bueno

Built Environment Optimisation
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BUENO data science challenge instructions

The problem

BUENO generates insights on building data using analytics. These could be fault detection, (e.g. identifying a faulty temperature sensor) or optimisation opportunities (e.g. identifying when a piece of equipment could be run more efficiently). The insights are turned into work orders which a building can action, such as replacing the temperature sensor. Completing work orders has benefits including reducing energy consumption, increasing equipment lifetime and improving tenant comfort. We would like you to quantify the value BUENO provides to its customers through the completion of these actions.

Provided data

You have been provided with a *data.xlsx* file containing the following anonymised data from 5 buildings BUENO currently works with.

1. *energy_history*
   Hourly energy data in kWh from the beginning of 2016.

2. *weather_history*
   Hourly weather data from the beginning of 2016. All buildings share the same weather data source.

3. *work_order_history*
   Work order data from the past 2 years, including information such as when the work order was raised and closed, which equipment is affected and details around what the issue was.

4. *data_dictionary*
   Further explanations of the above data sets.

Possible questions/ideas to explore

We welcome you to explore the data and come up with your own way to quantify the value BUENO provides however here are some suggestions to consider:

- What is the relationship between energy consumption and completed work orders?
- Are there other relationships between energy consumption and problems, causes or remedies?
- Are there any assets which appear to have a greater impact on energy consumption when they are not functioning correctly?