Special Parameters

Modified on: Mon, 22 Jun, 2020 at 11:28 AM

Smart Connections can read information from Host or connected element parameters and write them into inserted elements. Also you can read distance from insert point to connected element.

For that you can use parameters in your Families with some special rules.

1. To read information from Host element, use #.



A. To insert plate at the bottom of the column, use simple configuration to place plate Family at the center of bottom face of column.

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🖬 Modify (Update)				- U X
Model: Structural V Categor	y: Structural Column V Group: Structural Columns	Configuration: : Steel column	Save Save As Renam	ne Delete Cre
Hide Line Based Details 🗸 🛛 Hi	de Unused Tree Nodes			For Whole Run:
	Detail Priority 1 Detail Priority 2 Detail Priority 3 Detail	Priority 4 Detail Priority 5 Detail Priority 6 De	etail Priority 7 Detail Priority 8 Detail Prio	rity 9 Detail Priority 10
Point Based on Side Face	Detail	Adjust Layout by Searching for	other Elements	Preview
	Select Category All Categories	 Searching Rule Class 	None v	Detail
	Family and Type Browser Base plate : 20	v	<u> </u>	
Point Based on	Width (b,bf) 0 Height (h,d) 0			· · · · ·
e End Faces	Insert Details	v		· •
	Flip by X Axis Flip by Y Axis			· ·
Point Based on	Flip if Host is Flipped 📃 🛛 Flip Work Plane 🗌			Connected Element
Faces	Cut Geometry Join Geometry			
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Configuration	Host Filter	Side Offset	0	
Group	Side Offset 0	Start Offset	0	
	Start Offset 0 End Offset	0 End Offset	0	
r.	Relative to Length 0 Relative to Length	0 Layout Direction	Center v	
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	Min Length 0 Max Length	60960 Fixed Number	1	
	Layout Direction Center	Y Fixed Spacing	304.8	
	Layout Rule Fixed Number & Fix	ed Spacir 🝸		
	Fixed Number 1			
	Fixed Spacing 304.8			
	Symbolic Rule Preview			
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B. So that the plate automatically adjusts to the size of the column, you need to read column size parameters and use them in your connection plate.

In the Family that you want to insert with Smart Connections, create a parameter following rules like these:

○ Туре
 Instance
Reporting Parameter
(Can be used to extract value
report it in a formula or as a
schedulable parameter)

Use the "#" symbol in front of the parameter name.

Name, Discipline and Type of Parameter - should be exactly the same as it is in the Host element. **Instance** - it must be Instance parameter.

Group parameter under - it is necessary to group it under Model Properties

This parameter can be used to define element position, offsets, size, used in formulas of other parameters, etc.

	Family Types			Parameter Properties X		
	Type name: 20 Search parameters			Parameter Type		
	Parameter	Value	Formul	O Shared parameter		
	Constraints			(Can be shared by multiple projects and families, exported to ODBC, and appear in schedules and tags)		
	Default Elevation	1219.2	=			
D = 400	Materials and Finishes			Select Export		
<u>D - 400</u>	Plate material	<by category=""></by>	=	Parameter Data		
	Dimensions			Name:		
	A (default)	300.0	= #Width + offset A			
, EQ L, EQ	D (default)	400.0	= #Height + offset D			
	C	65.0	= hole r * 2.5 * 2	Discipline:		
	hole r	13.0	=	Structural 🗸 🔘 Instance		
c = 65	offset A (default)	100.0	=	Type of parameter: Reporting Parameter		
/ c = 65	offset D (default)	200.0	=	Section Property Can be used to extract value		
	t	20.0	=	from a geometric condition and report it in a formula or as a		
	Model Properties			Model Dreportion schedulable parameter)		
<u>8</u> , ' ' '	#Height (default)	20.00 cm 🛛 🔫	=	Model Properdes V		
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	🥒 🎦 🎦 🕇 E 🖣	⊧E ậ∔ ậ†		How do I create family parameters?		
	How do I manage family ty	pes?		OK Cancel		

Executing Insert, Update, Modify, Update Parameters commands will copy information from Hosts parameter to inserted element's parameter.

For example, size of plate is automatically changed based on the size of the column:



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2. To read information from connected element, use ##.



A. Insert connection element only at the positions of Virtual intersection of Structural Framing and Wall. To do that in Smart Connections configuration, use Adjust Layout rule:

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Adjust Layout by Searching for other Elements	Preview				
Searching Rule Class	Top & Bottom Virtual Interse V Detail				
Search in Project	Current and Linked Projects v				
Searching Category	Structural Framing V				
Family and Type Browser	M_MF Track : U25976-15 V				
Use all Types					
Additional Filter	Connected Element				
Searching Rule Name	Тор				
Cut Type	None *				
Min and Max Distances 0	1500				
Don't use Additional Side Check					

B. Move connection element to the side of Structural Framing automatically. To do that, in connection Family create parameter using rules like these:

Parameter Data		
Name:		
##bf		○ Туре
Discipline:		
Structural	\sim	 Instance
Type of parameter:		Reporting Parameter
Section Dimension	\sim	(Can be used to extract value from a geometric condition and
Group parameter under:		report it in a formula or as a
Construction	~	schedulable parameter)
To de la contrata de		

Use the "##" symbols in front of parameter name.

Name, Discipline and Type of Parameter - should be exactly the same as is in the Host element.

Instance - it must be Instance parameter

Group parameter under - it is necessary to group it under Construction.

Properties			{3D}	🔂 View 1	Ref. Level	×	🔂 {3D}						
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Graphics	â ^		Parameter type:	Length			1						
Visible			Existing family param	eters of compatible t	ype:		1	Parameter	Value	Formula		Lock	^
Visibility/Graphics Overr	Edit		Search parameters		Q		1	Construction					*
Materials and Finishes	*		and f				1	##b (default)	0.0	=			
Material	<by category=""></by>		##bt		^		1	##bf (default)	0.00 cm	=			
Identity Data	*		#b					##d (default)	0.00 cm	=			
Subcategory	<none></none>		#Thichness #Width				1	Distance To (default)	0.0	=			
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(2D)							1						

In this case ##bf parameter is created and used to offset connection element from insert point.

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3. To read distance to virtually intersected element, use 'Distance To'.

Example:



A. To insert supporting elements on a wall, use simple configuration to insert them, but also use Adjust Layout distance and search for the Floor, so your Distance To parameter would get the correct value.

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🖭 Modify (l	Jpdate)								- 🗆 ×
Model: Str	uctural V Category:	Walls	· Group:	Walls	 Configuration: 	: SW_8 panel	 Save 	Save As Ren	name Delete Cre
Hide Line Ba	Hide Line Based Details 🗹 Hide Unused Tree Nodes 🗌 For Whole Run: 🗌								
		Detail Priority 1	Detail Priority 2	Detail Priority 3 Detai	I Priority 4 Detail	Priority 5 Detail Priority 6	Detail Priority 7 D	tail Priority 8 Detail P	Priority 9 Detail Priority 10
	Side Face	- Detail				Adjust Layout by Searching	for other Elements		Preview
		Select Category	r	All Categories	v	Searching Rule Class	Top & Bo	ottom Virtual Interse 👻	Detail
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	Point Based on	Width (b,bf)	0	Height (h,d) 0)	Searching Category	Floors	v	
	End races	Insert Details	\checkmark	Left	~	Family and Type Brow	ser None	v	
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	Point Based on	Flip if Host is Fl	ipped 📃	Flip Work Plane		Additional Filter			Connected Element
	Top/Bottom Faces	Cut Geometry		Join Geometry		Searching Rule Name	Bottom	v	
						Cut Type	None		
-	Configuration					Min and Max Distances	0 4000		
CG	Group					Don't use Additional Side	Check		
		Layout Axis				Array Axis			
		Host	Filter			Side Offset	0		
		Side Offset		0		Start Offset	0		
		Start Offset	0	End Offset	0	End Offset	2000		
		Relative to Leng	gth 0	Relative to Length	0	Layout Direction	End	v	
		Rotate(°)	0]		Layout Rule	Fixed Nu	mber & Fixed Spacir \vee	
		Min Length	0	Max Length	60960	End Fixed Number	1		
		Layout Directio	n	By Gravity Point	~	Fixed Spacing	304.8		
		Layout Rule		Fixed Number & F	Relative to L 💉				
		Fixed Number		2					
4	>	Relative to Leng	gth	0.6					
					N				Cancel Undate
					6			C C	opuate

B. Length of support elements should automatically be updated based on the distance to the Floor.

Distance To - add parameter with exact name to your insert Family **Instance** - it must be Instance parameter

Parameter Data	
Name:	
Distance To	О Туре
Discipline:	
Common	Instance
Type of parameter:	Reporting Parameter
Length	(Can be used to extract value
Group parameter under:	report it in a formula or as a
Dimensions	/ schedulable parameter)

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Brace eters Parameter tion (default) t) ti from the wall (default)	Val 4' 0" 4' 0" 5" 30.00° 2' 3 91/128"	P	arameter Properties Parameter Type Family parameter (Cannot appear in schedules or Shared parameter (Can be shared by multiple proj appear in schedules and tags) Parameter Data Name: bistance To	tags) ects and	families, exporte Select
a			Discipline:		0.0
			Common	\sim	 Instance
			Type of parameter:		Reporting
			Length		(Can be use from a geom
			Group parameter under:		report it in a
			Dimensions	\sim	schedulable
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