Training

Data resources
MIS 3003 is the standard of SMT
MIS3103 standards for Contractors
Choose a good installation site

- Determining wind speed of installation from database or meteorological data
- Determine terrain type
- Determine if there are significant obstructions to the installation site
- Adjust wind speed according to terrain and obstacles
- Selection points of installation site
Type one of installation site

Flat grasslands, savanna or bare soil, no fences and only a small number of isolated obstacles
Type 2 of installation site

Fields of grain, scarce low fences and low trees
Type 3 of installation site

Farmland, high fences, and occasional farmhouses and trees
Type 4 of installation site

Woodland or low town/country area, CA. 20% Density
Type 5 of installation site

Dense urban area (e.g. 4 floors or above) with a density greater than 20%
Installation environment of wind turbines

$H_t =$ Hub center high of wind mill

$H_o =$ height of the highest point of the obstacle

A significant obstruction is considered to be any solid item (e.g. building, wall etc) or semi permeable item (e.g. trees or bushes) that is greater than 0.5m at its widest part and reaches to a height greater than 0.25 of the hub height of the turbine. This includes any building on which the turbine is mounted.

**Definition of obstacles:**
House, wall, or half black (tree, Bush). Width 0.5 meters above, 1/4 Hub Center Height.

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Diagram:
- **Turbine**
- **Zone A**
- **Zone B**
- Wind direction

Zone A = Upwind zone
Zone B = Downwind zone
$h_t =$ turbine hub height
$h_o =$ height of obstacle
Explanation of obstacles

Downwind, distance 4.9m from the turbine is an obstacle.

Use 7.5m tower, Upwind,
Height of 2.45m, distance of 24.5m of objects are counted as obstacles

Downwind, distance 3.9m from the turbine is an obstacle.

Use 5.5m tower, Upwind,
Height of 1.95m, distance of 19.5m of objects are counted as obstacles
## Wind speed correction table

\[ h_c = h_t - 0.8h_o \]

ht = Hub height of turbine

ho = Obstacle height

7.5m tower \( h_t = 9.8m \)

5.5m tower \( h_t = 7.8m \)

\[ V_{\text{Amended}} = V_{\text{Meteorological}} \times (\text{Coefficient}) \]
Site Selection Essentials

1. Open Terrain

2. At least the main wind has no obstruction.

3. 10kw turbine, the distance between two turbines is 60m