

Wind Mill Builder Facts

by [Cowboywindmillbuilder](#) on September 12, 2008

Table of Contents

intro: Wind Mill Builder Facts	2
step 1: Doing the Math	2
File Downloads	3
step 2: How not to make your windcatcher hum... ..	3
File Downloads	4
step 3: The First Flying Lizard Power Transfer System	4
step 4: The top of the tower	5
step 5: Up and running	5
Related Instructables	5
Advertisements	5
Customized Instructable T-shirts	5
Comments	5

intro: Wind Mill Builder Facts

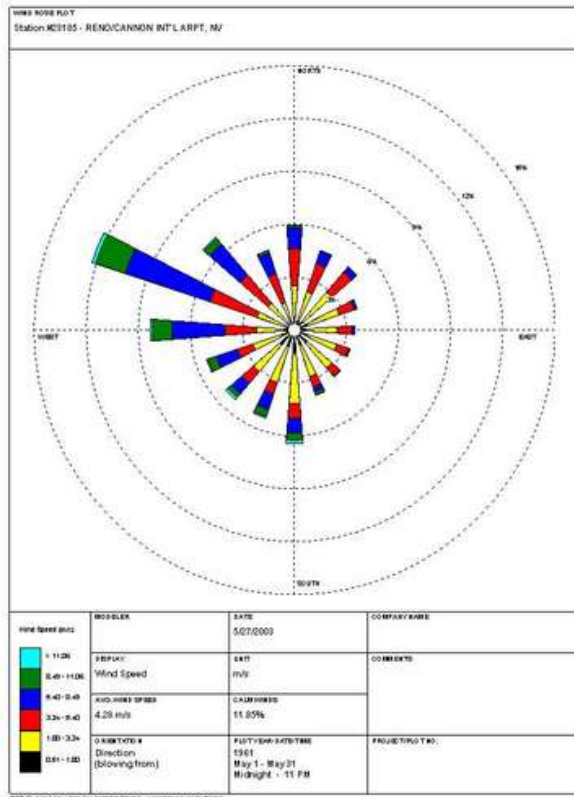
This is the earlier history of the downwind vertically driven shaft windcatcher and how I arrived at the final design for The Flying Lizard.

The name comes from the small lizards sucked up into the dust devils that frequent the Northern Nevada desert.

This first illustration is a necessity for anyone that wants to design a homebuilt windcatcher for the area he lives: the Windrose.

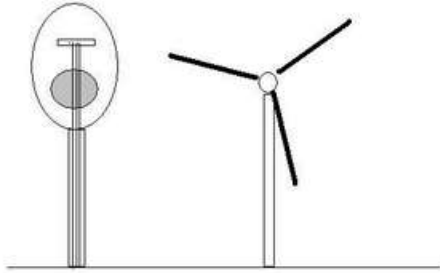
The WindRose tells you the prevalent direction and velocity of the winds in your area. They are usually available through NOAA.

This shows the wind direction in Reno



step 1: Doing the Math

Here's one of the first things the wind catcher will have to deal with. The Laws of Physics and how wind towers fall down. There's some important advice in the pdf file.



A SWS can be described vibrationally as an upside down guitar, with the blades plucking the supporting tower



The characteristic wavelength of a sws is equal to its height

File Downloads



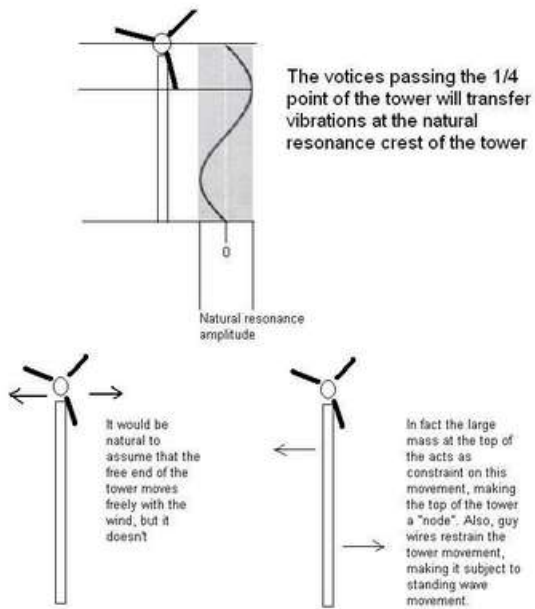
The Physics of Wind Generator Collapse.pdf ((612x842) 87 KB)

[NOTE: When saving, if you see .tmp as the file ext, rename it to 'The Physics of Wind Generator Collapse.pdf']

step 2: How not to make your windcatcher hum...

Probably the primary reason that a tower will fall is like tuning a guitar. Actually its best to untune the guitar.

Another pdf file on how the first Flying Lizard was built, and its rather strange way of transmitting power, via a flexible power shaft.



File Downloads



The Flying Lizard Windmill.pdf ((612x842) 51 KB)

[NOTE: When saving, if you see .tmp as the file ext, rename it to 'The Flying Lizard Windmill.pdf']

step 3: The First Flying Lizard Power Transfer System

Its simple. A 1/2 inch conduit elbow tranfers rotation vertically with a door spring and an inside aircraft cable. Lubricate the sliding areas with graphite. At the speeds the windcatcher runs at, there's not that much energy loss.



step 4: The top of the tower

The whole assembly rotated on a lazy susan bearing, the rotating spring went through the whole in the lazy susan.



step 5: Up and running

Here's what it looked like in the winter of 2006-7. The sails are made out of old campaign signs, they held up remarkably well. The main problem with this first device was not enough leverage to turn the sails downwind when the wind shifted.

Related Instructables



monster yet efficient and simple joule thief by shams



Windshield Wiper Wind Chime by RadBear



WindMill for Gusty Places by Cowboywindmillbu



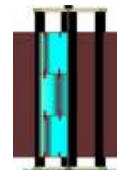
Digital Anemometer (wind meter) by dan



Hard Drive Parts Generator and Theory Tester (slideshow) by FullyInvolvedScien



Lenz v2 Vertical Axis Wind Turbine by faroun



Faroun Savonius Wind Turbine by faroun



Wind Generator from old scanner [updated] by Tigrezno



Comments

1 comments [Add Comment](#)



offlogic says:

Bravo on the new Instructable, CBWMB!

I was shopping for hardware to implement a vertical shaft system yesterday and saw some chimney sweep rods (Ace Hardware) that I'm thinking about using in my breakdown design. They are 4 foot fiberglass rods with threaded metal ends.

Thanks loads for all your sharing!

Sep 14, 2008. 9:06 AM [REPLY](#)