



**DEVELOPMENT AND INSTALLATION OF A WINDMILL AT NORTHWESTERN  
UNIVERSITY (PHASE 1)**

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This phase of the project aimed to install a windmill for water pumping. Specifically, it 1) determined the prevailing wind speed within the vicinity of Gabu, Laoag City, which includes Northwestern University, 2) developed the design of the wind pump rotor and blade, and 3) fabricated and installed the windmill tower.

A one-year wind speed data gathered and kept by PAGASA, Laoag City was utilized in this endeavor.

The study's findings revealed that the duration of wind speed ranges from 1-5 m/ sec and was found out as the longest wind speed throughout the year. This wind speed is experienced 83.79 or 7,341.63 hrs. annually out of the 8,760 hrs. the wind is blowing.

The mean wind velocity which is equivalent to the rated wind speed is 2.4 m/sec. A windmill designed at the speed gave the highest efficiency.

Hence, it was recommended that for a wind pump or wind turbine installed near the vicinity of Gabu, Laoag City, including the NU campus, the rated wind speed of 2.4 m/sec was the basis for designing the rotor.

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