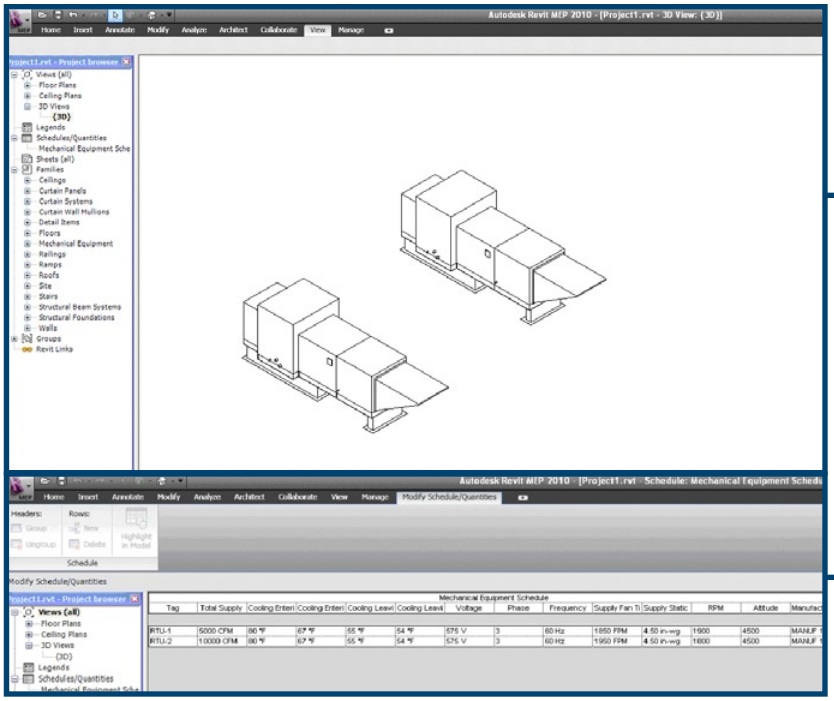
# REVIT APPLICATION GUIDE


## CUSTOM AIR HANDLING

HAAKON
INDUSTRIES

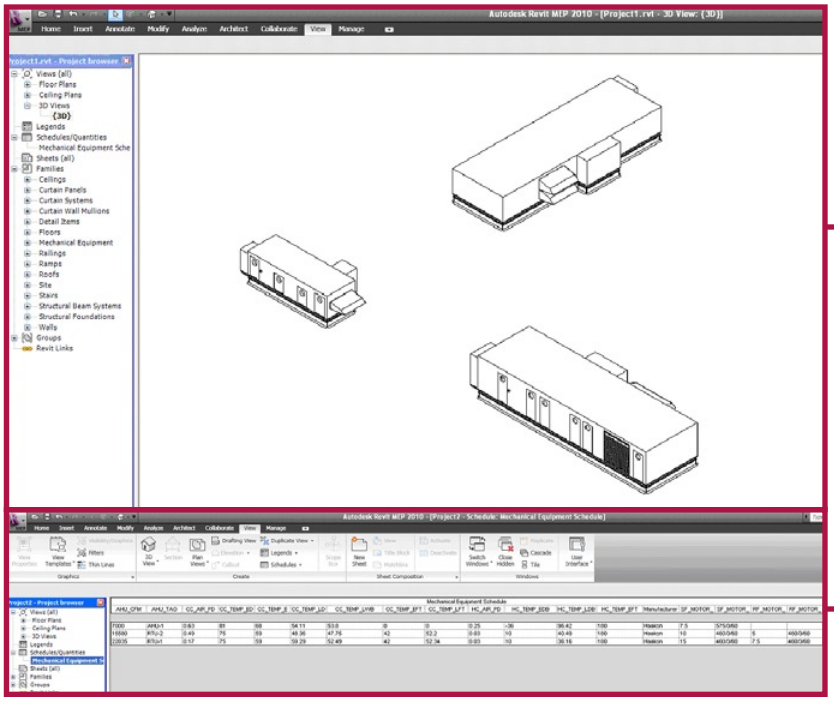
WWW.HAAKON.COM

# REVIT IMPORT INSTRUCTIONS



*Existing Project*

*Existing Project Schedule*

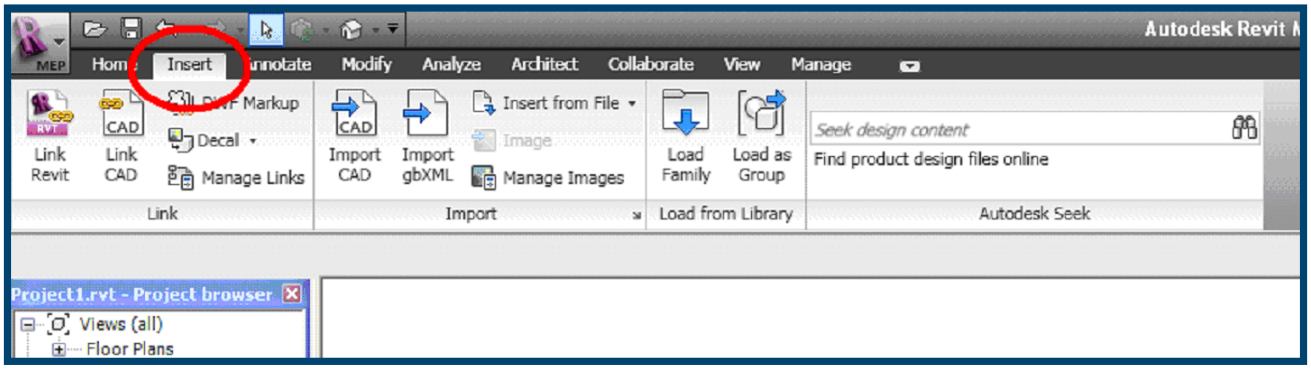


*Haakon Units ( in Haakon created project file )*

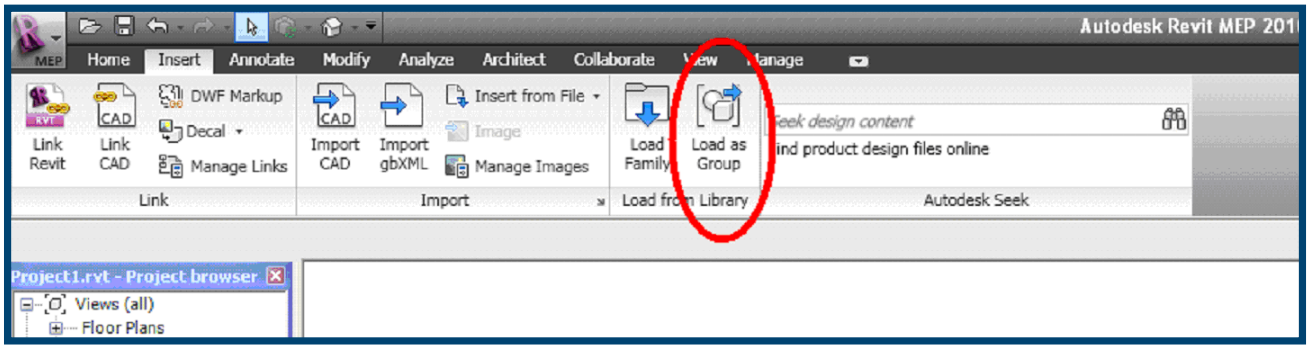
*Haakon Pre-Generated Project Schedule*

## *TO IMPORT THE HAAKON PROJECT FILES*

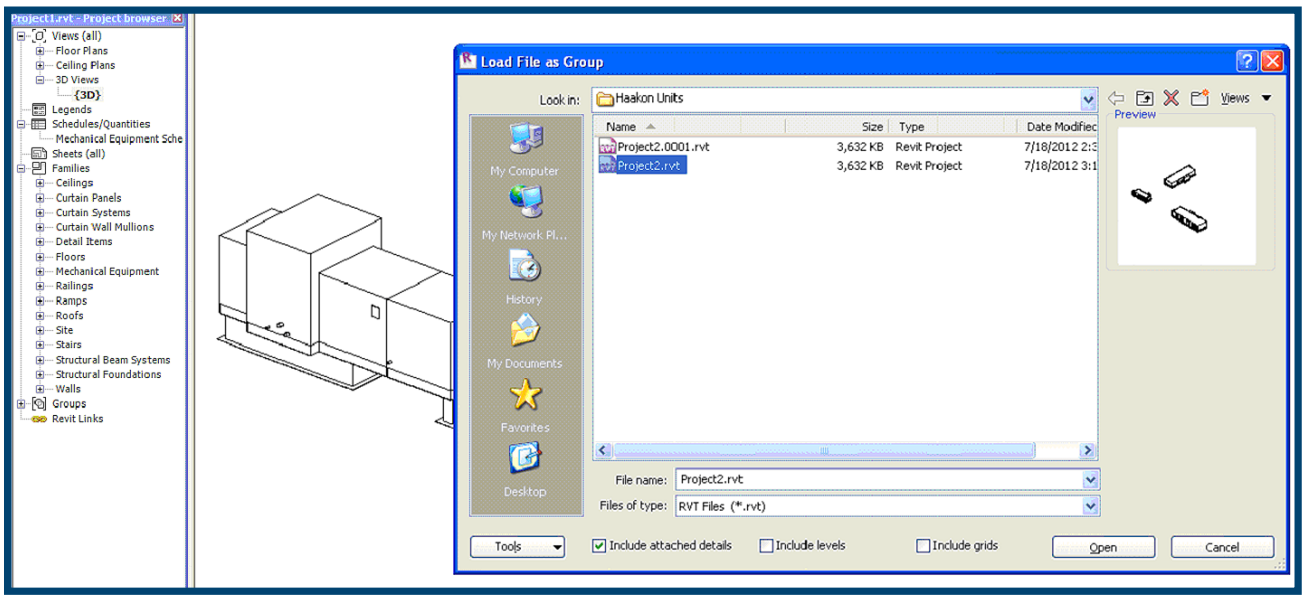
- *Open existing project*
- *Click on the "Insert" tab*




- *Select "Load as Group" option*

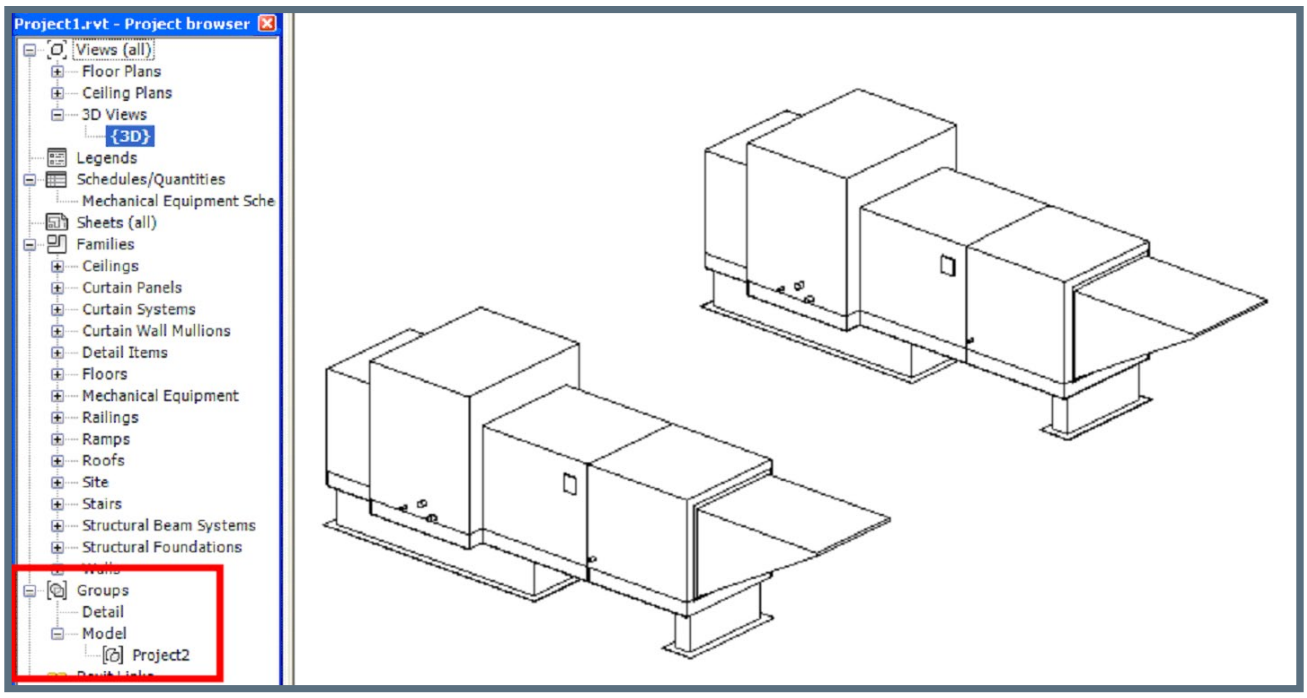



- *From the popup window that appears, select the appropriate Haakon project file and click open*

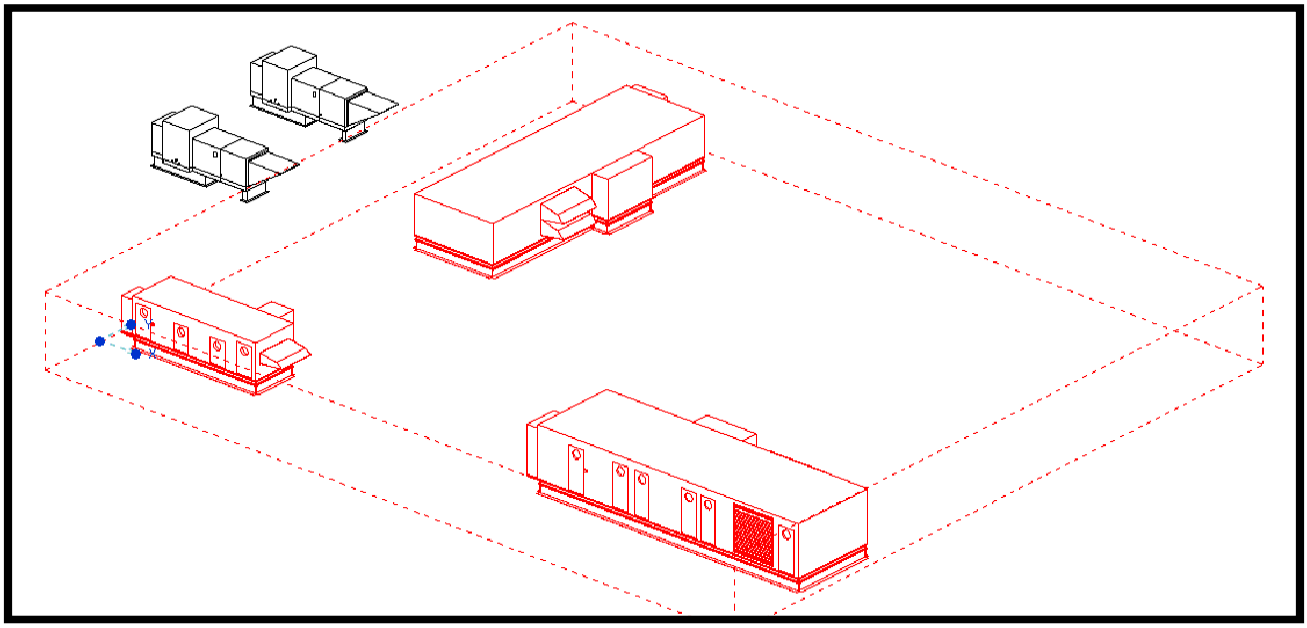


# REVIT IMPORT INSTRUCTIONS

- *Expand the "Groups" section of the project browser, and then expand the "Model" sub group*
  - *Select the appropriate file and drag and drop into the existing project*
  - *Place the Haakon project anywhere on the working plane ( it will be ungrouped in the next step – this will allow you to move any of the units independently of one another )*

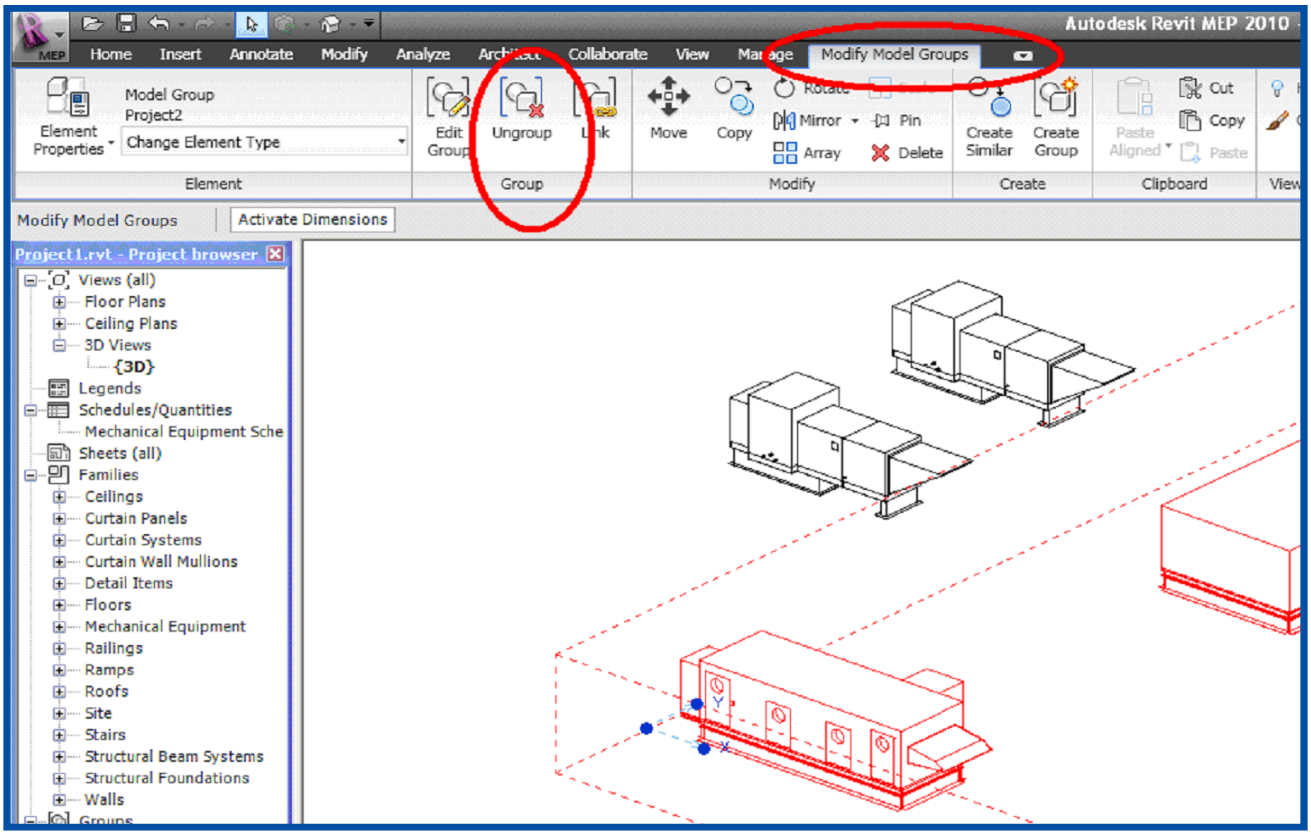



- *The units in the dotted box are a group. These are the imported Haakon units.*



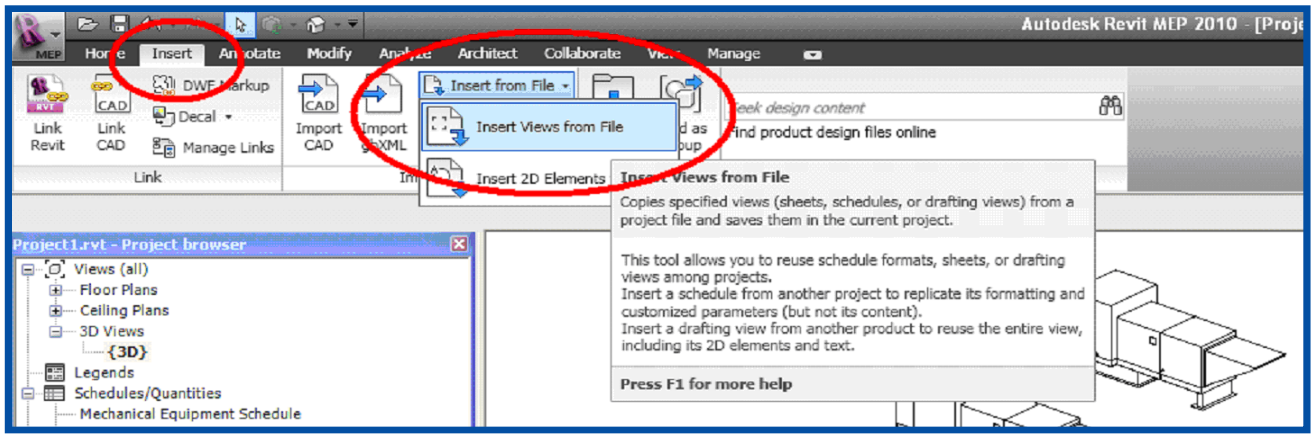
- *Select the group (make sure there is a dotted box around the units) and hit "Ungroup" in the "Modify Model Groups" ribbon*

- *The units are now ungrouped and can be placed in the proper location*

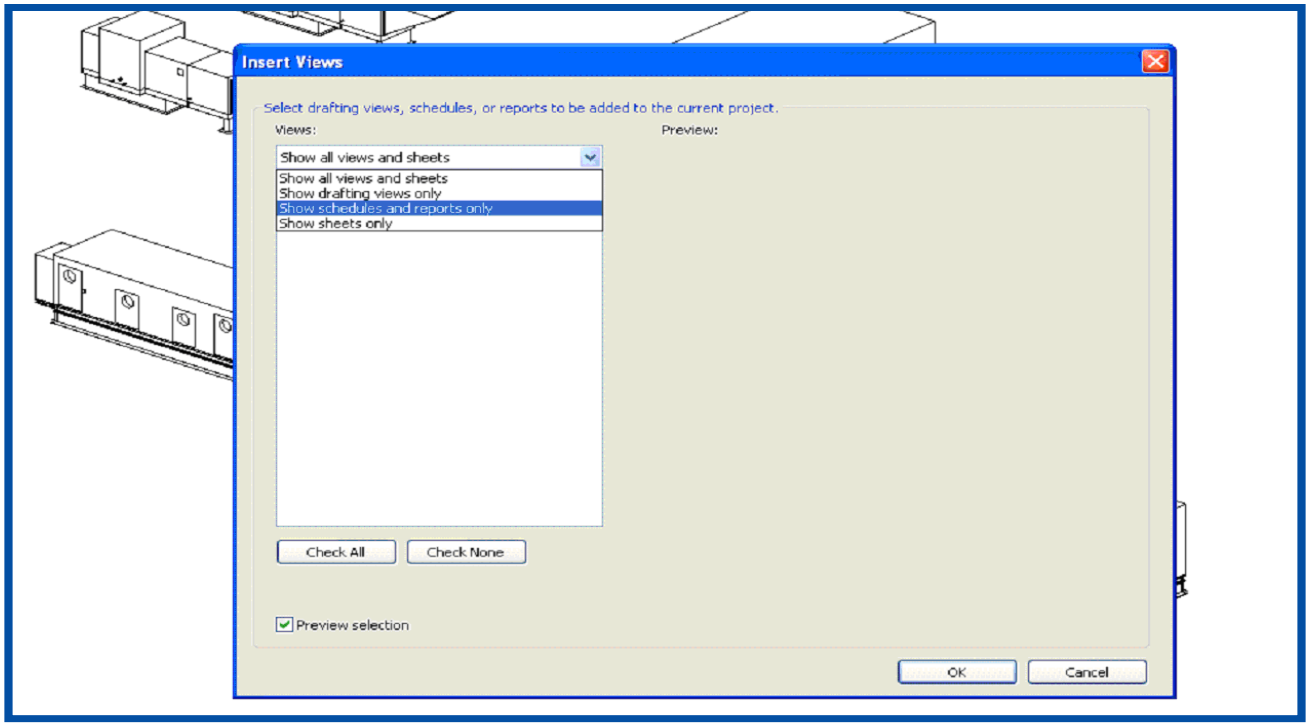


## *TO IMPORT THE PRE-GENERATED HAAKON SCHEDULE*

- *Go to the "Insert" ribbon and select "Insert from file" and click on "Insert views from file"*
- *Select the project file that has the schedule you want to import (Haakon project file)*




- *In the dialog box that appears, set the top drop down menu filter to "Show schedules and reports only"*




- *There will now be two schedules under the "Schedule" section in the project browser*
- *One will be from the original project and all of its equipment and one will be for the imported Haakon equipment*

## TIPS FOR USING REVIT FAMILIES ON YOUR PROJECT

### MODEL ACCURACY

*Although the 3D model contained in each REVIT family is dimensionally accurate, we do not suggest pre fabricating any piping without first confirming with the factory. Coil connection tolerance is much larger than AHU manufacturing tolerance and may lead to problems in the field.*

### INTERFERENCE CHECKS

*All REVIT families provided include instances for :*

- *Door swing ( family 'UnitDoor' )*
- *Coil pull space ( family 'CoilPullClearance' )*
- *Electrical clearance ( family 'ElecComp' )*

*Each of these instances is visible on COARSE view only so they can conveniently be hidden when not required to provide a clean model view.*

### CONNECTOR ELEMENTS

#### Electrical

- *Provided for all external electrical boxes on the unit*
- *Voltage is defined in instance properties*
- *Enclosure dimensions are included in instance properties*

#### Pipe

- *Flow rate ( in GPM ) is defined in instance properties*
- *System type is defined ( Hydronic Supply, Hydronic Return )*
- *Flow direction is defined*
- *Connection dimensions are included*

#### Duct

- *Flow rate ( in CFM ) is defined in instance properties*
- *System type is defined ( Supply Air, Return Air, Exhaust Air )*
- *Flow direction is defined*
- *Opening dimensions are included*

## *CUSTOM AIR HANDLER REVIT FAMILY TYPES*

*Note for all component parameters (i.e. prefix other than "AHU_"), a suffix will be appended if there is more than one of the same component in the unit. For example, if there is more than one fan in the unit, "FAN_QUANT" will become "FAN1_QUANT", "FAN2_QUANT"... etc.*

**AHU_TAG**
*Air handing unit tag. (eg AHU-1, HRU-37)*

**AHU_LOCATION**
*Location of air handling unit (indoor or outdoor)*

**AHU_CFM**
*Total AHU supply air volume, in cubic feet per minute*

**AHU_CFM_MIN_OA**
*Minimum OA setpoint*

**AHU_WEIGHT**
*Total weight, in pounds, of the air handling unit.*

*Note that for all fan parameters, "FAN_" may also be substituted with "SF_", "RF_" or "EF_" to distinguish between different fan systems.*

**FAN_QUANT**
*Number of fans in the given fan system*

**FAN_CAPACITY_CONTROL**
*VFD, 2 Speed*

**FAN_CFM**
*Total fan system air volume, in cubic feet per minute*

**FAN_TSP**
*Fan system total static pressure, in inches of water*

**FAN_MFG**
*Fan manufacturer (eg Haakon, Twin Cities, Ziehl Abegg, AcoustiFLO)*

**FAN_MODEL**
*Fan manufacturer model (eg EPQ, MPQN, 686q3)*

**FAN_TYPE**
*Plenum, DWDI, SWSI or Axial*

**FAN_ARR**
*Fan arrangement (eg 1,3,4)*

**FAN_SIZE**
*Nominal fan size, in inches (eg 12, 36, 44)*

**FAN_RPM**
*Fan revolutions per minute*

**FAN_BHP**
*Fan break horsepower at design conditions*

**FAN_MOTOR_HP**
*Fan motor nameplate horsepower*

**FAN_MOTOR_FLA**
*Fan motor nameplate full load amp rating*

**FAN_MOTOR_VOLTAGE**
*Fan motor nameplate nominal voltage rating*

**FAN_DB0**
*AMCA rated fan sound power level, 63Hz*

**FAN_DB1**
*AMCA rated fan sound power level, 125Hz*

**FAN_DB2**
*AMCA rated fan sound power level, 250Hz*

**FAN_DB3**
*AMCA rated fan sound power level, 500Hz*

**FAN_DB4**
*AMCA rated fan sound power level, 1000Hz*

**FAN_DB5**
*AMCA rated fan sound power level, 2000Hz*

**FAN_DB6**
*AMCA rated fan sound power level, 4000Hz*

**FAN_DB7**
*AMCA rated fan sound power level, 8000Hz*

**FURN_QUANT**
*Quantity of gas furnaces*

**FURN_MBH_IN**
*Furnace heat input, per furnace*

**FURN_MBH_OUT**
*Furnace heat output, per furnace*

**FURN_AIR_PD**
*Furnace air pressure drop*

**FURN_TURNDOWN_RATIO**
*Furnace turndown ratio (Max heat output / Min heat output)*

**FURN_CFM_MAX**
*Maximum rated airflow, in cubic feet per minute, per furnace*

**FURN_CFM_MIN**
*Minimum rated airflow, in cubic feet per minute, per furnace*

*Note that for all coil parameters, "COIL_" may also be substituted with "CC_", "HC_" or "HRC_".*

**COIL_TOTAL_MBH**
*Coil total heat transfer, in MBH*

**COIL_SENSBILE_MBH**
*Coil sensible heat transfer, in MBH*

**COIL_FACE_VEL**
*Coil face velocity, in feet per minute*

**COIL _AIR_PD**
*Coil air pressure drop, in inches w.g.*

**COIL _TEMP_EDB**
*Coil entering air dry bulb temperature, in Fahrenheit*

**COIL _TEMP_EWB**
*Coil entering air wet bulb temperature, in Fahrenheit*

**COIL _TEMP_LDB**
*Coil leaving air dry bulb temperature, in Fahrenheit*

**COIL _TEMP_LWB**
*Coil leaving air wet bulb temperature, in Fahrenheit*

**COIL _FLUID_TYPE**
*Coil fluid type (water, %PG, %EG)*

**COIL _TEMP_EFT**
*Coil entering fluid temperature, in Fahrenheit*

**COIL _TEMP_LFT**
*Coil leaving fluid temperature, in Fahrenheit*

**COIL _FLUID_GPM**
*Coil fluid flow rate, in gallons per minute*

**COIL _FLUID_VEL**
*Coil tube fluid velocity, in feet per second*

**COIL _FLUID_PD**
*Coil fluid pressure drop, in feet of water*

**COIL _STEAM_PSI**
*Coil steam pressure, in PSI*

**COIL _COND_LBHR**
*Coil condensation mass flow rate, in pounds per hour*

**COIL _REFRIG_PD**
*DX coil refrigerant pressure drop, in PSI*

**COIL _ROWS**
*Coil Rows*

**COIL _QUANT**
*Quantity of coils in bank*

**COIL _SIZE**
*Size of each coil in coil bank, in inches (eg 30x120)*

**COIL _FPI**
*Coil fin density, in fins per inch*

*Note that for all FILTER parameters, "**FILTER_MAIN**" may also be substituted with "**PRE**"*

**FILTER_MAIN_TYPE**
*Description of filter (ie 12 in Farr Riga-Flo 100 PH Style)*

**FILTER_MAIN_FAC_VEL**
*Filter nominal face velocity*

**FILTER_MAIN_AIR_PD**
*Clean catalogue air pressure drop*

**EHC_KW**
*Electric heating coil capacity, in kW*

**EHC_FACE_VEL**
*Electric heating coil nominal face velocity*

**EHC_AIR_PD**
*Electric heating coil air pressure drop*

**EHC_TEMP_EDB**
*Electric heating coil entering dry bulb temperature, in Fahrenheit*

**EHC_TEMP_LDB**
*Electric heating coil leaving dry bulb temperature, in Fahrenheit*

**EHC_STAGES**
*Number of stages for electric heating coil*

**EHC_VOLTAGE**
*Electric heating coil voltage*

*Note that for all SIL parameters, "**SIL**" may also be substituted with "**SIL_SA**", "**SIL_RA**" or "**SIL_EA**".*

**SIL_LEN_POD**
*Silencer pod length, in inches*

**SIL_AIR_PD**
*Silencer air pressure drop, in inches w.g.*

**EVAP_TEMP_EDB**
*Evaporative cooler entering dry bulb temperature, in Fahrenheit*

**EVAP_TEMP_EWB**
*Evaporative cooler entering wet bulb temperature, in Fahrenheit*

**EVAP_TEMP_LDB**
*Evaporative cooler leaving dry bulb temperature, in Fahrenheit*

**EVAP_TEMP_LWB**
*Evaporative cooler leaving wet bulb temperature, in Fahrenheit*

**EVAP_AIR_PD**
*Evaporative cooler air pressure drop, in inches w.g.*

**STRATELIM_QUANT**
*Quantity of stratification eliminators (Blenders)*

**STRATELIM_DIA**
*Stratification eliminator diameter*

**STRATELIM_AIR_PD**
*Stratification eliminator air pressure drop, in inches w.g.*

**STM_HUMID_TYPE**
*Type of steam generator (ie electric, steam, gas)*

**STM_HUMID_KW**
*Size of steam generator, in kW*

**STM_HUMID_STEAM_LBHR**
*Steam humidifier capacity, in pounds per hour*

**STM_HUMID_TUB_QUANT**
*Quantity of tubes in steam distribution panel*

**STM_HUMID_VOLTAGE**
*Steam generator voltage*

**HTWHL_MODEL**
*Heatwheel model (ie Siebu Geikan HPC-0700-S-20)*

**HTWHL_SUPPLY_CFM**
*Airflow volume on supply side of heatwheel, in cubic feet per minute*

**HTWHL_SUPPLY_AIR_DP**
*Air pressure drop across supply side of heatwheel, in inches w.g.*

**HTWHL_SUPPLY_SUMMER_EDB**
*Summer supply entering air dry bulb temperature, in Fahrenheit*

**HTWHL_SUPPLY_SUMMER_EWB**
*Summer supply entering air wet bulb temperature, in Fahrenheit*

**HTWHL_SUPPLY_SUMMER_LDB**
*Summer supply leaving air dry bulb temperature, in Fahrenheit*

**HTWHL_SUPPLY_SUMMER_LWB**
*Summer supply leaving air wet bulb temperature, in Fahrenheit*

**HTWHL_SUPPLY_WINTER_EDB**
*Winter supply entering air dry bulb temperature, in Fahrenheit*

**HTWHL_SUPPLY_WINTER_EWB**
*Winter supply entering air wet bulb temperature, in Fahrenheit*

**HTWHL_SUPPLY_WINTER_LDB**
*Winter supply leaving air dry bulb temperature, in Fahrenheit*

**HTWHL_SUPPLY_WINTER_LWB**
*Winter supply leaving air wet bulb temperature, in Fahrenheit*

**HTWHL_EXHAUST_CFM**
*Airflow volume on exhaust side of heatwheel, in cubic feet per minute*

**HTWHL_EXHAUST_AIR_DP**
*Air pressure drop across exhaust side of heatwheel, in inches w.g.*

**HTWHL_EXHAUST_SUMMER_EDB**
*Summer exhaust entering air dry bulb temperature, in Fahrenheit*

**HTWHL_EXHAUST_SUMMER_EWB**
*Summer exhaust entering air wet bulb temperature, in Fahrenheit*

**HTWHL_EXHAUST_SUMMER_LDB**
*Summer exhaust leaving air dry bulb temperature, in Fahrenheit*

**HTWHL_EXHAUST_SUMMER_LWB**
*Summer exhaust leaving air wet bulb temperature, in Fahrenheit*

**HTWHL_EXHAUST_WINTER_EDB**
*Winter exhaust entering air dry bulb temperature, in Fahrenheit*

**HTWHL_EXHAUST_WINTER_EWB**
*Winter exhaust entering air wet bulb temperature, in Fahrenheit*

**HTWHL_EXHAUST_WINTER_LDB**
*Winter exhaust leaving air dry bulb temperature, in Fahrenheit*

**HTWHL_EXHAUST_WINTER_LWB**
*Winter exhaust leaving air wet bulb temperature, in Fahrenheit*

HAAKON INDUSTRIES

A world leader in manufacturing custom designed air handling units, Haakon Industries excels in providing customers with the highest level of flexibility, engineering, quality, durability and energy efficiency leading to lowest life cycle cost. Haakon specializes in providing engineered solutions for hospitals, clean rooms, pharmaceutical applications, automotive, university, laboratory, food industry, industrial and institutional needs.

Visit *www.haakon.com* to find out more about Haakon Industries or to contact a Haakon representative about your project requirements and to assist you in engineering design, performance ratings and AUTOCAD or REVIT drawings.