

How to Select and Use Belimo Pressure Dependent Pump Curves on eQuest





eQuest is registered to James J. Hirsch.



#### 1 Open a project on - eQUEST Quick Energy Simulation Tool

To add the Belimo pressure dependent pump curves to the project follow these instructions: From the Mode dropdown menu select "Detailed Data Edit" mode.

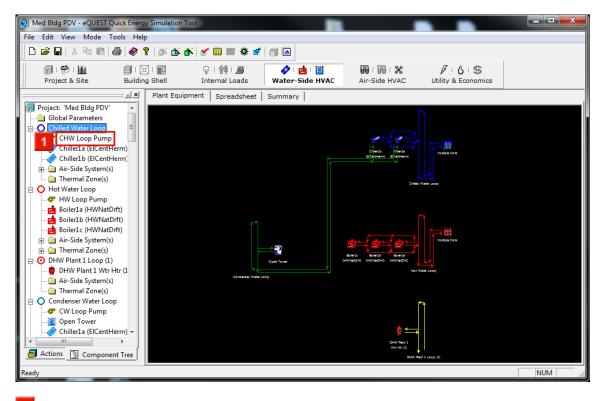
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	08SamplePermit	Envelope/Mechanical/Lighting 🚽	New Building	🚽 (no def
Fixed Shades				
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Actions 🚡 Component Tree			1	

#### Then select Water Side HVAC:

2) T2408SamplePermit - eQUEST Qu File Edit View Mode Tools		n Tool				
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Project: 'T2408SampleForPermit Global Parameters Global Parameter		Summary				
Cooling Design Day		Compliance Proje	ct Name	Building Type	Building Type	Buildii
<ul> <li>Standard US Holidays</li> <li>Fixed Shades</li> <li>Simulation Options</li> <li>Entire Year</li> <li>Simulation Output</li> <li>Hourly Reports</li> <li>Hourly Report Blocks</li> <li>Annual Schedules</li> <li>Weekly Schedules</li> <li>Daily Schedules</li> </ul>		(SamplePermit		Envelope/Mechanical/Lighting	Vew Building	Ţ (no def
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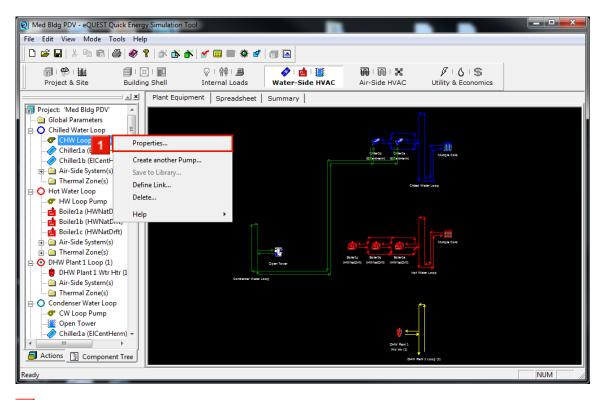
Once the basic building is created. On the component tree select CHW Loop
pump:



**1** Right-click the **CHW Loop Pump** tree entry.

0





1 Then Click Properties...



## 2 Pump Properties

Pump Properties							? ×
c	Currently Activ	ve Pump: C	HW Loop	Pump	•		
Basic Specifications							
Pump Name: CHW	Loop Pump						
Number of Pumps:	1			Electric Meter:	EM1		-
Head (per pump):		ft		Pump Power:		kW	
Flow (per pump):		gpm		Motor Efficiency:	0.90	ratio	
Head Ratio:	1.20	ratio		Mech Efficiency:	0.77	ratio	
Flow Ratio:	1.00	ratio		Minimum Speed:	0.40	ratio	
Max Pump Ratio:	1.30	ratio		Motor Class:	n/a		-
Head Setpoint:		ft		Capacity Control:	Variable Sp	beed Pump	-
Head Setpoint Ratio:		ratio		Compliance Inputs			_
				Motor Type:	Standard E	fficiency	-
Pump Head f(flow):	Pump-Head	Pump-Head-fFlow		Enclosure Type:	Open		-
Pump Power f(flov 1	Pump-Powe			Motor Speed:	1800 rpm		-
Pump Pwr Exponent:	- undefined -			Drive Efficiency:	1.000	ratio	
	library - Large-CHW-Bypass-fAirFlow		ow	Nominal HP:		hp	
	Furnace-HIR-fPLR OpenTwr-FluidCap-fAirflow		w =	Brake HP:		hp	
		-Factor-fPLR					
	HW-Coil-Ca CHW-Coil-C						Done

Select Pump Power f(flow) and then select **library** 



## 3 Curve Fit Library Selection

Curve Fit Library Selection	
Category: 1 Pumps Entry: Pump-Head-fFlow	Library Name: bdllib.dat Library File: h:\t 3-64 data\doe-2\bdllib.dat Library Entry Description:
Pump-Head-fFlow         Pump-Power-fFlow         VED-Loss-fPLR         Belimo-Pressure-Depen-5-10 psi         Belimo-Pressure-Depen-5-30 psi	OK Cancel
1 Open the dropdown menu under Cate	egory and select the <b>Pumps</b> .
2 Open the dropdown menu under Entr	y and select the <b>Belimo-Pressure-Depen-5-10 psi</b> .
	-5-10 if you are modeling a new building. -5-30 if you are modeling an existing building.
Curve Fit Library Selection	
Category: Pumps Entry: Belimo-Pressure-Depen-5-10 pst	Library Name: bdllib.dat Library File: h:\t 3-64 data\doe-2\bdllib.dat Library Entry Description:
	1 OK Cancel

Click OK.



4 Required Curve Fit Data for 'Belimo-Pressure-Depen-5-10 psi'

Required Curve Fit Data for 'Be	elimo-Pressure-Depen-5-10 psi'	<b></b> X
Input Type:	Curve Coefficients	
	Raw Data Points	Cancel

# 1 Under Input Type select Curve Coefficients.

Required Curve Fit Data for 'Belimo-Pressure-Depen-5-10 psi'					
Input Type:	Curve Coefficients	•			
	1 Done	Cancel			

Click Done.



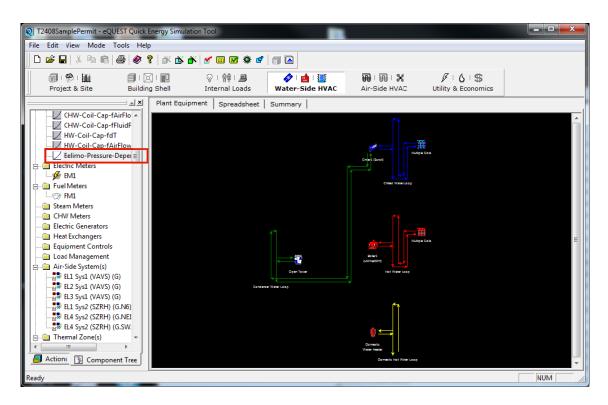
# 5 Pump Properties

Pump Properties			1.8				? <mark>&gt;</mark>	×
c	Currently Active F	ump:	HW Loop Pu	mp	•			
Basic Specifications								
Pump Name: CHW	Loop Pump		1					
Number of Pumps:	1			Electric Meter:	EM1		•	
Head (per pump):	ft			Pump Power:		kW		
Flow (per pump):	gpr	n		Motor Efficiency:	0.90	ratio		
Head Ratio:	1.20 rati	D		Mech Efficiency:	0.77	ratio		
Flow Ratio:	1.00 rati	D		Minimum Speed:	0.40	ratio		
Max Pump Ratio:	1.30 rati	D		Motor Class:	n/a		•	
Head Setpoint:	ft			Capacity Control:	Variable Sp	beed Pump	•	
Head Setpoint Ratio:	rati	D		Compliance Inputs				
				Motor Type:	Standard E	fficiency	-	
Pump Head f(flow):	Pump-Head-fFlo	w 🔻		Enclosure Type:	Open		-	
Pump Power f(flow):	Belimo-Pressur	e-Depe 🔻	]	Motor Speed:	1800 rpm		-	
Pump Pwr Exponent:	3.05 rati	D		Drive Efficiency:	1.000	ratio		
				Nominal HP:		hp		
				Brake HP:		hp		
						-	Done	
							Done	

Click Done.



#### 6 eQUEST Quick Energy Simulation Tool



The curve is now listed in the performance curves and can be selected for further use on the pumps if needed

Please run the model again using the Belimo pressure dependent pump curves and compare it to the base model to see the pump savings.