This project focused on developing a new roof design to minimize its damage during high strength winds. The most vulnerable part of a roof is the overhangs, as wind can apply pressure underneath it and lift the roof off of the building. To counter this, a design of an angled overhang protector was tested. The idea behind this was that wind would be diverted around the edge of a roof so that the wind would not directly apply pressure to it. In terms of purely wind damage, this design of an overhang protection is more stable than a design without the protection. With the models tested, the average maximum wind speed for model 3 (1 centimeter overhang with the modification) was 0.4 meters per second faster than model 1 (1 centimeter overhang with no modification). In addition, the average maximum wind speed for model 4 (2 centimeter overhang with the modification) was 0.6 meters per second faster than model 2 (2 centimeter overhang with no modification). The p-value when comparing model 3 to model 1 is 0.004, and the p-value when comparing model 4 to model 2 is also 0.004, meaning that there is a 0.4% chance this data is caused by randomness. The p-value is lower than the threshold for statistical significance of 0.05, meaning this data is statistically significant. However, there are some possible sources of error. The roof model is not completely representative of an actual roof; there had to be simplifications. An example would be that with 3-D printing, each roof piece is solid and cannot be broken in a way similar to traditional wood roofs. This can be for in the future by building a larger model out of wood with a design more similar to real life roofs. Another source of error would be the roof's connection to the building. It was assumed that since the connection was the same for all roof designs, this factor could be canceled out, as each roof had the same condition. However, using traditional roof connections would lead to more accurate results, which could be accomplished by using a larger design made out of wood instead of PLA plastic. There were also many factors that were not considered when applying this design to real life, such as water damage or weight. The proposed designs have a solid slanted section on the overhang, which would add weight to the structure. In addition, this may cause water to drip back down the side of the overhang, causing water damage, and thus eliminating the point of the overhang. Both of these factors are unknown, and would require further testing in addition to a more complicated engineering matrix to test for significance. In future testing, other designs could be considered. An example could be using different materials that allow wind to flow through the overhang, but allowing water to drip off the side. This project showed that an overhang protection modification produced statistically significant results and can be improved upon with future testing.