

# Task 2: 3 Case Studies

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*By U Penn (Parametric Analysis Tool)*

## **Case Study 1: Building 101, Philadelphia Navy Yard**

Model inputs:

- Hour of the day
- Outside air temperature
- Outside air humidity
- Lighting consumption
- AHU1 supply air temperature
- AHU1 return air temperature
- AHU2 supply air temperature
- AHU2 return air temperature
- AHU3 supply air temperature
- AHU4 return air temperature

Model target:

- Total electricity consumption

Results:

Investigated parameter(s)	Deviation (°F)	Impact factor
AHU1 supply air temperature	2	6.64%
AHU2 supply air temperature	2	
AHU3 supply air temperature	2	
AHU1 supply air temperature	2	1.35%
AHU2 supply air temperature	2	2.95%
AHU3 supply air temperature	2	2.41%

**Screenshots of the user interface**

## Model inputs

Available to select

- year
- month
- day

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Selected

- AHU3 return air temperature
- AHU2 return air temperature
- AHU1 return air temperature
- AHU3 supply air temperature
- AHU2 supply air temperature
- AHU1 supply air temperature
- outside humidity
- outside temperature
- lighting
- hour

## Model target

Available to select

- gas

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Selected

- total electricity

## Investigated parameters

Number of system control parameters to be investigated: 3

Parameter #1: AHU1 supply air temperature Deviation: 2 °F

Parameter #2: AHU2 supply air temperature Deviation: 2 °F

Parameter #3: AHU3 supply air temperature Deviation: 2 °F

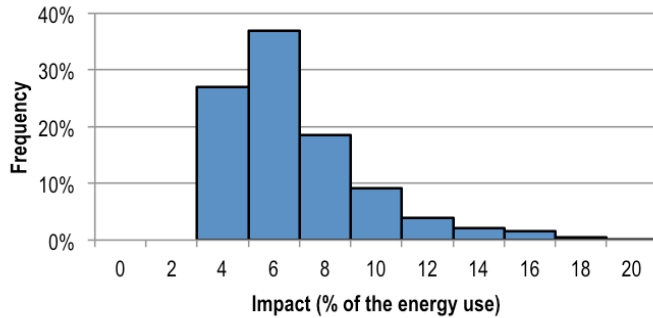


Figure 1 Screenshots of “Parametric Analysis Toolkit for System Control” user interface