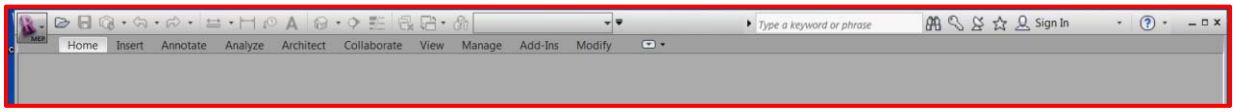
Revit MEP Flaws

Most of these are actual program flaws.
There are also some that are more like 'wish list' items, but should have been included in the program from the beginning. I have nearly 20 years' full time experience with AutoCAD, followed by three years' full time experience with Revit MEP (versions 2009 thru 2012). I wanted to give Revit 'a chance' – it's been over 3 years, and my conclusion is that the program is a huge waste of time and money for the MEP industry. Revit does many things well, but the flaws cause so much delay that they ultimately outweigh the benefits.

This list relates to Revit MEP 2011 and 2012, Mechanical ONLY, and is far from complete.
Electrical, Plumbing, and Fire Protection will generate their own lists. Some things on this list have been resolved with updates and patches, others may have extensive and convoluted work-arounds of which I am unaware, but my contention is that Autodesk has so much experience writing software for design, such work-arounds should no longer be necessary.

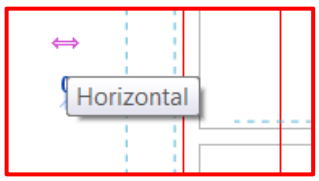
1. Cannot import Word files.
2. Cannot import Excel files.
3. Lacks AutoCAPS.
4. Lacks ability to associate text with phases.
5. Lacks ability to associate text with levels.
6. Lacks ability to associate text with worksets.
7. Lacks ability to change case of selected text.
8. Text box cannot have fixed width.
9. Text box changes width when it is clicked – without prompting.
10. Cannot have polygonal views, only rectangular.
11. Pipe reducers do not show up in plan view.
12. Program lacks an 'ortho mode', and F8 cannot be programmed to be 'constrain'.
13. View filter 'rules' have no 'or' operator.
14. Labels (pipe and duct) and text do not recognize each other, so they cannot line up.
15. Lacks ability to associate labels with phases.
16. Lacks ability to associate labels with levels.
17. Lacks ability to associate labels with worksets.
18. Entities cannot be 'locked' from being selected. When starting a selection box, the first point often selects some invisible entity on the architectural background – a huge waste of time.
19. Lacks ability to 'set level' (and lock it!) during creation of entities.
20. Lacks ability change level of a selection set of entities – must be done by filtering.
21. Lacks an 'Auto-hatch' function for elements that are assigned to the 'Demolition' phase. Hatch must be drawn manually ….. still.
22. Lacks a "Date Modified" column under all tabs for Manage Links.
23. Drafting views lack crop regions and cannot have dependent views.
24. Dimensions cannot be moved, have to be re-drawn.
25. Dimensions work poorly, in general. Dimensions do not find the endpoints of many entities, so we have to draw construction lines (which CAN find those endpoints - ??).
26. Lacks ability to 'lock' the visibility controls in a view.
27. Lacks ability to halftone a workset.

28. Lacks ability to copy legend entities from sheet to sheet – big waste of time.
29. Lacks ability to 'measure' in 3-D view. Measuring is one of the main purposes for having 3-D views.
30. Lacks ability to select object snaps in 3-D view – for rotating or mirroring.
31. 'Match properties' matches unknown (and non-adjustable) properties.
32. Vertical pipe often drops down to -200' or some other random number.
33. Many families have an unknown, invisible perimeter of selection.
34. When drawn, section depth extents are often the length of the building.
35. Sections cannot be assigned to worksets.
36. Sections cannot be 'locked' so they can't be deleted accidentally.
37. Lacks 'working section' entity, assignable to users.
38. Sections do not automatically adopt view filters from parent plan view.
39. In the Properties dialog box, the left column does not stay a fixed width.
40. Lacks ability to set text location in dimension style – text is always above the dimension line.
41. Maximized Revit will not minimize during synchronization, effectively blocking access to the Desktop.
42. When opening a file from Revit, the DATE column is not DATE MODIFIED.
43. Opening a dependent view does not Zoom Extents, often resulting in nothing being visible on screen.
44. 'Visual Style' is not available for View Templates – huh? This is a pretty fundamental aspect that is completely overlooked.
45. Rotate command is unable to snap to a center of a vertical duct or pipe elbow in plan view. This means I have to draw a temporary line across the base of the elbow, snap the center of rotation to the midpoint of that line, then go back and erase the line.
46. Full path of model not displayed in the title bar.
47. In RMEP 2012, the name of the program is not displayed in the title bar.



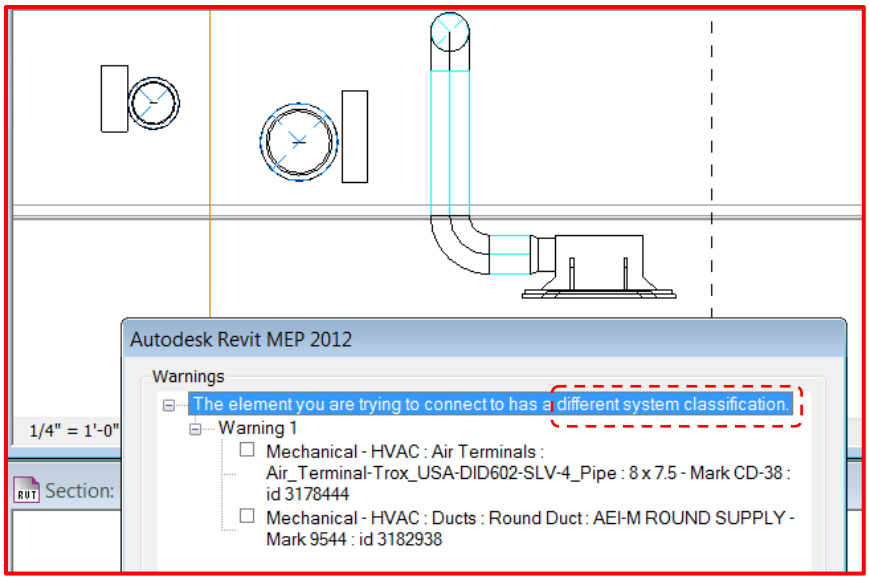
48. Lacks ability to <u>not</u> display linked CAD files in section views – should be default.
49. Disconnects all entities going to the demo phase – major problem.
50. Align disconnects pipe and duct from fittings – we always have to align twice, once for the fitting, and once for the duct, which is a waste of time.
51. Lacks feature that allows automatic reconnection of all pipes, fittings, accessories within a selection set which are going from the 'demo' phase back to the 'existing' phase – currently, only manual, individual re-connection of each pipe to each fitting.
52. Lacks ability to add a future phase.
53. Lacks ability to combine selection sets created with the 'tab' key.
54. Lacks active graphic representation of view range, to assist in setting same.
55. Lacks alignment tool for notes and labels.
56. Plotting works poorly. There is no 'print preview' for most settings or multiple sheets.

57. Views are rarely plotted, but Views are checked by default in the View/Sheet Select dialog box. Plotting → Selected Views/Sheets → View/Sheet set, Views should be unchecked by default.
58. When there is a plot preview, program lacks ability to zoom window.
59. Lacks ability to select a plot area window.
60. Lacks ability to make any entity non-plotting.
61. Often when plotting a PDF, the 'combine all sheets into one PDF' is selected, but Revit still attempts to generate separate PDFs, usually crashing the program.
62. Lacks ability to place entities (especially text) on the centerpoint of a round mass or even a circle.
63. Lacks the ability to right-click on a link, CAD or Revit, and 'reload link'.
64. Lacks the ability to right-click on a link, CAD or Revit, and 'edit link'.
65. Lacks ability to color the view names in Project Browser, based on discipline, phase, level, scale, or anything else.
66. There is no 'halftone' option for individual layers in linked CAD files.
67. When exporting to CAD files, the selected CAD version should remain the default.
68. Lacks user interface 'skins'.
69. When floating the mouse over a duct or pipe, the element size and elevation are NOT displayed.
70. Lacks pipe spud/taps – tees only (this one is really stupid).
71. Lacks ability to copy/paste filters – just view filters, not everything else.
72. Dependent views cannot have a scale different from the parent view.
73. 'Reveal hidden elements' changes view style to 'hidden'.
74. Cannot assign linetype (or any other parameter) to matchline sketch.
75. Revit allows the selection of certain components (most architectural) from well outside of any apparent boundary for those elements, even when they are outside of the view's crop boundaries. Many other entities (mostly non-architectural) require selection with single-pixel precision – see any checkbox in some dialogs. Picking inside the checkbox does not insert a check, unless the exact center pixel (inside the checkbox) is selected (see Plotting → Selected Views/Sheets → View/Sheet set).
76. The 'OK' button location varies from dialog to dialog.
77. When moving an object, a tooltip pops up to indicate whether the motion is Horizontal or Vertical. The ONLY reason the program needs such a tooltip is because there is no Ortho mode (see Flaw #12). THEN, this stupid tooltip invariably pops up on top of the temporary dimension, so we cannot see how far we've moved the object:



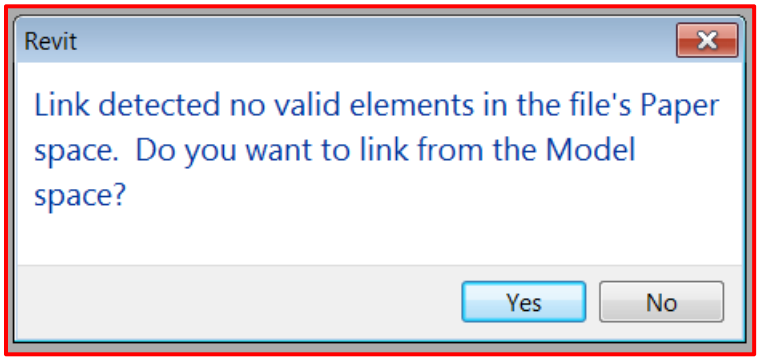
78. When rotating a fitting or valve, Revit does not attempt to use one of the connector points as a center of rotation – this should be the default, not the centroid of the assembly. Do some studies: How often is the centroid of the assembly the correct point of rotation? It's likely far less than 1% of the time for all users in the universe.
79. Lacks function similar to 'layer isolate' – we need a one-click 'Workset Isolate'.

80. Cannot change properties of selection set of differing entities, even if they are connected, like pipe with fittings.
81. For families created with the Mechanical template, there is no option to 'select new host', which would help solve a lot of problems.
82. Section heads often do not automatically align with each other.
83. Family preview thumbnail is usually unreadable, only shows the standard reference lines.
84. Sometimes, the UNDO command undoes the past 50 or 100 commands, then both the Undo and Redo buttons are grayed out – no explanation, no clues about what happened.
85. Fittings will often display different from the pipe or duct to which they are attached – they will be dark when they are in the 'existing' phase, or they will disappear when their pipe does not.
86. When selecting a run of pipe, if there is a 'Piping Accessory' (a valve) in the line, the size cannot be changed – changing the size requires selecting the pipe separately from the valve. This is a waste of time, because when changing the size of pipe, the valve usually needs to be changed to match.
87. When extending pipe, the new pipe does not automatically match existing pipe elevation or level association of the pipe from which it is being drawn - the space bar has to be pressed to match the elevation. This is a work-around that indicates just how poorly Revit programmers understand the design process. When drawing new pipe from the end of an existing pipe, no one in the history of mankind cares about the elevation of the previously drawn pipe – no one, ever. The default should be to match the elevation of the pipe from which the new pipe is continuing.
88. 'Enter' does not always repeat last command, the command has to be re-selected.
89. Linked CAD files and Imported CAD files are both identified as Imported Instances, once they are placed. They should be called what they are: Links or Imports.
90. Right click on the mouse is not customizeable from within Revit (as it is in most other programs for PCs) – this is big.
91. 'Measure distances' does not provide x/y/z values, just a linear distance – stupid!
92. 'Link Revit' does not use Origin to Origin as the default – stupid!
93. The desktop icon for RMEP 2011 is nearly exactly the same as the one for RMEP 2012 – stupid!
94. Active workset list box is too narrow to show the name of the active workset – only 20 characters wide, should be 48+.
95. Thick line display is default – default should be user-changeable.
96. 'Elements have duplicate mark values' – ridiculous, give us ID fields that don't cause this problem.
97. Cannot align to a duct edge, in section view of duct.
98. Linked CAD drawings have to be reloaded one-by-one if the folder location gets changed. Stupid.
99. No "ID" function, to identify location of a selected point in space (similar to ACAD ID).
100. Most error messages are cryptic and offer no solution – typical of programmers with Assburger's Syndrome. Example: After connecting a duct to a chilled beam, the warning for "Different System Classification" pops up. Why? When expanded, there is no indication about any type of system, conflict, or resolution:



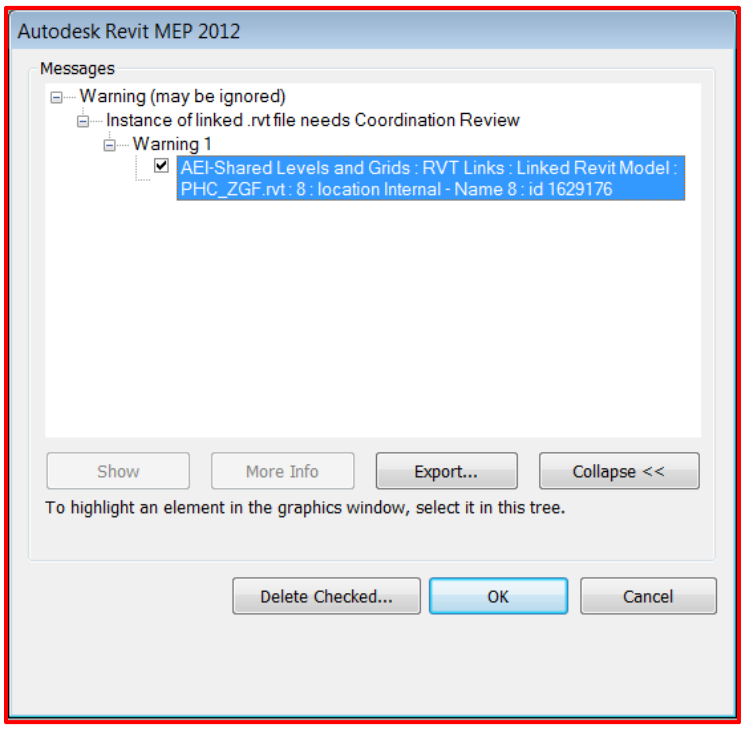
Why did this occur? Why are the systems in question not listed in the warning? WHAT IS THE SOLUTION? This is stupid and useless.

101. Another example: 'No Valid Elements in paper Space'



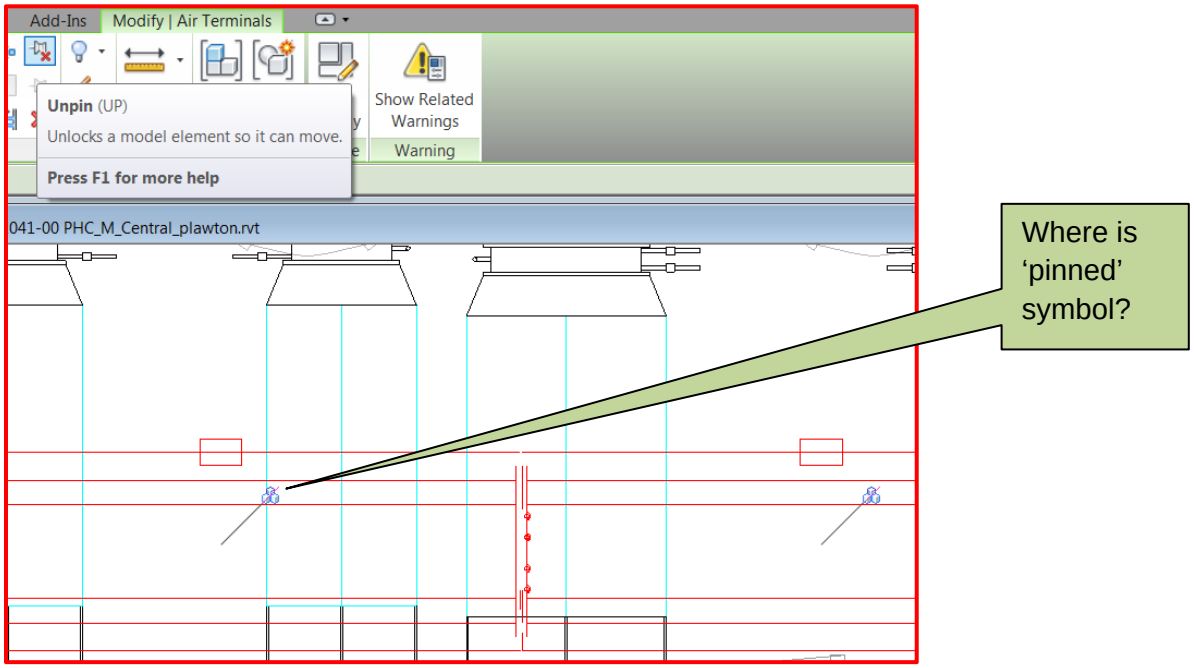
To which linked file is the message referring? It would be very easy to list the offending file in this dialog box. What is your point – are you trying to save on electrons? STUPID!

102. What is a suggested solution to this one?

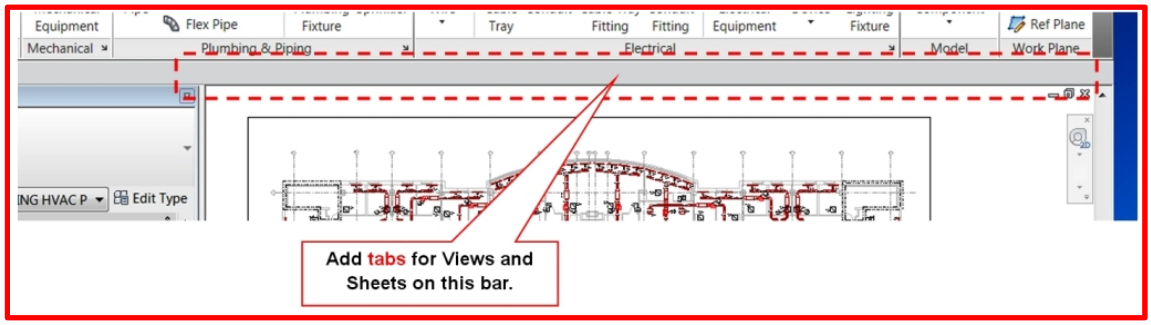


Is there no room under the warning to offer helpful tips that could be used to fix this problem?

103. Often pinned items will not indicate their pinned status:

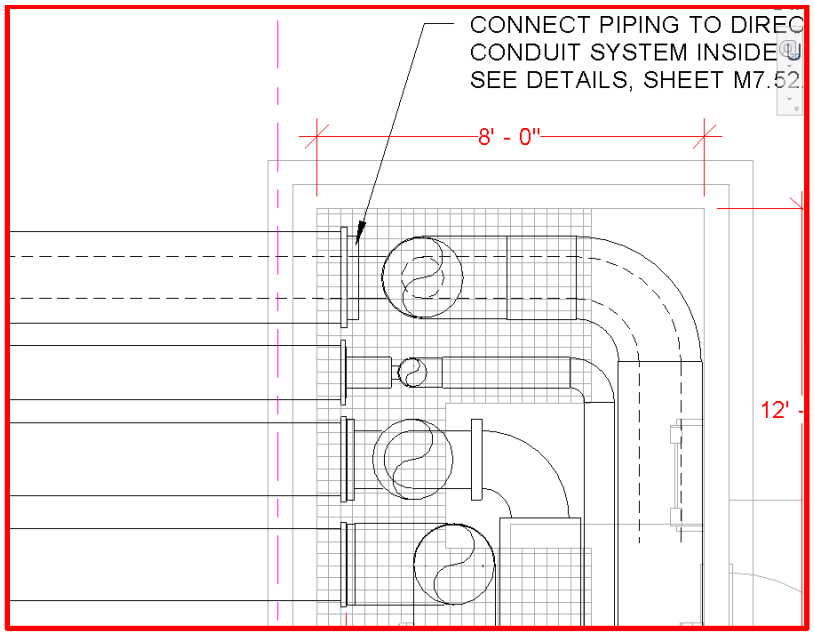


104. Lacks a function to make a sound after a command is completed, if that command is going to take longer than 10 seconds. 'Bind link' takes 20 minutes to 2 hours, I need a 'beep' to wake me up when it's completed.
105. In a View, the Underlay cannot be locked, so inadvertent editing cannot be prevented.
106. Plan Regions are not able to have an Underlay, which would allow Underlays to show up in limited areas.
107. Valves will host to the floor below (or floor element, like an equipment pad), rather than to the target pipe, without any sort of notification.
108. Lacks the ability to specify linetype for the boundaries of filled regions (hatched areas). We usually want the linetype of the boundary to be <invisible line>, but that's a manual change.
109. Lacks an adjustable translucent visual style.
110. Lacks ability to make line styles non-printing.
111. Lacks ability to make text styles non-printing.
112. Lacks ability to have a linked CAD file show up in any view, after linking.
113. When copying a section view, the view filters are lost. This is stupid.
114. Pinned elements cannot be moved, but they can be deleted – this is stupid.
115. Lacks ability to set default printer for application – always uses default for OS. User should be able to set printer for Revit, so that it will print to plotter or PDF app.
116. Lacks any ability to measure or divide a line into equal segments.
117. Lacks tabbed browsing of views/sheets:

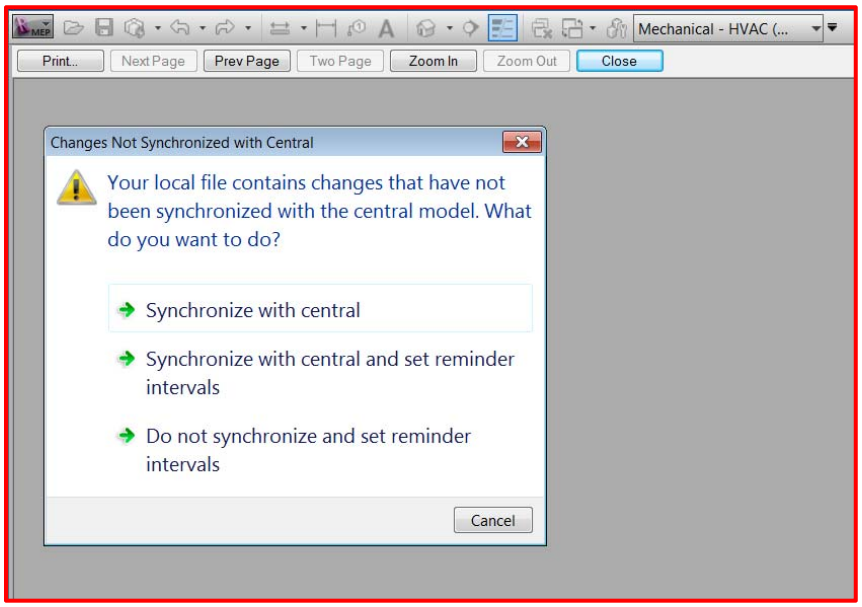


118. Lacks ability to show pipes under insulation as hidden:

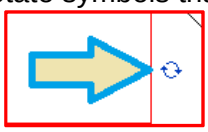
(These were added manually)



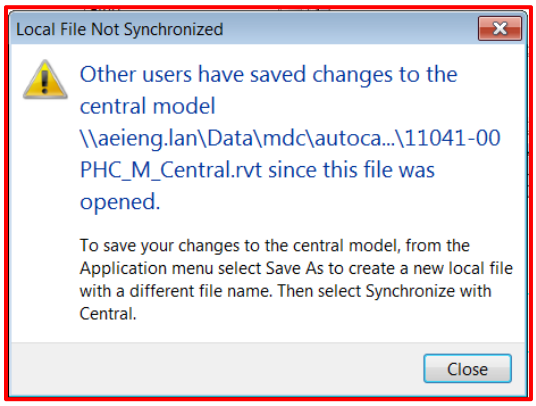
119. Lacks ability to detect flow direction from the presence of an endcap. When an endcap is installed on a duct, all beveled taps should POINT THE OTHER WAY.
120. Lacks the ability to assign 'system type' to a 'duct type' – what a waste of time. All 'supply duct' type will want to be assigned to the 'supply system'.
121. Program asks to 'synchronize to central' in the middle of printing a PDF! (right after asking for a print preview):



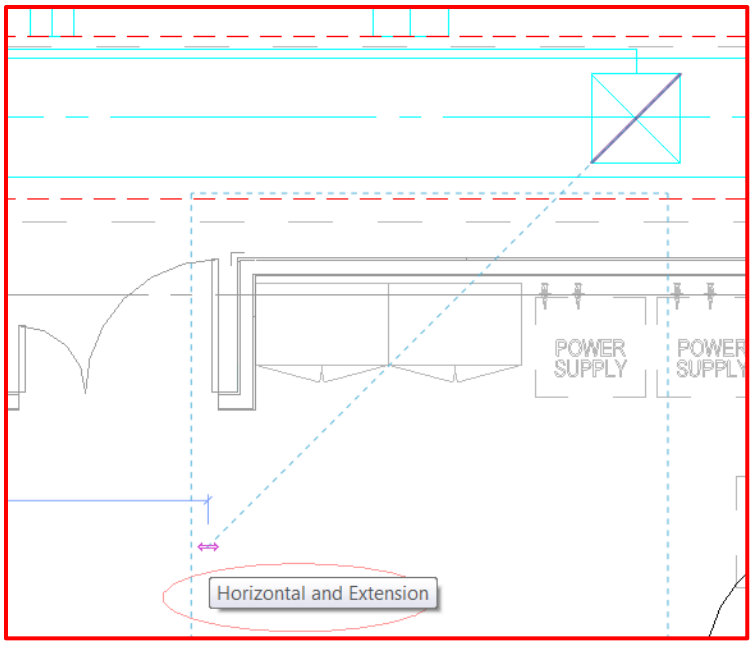
122. When drawing pipe or duct in a section view, reference level of that pipe or duct will randomly change, without notification.
123. When clicking on a fitting or accessory, the two rotate symbols that show up are not directional, they just indicate 'round and round':



They need to show which direction their rotation will be, counterclockwise or clockwise.
124. Often, when installing a rectangular endcap on a rectangular duct, a message pops up that says "Shapes do not match, a connection could not be made". Why?
125. Many times we need to install 40 or 50 instances of the same diffuser, and all of them will have the same 'Mark', like EG-2. Why does this cause a warning that 'Multiple entities have the same mark'? Doesn't Autodesk know that this is going to occur? This is how HVAC design has happened for 100 years.
126. What does this mean? What causes this problem?



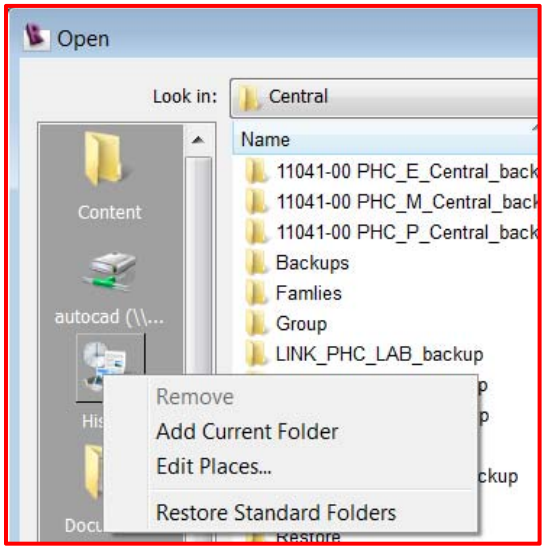
Of course 'other users have saved changes to the central model' – that's the whole point!
127. Cannot issue a command (like move or rotate), then request 'previous selection set'.
128. 'Split element' → 'Delete inner segment' does not stay checked – should be the default. Also, what are those resulting endcaps for? We always have to take the extra step of deleting them.
129. When moving or copying anything, Revit will seek to align with ANY diagonal line in the project:



This is useless and interfering, and should be changed.

130. ‘Tile views’ is not enough – we should be able to select the tiled arrangement (section 1 / section 2 / plan view, or top view / front view / isometric view), as with AutoCAD and 3DS Max, and probably most other design programs.

131. Open Places needs to be improved – we need to be able to widen the pane, re-name any of the shortcuts completely, and delete ALL the ones we don’t need or want.



132. The program is slow, even on top-tier hardware. The program is deeply flawed because it is not fully multi-threaded, and Autodesk does not appear to have any plans to make it so, or even to include any type of Open CL (or CUDA) GPU acceleration.

133. Autodesk obviously was more concerned about making the program “*NOT* AutoCAD”, than with adopting many of the ‘tried and true’ solutions that have been developed over 25 years of (often painful) AutoCAD growth. As a result, Revit has many of the same problems we saw fixed over many years of wishlists for AutoCAD – so it seems that Autodesk has refused

to learn from past mistakes on the technical side of the program. Autodesk clearly HAS learned from the mistakes on the financial side: "Do not make a program that works properly (like AutoCAD 14), or else revenues will drop for the following 8 quarters, and management staff will be fired by the board of directors." So, rather than manage expectations of the shareholders, Autodesk has chosen to consistently release half-baked software that will eternally be repaired 'in the next release'. This has cost the industries that use Autodesk's software many billions in completely unrecoverable expenses, while Autodesk has gained far less, which means that the business model is unjustifiable and is deleterious to the economy. Autodesk is lucky that the vendors from whom they buy their programming and OS software do not follow the same business model.

My main complaint seems to be that Autodesk spent 25+ years learning all sorts of ways to make design software work the way it should (while WE paid for that development, both in cash and in workplace frustrations), and now they've chosen to ignore whole chapters of those lessons, by not applying them to Revit.

It is likely the case that they are well aware of this, and are just planning to add the big obvious things to the program (like Ortho mode), for future releases, and then they'll expect to be lauded for it – and they'll charge for it. The lack of any type of 'easy' open programming (like AutoLISP for AutoCAD), would seem to indicate that they want to improve the program at their own very tightly controlled pace – and they'll charge for it.

My overarching view is that Autodesk's primary product is NOT software – it is profit. Profit is not a bad thing, but Autodesk's business model is bad for the majority of users (cows), while the cash (milk) flows regularly to the shareholders thru the subscription program.

Understanding that profit is Autodesk's primary motivation reveals that, while they could likely make the program run perfectly, (and make all the users happy), by reducing the release cycle from annual to every 4 or 6 years, and perfecting the software before release, the result would be that the flow of cash would slow. This reduction in the revenue stream would upset shareholders, who would remove the board of directors and upper management, and replace them with some other sharks who would come up with another scheme.

As long as Autodesk is a for-profit publicly-held company, the needs of the users will always be secondary. The solution is for users to buy stock, then ultimately turn Autodesk into a non-profit. Then the payoff for the shareholders will be much easier workdays and much lower IT costs.