

## Building Energy Consumption Analysis on office neighbourhood in Manila, Philippines

### FEATURES

|                              |                        |
|------------------------------|------------------------|
| Type of Urban Area           | Office                 |
| Period of Construction       | 20th and 21th Century  |
| Total Surface Area           | 107 780 m <sup>2</sup> |
| Floors of Reference Building | 18                     |
| Floors Surface Area          | 32 274 m <sup>2</sup>  |
| Climate                      | Tropical savanna       |
| Date of Simulation           | 20th to 28th of April  |

### CHALLENGE

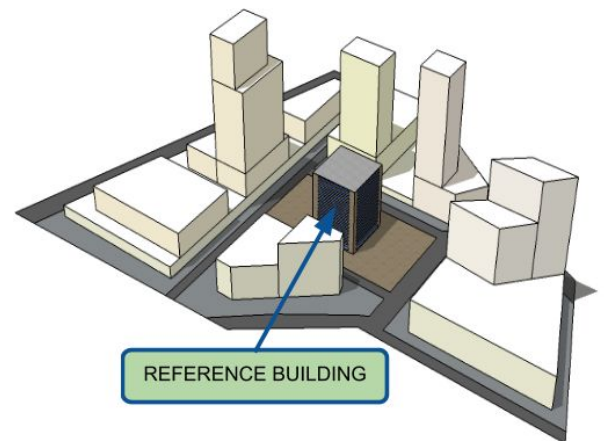
To utilise urban microclimate simulation technology to compare the influence of various scenarios on energy consumption due to cooling on a hot dry season, of a building based in Manilla.

### CONSULTANCY

The analyzed building is at the center of the scene, the neighborhood is fictional and represents the type of architecture found in the business district of central Manilla. We studied 4 cases : low albedo, high albedo, use of vegetation square, and insulation of the building. We evaluated their impacts on energy consumption and advised which strategies should be privileged to decrease peak of consumption.

### BENEFITS

- The insulation proved to be cardinal for lowering cooling energy consumption. With these high outside temperatures, to cool without insulation means lose a lot of energy.
- Because of the height of the building, a small change in the local microclimate as the vegetilization of the surrounding place does not significantly impact the cooling need of the building.
- To go further, we can determine which place is the more adapt for to place the fresh air intake of air conditioning.



Energy consumption to cool the building during four days

