

## GREENER

Through an in person interview with both the Johnston High School Principal and Johnston Community' School District's Director of Building and Grounds, George Smith, I was educated on the specifics on my educational space. I was able to understand many of the environmentally savvy attributes of my high school's infrastructure, as well as some concepts the school could improve upon. Since a new building was just constructed last year to house the high schoolers of Johnston, IA, the building is incredibly high tech, and has dedicated time and resources to create arguably the most cost effective, and environmentally conscious high school in the state of Iowa. According to George Smith, "the primary source of heating and air conditioning at the new Johnston High School is a multi-stack chiller. The multi-stack chiller works with a very large geo-thermal well field. There are 700 wells that make our geo-thermal well field". This new system is very energy efficient, and substantially decreases our dependence on fossil fields to heat and cool the new school. With the exception of a few theatrical lights, and the football field illuminators, all the lights the school are LEDs. Our HVAC (Heating, Ventilation, Air Conditioning) is fully geo-thermal. The HVAC is operated by a BAS (Building Automation System). Our lighting is full LED. The only lights in this facility that is not LED are just a few theatrical lights in the auditorium and the lights that shine down on the football field. However, the source of this electricity is from the city power lines, of which most energy is gathered from natural gas, and very little is from renewable energy sources. Unfortunately, because of the fact this school has only been in operation since August, there is no estimate for how much money is spent on heating, cooling, electricity, and every other operational expense per month. These numbers will be low, as assured by Principal Ryan Woods, as great lengths were gone to make this space as energy and cost efficient as possible. In fact, "our new high school did win a '2017 Excellence in Energy Efficient Design Award'", boasted George Smith. "Our new High School was built with such high energy standards that we applied for and received a rebate check from MidAmerican Energy for the amount of \$843,642.00 It has been a pleasure working on this project (JHS) and seeing this building coming to life as our High School in our District for students to enjoy for decades to come." The building very

evidently has focused many of its resources to be as green as possible, but steps could still be taken further to increase the environment consciousness of the building, such as the implementation of solar panels, wind turbines, and setting outdoor lights to turn off depending upon light detectors and not a specific time

To whomever it may concern,

At the new Johnston High School, there are many environmentally savvy techniques of the building that have been implemented. However, there are still many aspects that could be modified, or additions that could be constructed to turn a green building into an educational space at the world's forefront for environmentally conscious facilities. Some aspects include changing the outside lights to turn off, not at a designated time, but by a light detector tracking the Sun. Additionally, the school can implement solar panels *and* wind turbines in an effort to renewably cut off our dependency upon the city powerline therefore reducing fossil fuel usage.

While the usage of LED lights throughout the entire school except for a few stage lights in the stadium lights is beneficial and environmentally helpful, it would be even better for these lights to be turned off when not in use. While the inside lights at Johnston turn off automatically when people are not using them, the outdoor lights could do the same. Through turning off these lights what it is bright outside via a light detector of some sort, so much money, and thus fossil fuels could be saved. This small change could severely impact Johnston's environmental impact on a massive scale.

Johnston has gone through the process of trying to reduce energy usage as much as possible. Whether it be through LED lights, geothermal heating and cooling, or even a multi-stack chiller system, there could be so much done to generate power on campus. . Through this process of electricity generation our dependency upon the city's power grid would decrease, thus minimizing fossil fuel usage specifically in the form of natural gas. The process by which this could occur would include the implementation of wind turbines and solar panels. By creating a system which uses the power of the Sun to generate the power of education, our planet could be helped substantially. The sheer thought of a building that runs entirely on its own, as far as electricity is concerned, is absolutely mind-boggling, but could be achieved through usage of wind turbines and solar panels on the top of the school. Additionally, this would save the school money as a short term investment upon solar panels and wind turbines would pay itself back and then some over the course of a few years. There is so much that can be done to better the environment and these two additions, and a change can help change the world. Thank you so much!

