

## SYNCHRO Pro / Open Viewer / Scheduler 2019.2 (v.6.2.1.3) Release



SYNCHRO Pro



SYNCHRO Scheduler



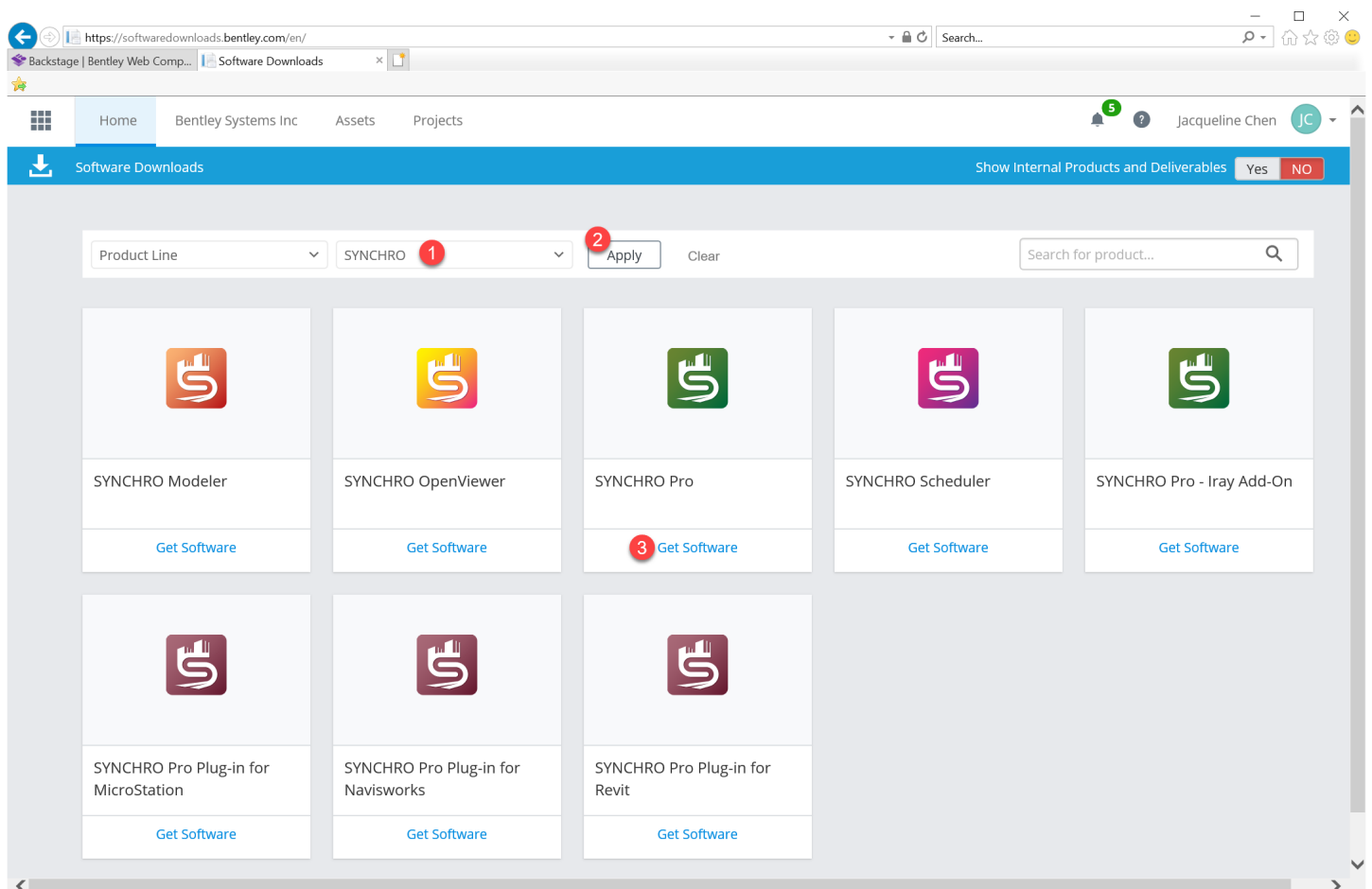
SYNCHRO Open Viewer



SYNCHRO Plugins

### Update is available here

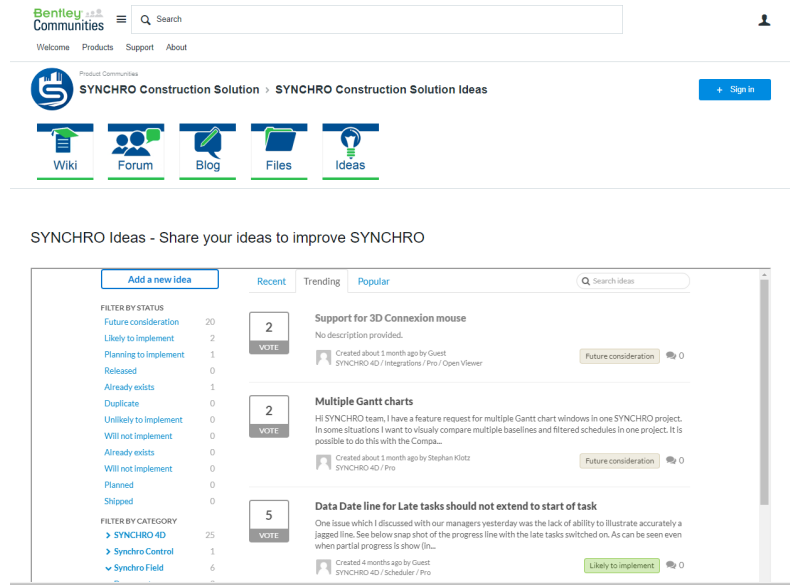
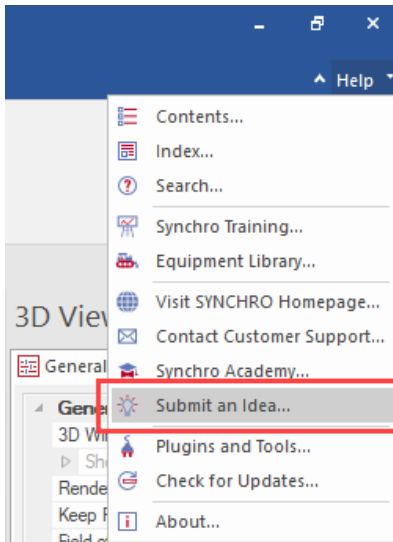
Visit [Software Downloads](#) in the Bentley CONNECTION Center. Look for brand SYNCHRO, then click *Apply* to find the latest updates for SYNCHRO Pro, Open Viewer and Scheduler.



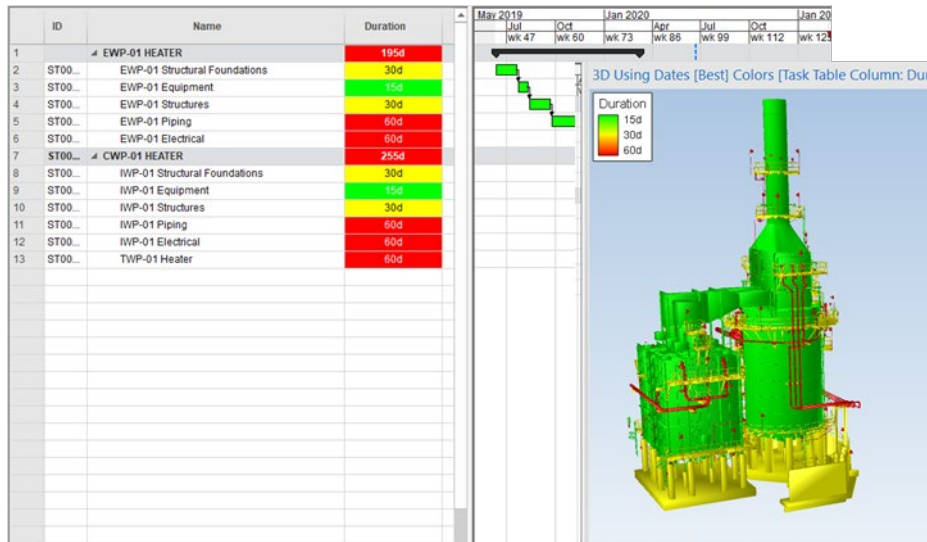
The screenshot shows the Bentley Software Downloads page. At the top, there is a navigation bar with 'Home', 'Bentley Systems Inc', 'Assets', and 'Projects'. Below this is a blue header for 'Software Downloads' with a toggle for 'Show Internal Products and Deliverables' set to 'NO'. A search bar is present with 'Product Line' set to 'SYNCHRO' (marked with a red '1') and an 'Apply' button (marked with a red '2'). The search results are displayed in a grid of product cards, each with a SYNCHRO logo icon and a 'Get Software' button. The 'SYNCHRO Pro' card has a red '3' next to its 'Get Software' button. The products listed are: SYNCHRO Modeler, SYNCHRO OpenViewer, SYNCHRO Pro, SYNCHRO Scheduler, SYNCHRO Pro - Iray Add-On, SYNCHRO Pro Plug-in for MicroStation, SYNCHRO Pro Plug-in for Navisworks, and SYNCHRO Pro Plug-in for Revit.

## Major Improvements and New Features

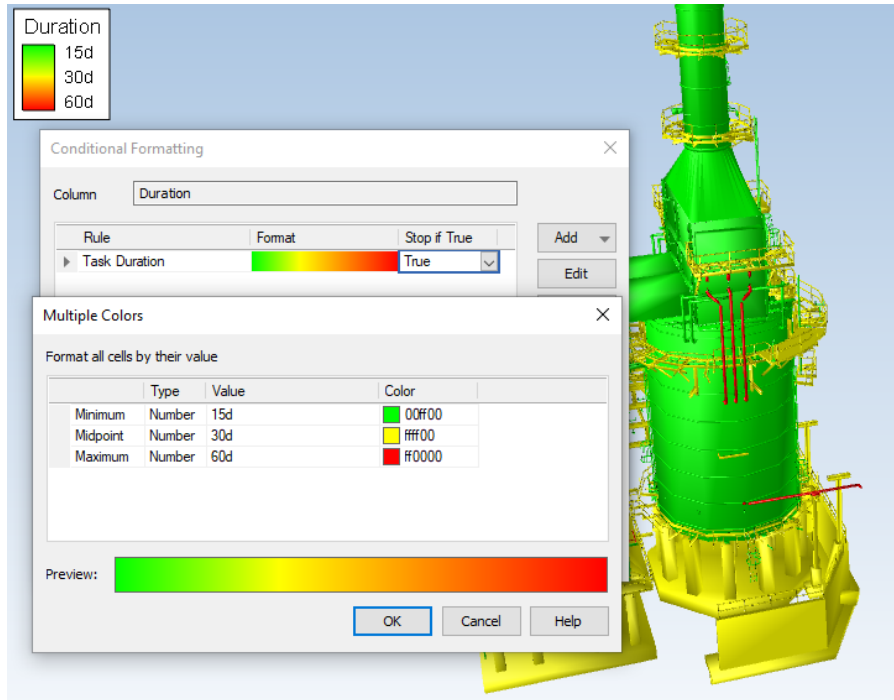
1. **Submit your ideas** for improvements and new features is available from help menu and support window.



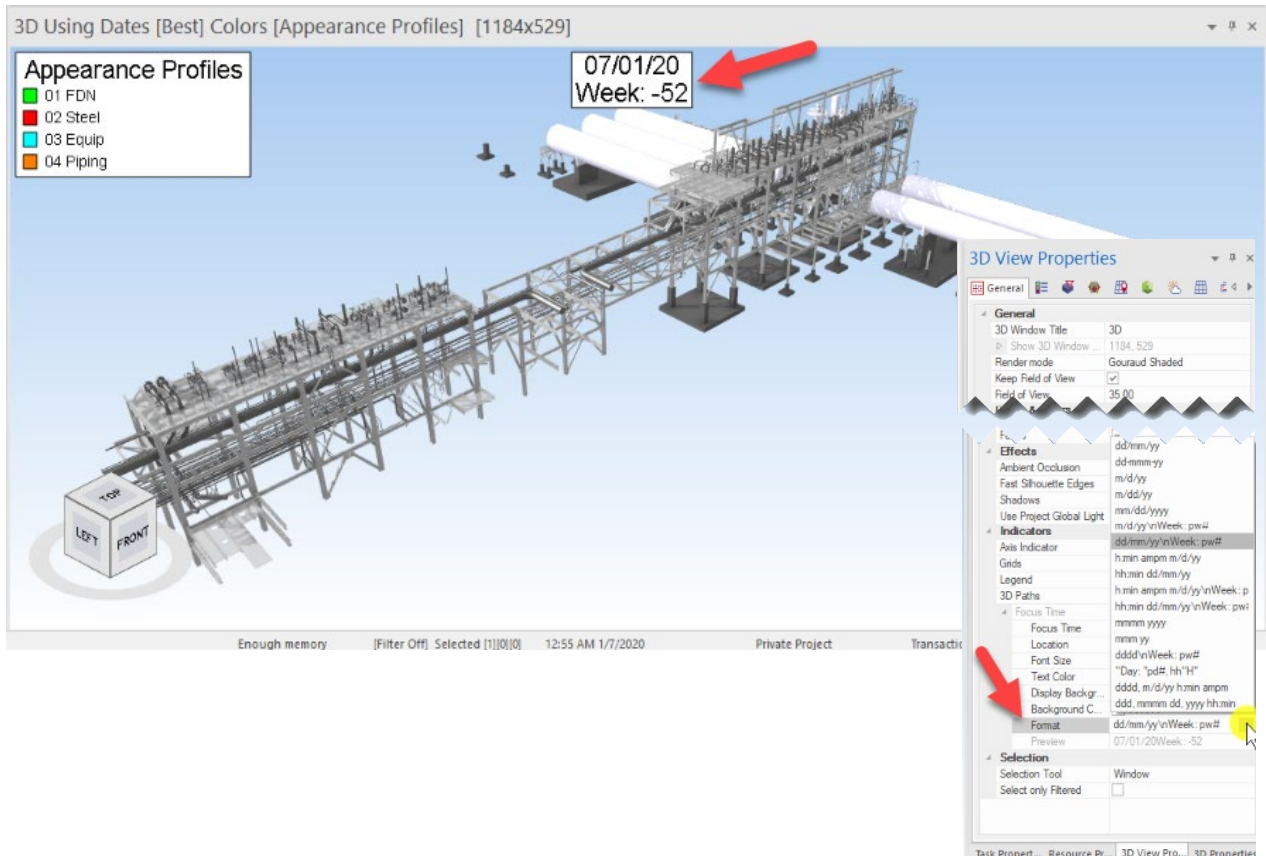
2. **New color modes by Task and Resources table column**, in addition to existing 3D table column coloring, allows coloring model by any task, resource, or 3D parameter using Conditional Formatting in the tables.



**3. Legend for Task/Resource/3D table column color modes can now be displayed in 3D View.**

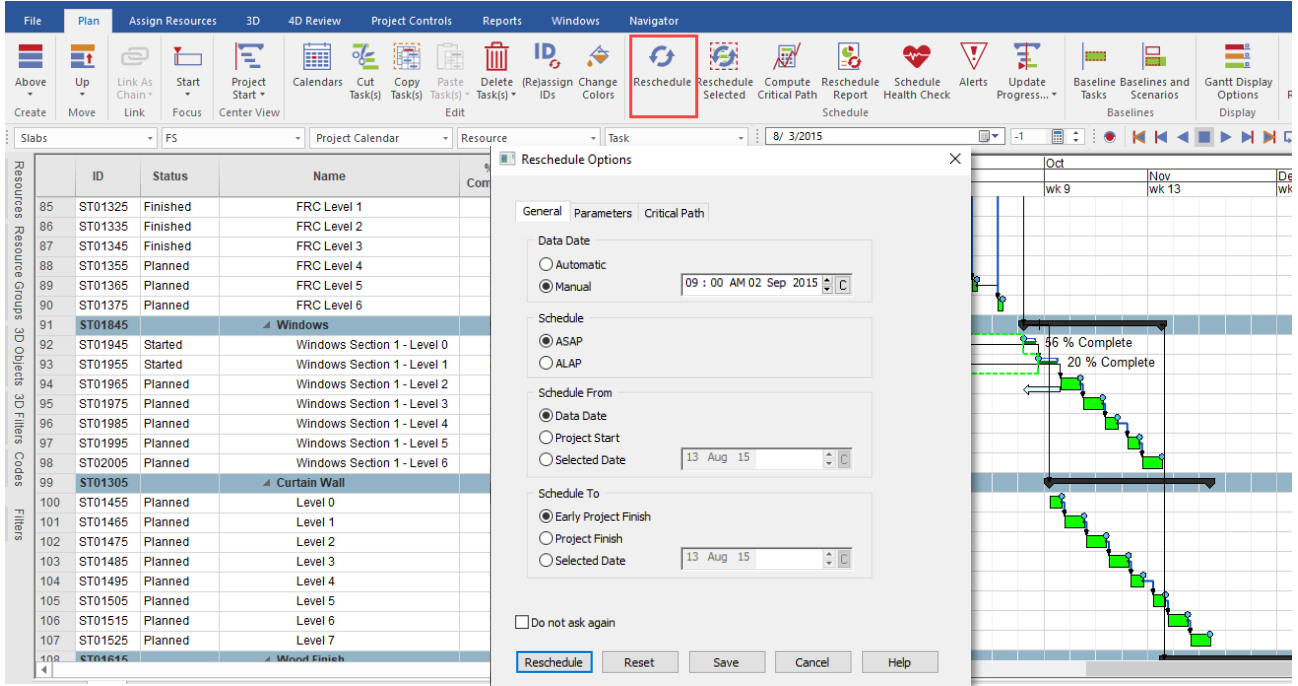


**4. Custom Focus Time Indicator in 3D View Properties and Animation exports. Format the date/time any way you want: include Project Week or Day numbers. Now have the flexibility to show time of day or date only, add custom text, etc.**

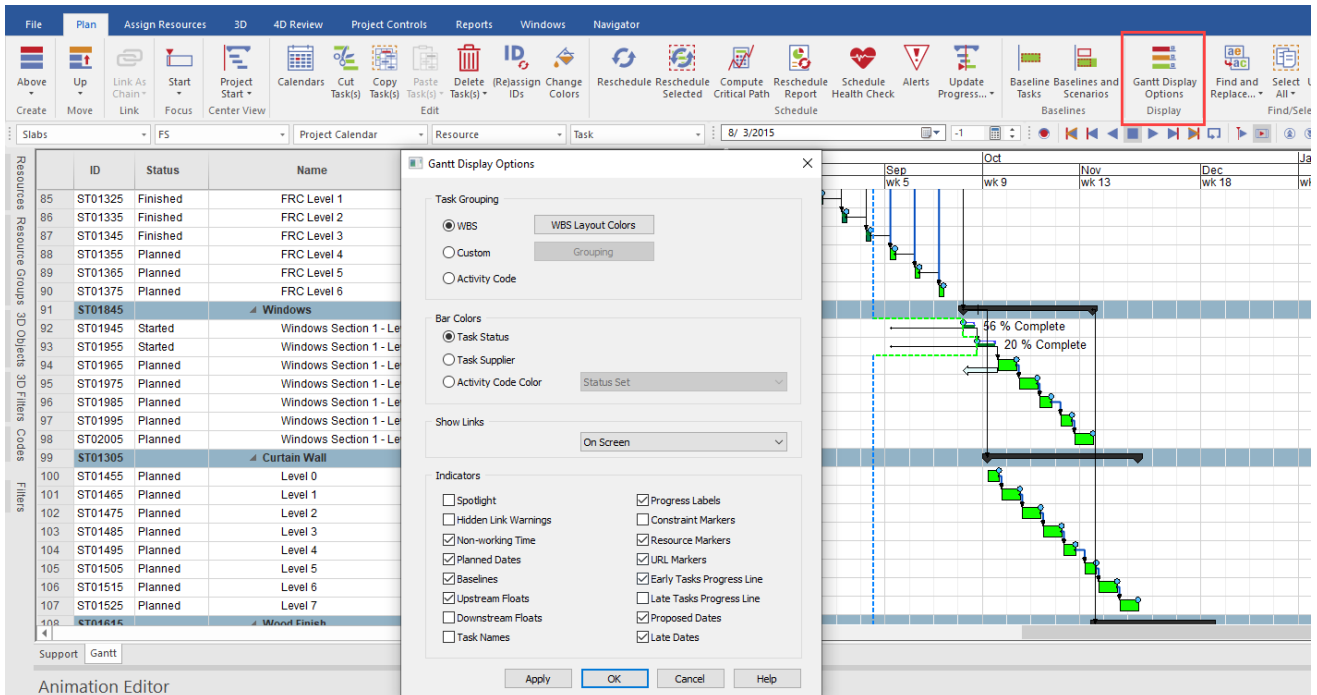




5. Reschedule Options Dialog combines all rescheduling settings in one place for ease of use.

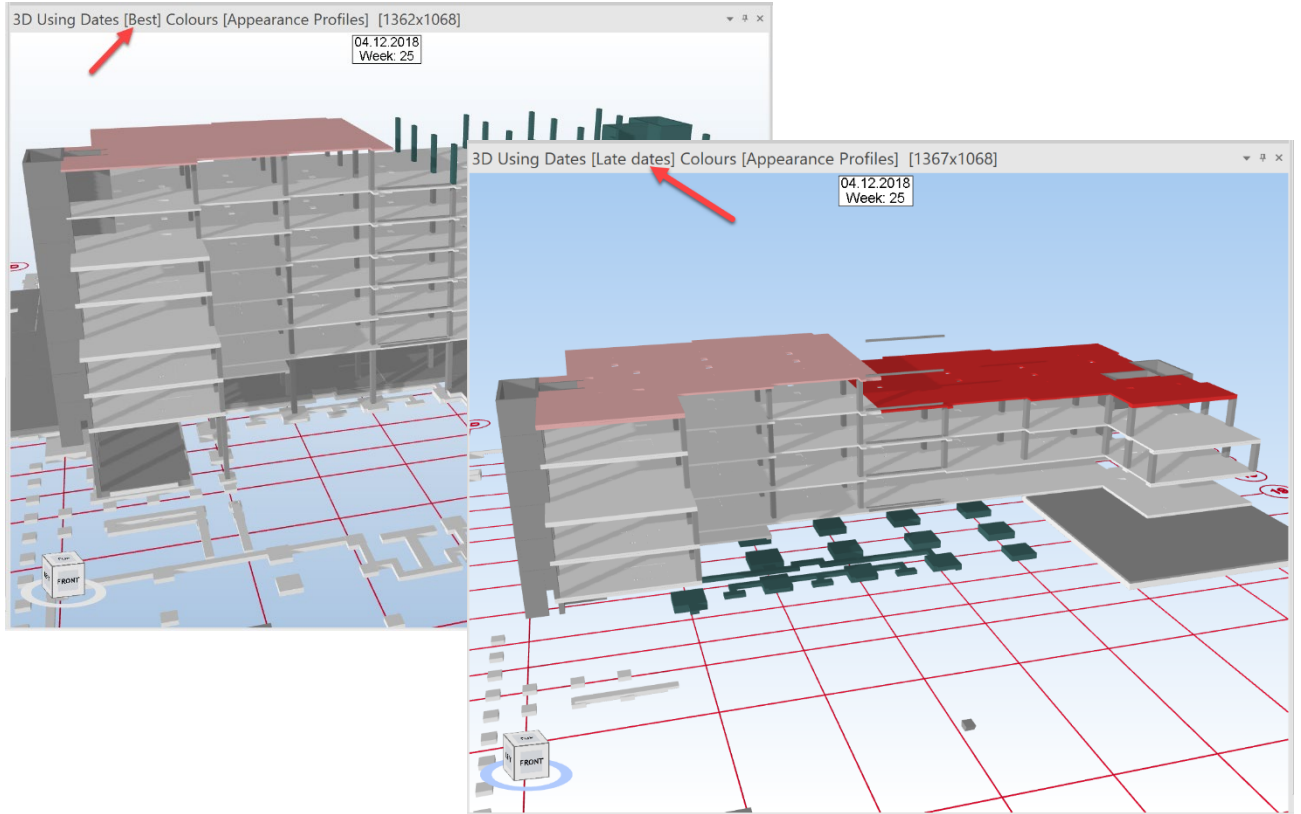


6. Gantt Display Options Dialog combines edit settings for Gantt Chart in one place: edit grouping, bar colors, link display, and toggle indicators on/off.

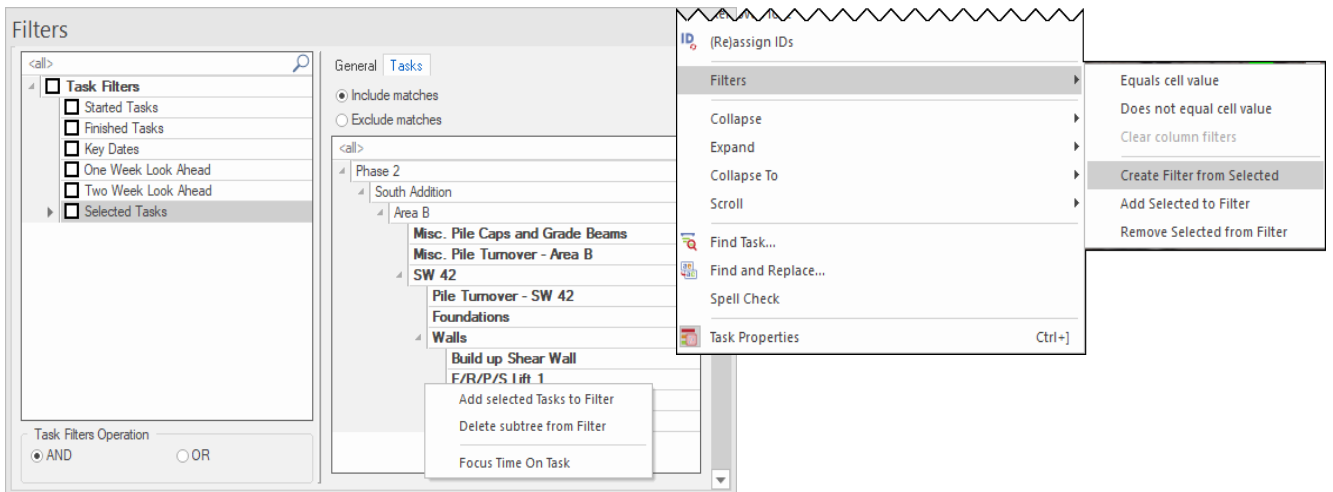




- 7. **Late Dates Gantt bars and simulation using Late Dates** can be used to compare early and late dates in the Gantt chart and in side-by-side 3D windows.



- 8. **Save Selected Tasks as Filter** can save selected Tasks as task filter for reuse later.





9. Focus Time keyframes linked to tasks allows automatic update of animation if schedule changes to prevent rework.

ID	Name	Duration	Start	Finish	3D Resources	
246	STO1484	Waterproofing	15d	9:00 AM 6/17/2018	5:00 PM 6/22/2018	4
247	STO1502	Brick Veneer	75d	9:00 AM 6/7/2018	5:00 PM 8/19/2018	43
248	STO1508	Glass Windows	15d	9:00 AM 9/20/2018	5:00 PM 10/10/2018	151
249	STO1518	Dismantle Scaffolding	5d	9:00 AM 10/11/2018	5:00 PM 10/17/2018	222
250	STO1480	NORTH ELEVATION	145d	9:00 AM 5/28/2018	5:00 PM 9/19/2018	150
251	STO1456	Level 1 North Elevation	5d	9:00 AM 5/28/2018	5:00 PM 6/1/2018	1
252	STO1466	Level 2 North Elevation	5d	9:00 AM 6/4/2018	5:00 PM 6/8/2018	1
253	STO1506	Level 3 North Elevation	5d	9:00 AM 6/11/2018	5:00 PM 6/15/2018	1
254	STO1526	Level 4 North Elevation	5d	9:00 AM 6/18/2018	5:00 PM 6/22/2018	12
255	STO1536	Waterproofing	10d	9:00 AM 6/18/2018	5:00 PM 6/29/2018	6
256	STO1546	Brick Veneer	40d	9:00 AM 9/20/2018	5:00 PM 11/4/2018	222
258	STO1522	Glass Windows	15d	9:00 AM 11/15/2018	5:00 PM 12/5/2018	2
259	STO1523	ROOFING	183d	9:00 AM 5/2/2018	5:00 PM 11/19/2018	(29)
263	STO1566	Roofing Level 5	15d	9:00 AM 5/30/2018	5:00 PM 6/19/2018	255
265	STO1586	Parapet Metal Level 5	10d	9:00 AM 12/31/2018	5:00 PM 1/11/2019	4
266	STO1596	INTERIOR BUILD-OUT	332d	9:00 AM 3/12/2018	5:00 PM 5/7/2019	(1094)
272	STO1606	BASEMENT LEVEL 0	165d	9:00 AM 3/12/2018	5:00 PM 10/26/2018	(226)
277	STO1646	Hang & Finish Drywall	15d	9:00 AM 6/18/2018	5:00 PM 7/6/2018	172
278	PTA624	Paint	15d	9:00 AM 7/14/2018	5:00 PM 7/27/2018	172

10. User-defined project Constants can be used for calculation in User Field Formulas and Script.

Name (unique)	Type	Value
WasteFactor	Number	0.02
FormworkPercent	Number	0.20

```

Script Interpreter
Script
[ProjectConstants]
Set Quantity incl Waste Factor
SET_PROPERTY(PHYSICALVOL_SH, "Cubic yard", SUM 3D UFV["Volume"]*(1-WasteFactor))

Command List
Index | Script | Command | Object | Argument | Status
-----|-----|-----|-----|-----|-----
0 | [0] | SetProperty(PHYSICAL | TASKArea A FND - TO... | 10011.75900204 | 
1 | [0] | SetProperty(PHYSICAL | TASKArea D FND - TO... | 5574.60802266 | do...
2 | [0] | SetProperty(PHYSICAL | TASKArea B FND - TO... | 2242.07211432 | do...
3 | [0] | SetProperty(PHYSICAL | TASKArea A FND - Ste... | 3459.8048151 | do...
4 | [0] | SetProperty(PHYSICAL | TASKArea D FND - Ste... | 6601.2545436 | do...
5 | [0] | SetProperty(PHYSICAL | TASKArea B FND - Ste... | 90.86500068 | doubl...
6 | [0] | SetProperty(PHYSICAL | TASKArea E FND - Ste... | 146.71000272 | do...
7 | [0] | SetProperty(PHYSICAL | TASK[D1] | 146.71000272 | do...
8 | [0] | SetProperty(PHYSICAL | TASK[D2] | 367.2125017 | do...
9 | [0] | SetProperty(PHYSICAL | TASK[D3] | 127.67000034 | do...
10 | [0] | SetProperty(PHYSICAL | TASK[D4] | 166.81204338 | do...
11 | [0] | SetProperty(PHYSICAL | TASK[D5] | 243.14250306 | do...
12 | [0] | SetProperty(PHYSICAL | TASK[D6] | 311.05750374 | do...
13 | [0] | SetProperty(PHYSICAL | TASK[D7] | 107.3125017 | do...
14 | [0] | SetProperty(PHYSICAL | TASKArea C FND - Ste... | 3334.81541556 | do...

Progress
All scripts resolved.
  
```

Formula editor

Condition

Formula

FormworkPercent

FormworkPercent = DOUBLE(0.2)



11. Fill down command in tables can easily copy parameter values to non-consecutive rows.

ID	Name	Duration	Start	Finish	3D Resources	
437	ST02826	Prime/ Paint	5d	9:00 AM 9/3/2018	5:00 PM 9/7/2018	
438	ST02836	Ceiling Grid	5d	9:00 AM 9/10/2018	5:00 PM 9/14/2018	10
439	ST02846	MEP Drops	10d	9:00 AM 9/17/2018	5:00 PM 9/28/2018	
440	ST02851	Above Ceiling Inspections	5d			
441	ST02856	Ceiling Tile	5d			
442	ST02866	Final Paint	10d			
443	ST02876	Doors Hardware	5d			
444	ST02886	MEP Trim-Out	10d			
445	ST02896	Wall Protection	5d			
446	ST02906	Flooring/ Base	5d			
447	ST02916	Testing, Punch	10d			
448	ST03976	Commissioning	80d			
449	ST03991	Certifications	30d			
450	ST04006	Final Inspections	35d			
451	ST01746	AIR-ON	5d			
452	0020	SITWORK	60d			
442	ST02866	Final Paint	10d	9:00 AM 10/15/2018	5:00 PM 10/26/2018	
443	ST02876	Doors Hardware	5d	9:00 AM 10/29/2018	5:00 PM 11/2/2018	
444	ST02886	MEP Trim-Out	10d	9:00 AM 10/29/2018	5:00 PM 11/9/2018	
445	ST02896	Wall Protection	5d	9:00 AM 11/12/2018	5:00 PM 11/16/2018	
446	ST02906	Flooring/ Base	5d	9:00 AM 11/19/2018	5:00 PM 11/23/2018	
447	ST02916	Testing, Punch	5d	9:00 AM 11/26/2018	5:00 PM 11/30/2018	
448	ST03976	Commissioning	80d	9:00 AM 11/12/2018 (*)	5:00 PM 3/1/2019 (*)	
449	ST03991	Certifications	5d	9:00 AM 3/20/2019	5:00 PM 3/26/2019	
450	ST04006	Final Inspections	35d	9:00 AM 3/20/2019	5:00 PM 5/7/2019	14

12. Collapse/Expand to a specific level in tables can quickly collapse to a certain level to show the Work Breakdown Structure or Code summaries and hide detailed tasks.

The screenshot shows a software interface with a table of tasks. A context menu is open over the table, and the 'Collapse To' option is highlighted. A sub-menu is displayed, showing levels 1 through 9. The 'Level 2' option is selected. In the bottom left corner, there is an 'Appearance Profiles' legend with color-coded boxes for various task types: D1 Excavate (brown), D2 Place Concrete (green), D3 Structural Infill (blue), D4 Fence/Railing (red), D5 Ballast (purple), D6 Realignment/Exclusion Zone (orange), D8 Form/SCM (dark red), D8 Pway (teal), and D8 Upstand (cyan). The table shows a hierarchy of tasks under ID L010, including 'Track Realignment, Overpass and Rail Construction' and its sub-tasks 'STAGE 1 Demolition', 'STAGE 2 Track Realignment Work', 'STAGE 3 Overpass Structure and Rail Construction', and 'STAGE 4 Possession and Commissioning'.



### 13. Assign Resource Statuses with Script in bulk based on Resource properties (e.g. User Field value).

The screenshot shows the Resources window with a table of resources and their properties. A script is being executed in the Script Interpreter window to assign statuses based on the SYN-Status property.

Name	3D	SYN-Status	Default category: Status Set	Default category: Status	Default category: Status Date
Part [622833]	1	Form	Concrete	Form	10:17 PM 12/15
Part [622834]	1	Form	Concrete	Form	10:17 PM 12/15
Part [622835]	1	Form	Concrete	Form	10:17 PM 12/15
Part [622836]	1	Form	Concrete	Form	10:17 PM 12/15
Part [622837]	1	Form	Concrete	Form	10:17 PM 12/15
Part [622839]	1	Form	Concrete	Form	10:17 PM 12/15
Part [622840]	1	Form	Concrete	Form	10:17 PM 12/15
Part [623079]	1	Reinforce	Concrete	Reinforce	10:17 PM 12/15
Part [623082]	1	Reinforce	Concrete	Reinforce	10:17 PM 12/15
Part [623090]	1	Reinforce	Concrete	Reinforce	10:17 PM 12/15
Part [623091]					
Part [623094]					
Part [623096]					
Part [623104]					
Part [623109]					
Part [623116]					
Part [623117]					

Script Interpreter

```
Script  
call- (Assign Resource Statuses by UFs)  
Assign Resource Statuses by UFs  
RESOURCE(SELECTED) SET_PROPERTY(STATUS_NAME, "Default category:Concrete" + UFV("SYN-Status"))
```

Command list

Index (Scrp...)	Command	Object	Argument	Status
0 [0]0	SetProperty(STATUS_N...	RESOURCE[Part [6230...	Default category: C...	assigned
1 [0]1	SetProperty(STATUS_N...	RESOURCE[Part [6230...	Default category: C...	assigned
2 [0]2	SetProperty(STATUS_N...	RESOURCE[Part [6230...	Default category: C...	assigned
3 [0]3	SetProperty(STATUS_N...	RESOURCE[Part [6231...	Default category: C...	assigned
4 [0]4	SetProperty(STATUS_N...	RESOURCE[Part [6230...	Default category: C...	assigned
5 [0]5	SetProperty(STATUS_N...	RESOURCE[Part [6228...	Default category: C...	assigned
6 [0]6	SetProperty(STATUS_N...	RESOURCE[Part [6228...	Default category: C...	assigned
7 [0]7	SetProperty(STATUS_N...	RESOURCE[Part [6228...	Default category: C...	assigned
8 [0]8	SetProperty(STATUS_N...	RESOURCE[Part [6228...	Default category: C...	assigned
9 [0]9	SetProperty(STATUS_N...	RESOURCE[Part [6228...	Default category: C...	assigned





14. Auto-match Resources to Resource Groups can automatically assign Resources in bulk to Resource Groups based on Resource properties (e.g. User Field value).

The screenshot displays the SYNCHRO 4D interface. The 'Assign Resources' menu is open, showing options like 'Resource Groups to Tasks', 'Resources to Resource Groups', and 'Auto Matching'. Below the menu is a table of 'Resource Groups' with columns for Name, Resources, and other attributes. An 'Auto Matching (Resources to Resource Groups)' dialog box is open, showing a rule configuration. The rule is named 'Match Resources to Resource Groups by UFV's'. The expression is 'AND ( User Field: Phase = Resource group name )'. The dialog also shows options for 'Summary options' and 'Relations'.

Name	Resources
1 5027	BEAM_#556014, BEAM_#5561...
2 93	BEAM_#4171491, RAKER BEAM...
3 452	GIRT_#281569, BEAM_#29944...
4 983	BEAM_#466079, BEAM_#4676...
5 19	STUD_#193667, STUD_#1937...
6 456	COLUMN_#480929, BEAM_#2...
7 5157	TRUSS_#330066, TRUSS BOT...
8 53	POUR STOP_#262190, POUR...
9 331	WASHER PLATE_#176889, NA...
10 215	TRUSS DIAGONAL_#540441, T...
11 211	TRUSS VERTICAL_#164546, T...
12 87	BEAM_#546819, BEAM_#5164...
13 401	GIRT_#265955, GIRT_#32233...
14 333	ANCHOR ROD_#357094, NUT...
15 8117	HORIZONTAL BRACE_#558340, ...
16 601	HANGER_#460688, BEAM_#937...
17 84	COLUMN_#445163, RAKER BE...
18 1003	BEAM_#471719, BEAM_#4657...
19 206	POST_#164289, TRUSS VERT...
20 562	BEAM_#235038, ELEVATOR C...
21 661	STUD_#323851, STUD_#2396...
22 612	BEAM_#532816, BEAM_#3614...
23 1054	GIRT_#254032, GIRT_#25202...
24 334	ANCHOR ROD_#362203, WAS...
25 212	TRUSS TOP CHORD_#165213, ...
26 664	STUD_#267545, ANGLE_#108...
27 46	BEAM_#514556, VERTICAL BR...
28 1056	BEAM_#515911, BEAM_#5151...
29 5067	BEAM_#554752, BEAM_#5056...
30 610	VERTICAL BRACE_#541173, B...
31 5147	TRUSS_#330826, TRUSS_#33...
32 454	ANCHOR ROD_#461778, WAS...
33 666	CHANNEL_#559300, STUD_#58...
34 210	TRUSS DIAGONAL_#163200, T...
35 209	COLUMN_#392091, TRUSS TO...
36 626	BEAM_#517169, BEAM_#5034...
37 24	RAKER TRUSS_#366635, ANG...
38 23	COLUMN_#444680, BEAM_#4...
39 63	BEAM_#474822, BEAM_#4609...
40 354	BEAM_#477931, BEAM_#4696...
41 457	POST_#524694, BEAM_#5169...
42 106	BEAM_#511666, COLUMN_#4...
43 17	BEAM_#530242, BEAM_#5266...
44 613	BEAM_#385653, BEAM_#5271...
45 855	GIRT_#503462, GIRT_#5232...
46 24	RAKER BEAM_#300654, COLU...
47 332	HORIZONTAL BRACE_#559337, ...
48 5057	TRUSS VERTICAL_#548440, T...
49 202	BEAM_#432786, BEAM_#4336...
50 72	BEAM_#432786, BEAM_#4336...
51 251	DEFORMED BAR_#202021, DE...
52 402	GIRT_#355233, GIRT_#365638...
53 105	BEAM_#500707, BEAM_#5002...
54 47	COLUMN_#488196, BEAM_#5...
55 203	TRUSS DIAGONAL_#161619, T...
56 51	VERTICAL BRACE_#4937649, B...
57 74	BEAM_#448186, RAKER BEAM...
58 453	BEAM_#476120, ELEVATOR C...
59 662	STUD_#240741, STUD_#2365...
60 77	BEAM_#522079, BEAM_#5541...
61 94	BEAM_#487801, COLUMN_#4...
62 42	BEAM_#445970, COLUMN_#2...
63 663	STUD_#242235, STUD_#2421...
64 5017	TRUSS_#553394, TRUSS_#5...
65 81	ELEVATOR COLUMN_#403072, ...

15. Separated Resources from companies allows greater flexibility in Resource tree restructuring. Company is now an optional parameter for Resources.



## Other Improvements

### 3D

- Combined Edit > Simple/Advanced/Snapping Manipulator into one command **Edit > Transform**. Use keyboard shortcut Ctrl+M to switch between the manipulators
- Added **Simulate as Remove** setting for Growth Simulation to be used with Maintain and Temporary Resource Appearance Profiles. When enabled, it will appear as if the object is being removed (shrinking over time). When disabled, the object will appear as if it is being installed (growing over time)

### Resources, Resource Statuses, Resource Groups

- Added ability to edit the Status Set for current Category in Resource Properties > Status Tab
- Added ability to assign selected Interruption Status on selected Resource by context menu in Resource Status window
- Add "Linear meter" resource unit type in Resource Properties > General
- When creating tasks from Resource groups: added option to link created tasks and divide duration uniformly
- Option to use current Appearance Profile or Resource Group Activity Type for Resource Group assignments
- Added commands **Assign Associated Resources (Neutral profile)** and **Use Assign Associated Resources (default profile)** and **Remove Group assignments** to assign resources from the assigned Resource Group separately on the same task (with and without removal of the group assignment itself) – can be used to allow the Resource Usage to be tracked without affecting the appearance of the Resources or to transfer the assignment from Resource Group to directly assign Resources instead.

### Scheduling

- Consider Data Date time of day on rescheduling
- Save baseline no longer requires select all tasks first. After Baseline Tasks is selected, user can choose whether to baseline: All, Selected, or Filtered (visible) Tasks.

### Tables, Grouping, Filtering

- Custom grouping in resource group table
- Grouping by codes in Task/Resource/Resource Group tables
- Taking into account differences between no value and empty string when grouping
- Improve copy/paste functions – combine Copy and Copy as Text
- "Select Filtered Tasks" command to Task Filter context menu

### User Interface

- Add Philippine Peso currency
- Drag & drop User Fields to Resources/Resource Groups/3D
- Drag & drop in Resource Group window



- Select resources in 3D View when the appropriate Resource Group is selected via Task Properties > Resource Groups
- Move 3D Paths section within Task Properties > Resources to be more accessible
- Update warning dialog when disconnecting from SWP

### Performance / Memory Expense Reduction

- Improve removal of 3D and reading old SP files
- Accelerate 3D filtering
- Optimize working with data containing a lot of UF values
- Refactor some internal data structures to reduce memory expenses and improve performance when working with huge data

### Integrations (Import / Export / Synchronization)

- ProjectWise Design Integration CONNECT (v10)
- iModel 2.0 (BIM files): import and export
- Publishing SP files for SYNCHRO 4D Web Viewer service
- SPM file exporter
- Support for recent 3D CAD formats (ACIS 2019, Autodesk Inventor 2020, CATIA V5/V6 V5-6 R2019 (R29), Parasolid v31.1, ProE/Creo 6.0, SolidEdge 2019, SolidWorks 2019, UGS JT v10.2, Unigraphics NX 12.0)
- Asta Powerproject v15 support
- Safran: support import from v7.3
- Excel and SP integrations are now plug-in modules
- Improve synchronization to Primavera P6 PPM SQLite-based

### Plugins

- New for Autodesk Revit 2020
- New for Autodesk Navisworks 2020
- Improve export of filters and cutting planes from Revit (all supported versions)

### Bugs squashed

- Summary WBS shows 100% when there is remaining duration – update to % complete formula for summary tasks
- Incorrect growth simulation of assigned Resource Groups
- Options > Gantt Chart > Activity Code Mode has no effect
- 3D Filter with multiple UF values not working for more than 2 values
- Assign STRING User Field by Script does not remove quote marks ""
- Zoom issues in Isometric view
- Ribbon buttons do not work if make docked windows floating
- Extra tasks created for blank rows on synchronise to IFC



- Various data that did not refresh until F5 (Refresh All) pressed
- SYNCHRO Scheduler: Resource Usage Graph empty
- SYNCHRO Open Viewer: displays as trial license
- Revit Plugin:
  - Fixed the option "Export nested families as separate elements" to work with Custom Exporter
  - Fix for several elements exported as a single element in certain files

## Resources

- **Help documentation:** press F1 to access directly in the product
- **Tutorials:** <C:\Users\Public\Documents\Shared SYNCHRO Projects\Tutorial Files>
- **SYNCHRO Academy:** <https://bentley.matrixlms.com/>

## Contact Details

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**Bentley Systems Website:** <https://www.bentley.com/en/about-us/contact-us>

**SYNCHRO Website:** <https://www.bentley.com/en/products/brands/synchro>

**Bentley Software Downloads:** <https://softwaredownloads.bentley.com/en/>

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[https://communities.bentley.com/products/construction/w/construction\\_wiki](https://communities.bentley.com/products/construction/w/construction_wiki)

**FAQ:** [https://communities.bentley.com/products/construction/w/construction\\_wiki/41481/best-practices-and-faq](https://communities.bentley.com/products/construction/w/construction_wiki/41481/best-practices-and-faq)

**Submit an Idea for Improvements:** <https://communities.bentley.com/products/construction/i/synchro-construction-solution-ideas>