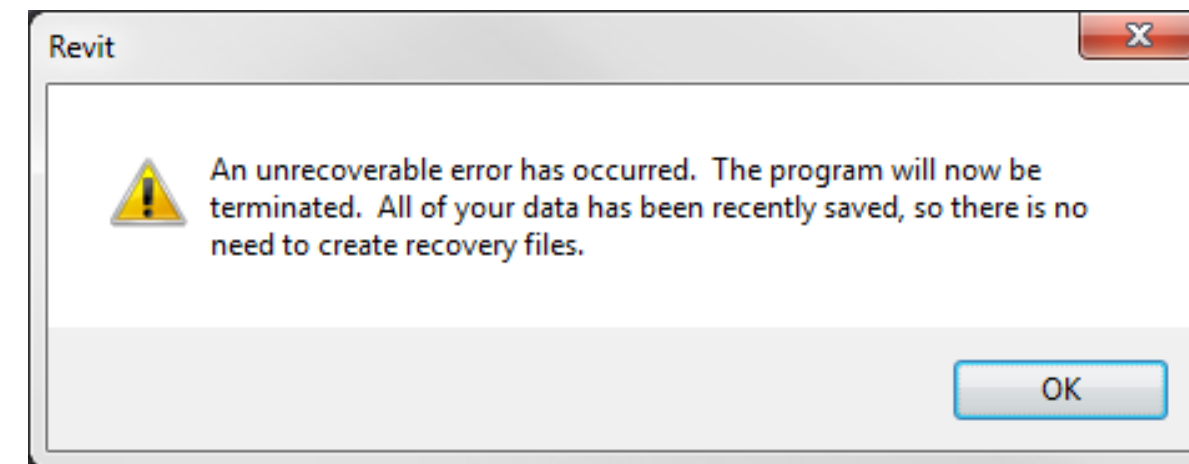
Export...

Close

REGULAR USE (CRASH)

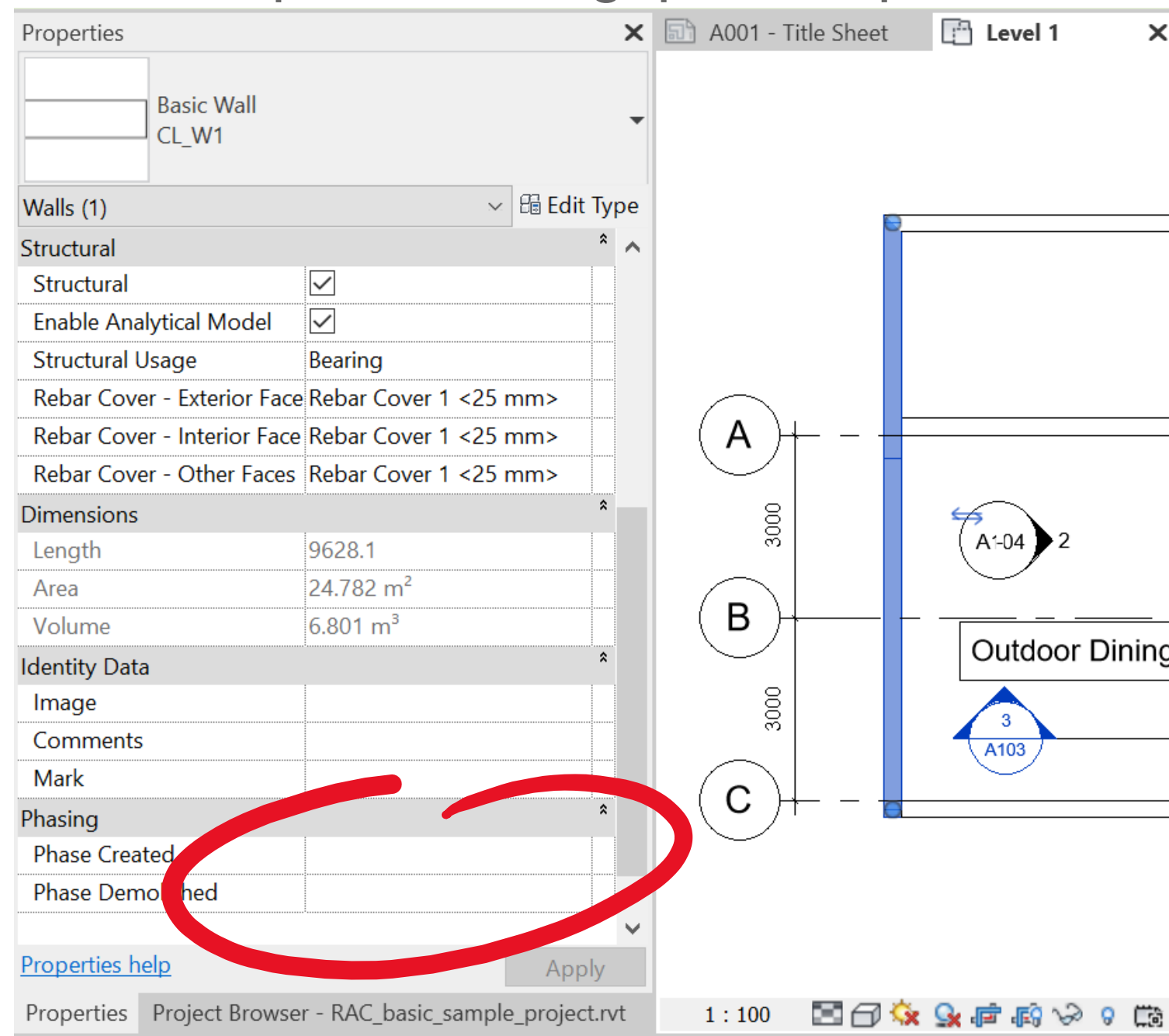
DIAGNOSIS

- Cannot open a view
- Cannot model pipe
- Corrupt or missing phase / phase settings



RECOMMENDED THERAPIES

- View is corrupt and must be recreated
- Corrupt family / wall within view is corrupt
- Typically related to a corrupt MEP fitting family
- Transfer Project Settings & overwrite Phases



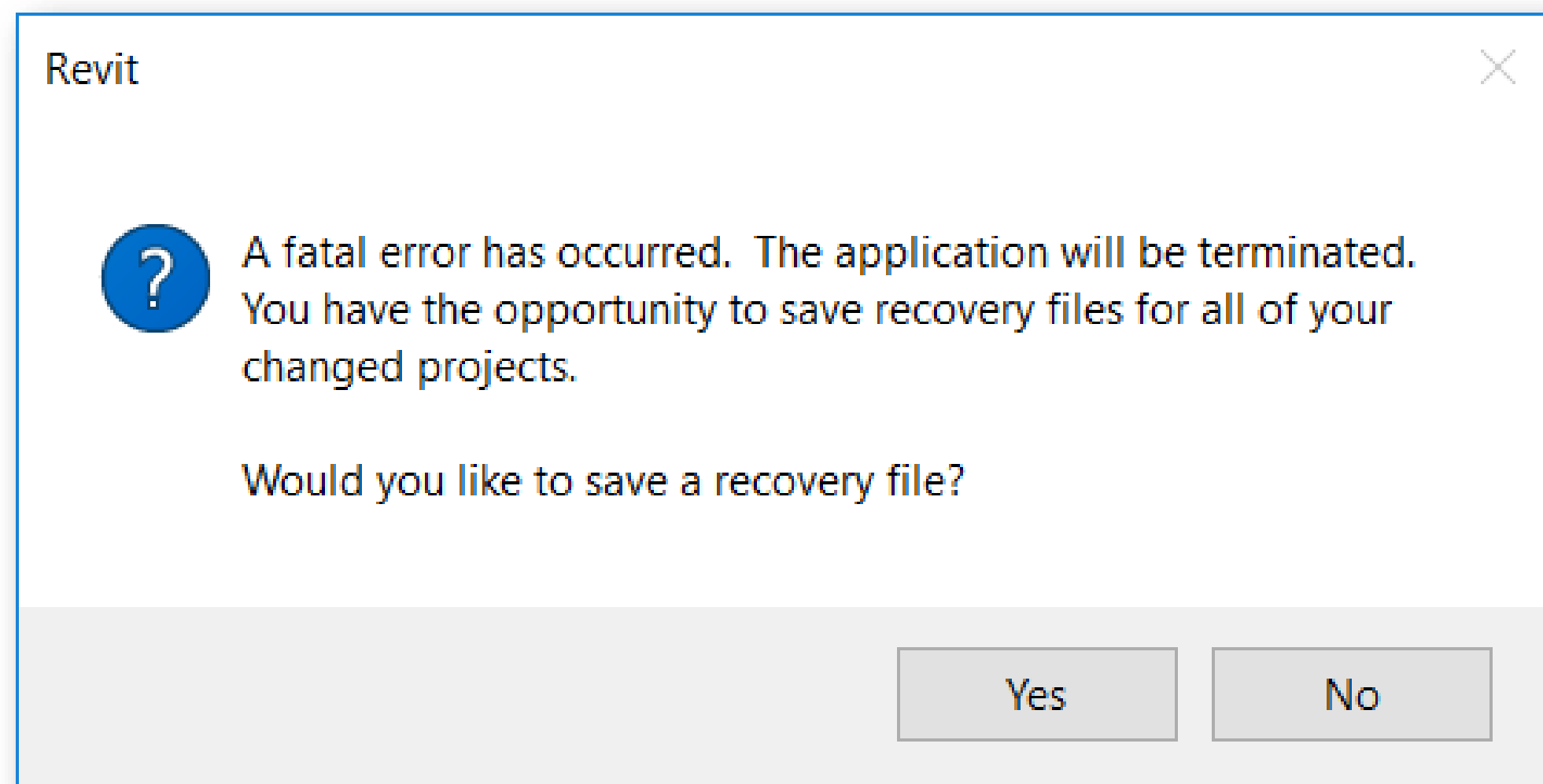
REGULAR USE (FAILURE)

DIAGNOSIS

- Cannot edit family
- Cannot open a view

RECOMMENDED THERAPIES

- Reload & overwrite the family to remove corruption
- Identify other possible corrupt families
- Delete the family – worst case scenario
- Install latest graphic card updates
- Corrupt view / phase
- Unload all links
- Check journal for clues



JOURNAL

A simple .TXT file

- Keeps a running history of commands initiated during a session
- Great tool for analyzing crashes
 - Contains system info, graphics card drivers, OS builds, printers, and more

Technically, it's a VBScript (.VBS) file

- Can be used to recreate geometry

JOURNAL



“I already have the latest updates installed.”

```
1 ' 0:< Initial VM: Avail 134213234 MB
2 ' 0:< GUI Resource Usage GDI: Avail
3 'C 11-Nov-2019 07:17:56.574; 0:< s
4 ● ' Build: 20180518_1600(x64)
5 ● ' Branch: RELEASE_2019
6 ● ' Release: 2019.0.1
7 Dim Jrn
8 Set Jrn = CrsJournalScript
```


JOURNAL

“I updated my system and have the latest drivers installed.”

```
MB, Used +1 -> 497 MB, Peak +1 -> 498 MB
517 ● ' 0:< OPERATING SYSTEM INFORMATION:
518 ● ' 0:<      BuildNumber : 18362
519 ' 0:<      BuildType : Multiprocessor Free
520 ● ' 0:<      Caption : Microsoft Windows 10 Pro
521 ' 0:<      CodeSet : 1252

589 ' 0:<      AdapterRAM : -1048576
590 ● ' 0:<      Caption : NVIDIA Quadro M4000
591 ● ' 0:<      Description : NVIDIA Quadro M4000
592 ● ' 0:<      DriverDate : 20180316000000.000000-000
593 ● ' 0:<      DriverVersion : 23.21.13.9125
594 ' 0:<      Monochrome : 0
```

JOURNAL

Start from the bottom and work your way up

```
' 4:< System exception in tweakGRepsInView
' 4:< for element 991446 of class SWall
' 4:< in dbview 810789 of class DBViewPlan
' 4:< TaskDialog "A serious error has occurred. It is strongly recommended that you save your work in a new
file before continuing.
'
'Would you like to save a recovery file?"
'CommonButtons : Yes, No
'DefaultButton : Yes
' 4:< ::73:: Delta VM: Avail -6 -> 134177181 MB, Used +5 -> 1317 MB, Peak +9 -> 1321 MB; RAM: Avail +24 ->
3434 MB, Used +6 -> 1507 MB, Peak +10 -> 1511 MB
' 4:< GUI Resource Usage GDI: Avail 9115, Used 885, User: Used 466
'H 05-Nov-2019 06:26:47.828; 4:<
Jrn.Data "TaskDialogResult"
    , "A serious error has occurred. It is strongly recommended that you save your work in a new file
before continuing. " & vbLf & "" & vbLf & "Would you like to save a recovery file?", _
```

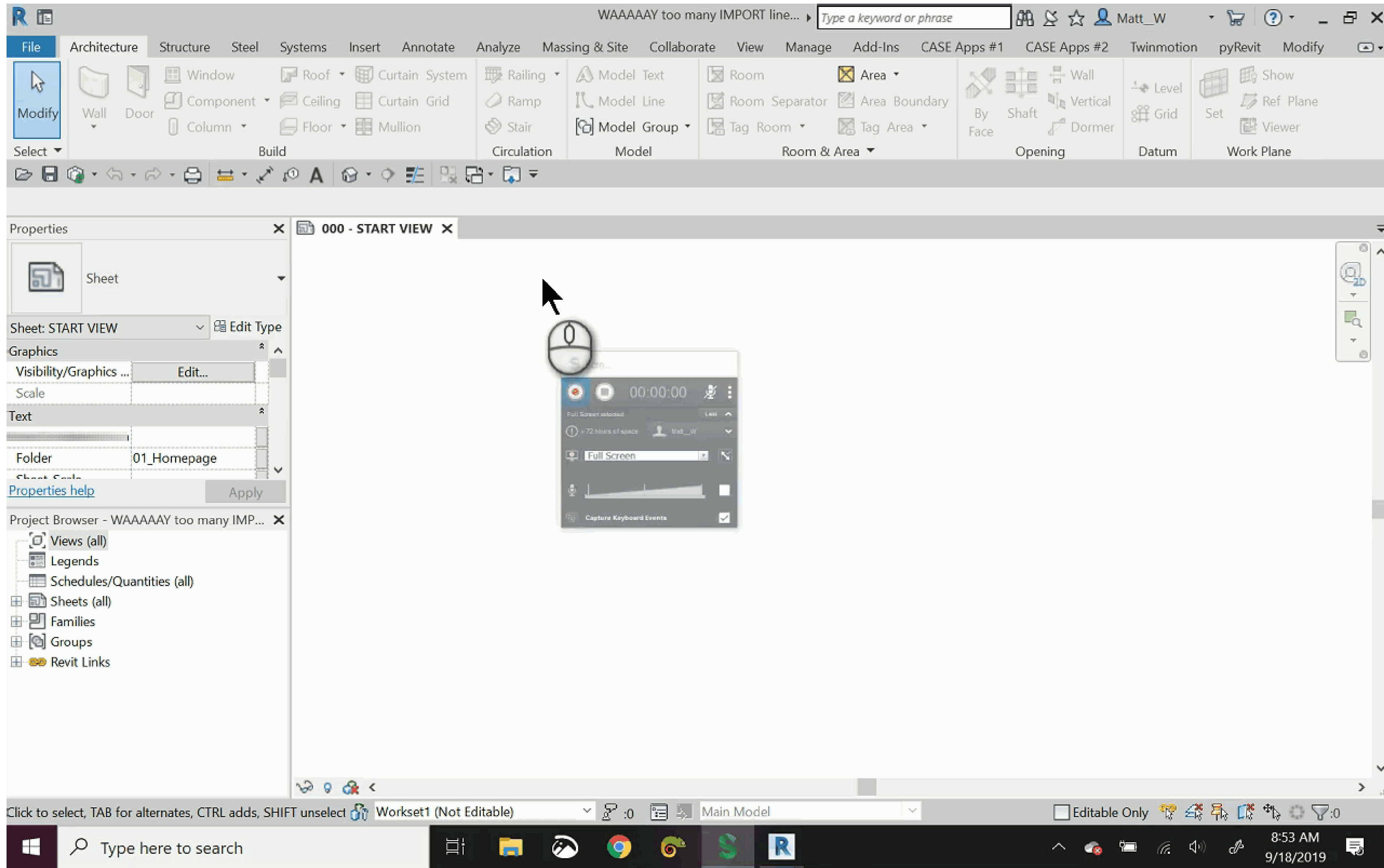
```
' 1:< DBG_WARN: failed to create message_queue named 'Session7276_P0MasterQueue'
because boost::interprocess::intermodule_singleton initialization failed: line 196
of NOBLE\ManageWorkerServices.cpp.
' 1:< Exception occurred
'C 11-Nov-2019 13:58:54.169; 1:< ExceptionCode=0xc0000005
ExceptionFlags=0x00000000 ExceptionAddress=00007FFD8014846B
' 1:< DBG 1 0 1
```

PLATFORM

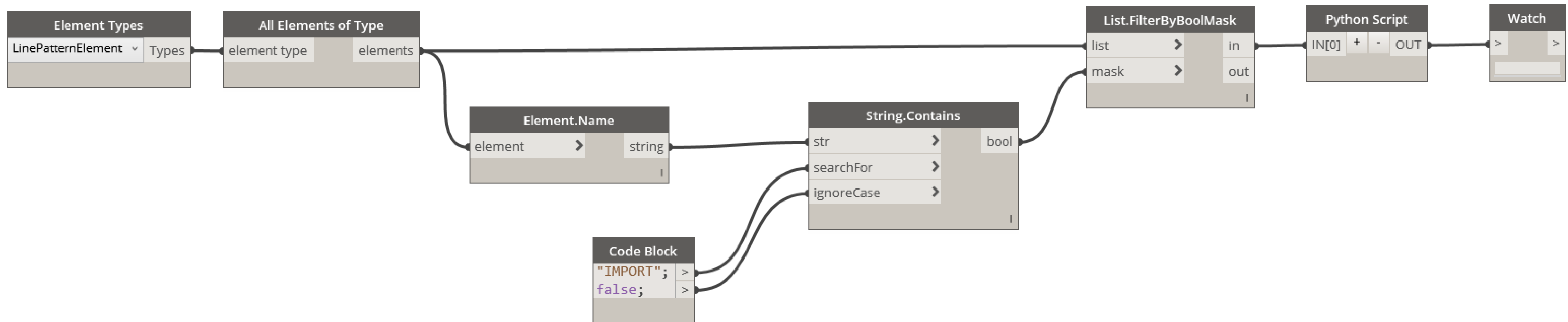
MISMATCHED REVIT BUILDS

```
' 3:< Document save history --> :
' 3:<   Revit 2015 - Preview Pre-Release 2015 (2015.000) : 20140120_1515(x64)
' 3:<   Revit 2015 2015 (2015.000) : 20140606_1530(x64)
' 3:<   Revit 2015 2015 (2015.000) : 20140223_1515(x64)
' 3:<   Revit Architecture 2015 2015 (2015.000) : 20140322_1515(x64)
' 3:<   Revit 2017 2017 (2017.000) : 20160225_1515(x64) < Initial release of Revit 2017
' 3:<   Revit 2017 2017 (2017.000) : 20160720_1515(x64) < 2017.0.2 Service Pack 2
' 3:<   Revit 2017 2017 (2017.000) : 20171027_0315(x64) < 2017.2.3
' 3:<   Revit 2017 2017 (2017.000) : 20181011_1645(x64) < 2017.2.4
' 3:<   Revit 2017 2017 (2017.000) : 20160225_1515(x64) < Initial release of Revit 2017
' 3:<   Revit 2017 2017 (2017.000) : 20161117_1200(x64) < 2017.1.1
' 3:<   Revit 2017 2017 (2017.000) : 20190507_1515(x64) < 2017.0.5 (TLS Security Update)
' 3:<   Revit 2017 2017 (2017.000) : 20190508_0315(x64) < 2017.2.5
' 3:< Document save history <--
```

Never, EVER, EVER explode DWGs

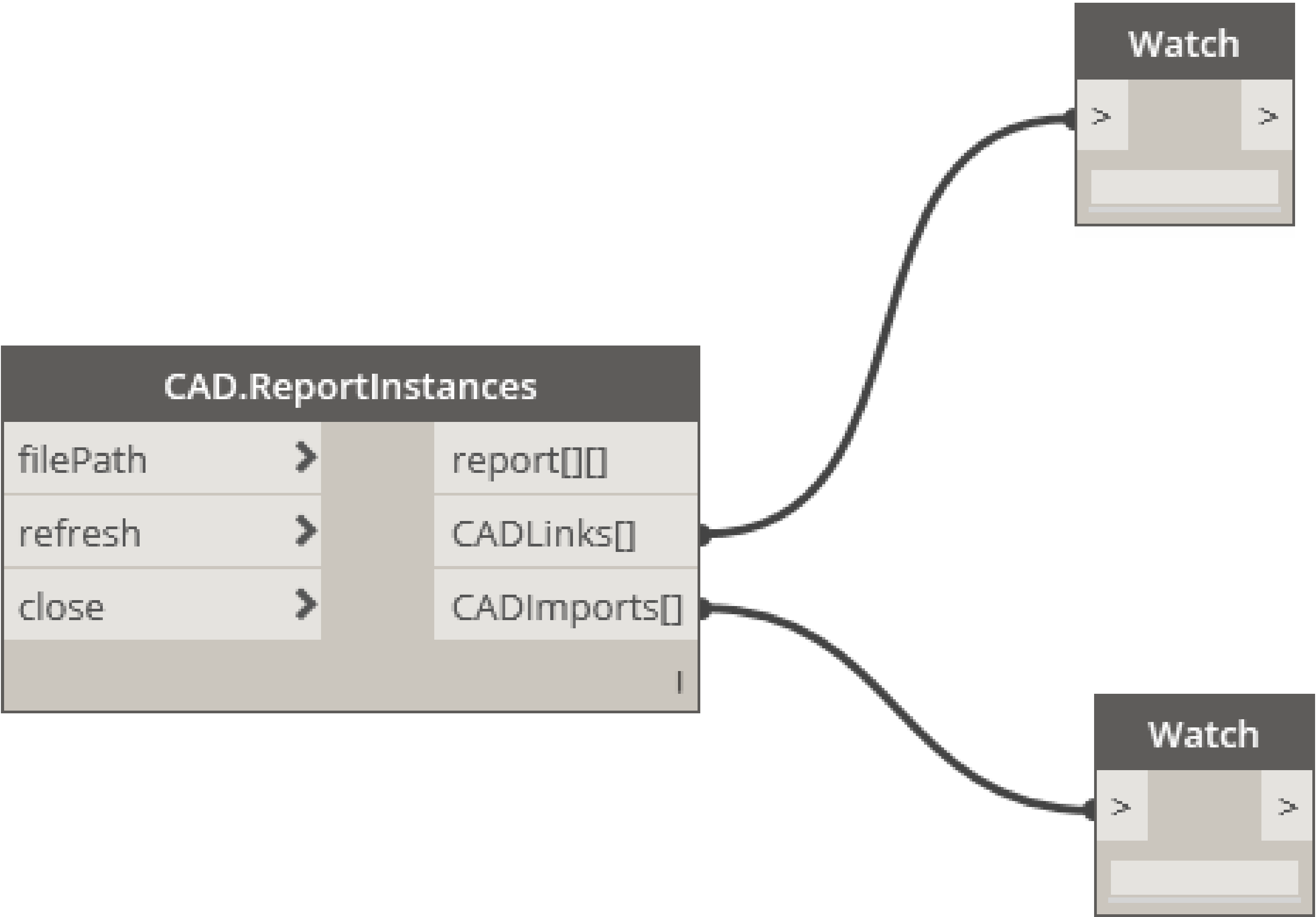


DYNAMO – REMOVE IMPORT LINE PATTERNS

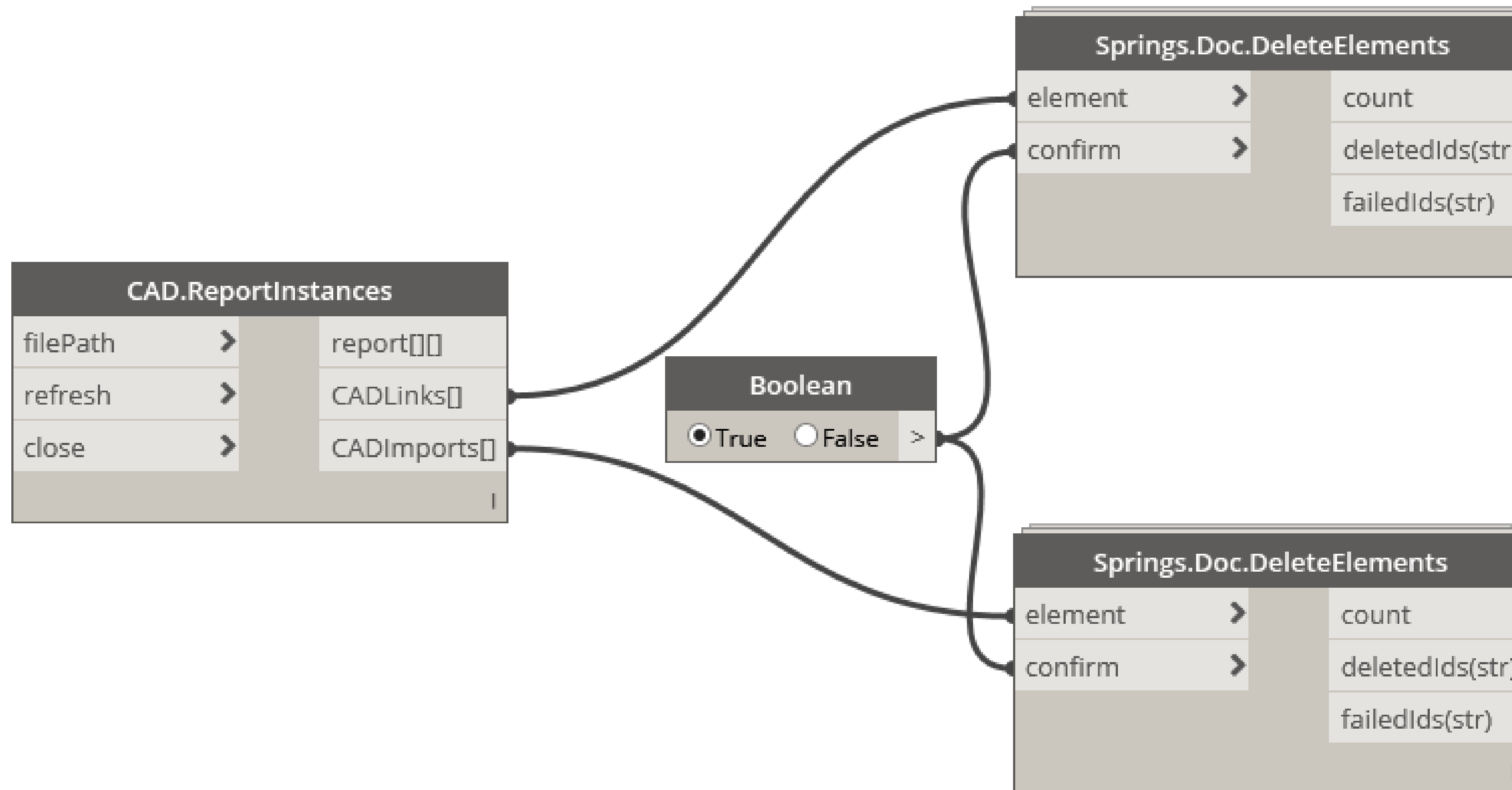


<https://archi-lab.net/delete-imported-line-patterns-using-dynamo/>

DYNAMO – LINKED / IMPORT DWG REPORT



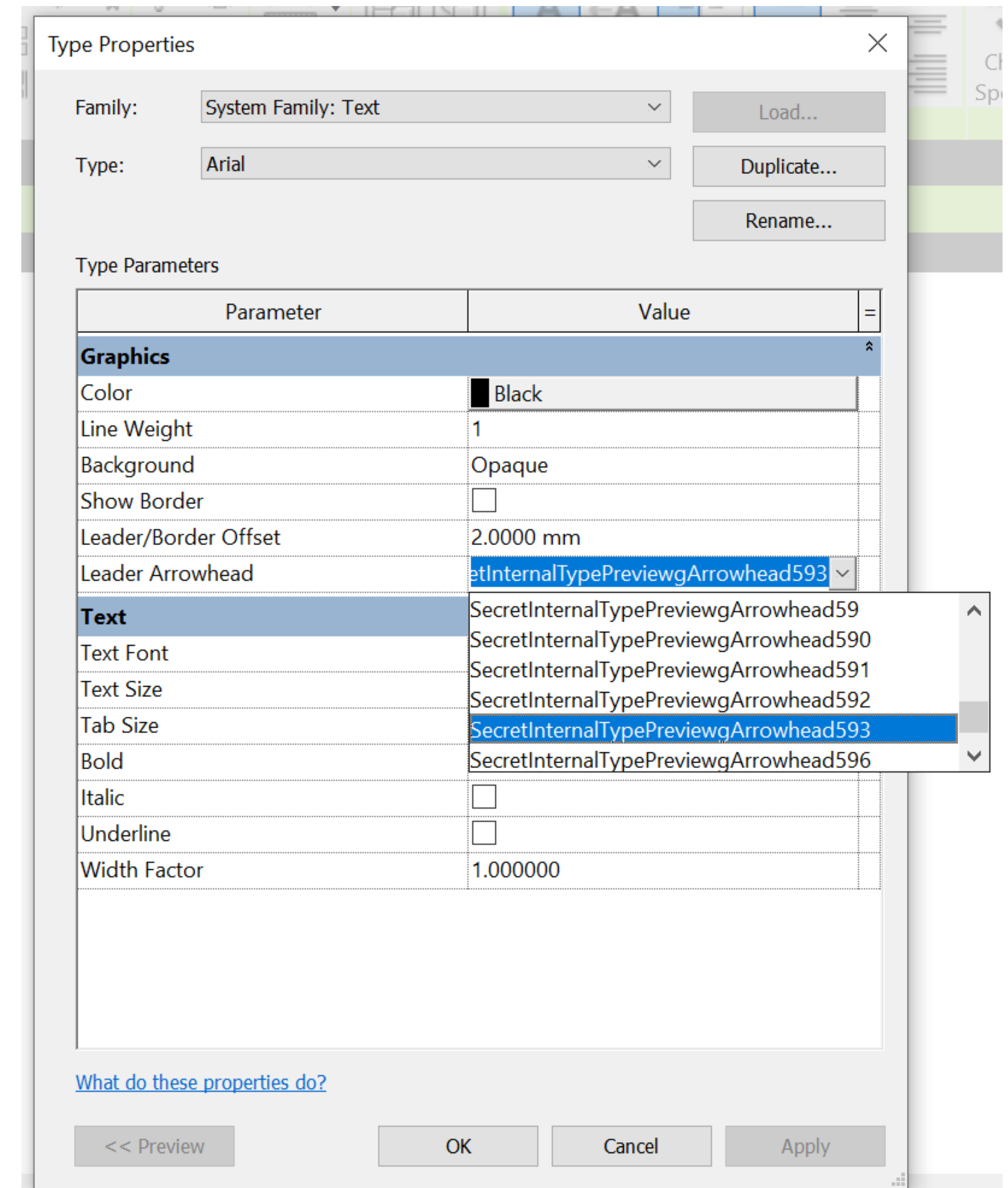
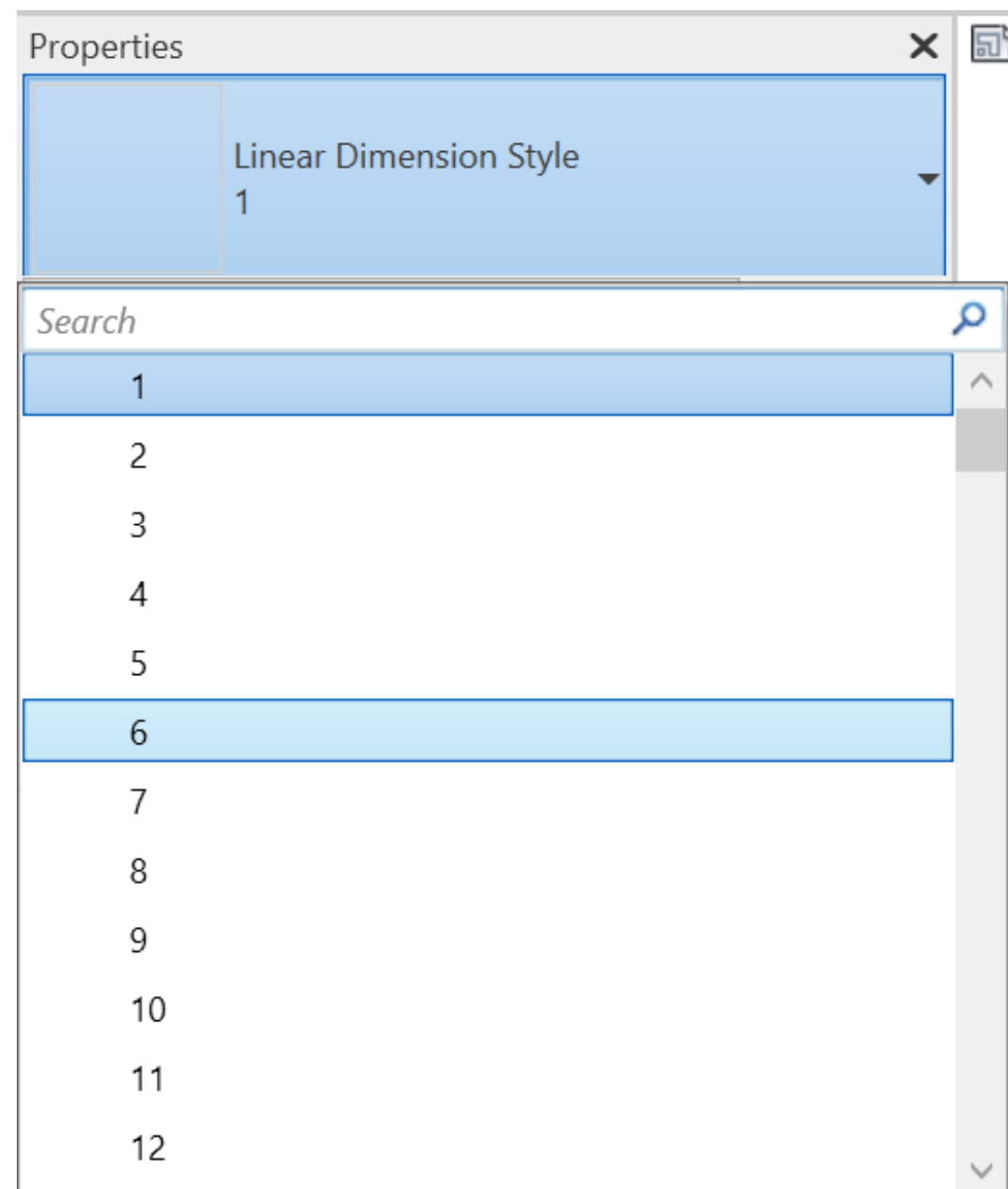
DYNAMO – DELETE ALL DWGS



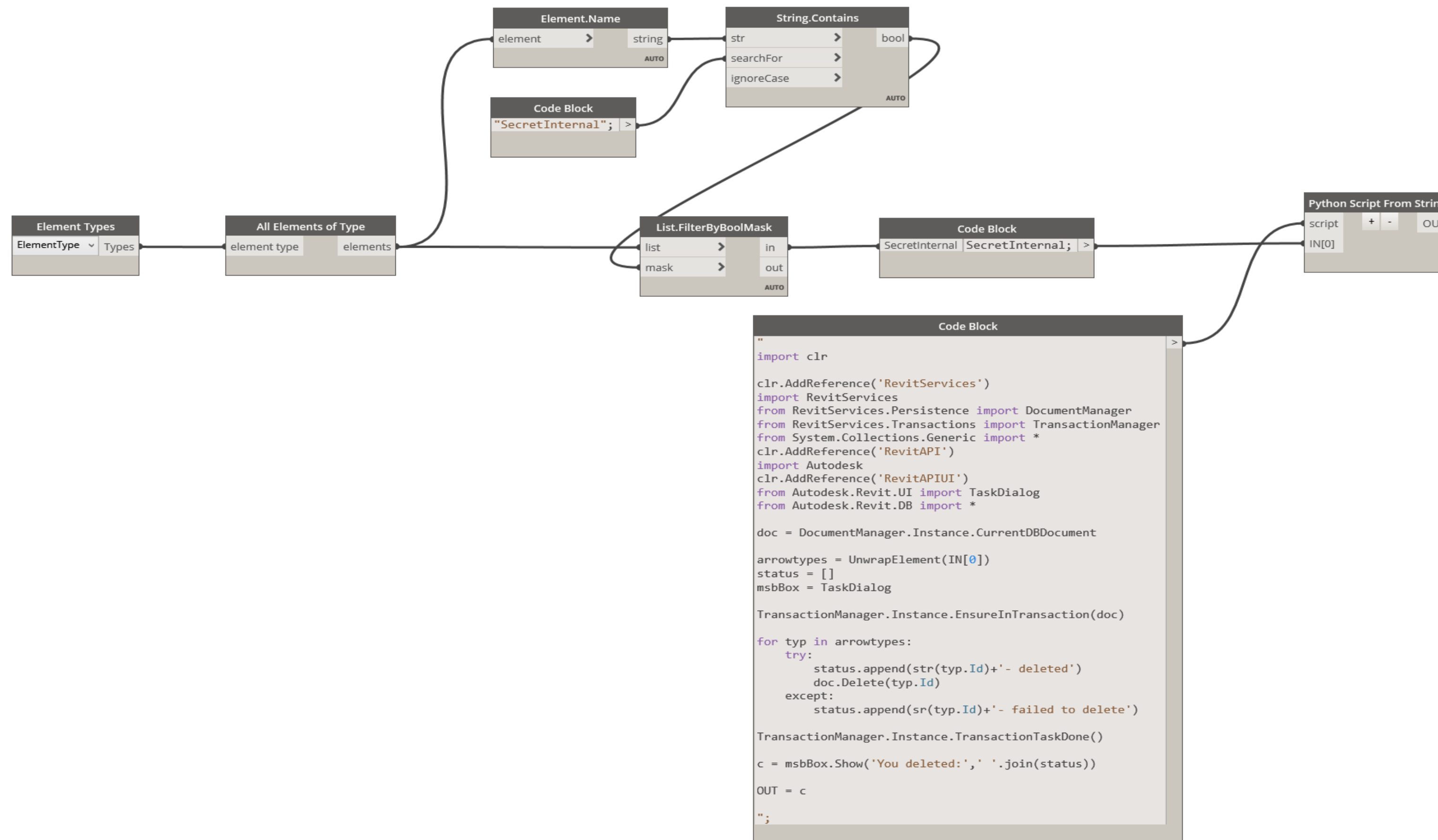
<https://forum.dynamobim.com/t/how-do-i-use-dynamo-to-locate-and-delete-imported-dwgs/13249>

Shhhh.....it's a secret InternalArrowHead

- Cannot be purged
- Not sure where they come from
- Not sure how they get into the model
- Affect dimension styles as well
- Sooooo..... What can you do about them?



Shhhh.....it's a secret InternalArrowHead



<https://forums.autodesk.com/t5/revit-mep-forum/secretinternaltypereviewgarrowhead/m-p/8198894#M54283>

MODEL FITNESS – EXERCISES

- Audit, selectively purge & compact the model
- Vet the families from outside sources
- Recreate the central model at least once a month
- Users should create new locals EVERY DAY
- Review and mitigate warnings. Don't just click OK to close the message
- Clear %TEMP% folder and empty Recycle Bin
- Install available updates

MODEL FITNESS EQUIPMENT – APPLICATIONS

Dynamo

- Try not to rely on custom packages
 - When will they be updated?
 - Will they be updated at all?
 - Harder to share

Family Size Reporter

- [Free on the Autodesk App Store](#)

pyRevit

- [Free / Open-source](#)

Project Sweeper

- [\\$2 / year, available on the Autodesk App Store](#)

Revit Lookup

- [Free, written by Jeremy Tammik](#)

MODEL FITNESS EQUIPMENT – FAMILY SIZE REPORTER

Family Reporter v2.1.3

Show Table View

Currently Selected: Miele MasterCool KF 1911 Vi

Open Family

Delete Selected Family

Purge CAD Styles

Delete Checked Imports

M_Circular Handrail <316kB, 0x>

M_Slab Edge-Thickened <316kB, 0x>

M_Fascia-Flat <316kB, 0x>

M_Dimension Lumber-Profile <316kB, 0x>

Cable Profile <324kB, 0x>

Property Line Tag <316kB, 0x>

M_Room Tag <320kB, 0x>

M_Section Tail - Filled <316kB, 0x>

M_Section Head - No Arrow <312kB, 0x>

M_Section Tail - Filled Horizontal <316kB, 0x>

M_Section Head - Filled <320kB, 0x>

▸ M_Wind Power Generator <468kB, 3x>

▸ Miele Tumble Dryer T 7944 C <756kB, 1x>

▾ Miele MasterCool KF 1911 Vi <892kB, 1x>

▾ F 1471 Vi <700kB, 0x>

▾ KWT 4154 UG-1 <576kB, 0x>

▾ FN 9752 i <432kB, 0x>

Section Tail - Upgrade <312kB, 0x>

Section Tail - Upgrade <312kB, 0x>

Section Tail - Upgrade <312kB, 0x>

Section Tail - Upgrade <312kB, 0x>

Wine Bottles <368kB, 1x>

▸ Vase (3)-with Flower <432kB, 1x>

▸ Miele Built-in Rangehood DA 2210 <544kB, 1x>

▸ Miele Oven H 5681 BP <584kB, 1x>

▸ Miele Built-in Microwave M 8260-2 <516kB, 1x>

M_Spot Elevation - Target Filled <316kB, 0x>

M_L-Angle-I-Column <360kB, 2x>

▸ M_Concrete-Round-Column with Drop Caps <508kB, 1x>

M_Pile-Steel Pipe <348kB, 11x>

▸ M_Pile Cap-600 Pile <404kB, 11x>

▸ M_Support - Metal - Circular <396kB, 0x>

A1 metric <400kB, 6x>

M_View Reference <312kB, 0x>

M_View Title <312kB, 0x>

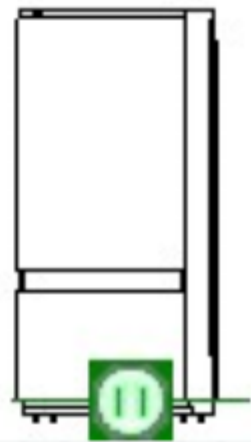
M_Window Tag <316kB, 0x>

▸ Single Window <452kB, 15x>

Expand Tree

Miele MasterCool KF 1911 Vi

Property	Value
Size In Kb	892
Number Of Instance	1
Project Category	Specialty Equipment
Last Updated	11/10/2019 6:35:15 PM
UID	89b7d9e7-00a9-45d9-849
Parent Name	RAC_basic_sample_project
Parent UID	



Family Parameters

Property	Value	Type	Parameter Type
Constraints			
Dimensions			
Round_Connector_Dime	Use Diameter	system	
Mechanical			
Part_Type	Normal	system	
Identity Data			
Other			
Work Plane-Based	No	system	Yes/No
Always vertical	Yes	system	Yes/No
Cut with Voids When Lo	No	system	Yes/No
Shared	No	system	Yes/No
Room Calculation Point	No	system	Yes/No

Number of User-Defined Types: 1

Property	Value	Type	Parameter Type
Miele Fridge/Freezer KF 1911 Vi			
Voltage	230	custom	Text
URL	www.miele.com.au	system	URL
Power connection point	No	custom	Yes/No

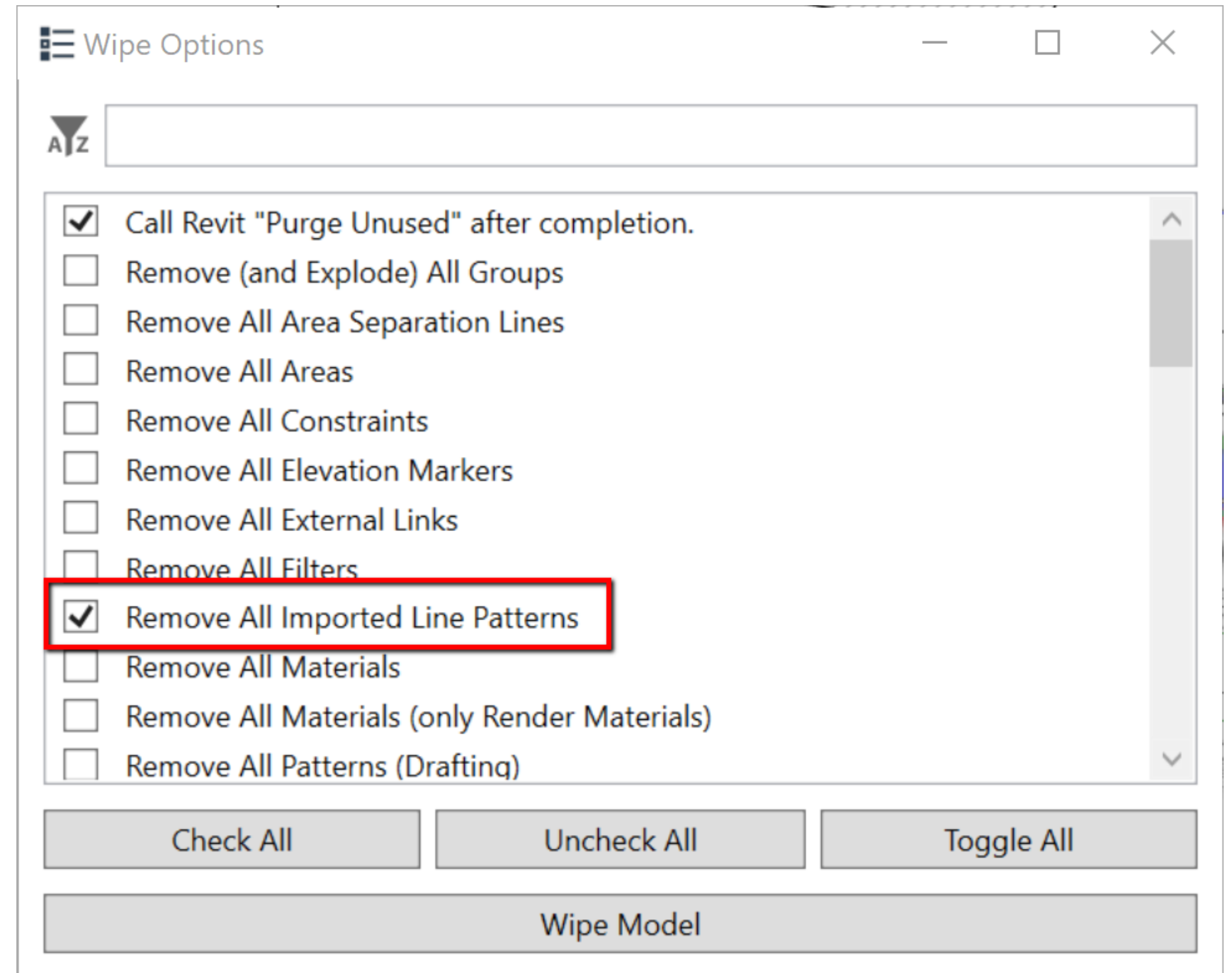
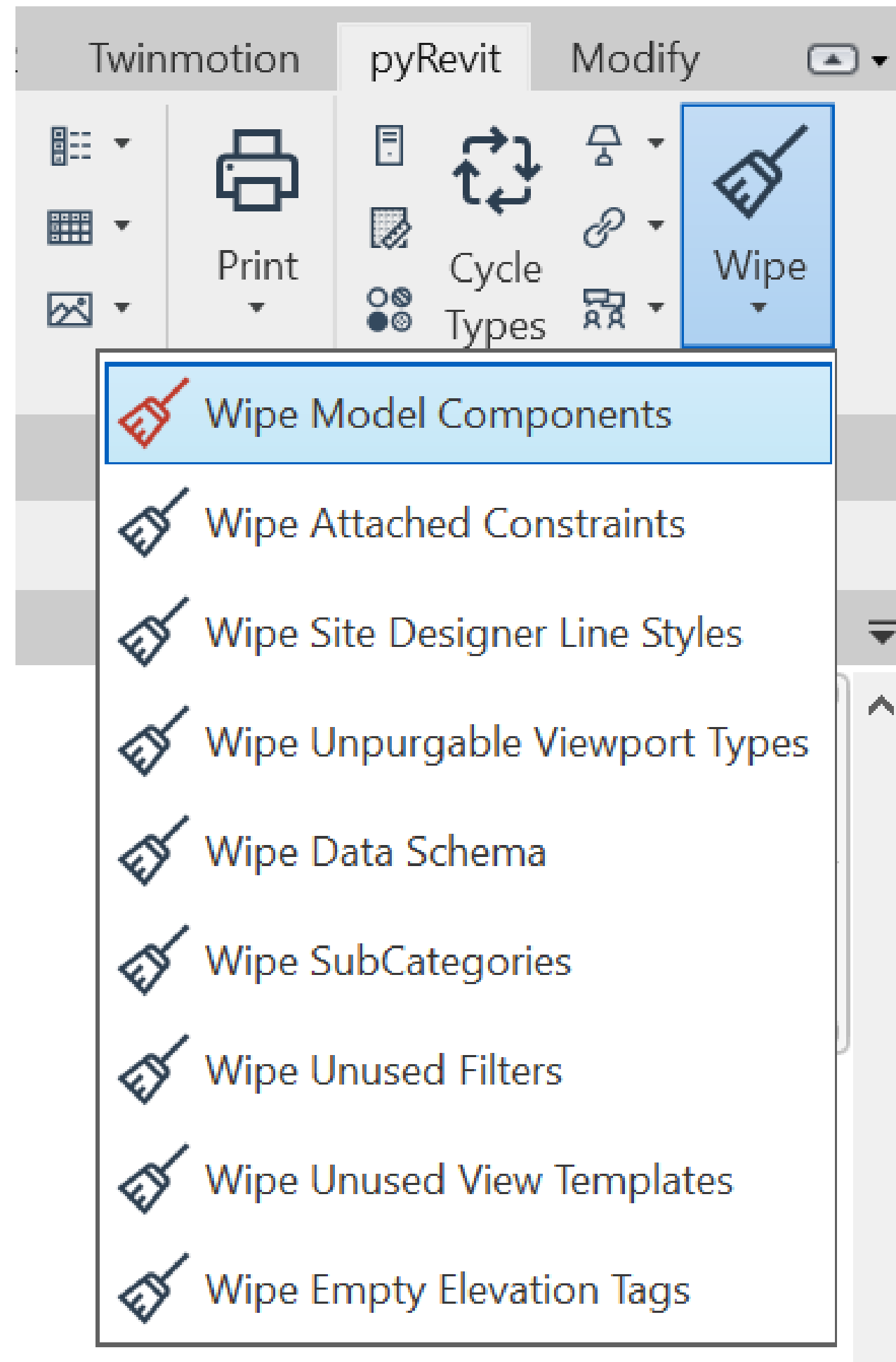
Wine Bottles

⚙️

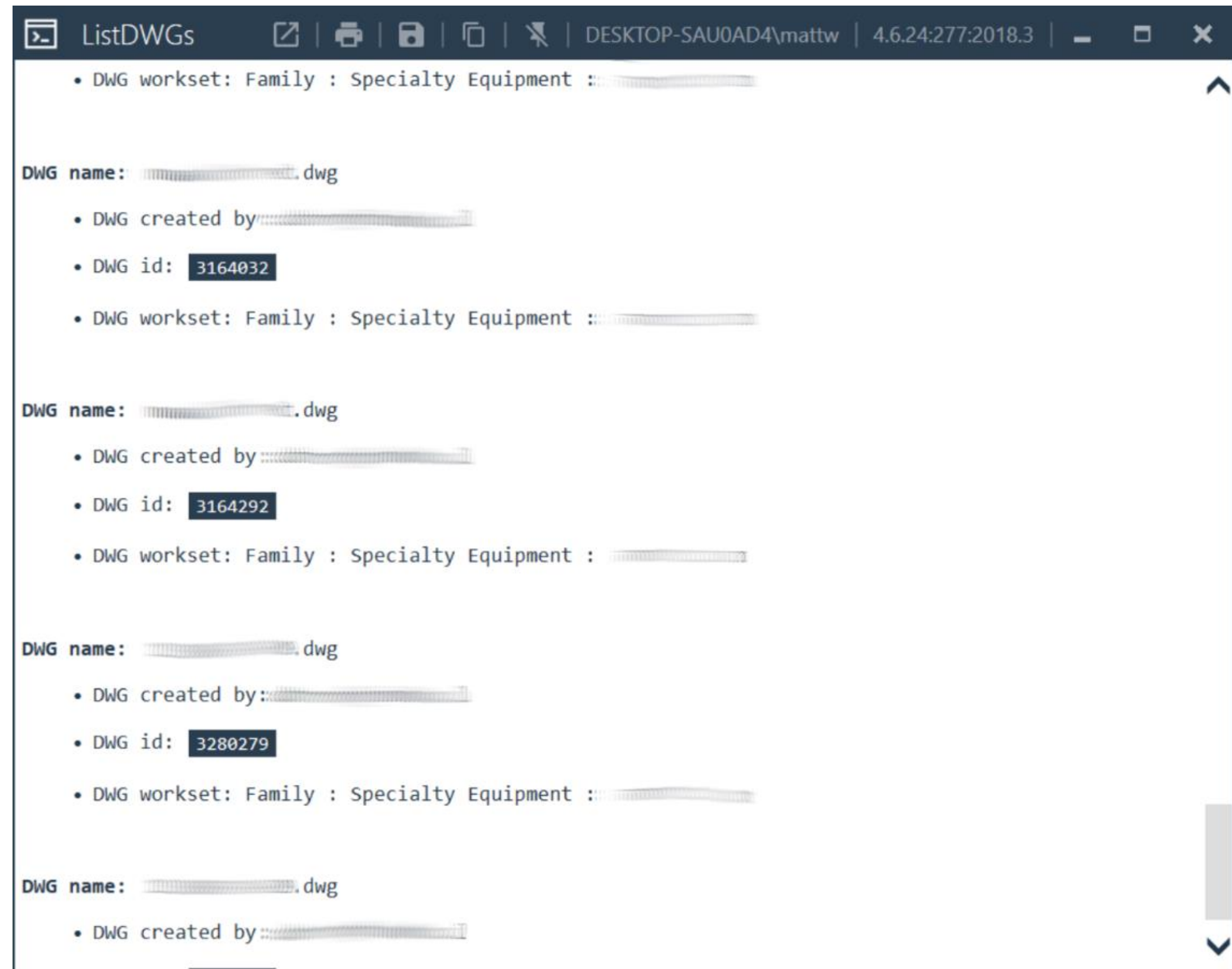
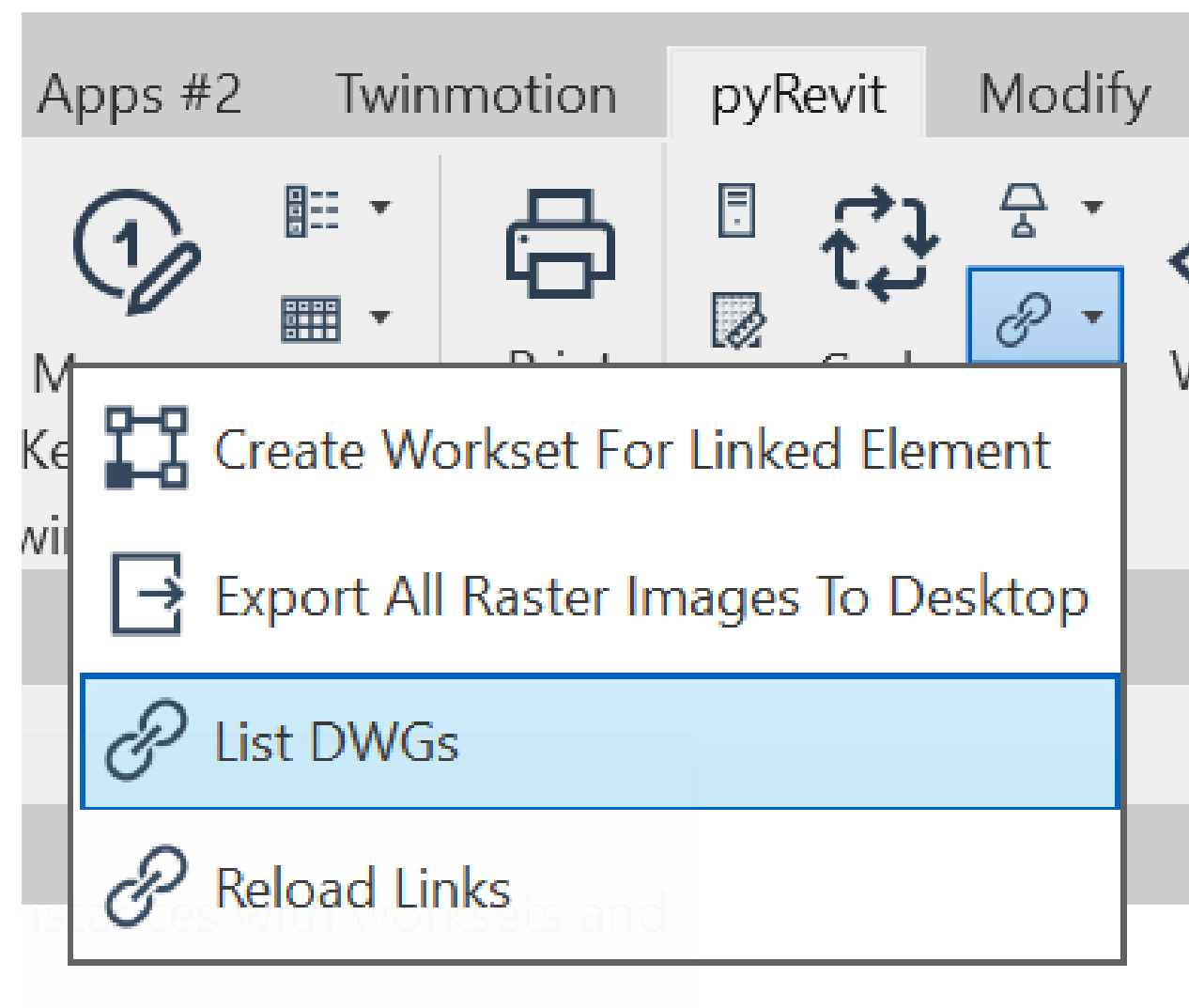
Cancel

Close

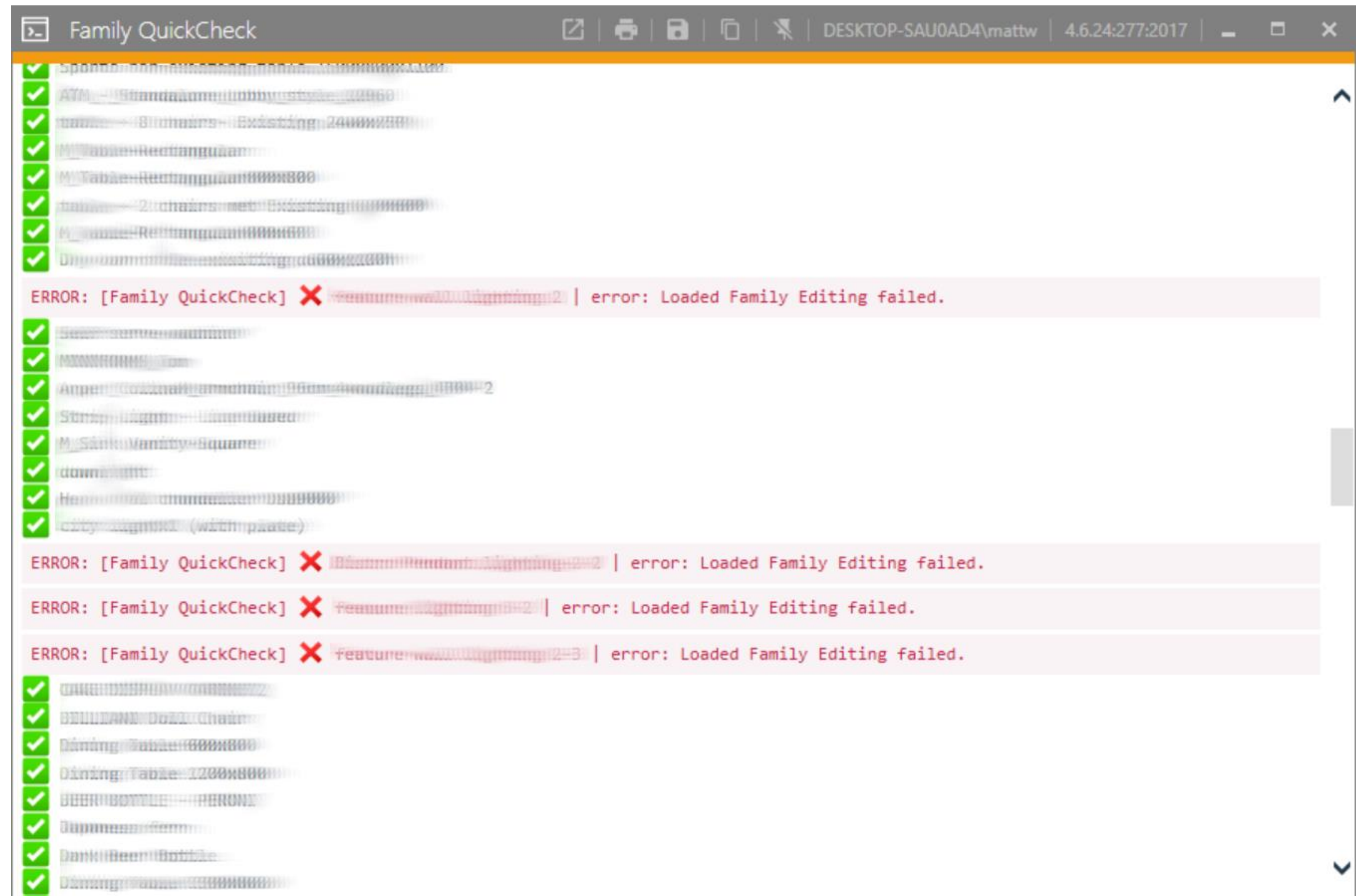
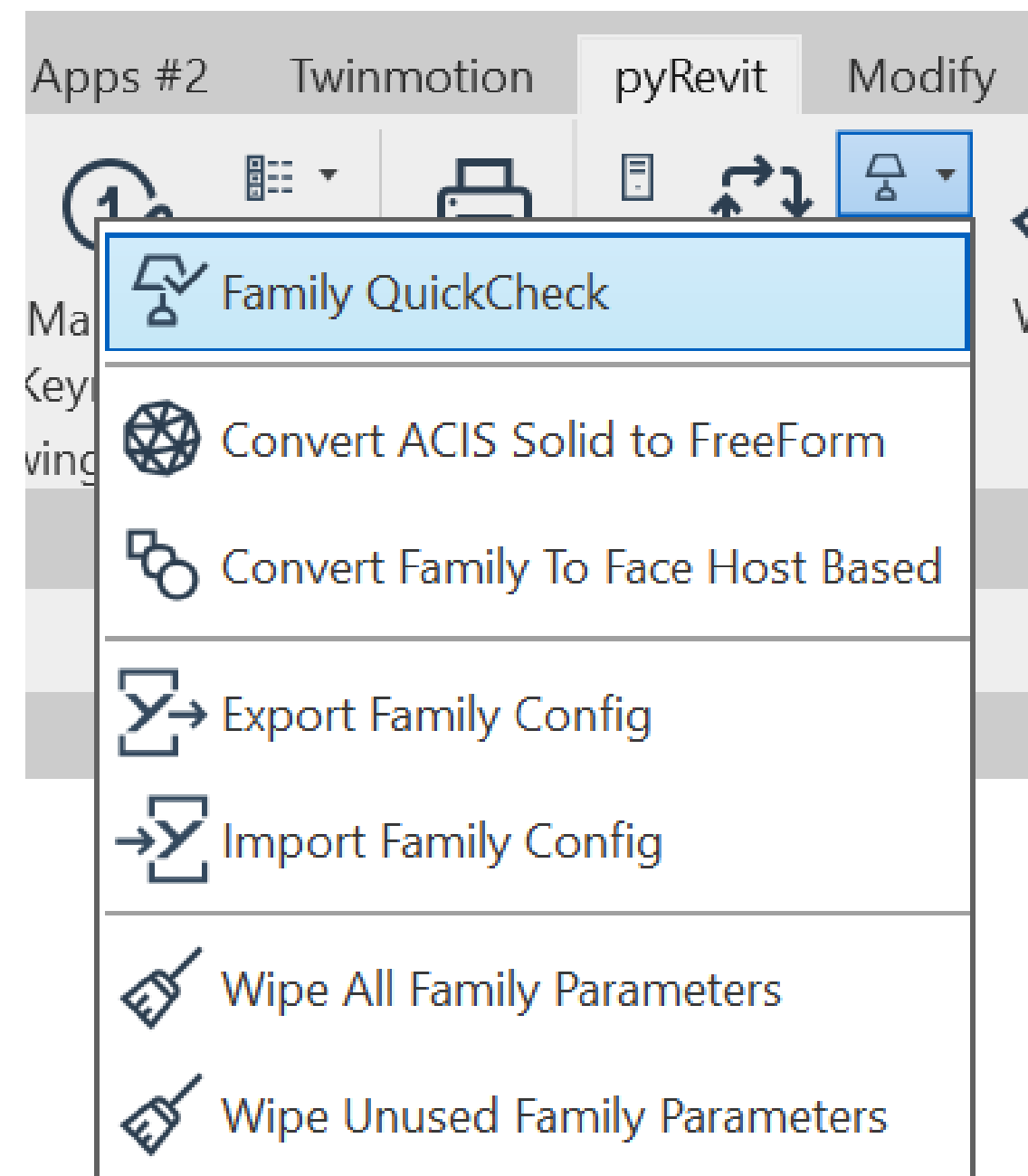
MODEL FITNESS EQUIPMENT – PYREVIT



MODEL FITNESS EQUIPMENT– PYREVIT



MODEL FITNESS EQUIPMENT- PYREVIT



MODEL FITNESS EQUIPMENT– REVIT LOOKUP

Snoop Objects

Text style name (1)

Location of text element

Field	Value
--- Element ---	
--- Properties ---	
AssemblyInstanceId	< null >
BoundingBox	< BoundingBoxXYZ >
Category	< Category Text Notes >
CreatedPhaseId	< null >
DemolishedPhaseId	< null >
DesignOption	< null >
Document	< Document >
Geometry	<Geometry.Element>
GroupId	< null >
Id	941384
IsTransient	False
IsValidObject	True
LevelId	< null >
Location	< Location >
Name	1
OwnerViewId	< ViewPlan Level 2 245424 >
Parameters	< ParameterSet >
ParametersMap	< ParameterMap >
Pinned	False
UniqueId	0712468e-1b41-4ca5-b1a4-550147bf5c41-000e5d...
ViewSpecific	True
WorksetId	< WorksetId >
--- Methods ---	
ArePhasesModifiable	True
CanBeLocked	True

OK

MODEL FITNESS EQUIPMENT– REVIT LOOKUP

Snoop Objects

+

StructuralConnectionType

+

StructuralSettings

+

SunAndShadowSettings

+

TemperatureRatingType

+

TextElementType

-

TextNote

< 1 941384 >

< 10mm Arial 960046 >

< 10mm Arial 960060 >

< 18mm Arial 960043 >

< 3.5mm Arial 940773 >

< 3.5mm Arial 940801 >

< 3.5mm Arial 941338 >

< 3.5mm Arial 941365 >

< 3.5mm Arial 941502 >

< 3.5mm Arial 941537 >

+

TextNoteType

+

TilePattern

+

TopographySurface

+

TopRail

+

TopRailType

+

View

+

View3D

+

ViewFamilyType

+

ViewNavigationToolSettings

+

ViewPlan

+

Viewport

+

ViewSchedule

+

ViewSection

+

ViewSheet

Field	Value
--- TextElement ---	
--- Properties ---	
BaseDirection	(1, 0, 0)
Coord	(44.4946455731454, 17.2235918715554, 0)
Height	0.0540354330708661
HorizontalAlignment	Left
IsTextWrappingActive	True
KeepRotatedTextReadable	True
Symbol	< TextNoteType 1 1101805 >
Text	Walking bridge to carport
UpDirection	(0, 1, 0)
VerticalAlignment	Top
Width	0.107952276597483
--- Methods ---	
GetMaximumAllowedWidth	7
GetMinimumAllowedWidth	0.001
--- TextNote ---	
--- Properties ---	
LeaderCount	1
LeaderLeftAttachment	TopLine
LeaderRightAttachment	BottomLine
TextNoteType	< TextNoteType 1 1101805 >
--- Methods ---	
GetFormattedText	< FormattedText >
GetLeaders	< List`1 >
--- Extensible storages ---	
Entity with Schema [FamilyBrow...	Reading of Entities of this Schema is not allowed t...

OK

MODEL FITNESS EQUIPMENT– REVIT LOOKUP

The screenshot displays the Revit interface for a project named "A001 - Title Sheet". The current view is "Level 2". The Properties panel on the left shows the "Text" properties for a selected text note. The text note is labeled "Text 1" and is highlighted with a red box. A red arrow points from this box to the "Text 1" property in the Properties panel. The text note itself is a blue rectangle with the text "Walking bridge to carport" and is also highlighted with a red box. The floor plan shows a yellow "Entry Hall" (30 m²) and a teal "Bedroom" (14 m²). The Entry Hall is labeled "201" and the Bedroom is labeled "202". A blue circle with a question mark is placed near the Bedroom. The floor plan is divided into three horizontal sections labeled A, B, and C, each with a width of 3000. The scale is 1:100. The Project Browser on the left shows the project structure, including "Level 2" and "3D Views".

Properties

Text 1

Text Notes (1) Edit Type

Graphics

Arc Leaders	<input checked="" type="checkbox"/>
Left Attachment	Top
Right Attachment	Bottom
Horizontal Align	Left
Vertical Align	Top
Keep Readable	<input checked="" type="checkbox"/>

Properties help Apply

Project Browser - RAC_basic_sample_project.rvt

- Views (all)
 - Floor Plans
 - Level 1
 - Level 2**
 - Site
 - 3D Views
 - Approach
 - From Yard
 - Kitchen
 - Living Room
 - Section Perspective
 - Solar Analysis
 - {3D}
 - Elevations (Building Elevation)
 - East
 - North
 - South
 - West

Grids : Grid : 6

1 : 100

Main Model

MODEL FITNESS EQUIPMENT– PLATFORM

Hard Drives

- Consider SSD when using point clouds
- SCSI or SATA are optional for day-to-day use

Video Cards

- DirectX 11 or later
- Integrated video should be avoided due to RAM use

Memory

- 16GB recommended but more the merrier
- RAM req'd ~ 20 x's the size of your compacted central model file size
- Higher speed, low latency, dual channel RAM

MODEL FITNESS EQUIPMENT– PLATFORM

Restart Revit Occasionally

- Model data maintained in memory and hard disk caches to increase performance against repeated data access
 - Printing
 - Rendering
 - Exporting
 - Upgrading models

Network Recommendations

- Gigabit speed cards at desktop
- Cat 5e or Cat 6 cabling
- Gigabit switches

MODEL FITNESS EQUIPMENT– PLATFORM

BIM 360

- Bandwidth – Maximum throughput is 50Mbps, results in faster transfer of deltas with the service, faster performance overall. It's not just the download speeds, the upload speeds are critical too.
- Hard Drive Space – Rule of thumb is 3 x's the total RVT size of ALL models worked on by a team member
- Latency – Below 400ms to Amazon AWS is recommended

WHAT IS THE KEY TO SUCCESS FOR A HEALTHY MODEL?

**“DISCIPLINE
DETERMINES YOUR
LEVEL OF
SUCCESS”**

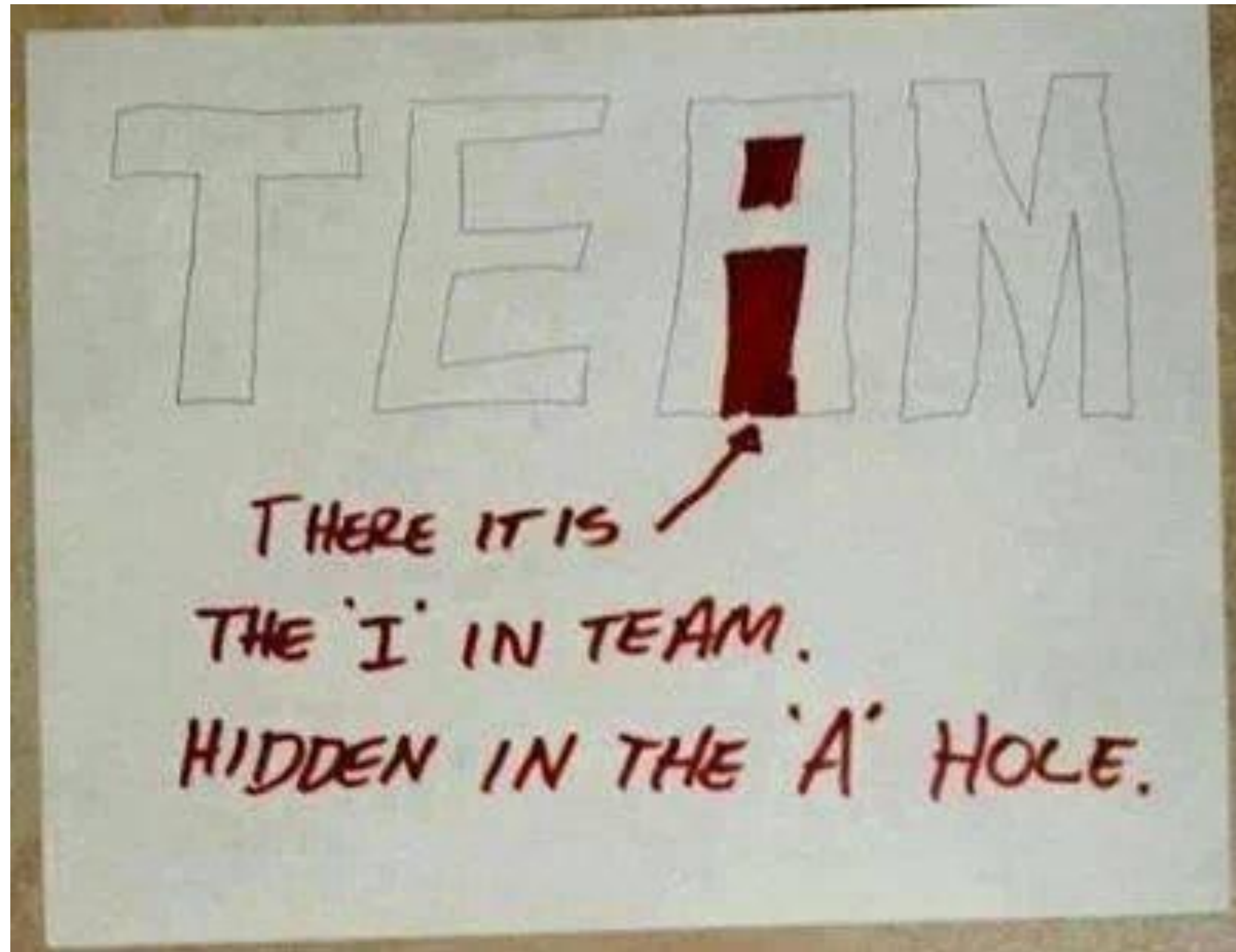
WHAT IS THE KEY TO SUCCESS FOR A HEALTHY MODEL?

TEAM



TOGETHER
EVERYONE
ACHIEVES
MORE

DON'T BE "THAT GUY"



THANK YOU!



<https://twitter.com/mattwunch>



<https://www.linkedin.com/in/mattwunch/>





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