

Web-based Project Management

Konrad K Sobon
Design Technology Specialist

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what i do

- Design Technology Specialist at HOK



what i do

- Design Technology Specialist at HOK
- Blogger at ***archi-lab.net***



what i do

- Design Technology Specialist at HOK
- Blogger at ***archi-lab.net***
- Co-Founder at Bad Monkeys



Select an Office Location

design technology team

- research into new tech

design technology team

- research into new tech
- project support

design technology team

- research into new tech
- project support
- training

design technology team

- research into new tech
- project support
- training
- automation workflows

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- software development

design technology team

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- software development
- web-app development

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mission control

introductions

- When Mission Control project started the idea was to ***increase compli-
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- M - MongoDB
- E - Express
- A - AngularJS
- N - Node.js

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*Since Greg Schleusner likes cats so much, we decided to keep those around as well.

what is it?

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+

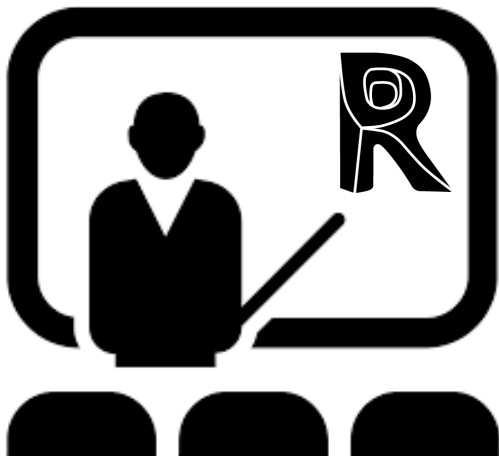


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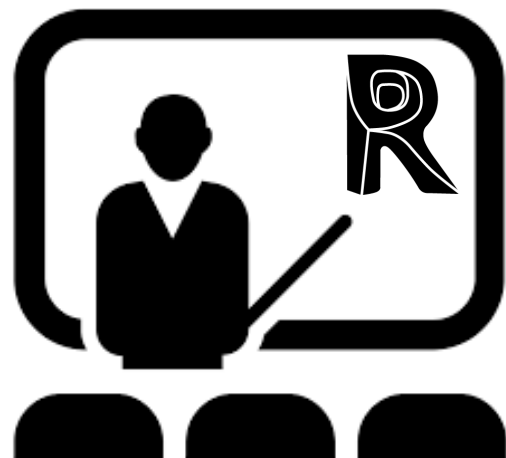
why?

- We all know by now that typical Revit training doesn't work. The issues arising from inexperienced users in models, are compounded by Revit's inability to provide feedback, hence further hindering learning.



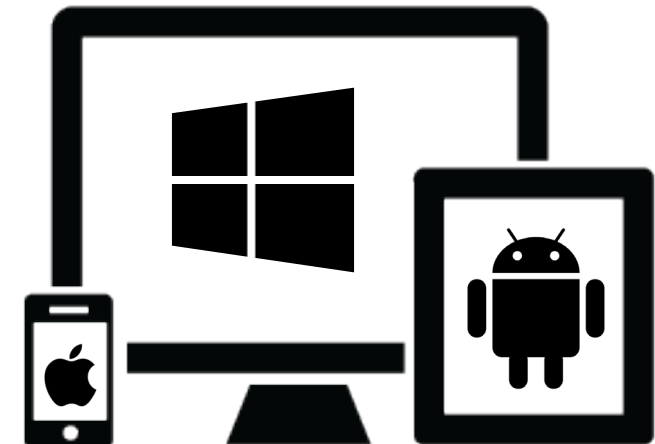
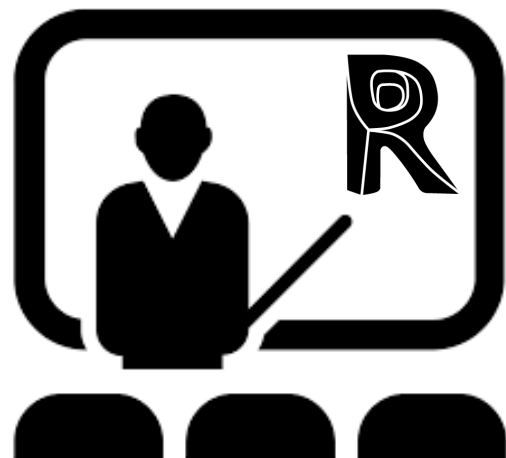
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- Web based, because managers "needed to" delegate things rather than doing them directly in Revit.
- It was time to develop something that is a little bit more flexible and platform agnostic.



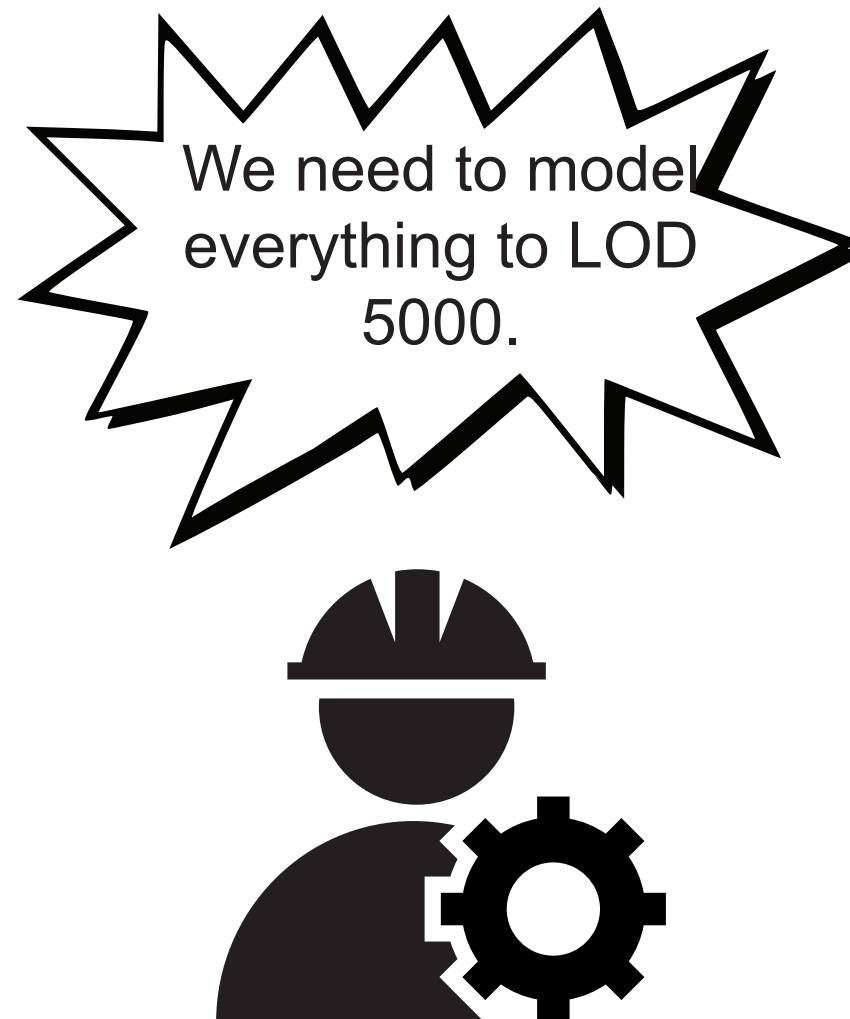
let's break this down

- Designers



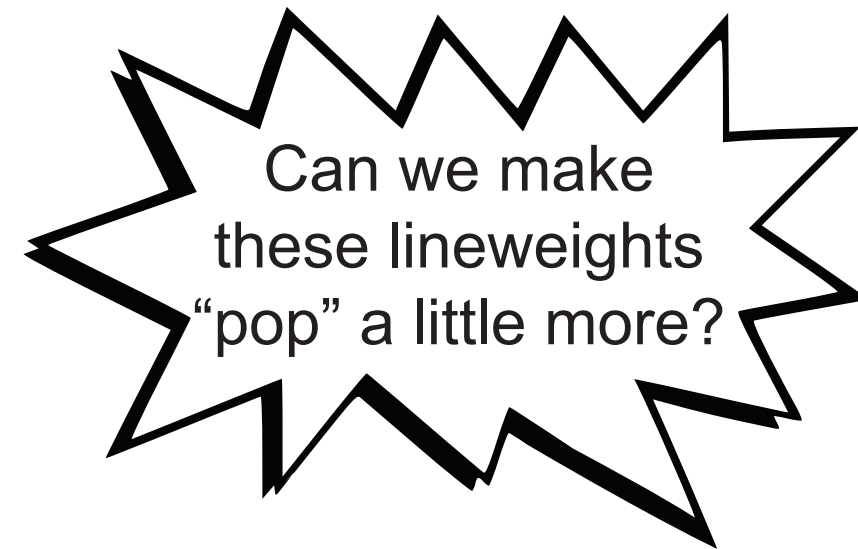
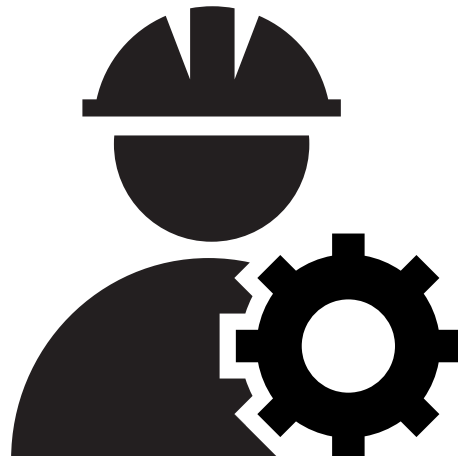
let's break this down

- Designers
- BIM Managers



let's break this down

- Designers
- BIM Managers
- Project Managers



challenges/goals with designers

- Did I say that Revit training sucks?



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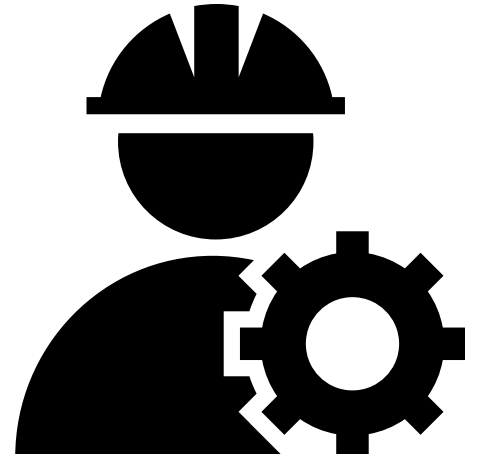
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- We have to remove obstacles and provide instant feedback, or people will keep coming up with "creative workarounds".

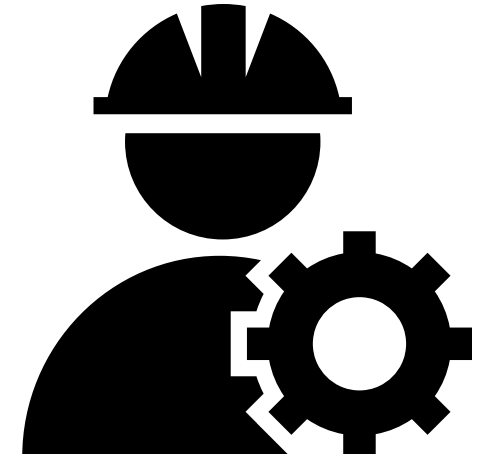
challenges/goals with bim managers

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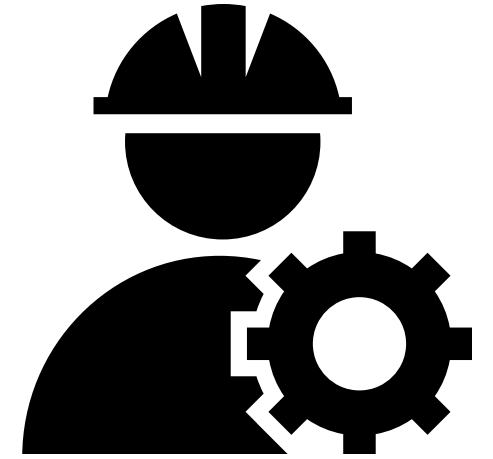


challenges/goals with bim managers

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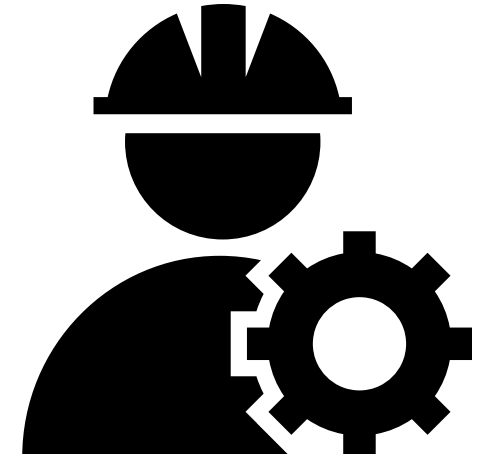


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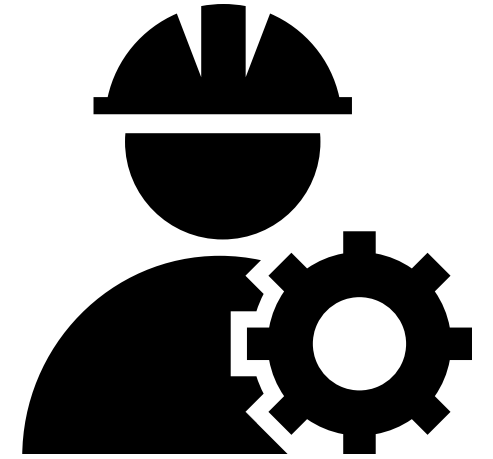
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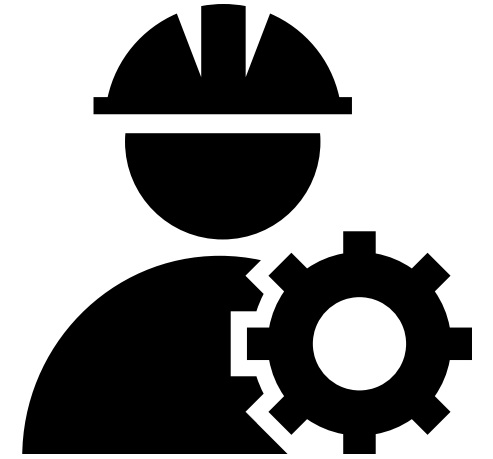
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- We needed a way to identify certain **tendencies and workflows** that might be potentially harmful.

challenges/goals with bim managers



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- We needed a way to identify potential **bottlenecks** and issues with models, without having to spend hours to comb through them.
- We needed a way to identify certain **tendencies and workflows** that might be potentially harmful.
- Of course we needed a way to **enforce standards!**

challenges/goals with project managers

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challenges/goals with project managers



- I can't effectively train Designers. There is no way I can train Project Managers in the dark arts of Revit.
- If we can somehow allow them to contribute "to Revit", ***without having to teach them Revit***, then it's a win-win.

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designers first

how people learn?

- For people to master something they need two things:

how people learn?

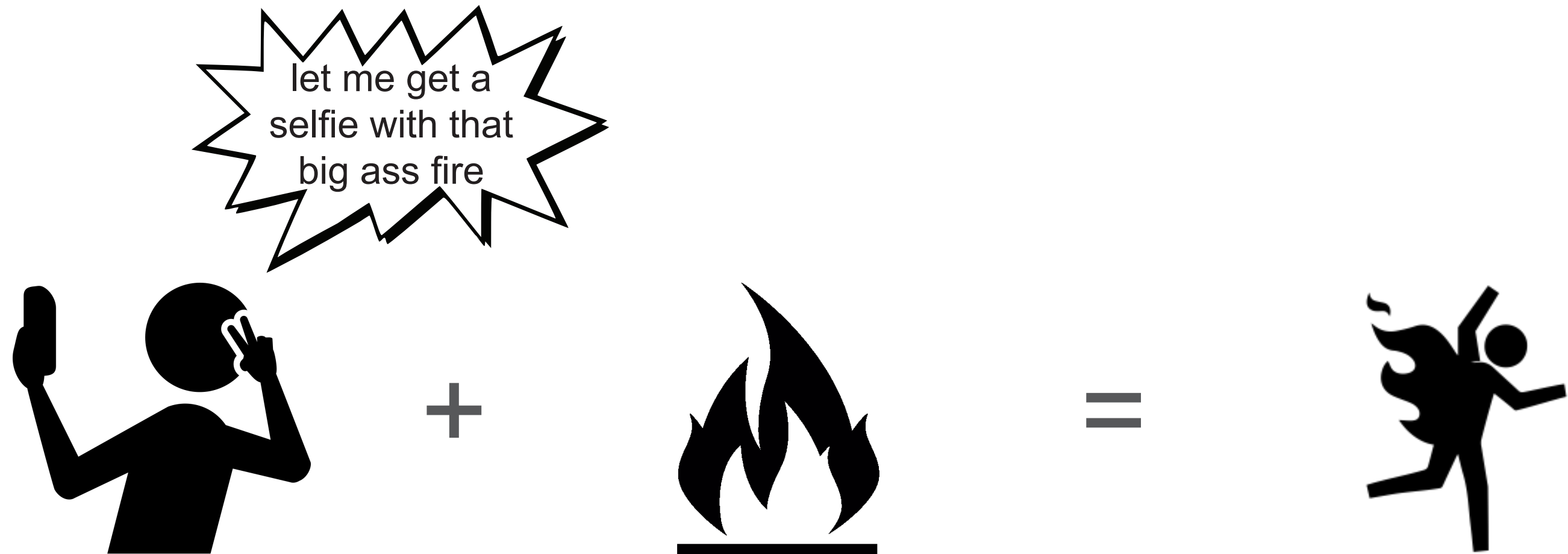
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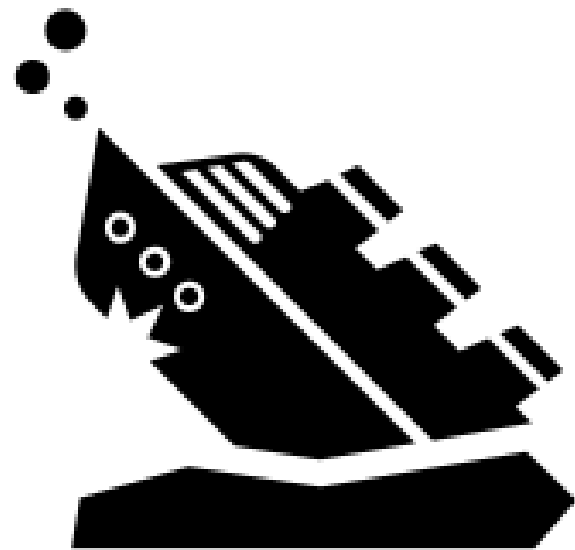
why people can't learn Revit effectively?

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why people can't learn Revit effectively?

- You do “revit” and two things can happen:
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 2. If you haven't angered Revit gods it will ***“just work”*** (phew!)



why do we make mistakes?

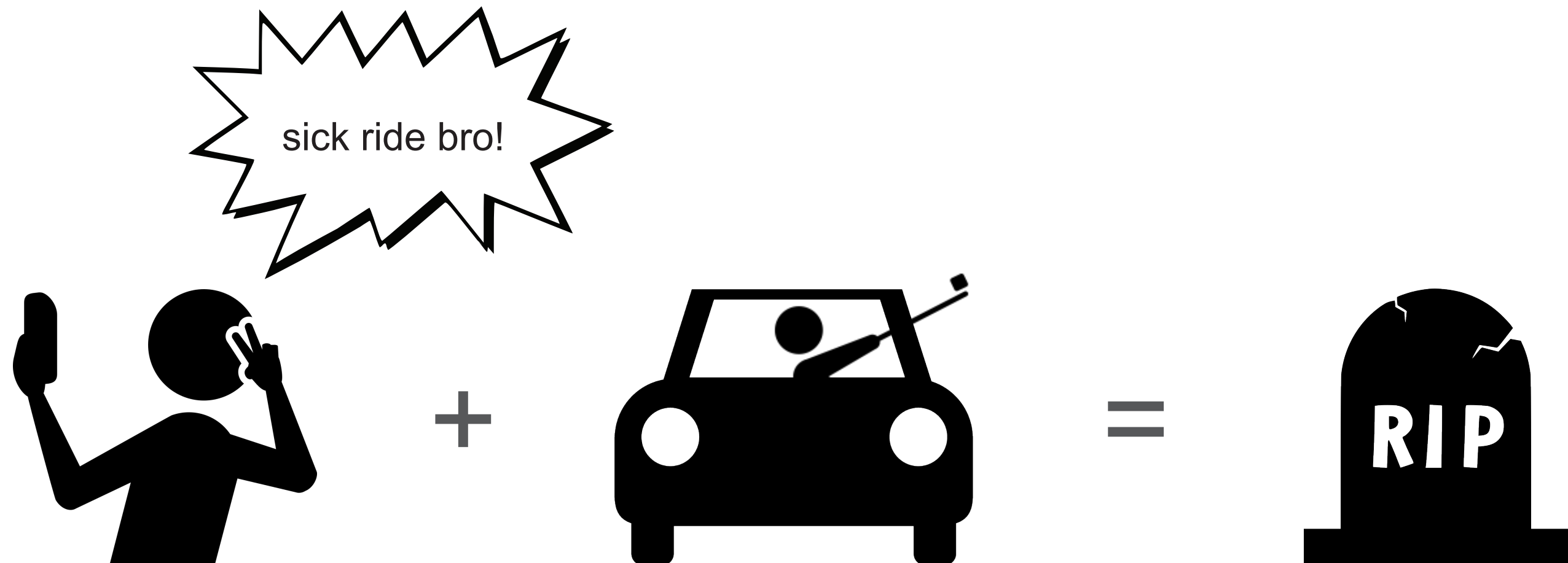
- “One reason why teenagers are such risky drivers is that their ***Automatic Systems*** had not have much practice, and using the ***Reflective System*** is much slower”.

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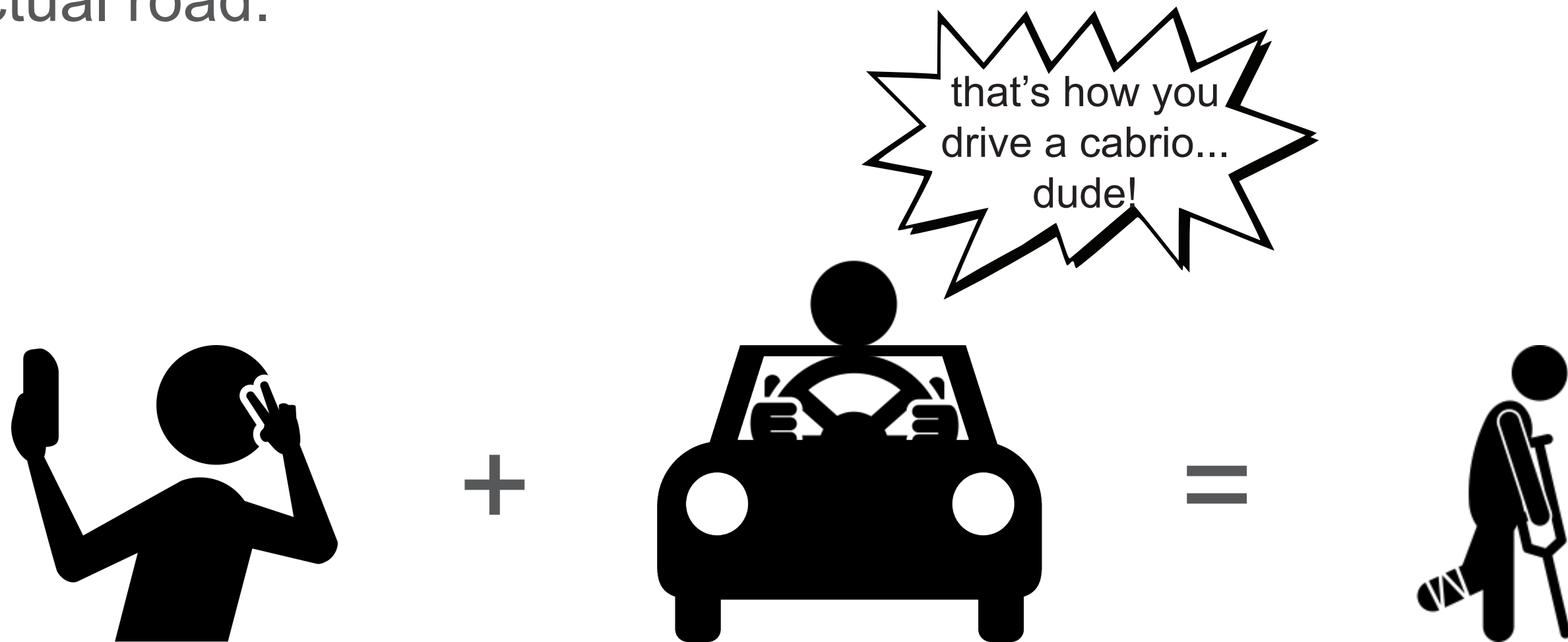


how do we correct such behavior?

- We require potential new drivers to obtain a driving permit, pass exams, drive with a more experienced guardian before being allowed to drive on their own. Most importantly we ***allow*** them to drive...in an actual car, on an actual road.

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can “bad revit” be corrected?

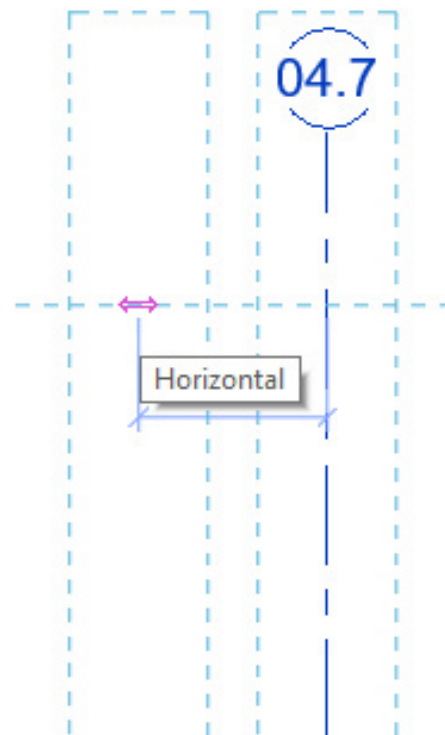
- Yes, what we need is means of providing ***opportunity to practice***, and ***immediate feedback*** so people can evaluate their decisions, gain insights and actually learn.

feedback

- How about giving people ability to do what they want, but letting them know what the potential pitfalls of doing it might be?

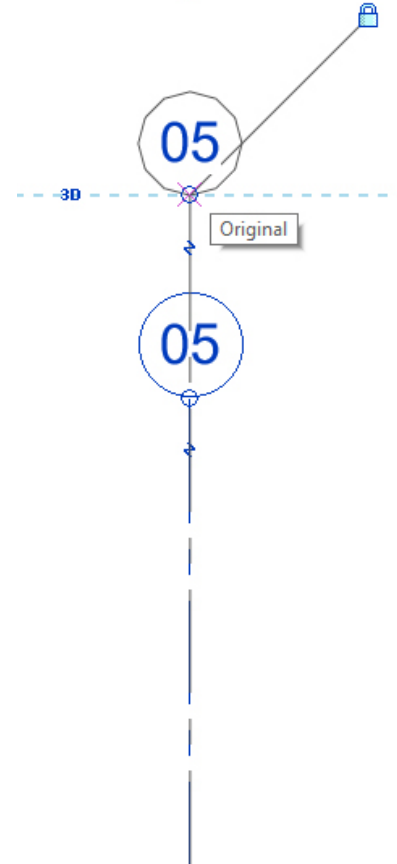
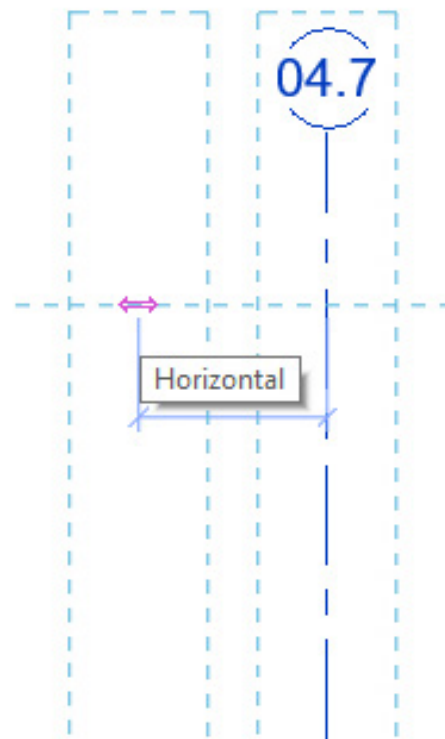
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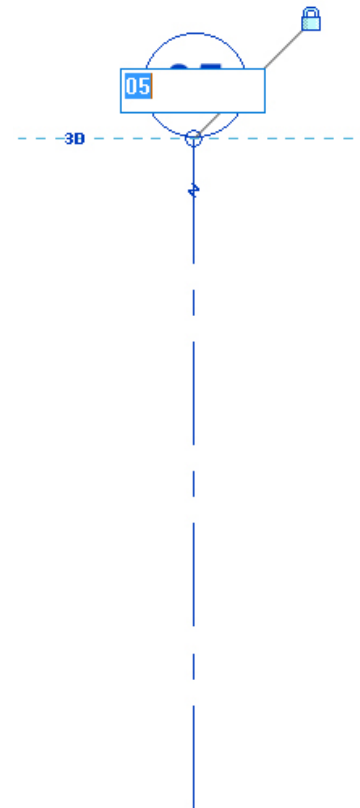
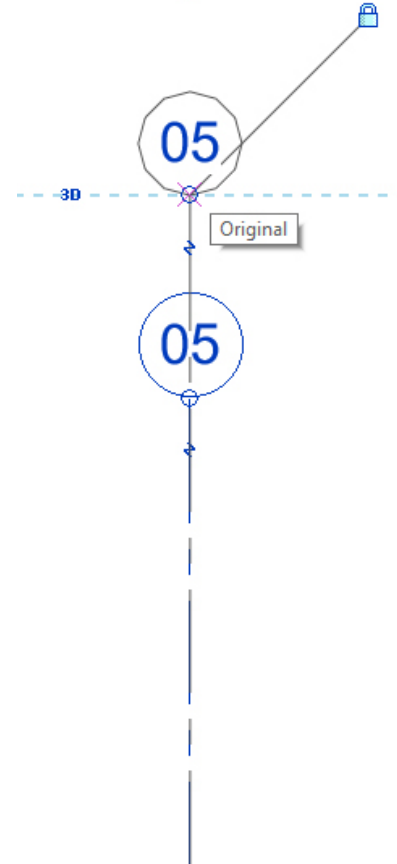
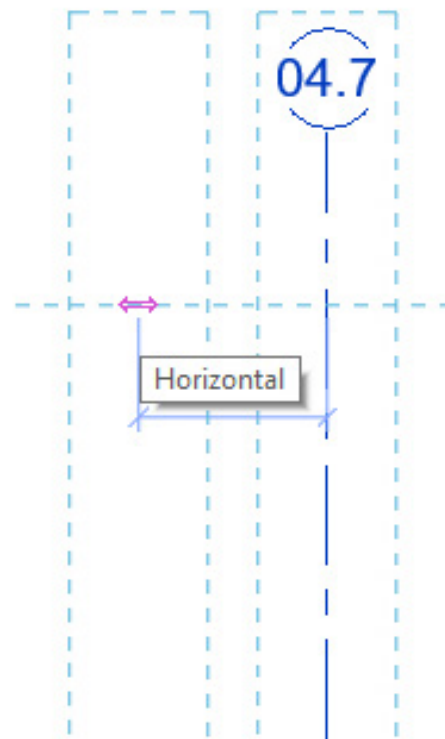
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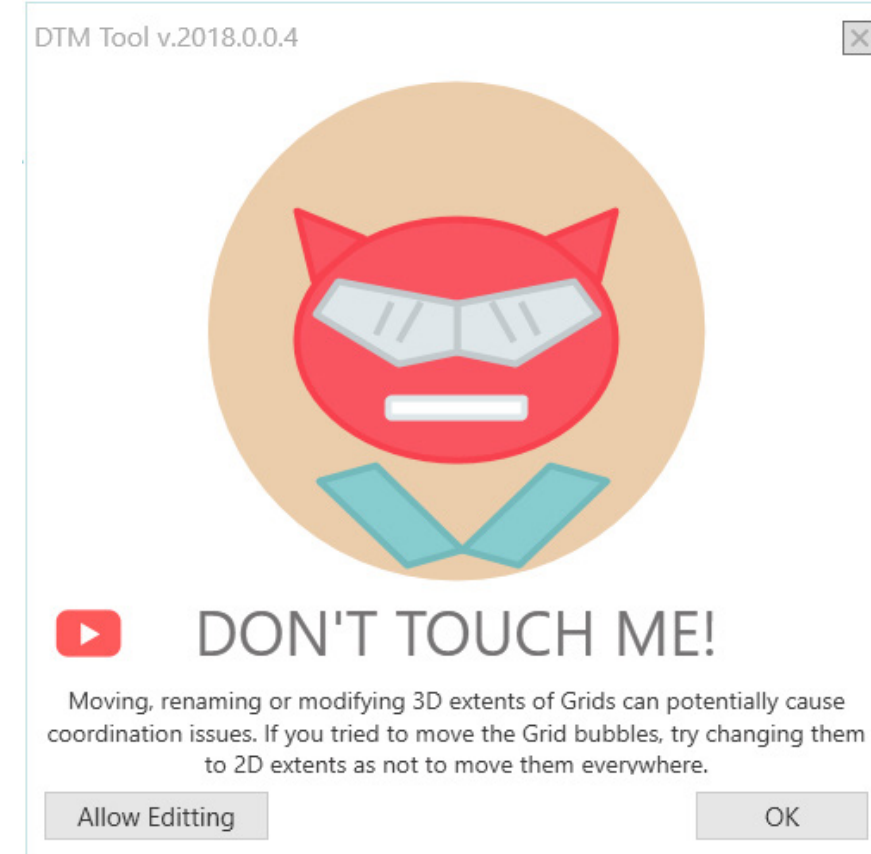
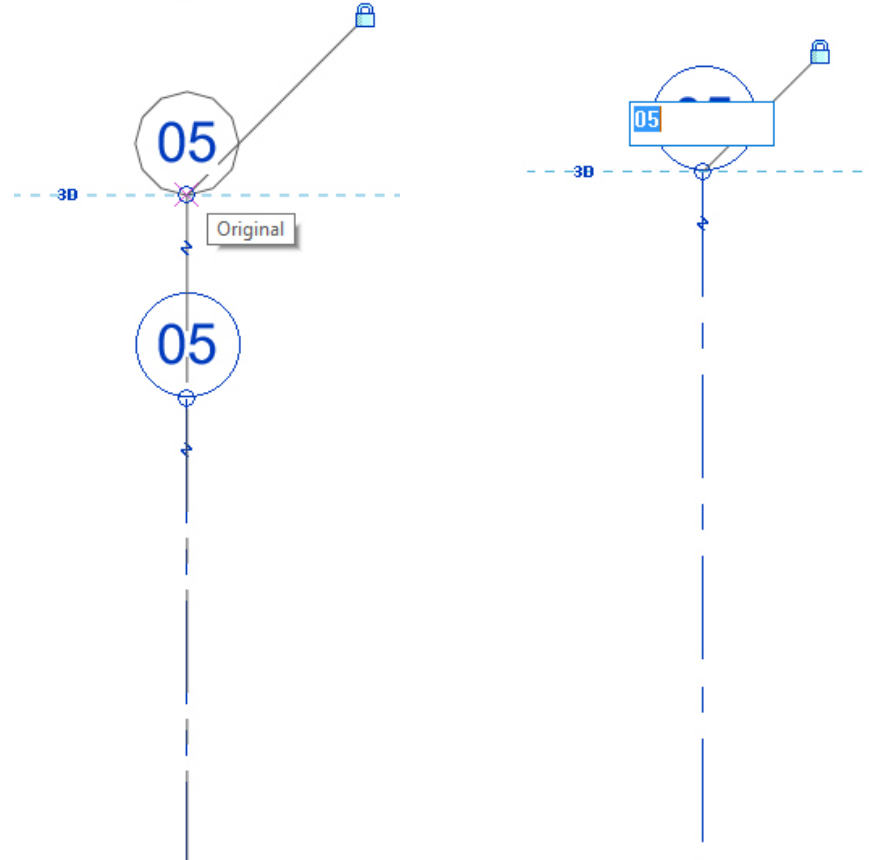
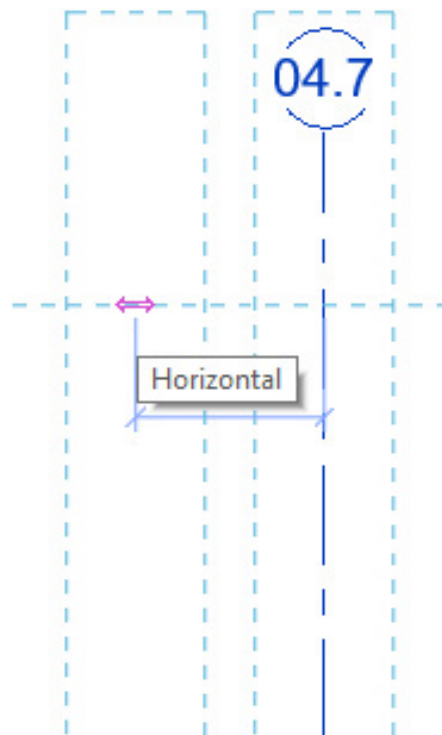
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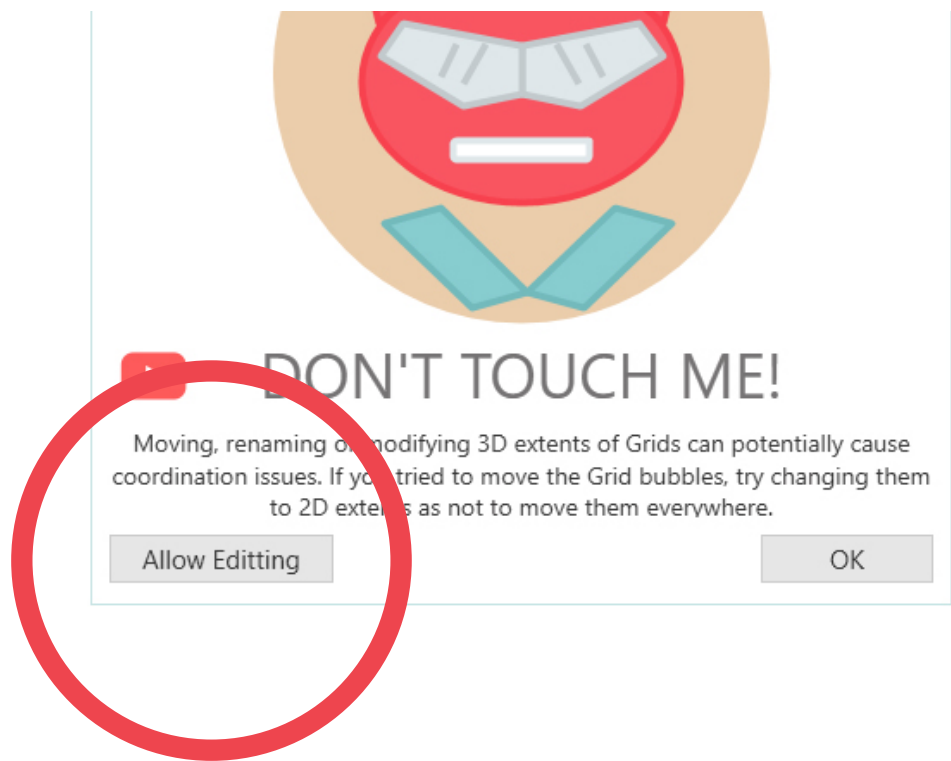


choices

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choices

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RDN /NY 288V/13 0701 3D LaGuardia Terminal BAAIA12801375-3D-CAENC_CENTRAL.ht	Views	10/17/17 5:41	mark.pritchard
RDN /NY 288V/13 0701 3D LaGuardia Terminal BAAIA12801375-3D-CACOR_CENTRAL.ht	Views	10/17/17 5:38	mark.pritchard
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RDN /NY 288V/13 0701 3D LaGuardia Terminal BAAIA12801375-3D-CACOR_CENTRAL.ht	RVT Links	09/21/17 5:18	marcus.allen
RDN /NY 288V/13 0701 3D LaGuardia Terminal BAAIA12801375-3D-CACOR_CENTRAL.ht	Views	09/21/17 4:49	marcus.allen
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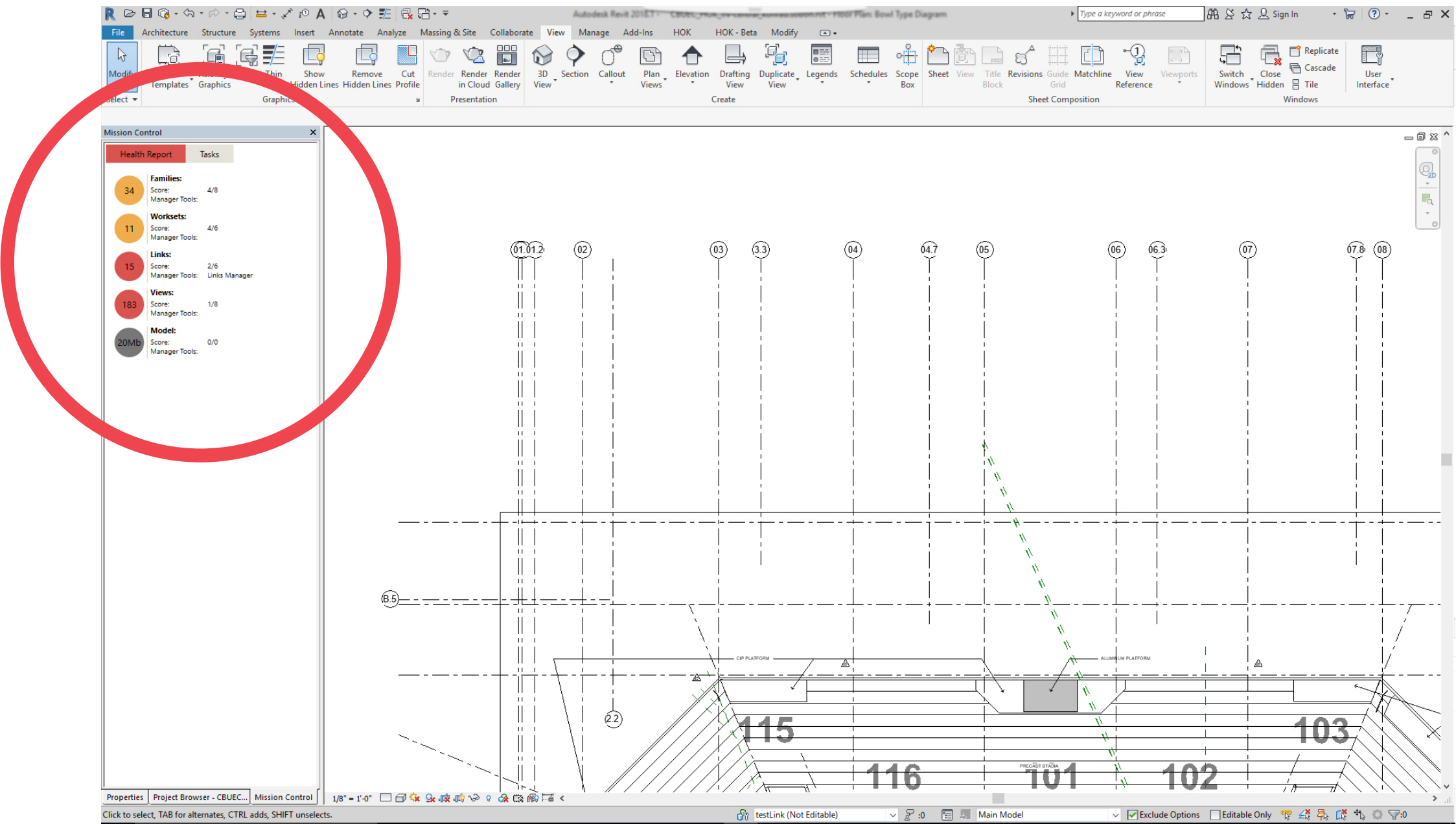
how to make people do what you want them to?

- You have to ***remove any and all barriers***, however small or supposedly insignificant they might be.

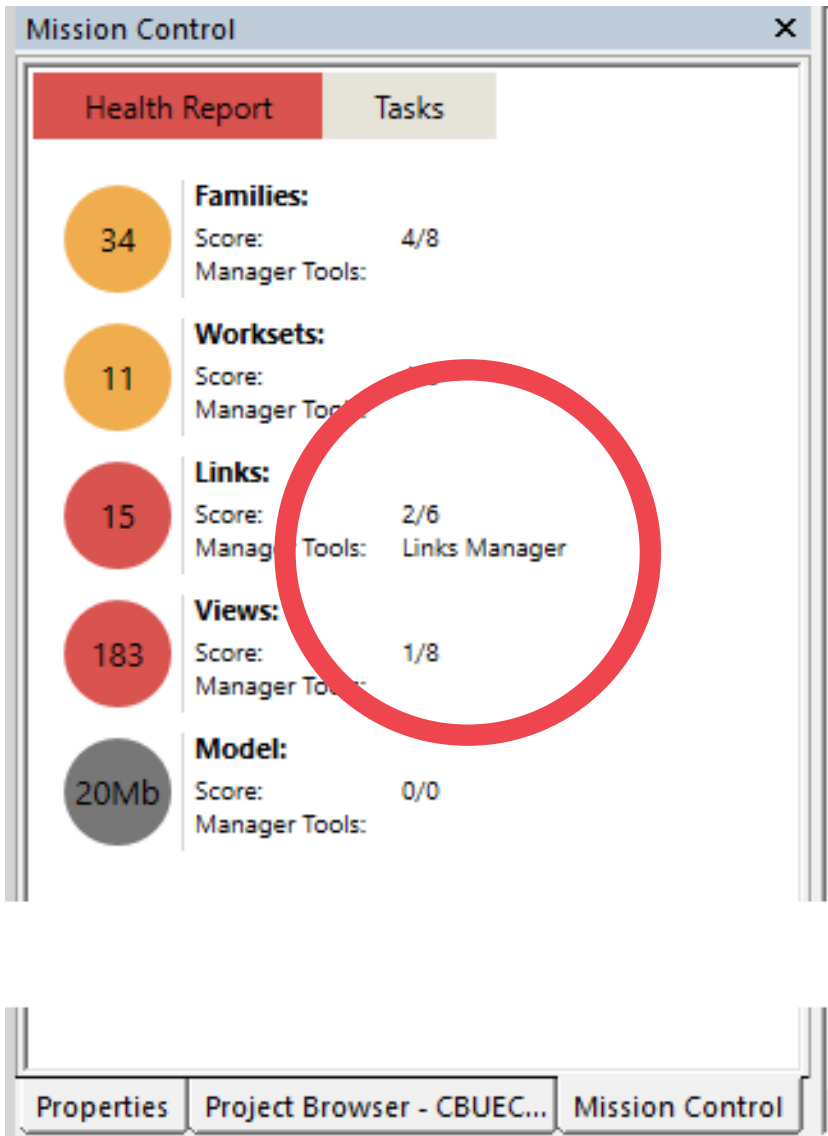
how to make people do what you want them to?

- You have to ***remove any and all barriers***, however small or supposedly insignificant they might be.
- Sensible defaults are a great place to start.
 1. They help to overcome inertia/procrastination.
 2. They help us by providing a hint at what the answer is.

availability



one-click solutions



one-click solutions

Mission Control

Health Report

Tasks

34

Families:

Score: 4/8

Manager Tools:

11

Worksets:

Score:

Manager Tools:

15

Links:

Score: 2/6

Manager Tools: Links Manager

183

Views:

Score: 1/8

Manager Tools:

20Mb

Model:

Score: 0/0

Manager Tools:

Properties

Project Browser - CBUEC...

Mission Control

Mission Control - Links Manager v.2018.0.0.4

Images

Styles

Imported DWGs

Imported DWGs

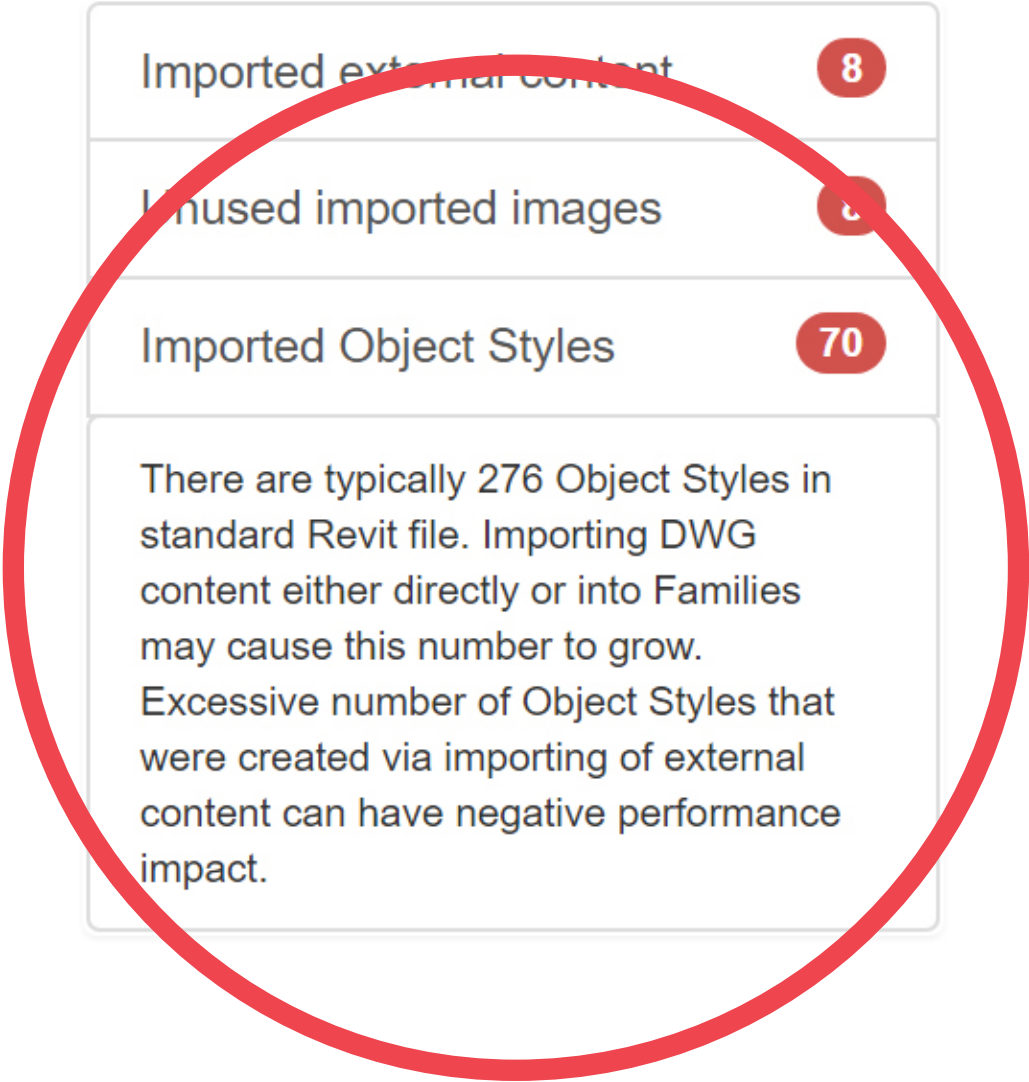
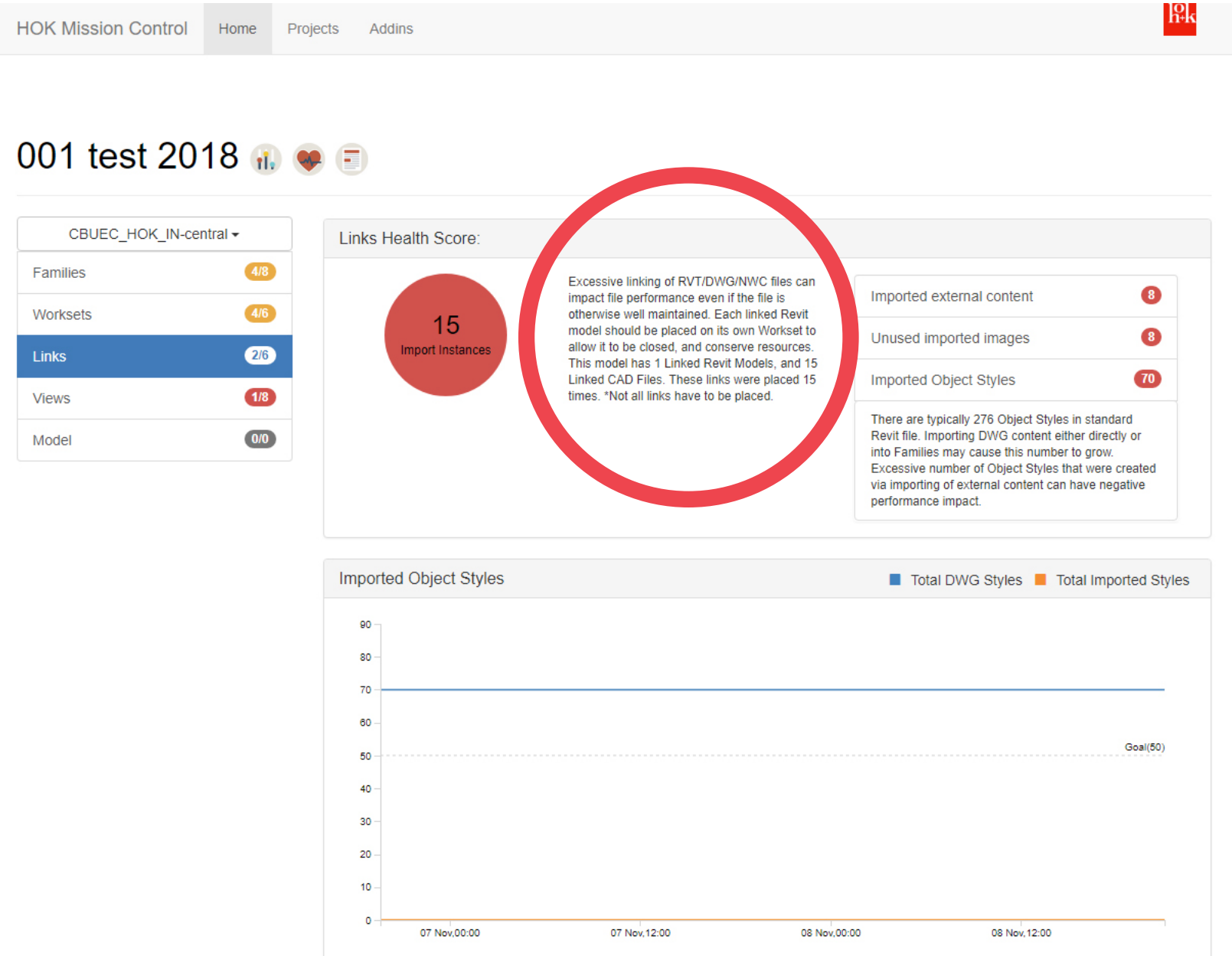
Name	View Specific	Link/Import	Instances
360-text.dwg	Yes	Imported	1
fake - Copy (2) - Copy - Copy.dwg	Yes	Linked	1
fake - Copy (2) - Copy.dwg	Yes	Linked	1
fake - Copy (2).dwg	Yes	Linked	1
fake - Copy (3).dwg	Yes	Linked	1
fake - Copy (4).dwg	Yes	Linked	1
fake - Copy (5).dwg	Yes	Imported	1
fake - Copy (6).dwg	Yes	Imported	1
fake - Copy (7).dwg	Yes	Imported	1
fake - Copy (8) - Copy.dwg	Yes	Imported	1
fake - Copy (8).dwg	Yes	Imported	1
fake - Copy (9).dwg	Yes	Linked	1
fake - Copy.dwg	Yes	Imported	1
fake.dwg	Yes	Imported	1

Close

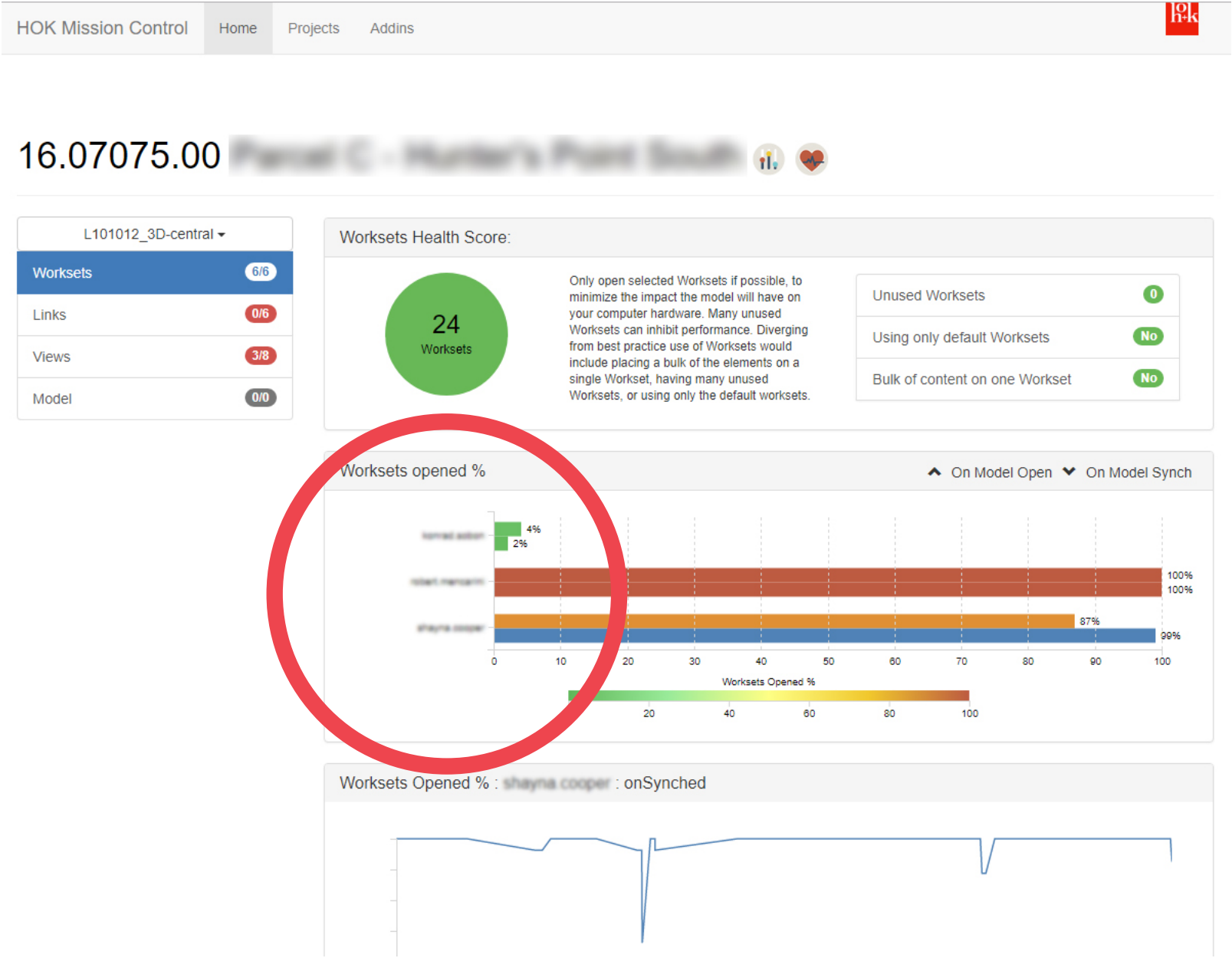
Delete

Ready

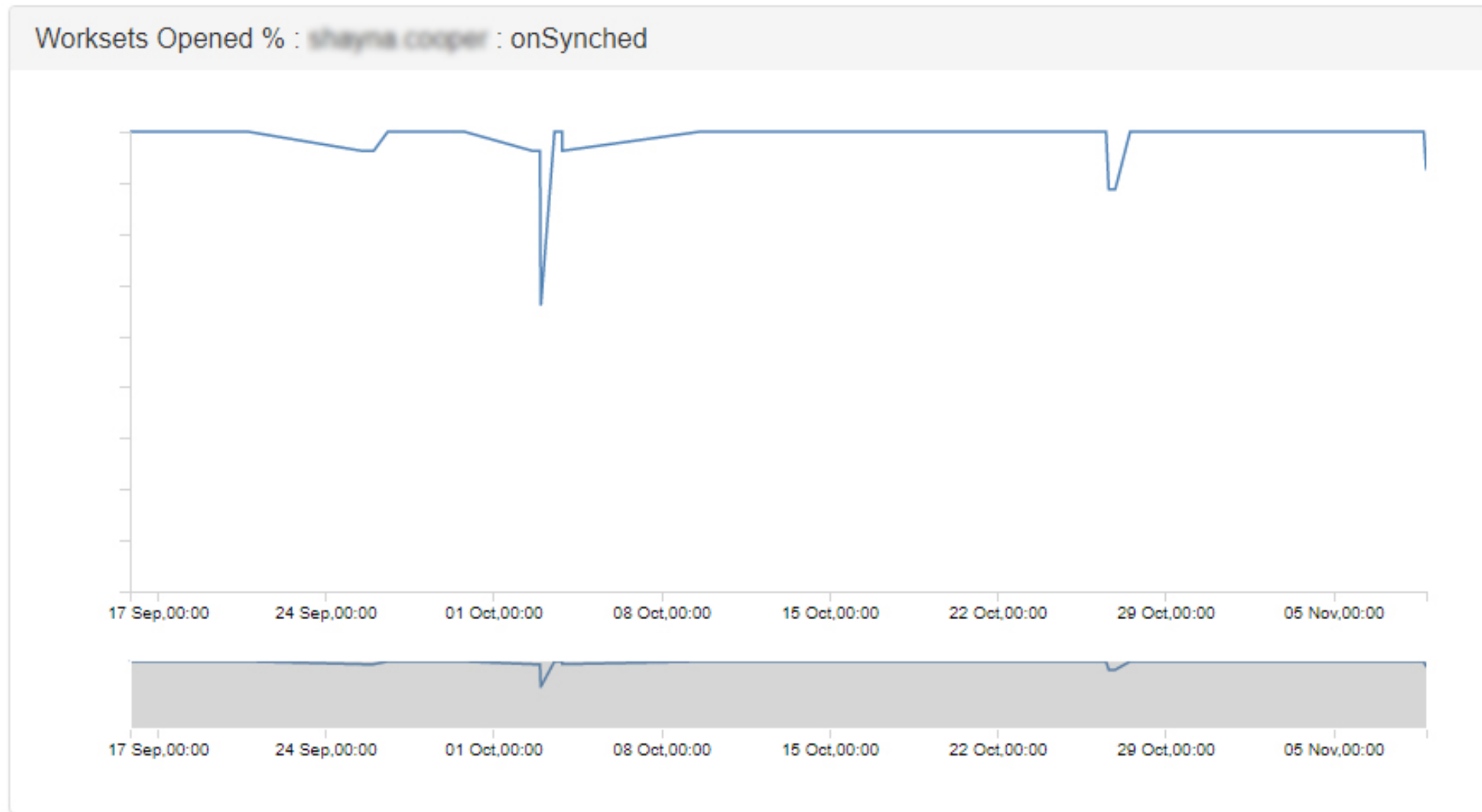
information matters



individualized feedback



backed by numbers



defaults

Shared Parameter Monitor

This tool will monitor and make sure that the appropriate Shared Parameter file is being used on the project.

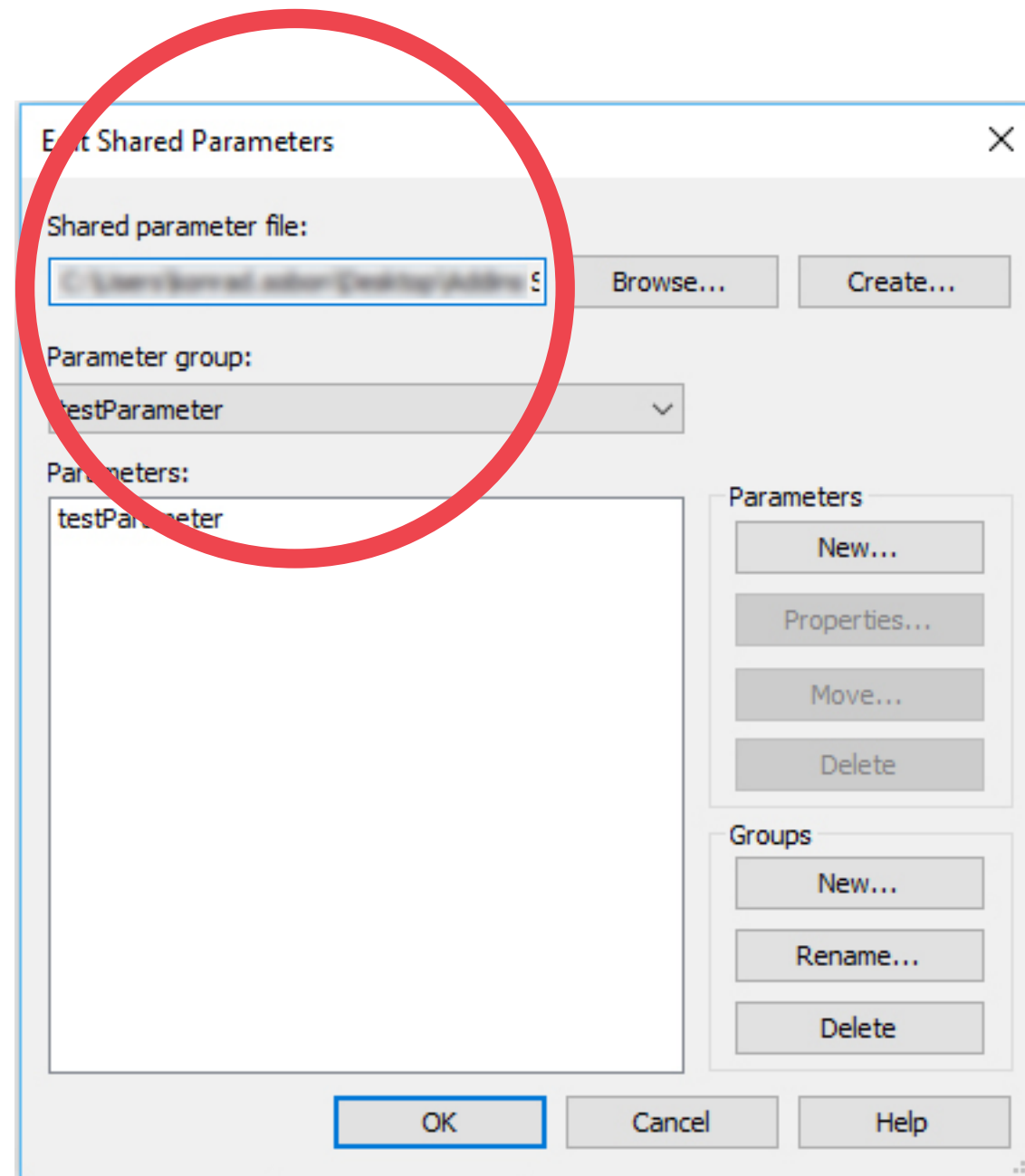
Updater On/Off

☒

File Path: ✓

\\Group\HOK\NY\PROJECTS\2016\16-07075-00 Parcel C at Hunters Point - Q341E-BM\Support\NYCSCA_Shared_Parameters

defaults



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bim managers next

your job

- Being a “**revit expert**” means that more often than not, you are the go-to person to model that complex parametric family, and figure out how to import that fancy Rhino model.

your job

- Being a **“revit expert”** means that more often than not, you are the go-to person to model that complex parametric family, and figure out how to import that fancy Rhino model.
- You are also running coordination meetings, writing BIM Level 15 standards and, yes, I didn't forget, you are there on the **“zero day”** to make sure that everything gets printed, and things don't disappear from the model in some automagical fashion.

high level view

HOK Mission Control

Home

Projects

Addins

13.07051.00 LaGuardia

A12801375-3D-HHENC_CENTRAL

Families	2/8
Worksets	2/6
Links	2/6
Views	2/8
Model	0/0

971

Families

83

Worksets

11

Revit Links

3712

Views

1.4 GiB

Model Size

Families:

Families are integral part of Revit functionality. It is however, important to remember, that oversized (>1MB) families can be a sign of trouble (poorly modeled, imported DWGs etc.). That's why it's imperative to follow HOK's best practices in modeling and naming Revit Families. InPlace families should be limited in use as they do not allow full functionality of the regular Families.

Worksets:

Only open selected Worksets if possible, to minimize the impact the model will have on your computer hardware. Many unused Worksets can inhibit performance. Diverging from best practice use of Worksets would include placing a bulk of the elements on a single Workset, having many unused Worksets, or using only the default worksets.

Links:

Revit allows linking of external content. However, excessively linking of RVT/DWG/NWC files can impact file performance even if the file is otherwise well maintained. Each linked model should be placed on its own Workset to allow it to be closed, and conserve resources. Models should under no circumstances be imported.

Views:

Revit allows for the quick creation of views within the model. An excessive number of views, however, can increase file size and impact performance. Please keep the number of "working views" to minimum in order to preserve your computer hardware resources.

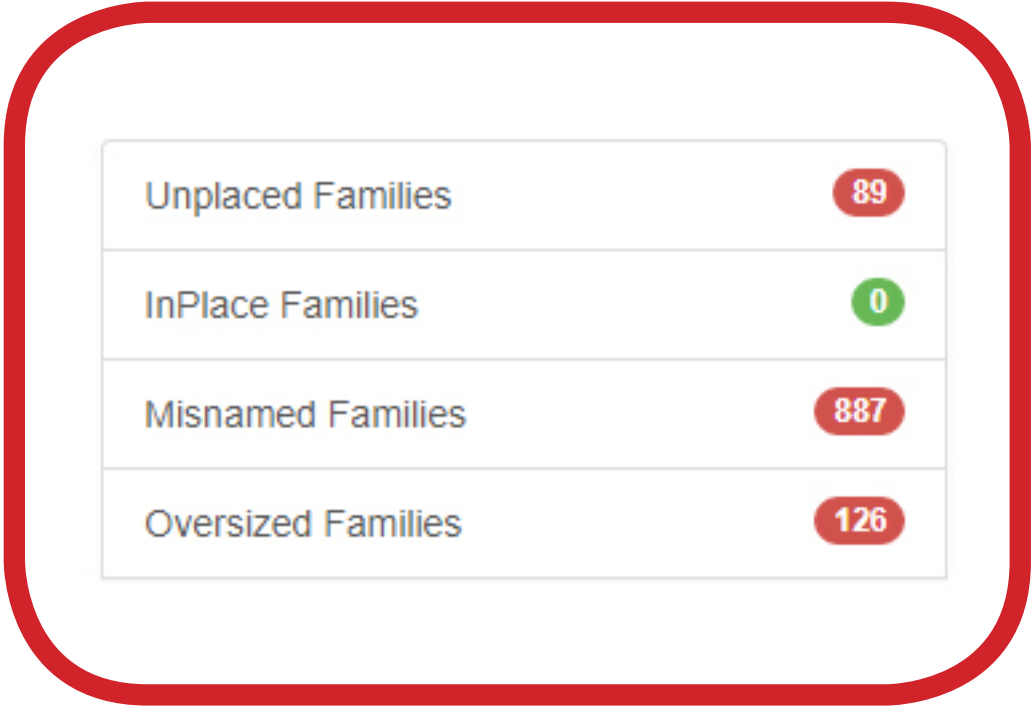
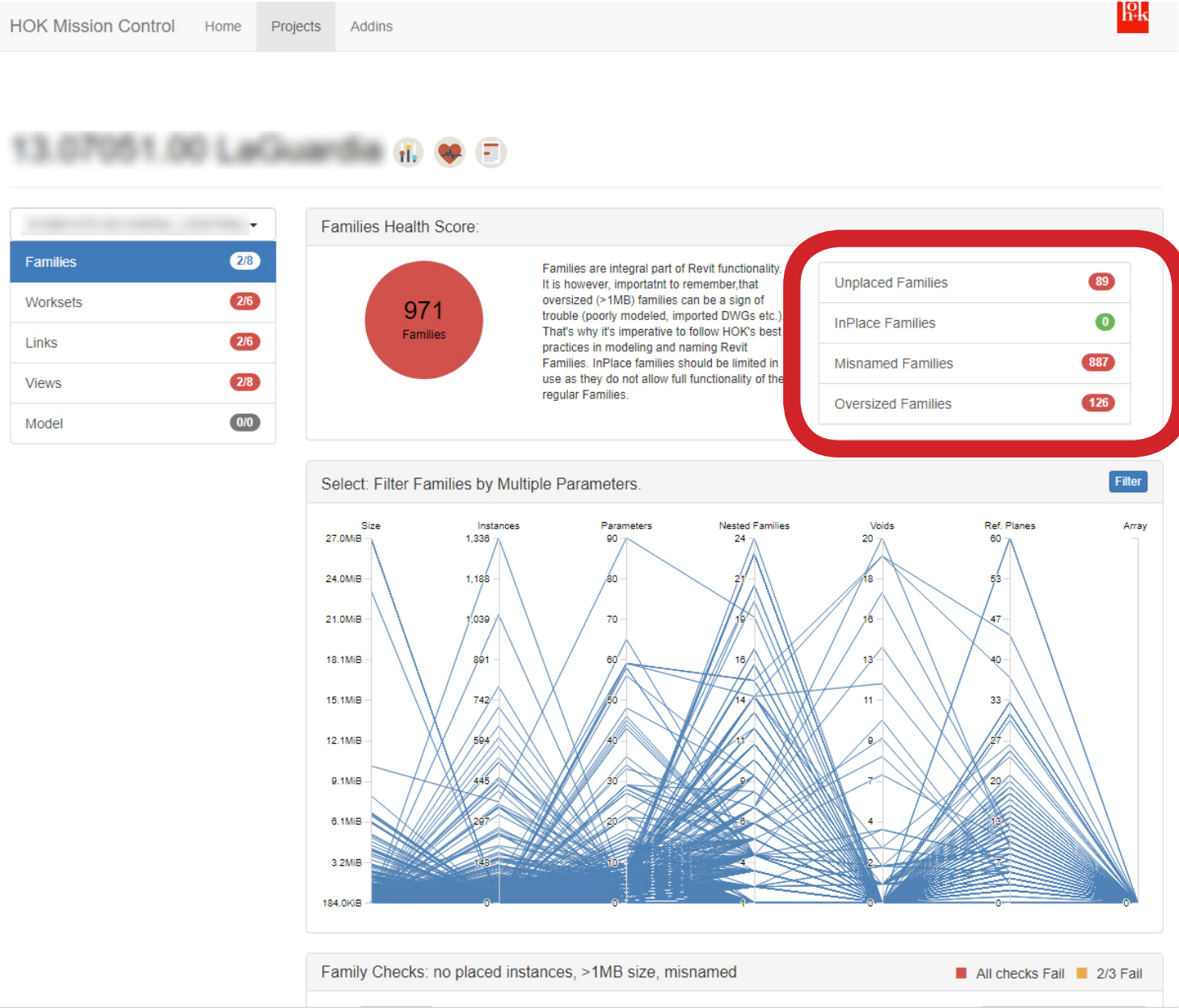
Model:

There are a few simple measurements that we can use to judge model speed and responsiveness. The good rule of thumb is to keep the model size smaller than 200Mb and that will help increase both open and synch times. Model size is also a good early indicator that something bad has happened to the model - it's size can increase significantly if we link and/or explode DWG/STL content.

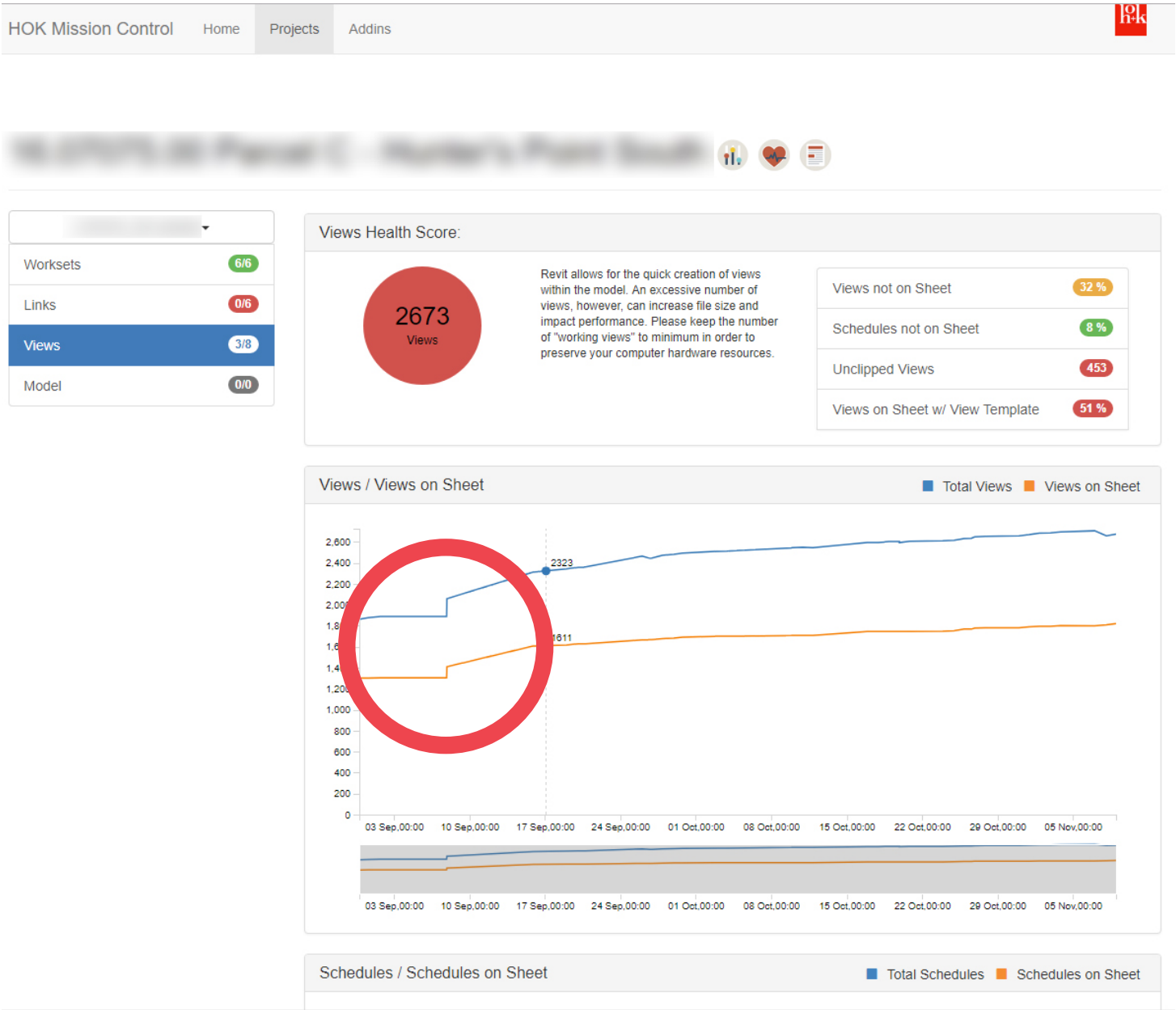
A12801375-3D-HHENC_CENTRAL

Families	2/8
Worksets	2/6
Links	2/6
Views	2/8
Model	0/0

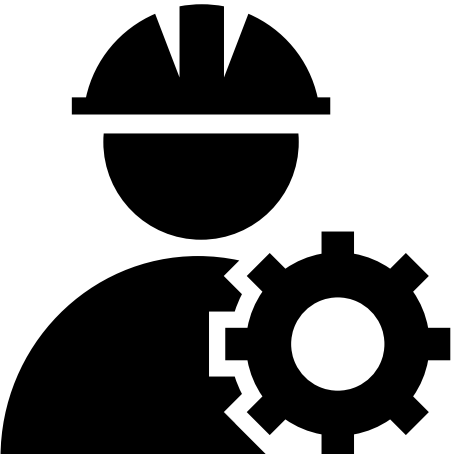
low level view



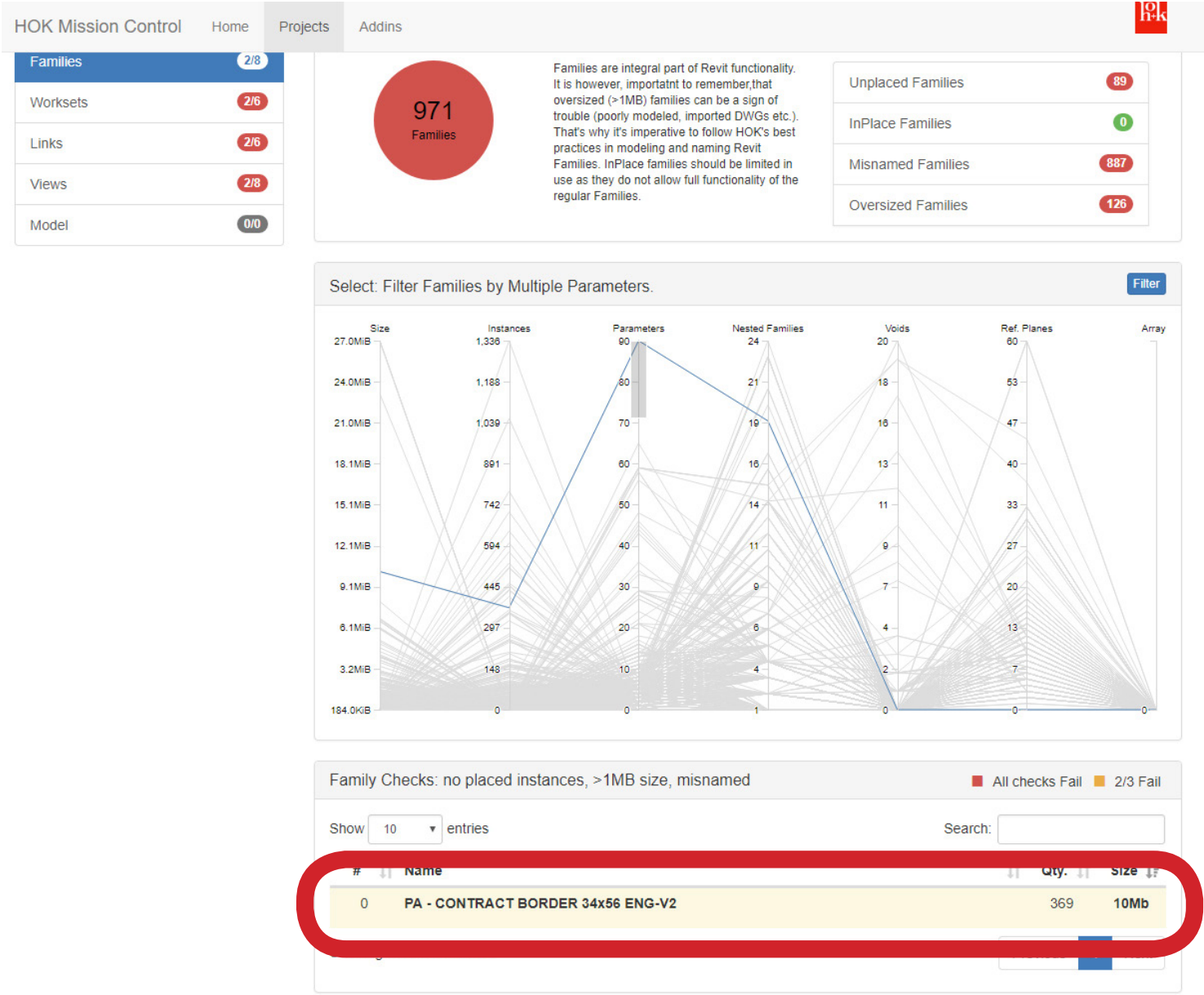
timelines



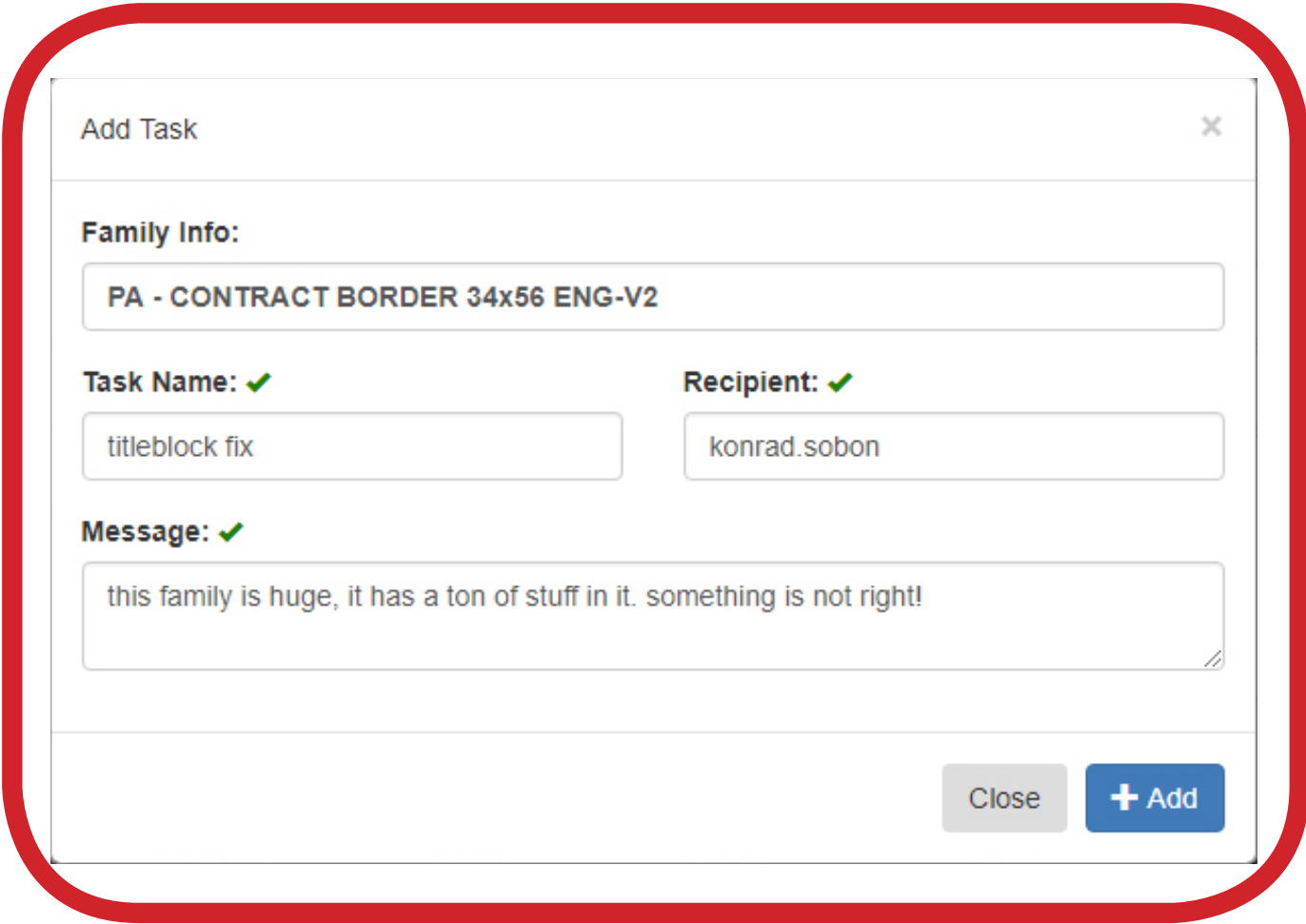
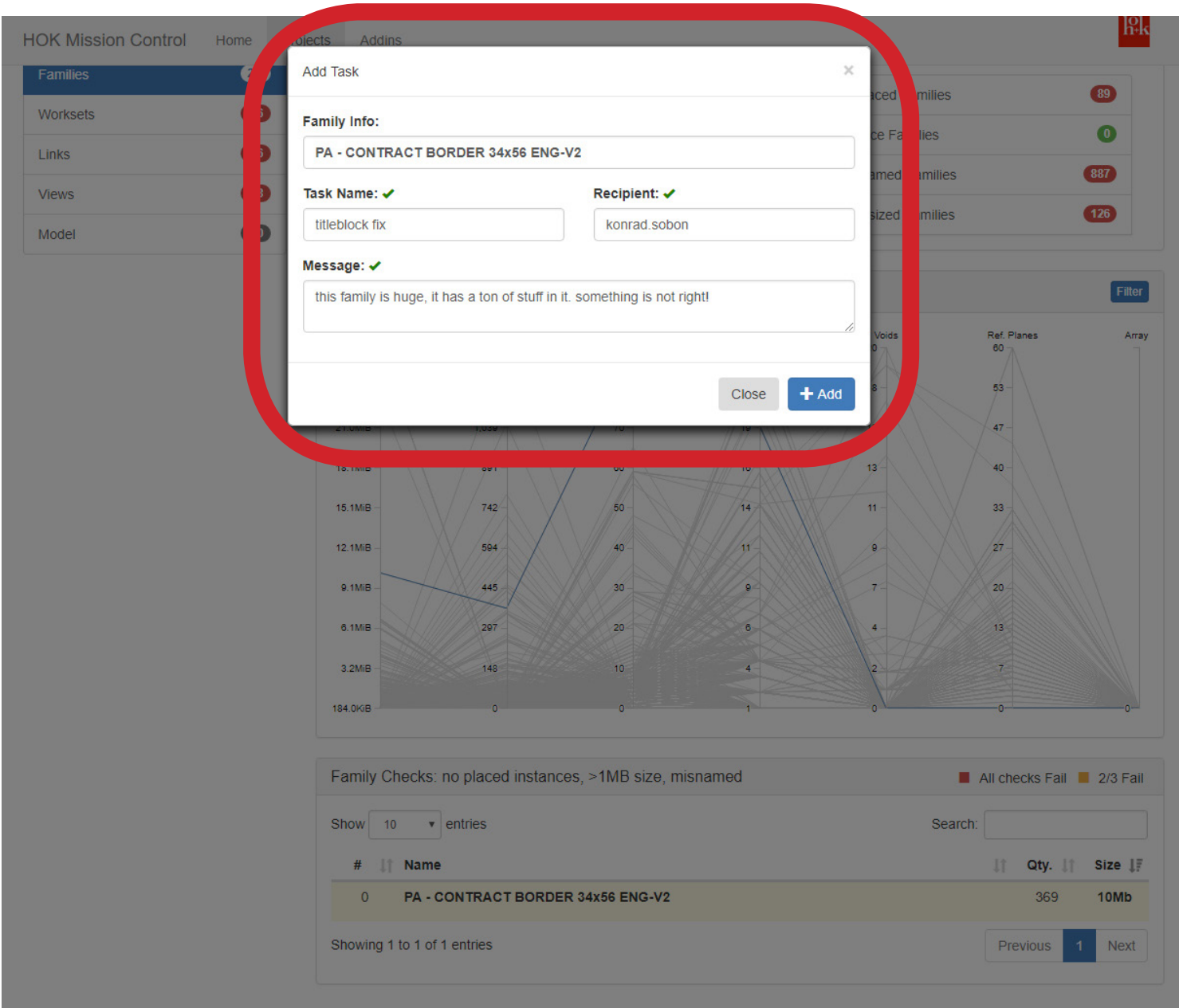
how did we get 100+ new views in one day?



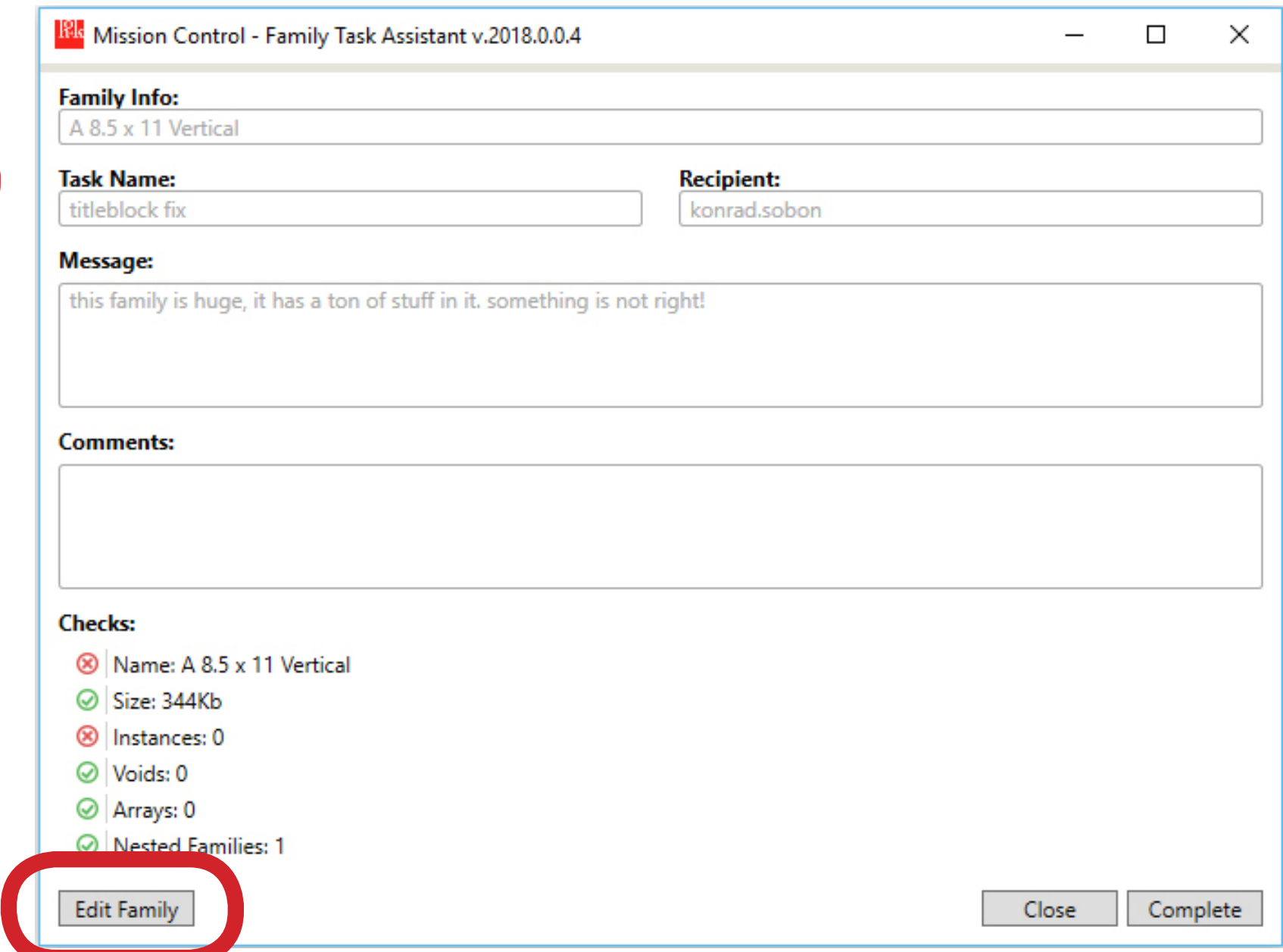
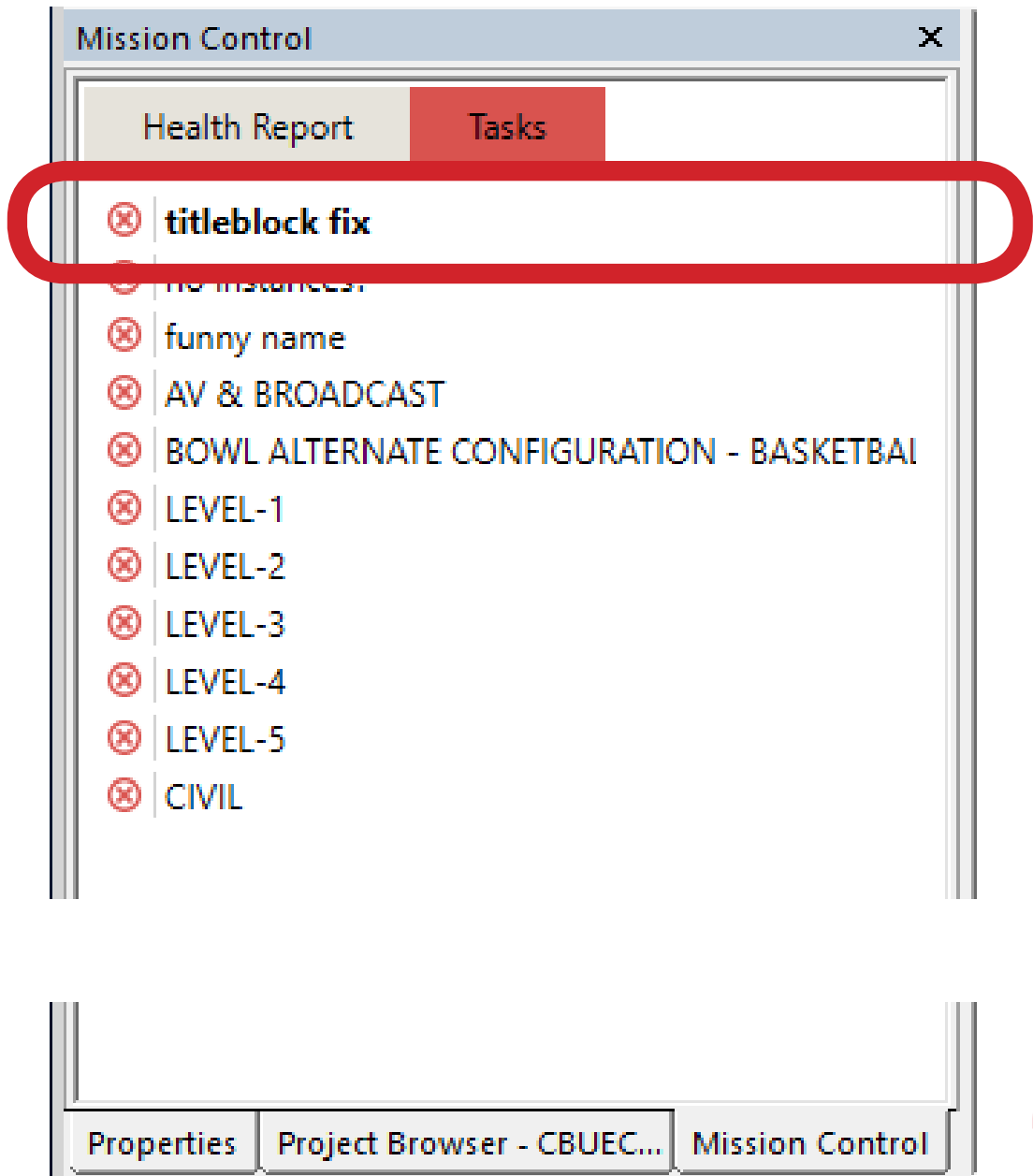
take action



take action



take action








lastly project managers

low hanging fruit




- We thought that we can start with sheet management. The typical task of creating and maintaining a project wide drawing list, usually falls on the BIM Manager, because it's tied closely with Revit, but can be easily done by Project Architect/Manager.

sheets manager

00.000000.00 patient0   

Sheets				+ Add Sheet	CBUEC_HOK_IN-central
Show	All	▼	entries	Search: <input type="text"/>	
<input type="checkbox"/>	Number		Name		Revision
<input type="checkbox"/>	A100		SHEET NAME		
<input type="checkbox"/>	A101		SHEET NAME		
<input type="checkbox"/>	A601		SEATING BOWL REFERENCE PLAN		21
<input type="checkbox"/>	A611		SEATING PLAN BY SECTION		21
<input type="checkbox"/>	A612 - 1		BOWL ALTERNATE CONFIGURATION - SCORERS N/S		21
<input type="checkbox"/>	A613		BOWL ALTERNATE CONFIGURATION - WRESTLING 6 MAT HIGH SCHOOL		21
<input type="checkbox"/>	A614		BOWL ALTERNATE CONFIGURATION - BASKETBALL PRACTICE		21
<input type="checkbox"/>	A615		BOWL ALTERNATE CONFIGURATION - WRESTLING 4 MAT		21
<input type="checkbox"/>	A616		BOWL ALTERNATE CONFIGURATION - CONCERT		21
<input type="checkbox"/>	A617		BOWL ALTERNATE CONFIGURATION - VOLLEYBALL		21
<input type="checkbox"/>	A618		COURT STRIPING		20
<input type="checkbox"/>	A619		BOWL ALTERNATE CONFIGURATION - VOLLEYBALL PRACTICE		21
<input type="checkbox"/>	A621		BOWL TYPE DIAGRAM		21
<input type="checkbox"/>	A631		SEATING BOWL ENLARGED PLANS		21
<input type="checkbox"/>	A641		SEATING BOWL SECTIONS		20
<input type="checkbox"/>	A642		SEATING BOWL ENLARGED SECTIONS		19
<input type="checkbox"/>	A651		SEATING BOWL ELEVATIONS		20
<input type="checkbox"/>	A652		SEATING BOWL ENLARGED ELEVATIONS & SECTIONS		21
<input type="checkbox"/>	A661		RAILING/BOWL DETAILS		19
<input type="checkbox"/>	A662		RAILING/BOWL DETAILS		19

filter by model/all

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Sheets

+ Add Sheet

CBUEC_HOK_IN-central

Show




All

 entries

Search:

<input type="checkbox"/>	Number	Name	Revision
<input type="checkbox"/>	A100	SHEET NAME	
<input type="checkbox"/>	A101	SHEET NAME	
<input type="checkbox"/>	A601	SEATING BOWL REFERENCE PLAN	21
<input type="checkbox"/>	A611	SEATING PLAN BY SECTION	21
<input type="checkbox"/>	A612	BOWL ALTERNATE CONFIGURATION COORDINATING	21

proposed new sheets

00.0000000.00 patient0   

Sheets				+ Add Sheet	CBUEC_HOK_IN-central
Show	All	entries	Search:		
<input type="checkbox"/>	Number	Name	Revision		
<input type="checkbox"/>	A100	SHEET NAME			
<input type="checkbox"/>	A101	SHEET NAME			
<input type="checkbox"/>	A601	SEATING BOWL REFERENCE PLAN	21		
<input type="checkbox"/>	A611	SEATING PLAN BY SECTION	21		
<input type="checkbox"/>	A612	BOWL ALTERNATE CONFIGURATION COORDINATING	21		

proposed changes

Show

All▼

 entries

Search:

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<input type="checkbox"/>	A613	BOWL ALTERNATE CONFIGURATION - WRESTLING 8 MAT HIGH SCHOOL	21
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<input type="checkbox"/>	A615	BOWL ALTERNATE CONFIGURATION - WRESTLING 4 MAT	21
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<input type="checkbox"/>	A617	BOWL ALTERNATE CONFIGURATION - VOLLEYBALL	21
<input type="checkbox"/>	A618	COURT STRIPING	20
<input type="checkbox"/>	A619	BOWL ALTERNATE CONFIGURATION - VOLLEYBALL PRACTICE	21

proposed deletions

Show

All▼

 entries

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<input type="checkbox"/>	A101	SHEET NAME	
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<input type="checkbox"/>	A617	BOWL ALTERNATE CONFIGURATION - VOLLEYBALL	21
<input type="checkbox"/>	A618	COURT STRIPING	20
<input type="checkbox"/>	A619	BOWL ALTERNATE CONFIGURATION - VOLLEYBALL PRACTICE	21

add new sheets by model

Add Sheet

Add Sheet

Architecture ▾ CBUEC_HOK_IN-central ▾

Sheet Count:

5

Recipient: ✓

konrad.sobon

Placeholder:

▾ No

Sheet Number:

A

101-105

Sheet Name:

LEVEL-

1-5

Components:

Type ▾

Components:

Type ▾

Clear

+ Create

Close

create series of name/number

Add Sheet

Architecture

CBUEC_HOK_IN-central

Sheet Count:

5

Sheet Number:

A

101-105

Sheet Name:

LEVEL-

1-5

Recipient: ✓

konrad.sobon

Placeholder:

▼ No

Components:

Type ▼

Components:

Type ▼

Clear

+ Create

Close

name/number builder

Add Sheet

Add Sheet

Architecture

CBUEC_HOK_IN-central

Sheet Count:

5

Recipient: ✓

konrad.sobon

Placeholder:

▼ No

Sheet Number:

A

101-105

Sheet Name:

LEVEL-

1-5

Components:

Type ▼

Prefix/Suffix

Number Series

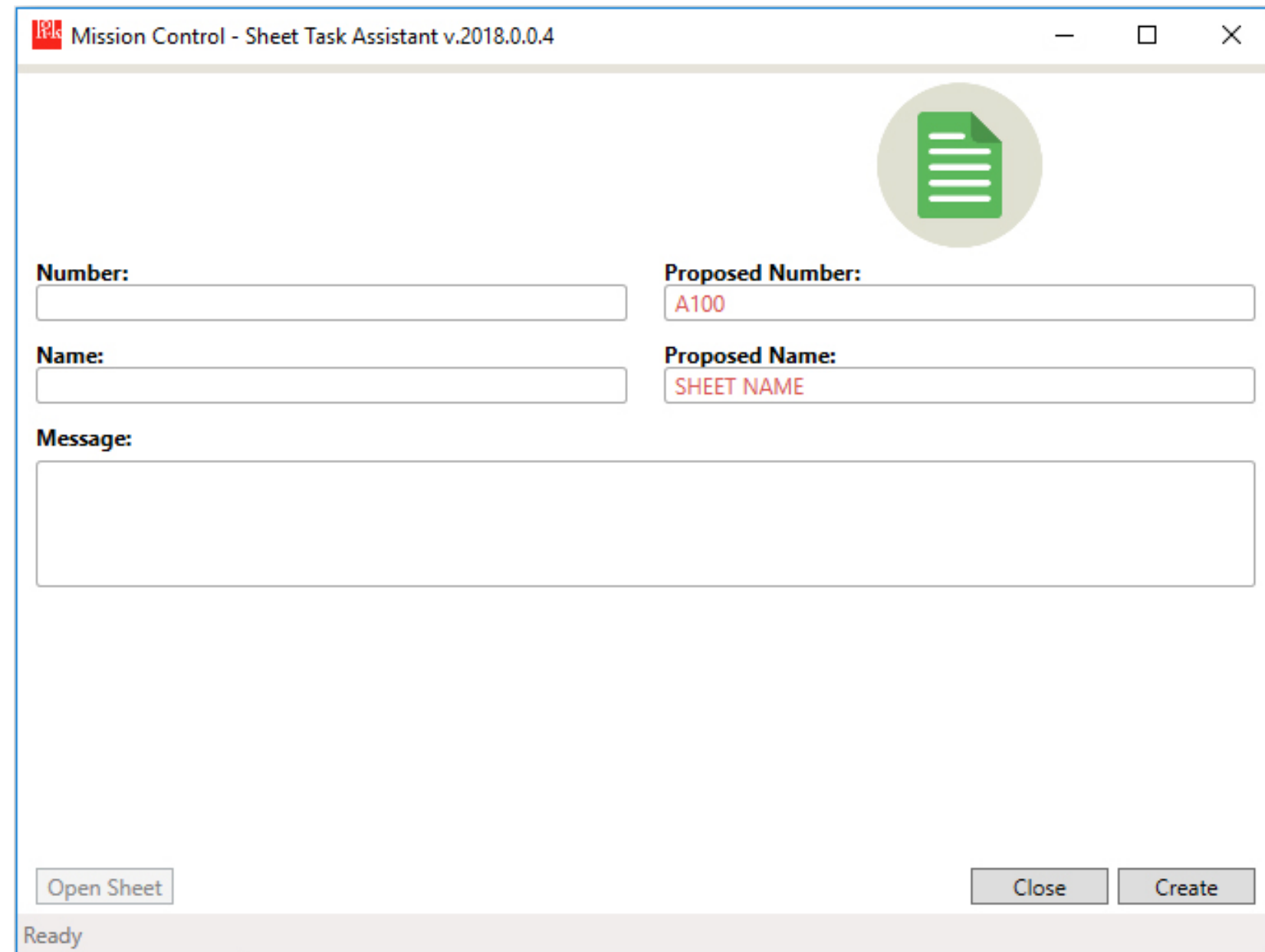
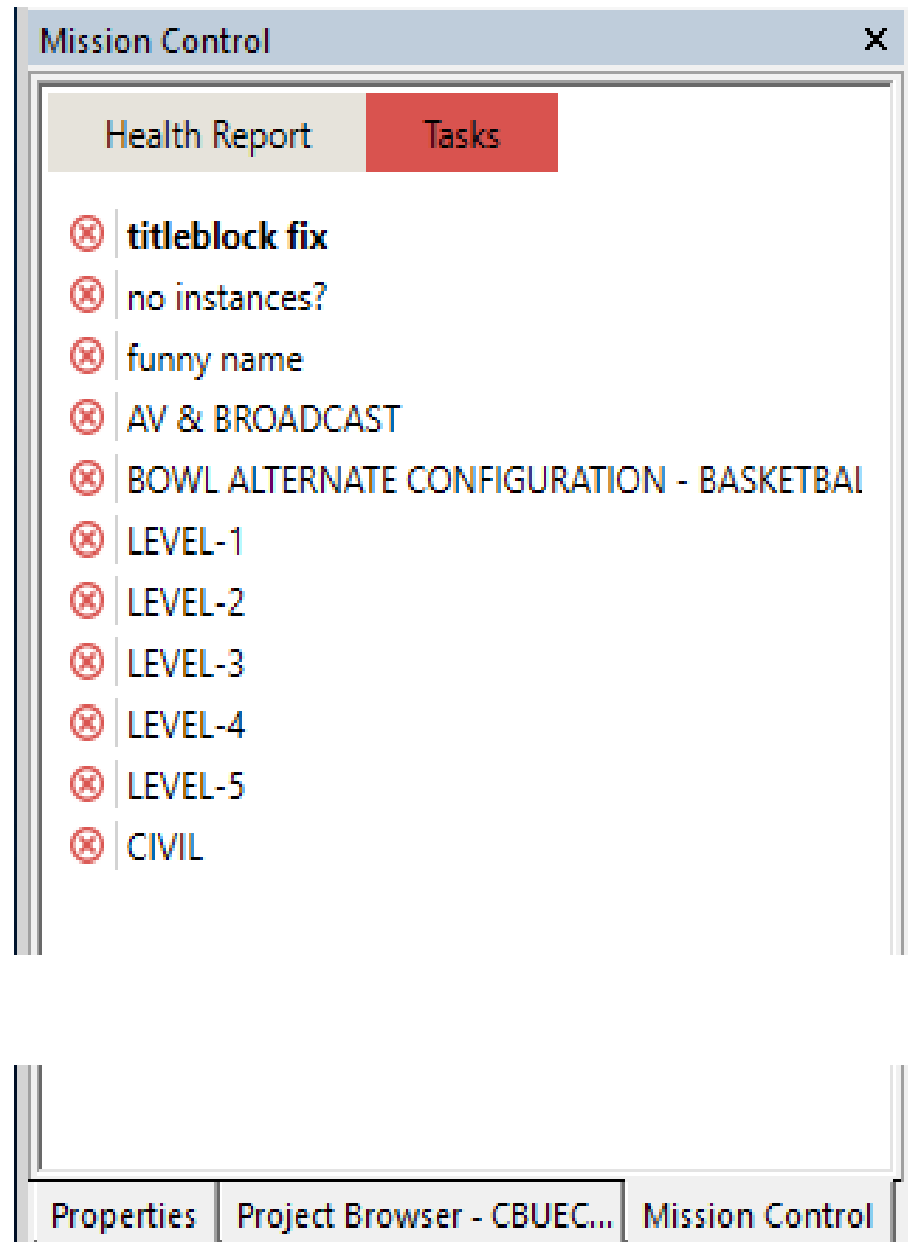
Letter Series

Clear

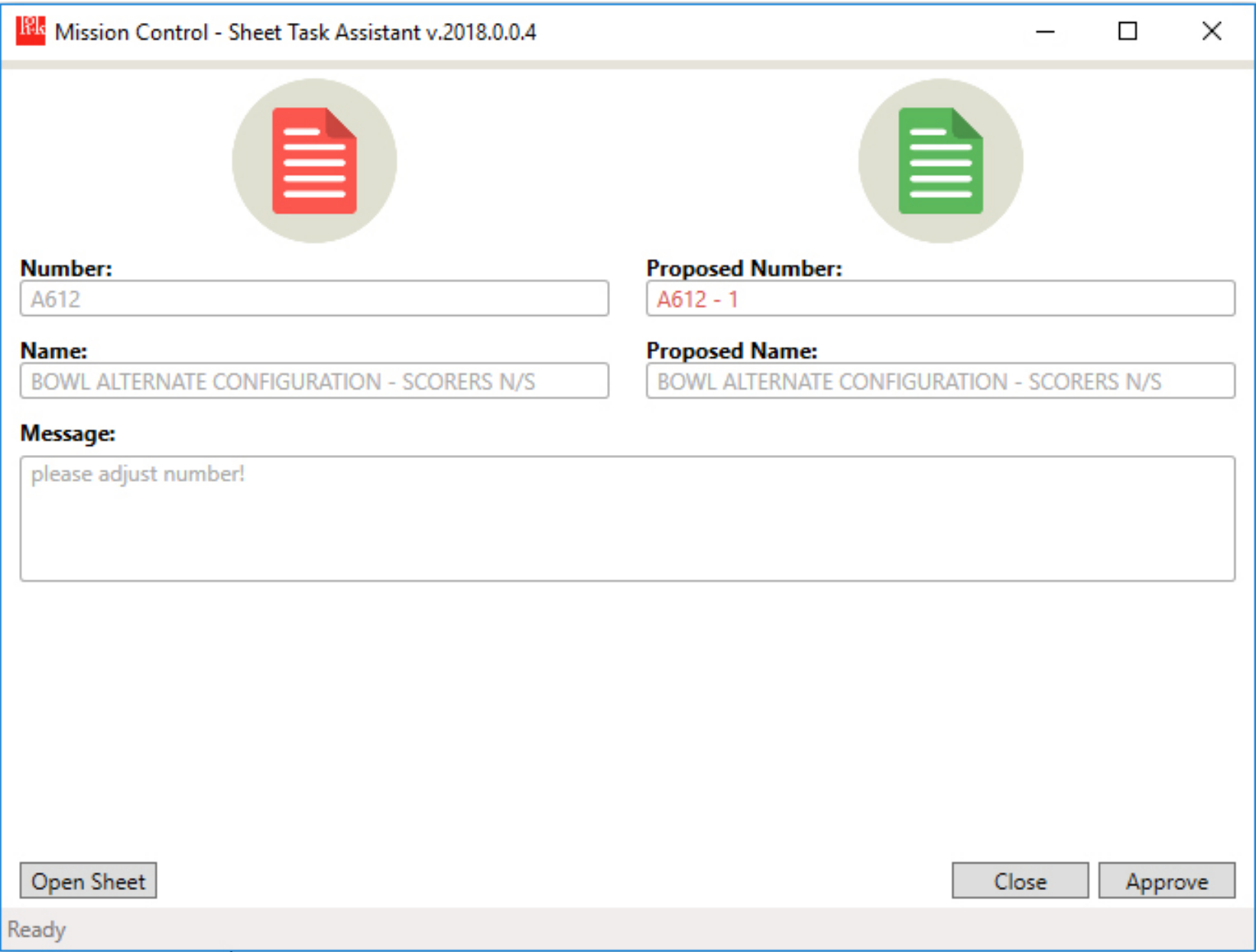
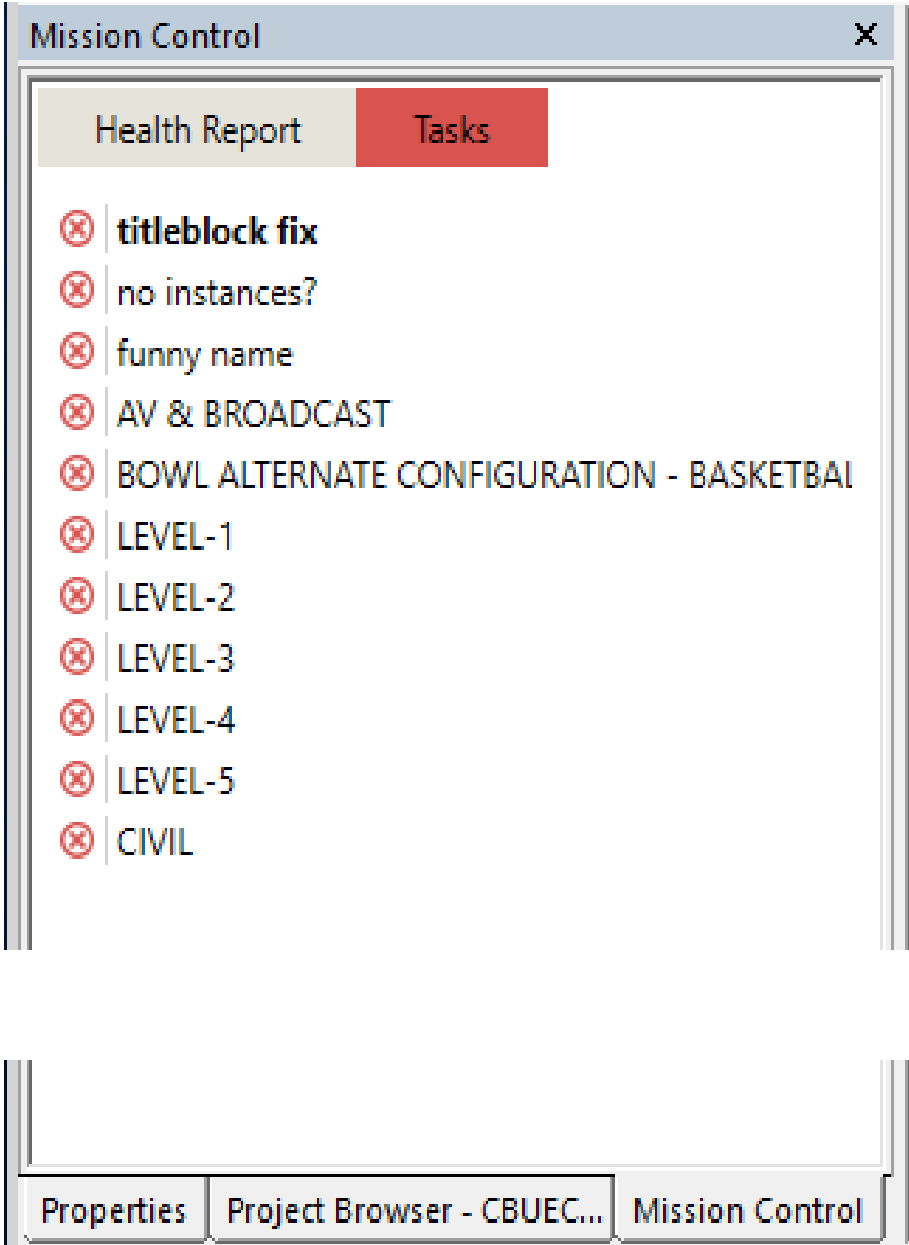
+ Create

Close

new sheet task



change sheet task





summary

collect data

- *“It ain’t what you don’t know that gets you in trouble. It’s what you know for sure that just ain’t so.” - Mark Twain.*

collect data

- *“It ain’t what you don’t know that gets you in trouble. It’s what you know for sure that just ain’t so.”* - Mark Twain.
- People become overconfident because they don’t document their past track record of bad decisions. We also tend to look for evidence of things that confirm our initial assumptions.

observe

- People make mistakes - lots of them. In order for us to realize what we are doing wrong we need to observe better, and document our past assumptions so that we can make better decisions in the future.

Speak up

- Enable people in your organization to provide you with feedback. Your solutions might not work for everyone, so it's important to let people tell you just that.



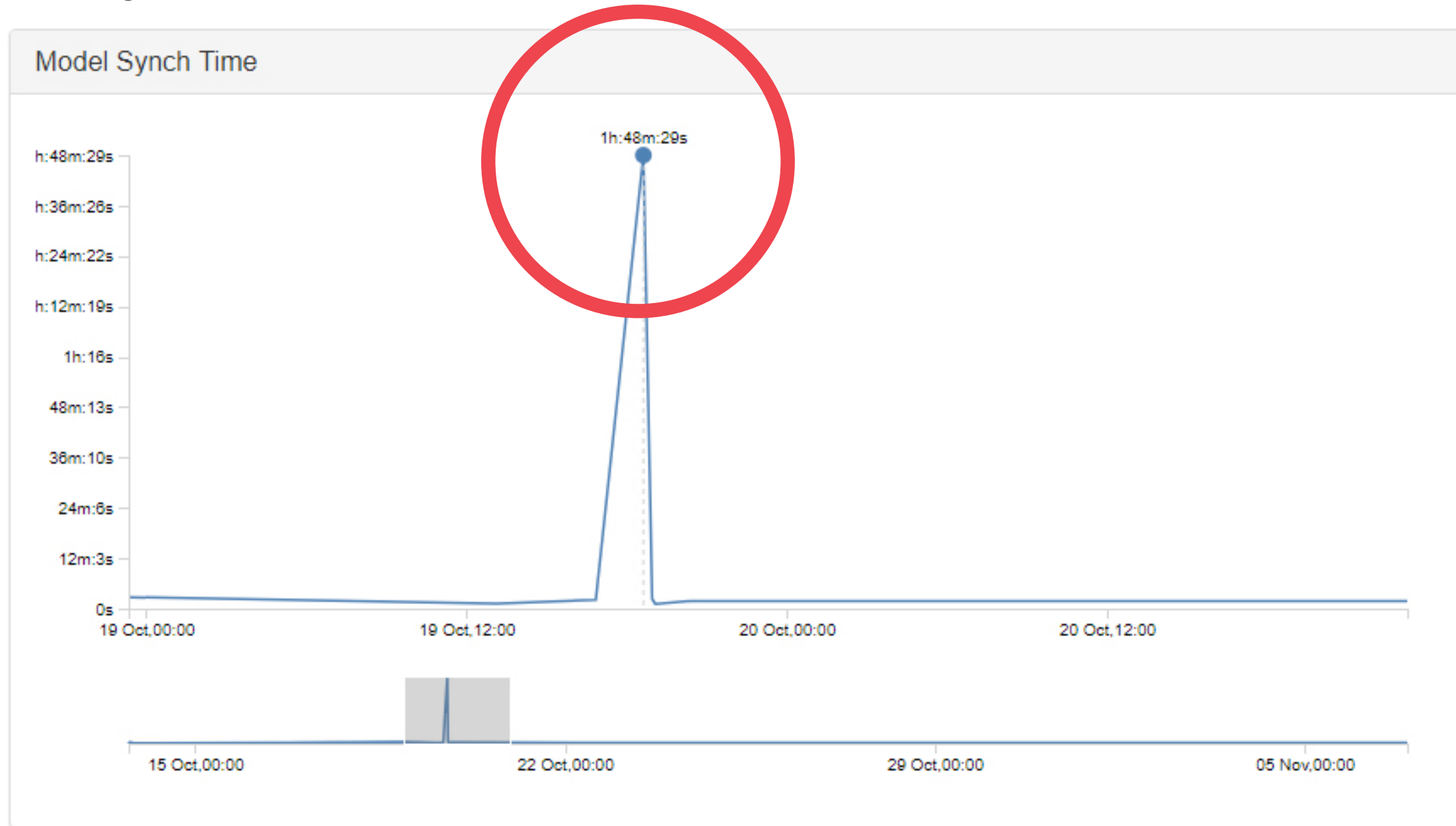
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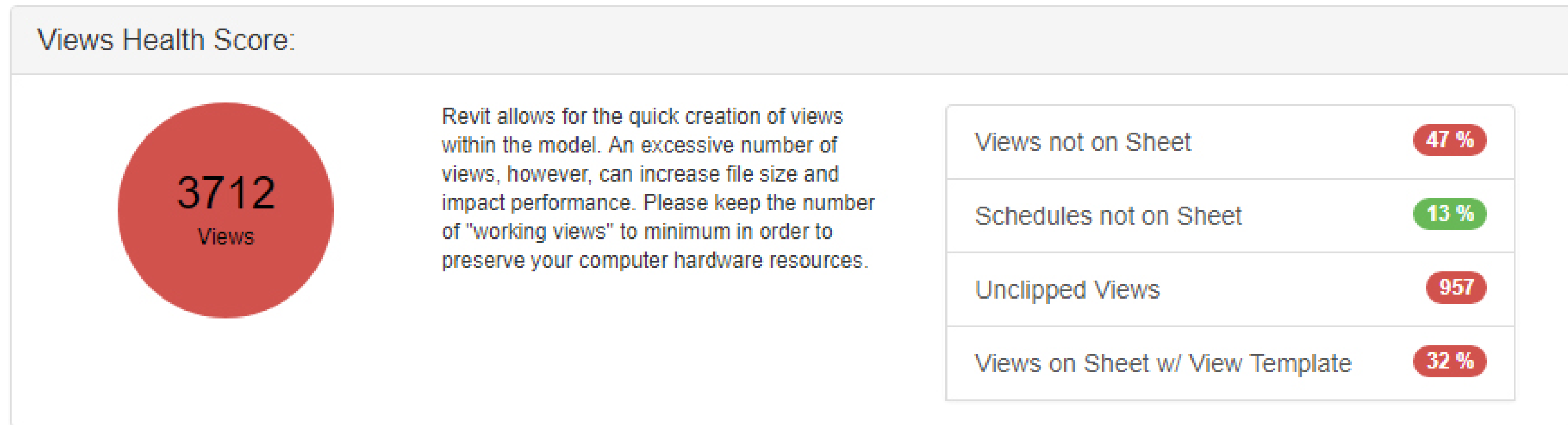
golden nuggets

- 1h 48m 29s synch...



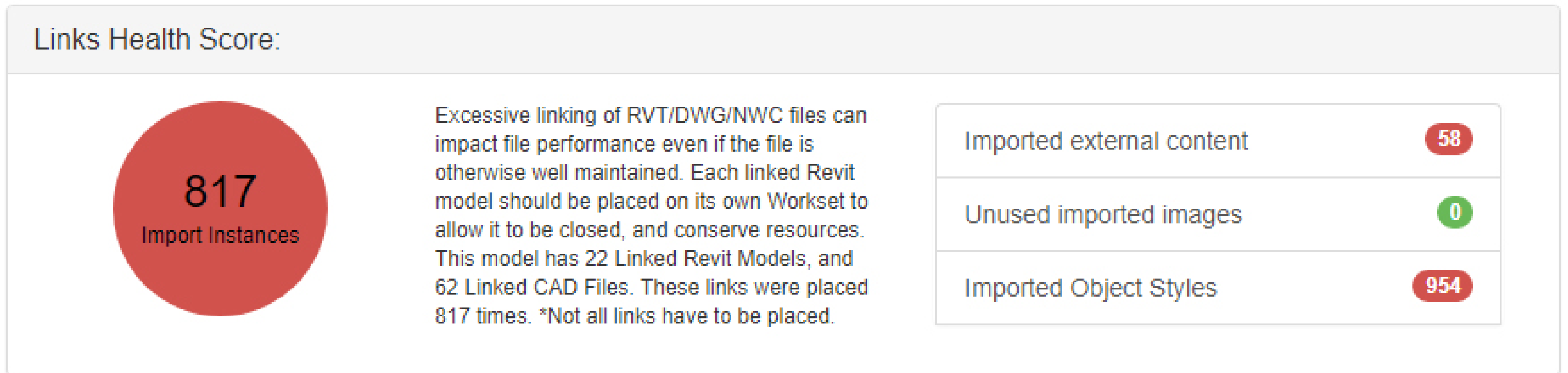
golden nuggets

- 3712 views
- 47% of which are “working” views



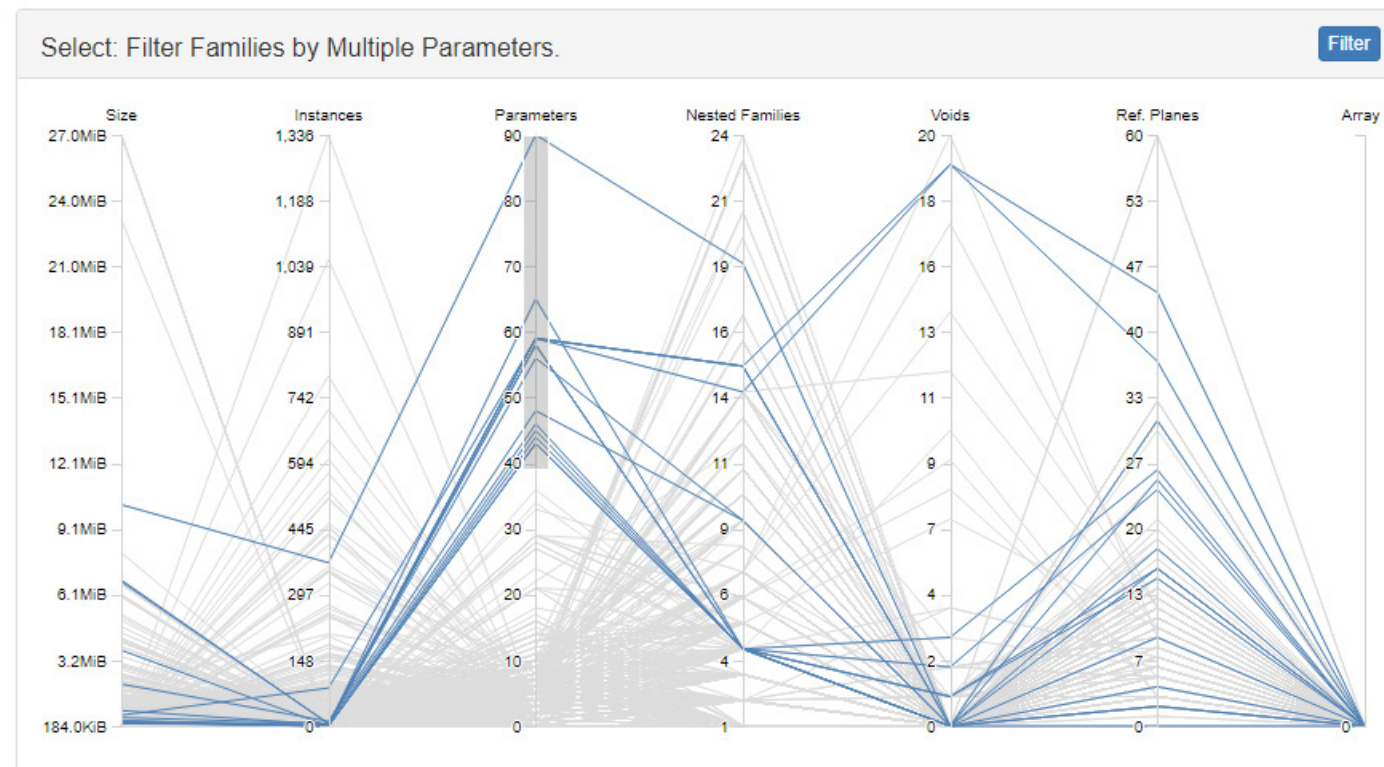
golden nuggets

- 22 linked Revit models
- 954 imported object styles
- 62 linked CAD files
- 817 instances of links



golden nuggets

- 369 instances of 10MiB titleblock, each has 90+ parameters
- 27MiB “conduit penetration” family
- 15 families with 40+ parameters
- Screw family type with 60 reference planes
- 7 family types with 20+ nested families, each 27MiB+ in size



Family Checks: no placed instances, >1MB size, misnamed ■ All checks Fail ■ 2/3 Fail

Show entries Search:

#	Name	Qty.	Size
4	PA - CONTRACT BORDER 34x56 ENG-V2	369	10Mb
12	Vestibule Level 3-mass wall	5	7Mb
13	Vestibule Level 3-rev1	6	7Mb
14	Vestibule Level 3-rev1 (STUDY)	0	4Mb
1	08_LVR04 CS RS-5300	11	2Mb
7	SectElevCallout_Autolink_LGA.0001	3	904Kb
6	SectElevCallout_Autolink_LGA	86	688Kb
0	03_Stair_Tread_Nosing-Babcock_Davis-Ribbed_Bar_Abrasive_Nosing_Cast_in_Mount	6	580Kb
9	Service Weight - Combination - Double1	0	432Kb
3	11_RiteHite_Hydraulic_RHJ5000_LGA	3	428Kb

Showing 1 to 10 of 15 entries Previous 1 2 Next

golden nuggets

- 1.4 GiB model

